



DISCUSSION PAPER SERIES

IZA DP No. 4785

## Trends in Economic Research: An International Perspective

Ana Rute Cardoso  
Paulo Guimarães  
Klaus F. Zimmermann

February 2010

Forschungsinstitut  
zur Zukunft der Arbeit  
Institute for the Study  
of Labor

# Trends in Economic Research: An International Perspective

**Ana Rute Cardoso**

*Institute for Economic Analysis (CSIC)  
and IZA*

**Paulo Guimarães**

*University of South Carolina  
and IZA*

**Klaus F. Zimmermann**

*IZA, DIW Berlin, University of Bonn,  
CEPR and CEPS*

Discussion Paper No. 4785  
February 2010

IZA

P.O. Box 7240  
53072 Bonn  
Germany

Phone: +49-228-3894-0  
Fax: +49-228-3894-180  
E-mail: [iza@iza.org](mailto:iza@iza.org)

Any opinions expressed here are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit organization supported by Deutsche Post Foundation. The center is associated with the University of Bonn and offers a stimulating research environment through its international network, workshops and conferences, data service, project support, research visits and doctoral program. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

## ABSTRACT

### Trends in Economic Research: An International Perspective<sup>\*</sup>

Given the recent efforts in several countries to reorganize the research institutional setting to improve research productivity, our analysis addresses the following questions: To which extent has the recent awareness over international quality standards in economics around the world been reflected in research performance? How have individual countries fared? Do research quantity and quality indicators tell us the same story? We concentrate on trends taking place since the beginning of the 1990s and rely on a very comprehensive database of scientific journals, to provide a cross-country comparison of the evolution of research in economics. Our findings indicate that Europe is catching up with the US but, in terms of influential research, the US maintains a dominant position. The main continental European countries, Germany, France, Italy and Spain, experienced some of the largest growth rates in economic scientific output. Other European countries, namely the UK, Norway, the Netherlands, Denmark, and Sweden, have shown remarkable progress in per capita output. Collaborative research seems to be a key factor explaining the relative success of some European countries, in particular when it comes to publishing in top journals, attained predominantly through international collaborations.

JEL Classification: A10, I20

Keywords: research performance, publications, rankings, Europe, North-America, US

Corresponding author:

Ana Rute Cardoso  
IAE-CSIC  
Campus UAB  
08193 Bellaterra, Barcelona  
Spain  
E-mail: [anarute.cardoso@iae.csic.es](mailto:anarute.cardoso@iae.csic.es)

---

<sup>\*</sup> We thank the research assistance of Yuanyuan Zeng, Victorya Pinter, Daniela Goed, and Dan Yang. The first author acknowledges the support of the Barcelona GSE and of the Government of Catalonia.

## **1. Introduction**

Just a couple of decades ago, the standards to evaluate research performance in economics varied widely across countries, with entrenched national traditions defining the methodological approaches favored, the type of issues covered, as well as the language used. The prevailing notion was that country specificities prevented the use of common standards. Frey and Eichenberger (1993) provide a concise summary of the differences between the American and European research markets and their incentive systems, reporting nevertheless early signs of convergence, as Europe moved towards the North-American benchmark. Nowadays, the idea of relying on world-recognized quality standards to allocate research funding on a competitive basis or to take decisions on recruitment and promotion of academic staff is widespread.

Studies focusing on the sources of the low European research performance in economics when compared to the USA invariably emphasize the relevance of incentives, both at individual and department levels, and the need to promote profound institutional reforms in most European countries (see for example Drèze and Estevan, 2007). Aghion et al (2010) emphasize the causal impact of autonomy in decision-making combined with market competition (for grants, students and staff) on university output (publications and patents) and the role of assessment exercises to guarantee accountability.

Accordingly, different countries have been undertaking efforts to reorganize their research institutional setting. In particular, the European Union places great emphasis on promoting mobility of staff, cross-country cooperation and research excellence more broadly. There seems to be an expectation that Europe will move towards American standards of research productivity, based on the on-going economic and cultural integration that renders the market wider and more transparent and the fact that a new generation of economists is growing equipped with the analytic tools and the motivation to place European research at a higher level (Kirman and Dahl, 1994; Borghans and Coervers, 2009). A few studies for other academic fields report trends that question the traditional American hegemony (Shelton and Holdridge, 2004; Glaenzel et al , 2008).

Given this setting, we address the following questions: To which extent has the recent awareness over international quality standards in economics around the world been reflected in research performance? How have individual countries fared? Do research quantity and quality indicators tell us the same story?

We concentrate on trends taking place since the beginning of the 1990s and rely on a very comprehensive database, covering all 170 journals that show up simultaneously in Econlit and

the Social Science Citation Index (SSCI) for at least five years during the 1991 to 2006 period. Finally, our focus is on cross-country comparisons, an area where, despite widespread curiosity and strong a priori beliefs, little comprehensive analysis has been undertaken, due to data limitations.

Section 2 describes the data collection and data handling procedures. Section 3 overviews the trend in research production by broad continents. Sections 4 and 5 scrutinize whether the extension of coverage of journals by international databases, as opposed to considering a stable set of journals, may inflate the growth of some continents, and whether quality indicators still report the same trends. Section 6 provides a comparative perspective on several countries, identifying contrasts among their paths.

## **2. Data and concepts used**

Our selection of journals was obtained by combining information from the Econlit database with that from the Social Science Citation Index (SSCI) database. Econlit, the American Economic Association's electronic bibliography, is a comprehensive database that indexes economics related literature from a large number of scientific journals. Importantly, beyond the commonly used bibliographic items, the Econlit includes information on JEL codes and the affiliation of each of the authors. On the other hand, the SSCI includes information on a large number of journals in many different fields but offers a classification into scientific areas, one of those being Economics. The SSCI has the additional advantage of collecting information on citations. Both databases have been expanding their coverage at a rapid pace and currently include core journals in economics as well as others only loosely related to economics.

Therefore, to define a comprehensive set of economics journals that may be considered representative of the field according to internationally widely accepted standards, we opted to include in our database all journals that showed up in both the Econlit and the SSCI (Economics) for at least five consecutive years between 1991 and 2006.<sup>2</sup> This resulted in a set of 170 journals (see Appendix A1 for a list of journals and their coverage). Our database contains information for a total of 100,404 articles including bibliographic information, author affiliation and JEL code (from Econlit) and the number of citations collected by each article from publication until 2008 (from SSCI). In our analysis we refer to this as the list of all journals.

For reasons to be clarified in the analysis, we may at times be interested in the set of journals that are present in our database throughout the 16 year period. We refer to this set as the

---

<sup>2</sup> We start in 1991 because JEL codes changed in that year.

incumbent journals (reported in bold in Appendix A1), which represent a total of 79,161 articles.

Finally, we will also work with a restricted set of top journals (6,811 articles). To define the list of top economics journals, we considered five alternative rankings available in the literature, which are widely known: Kalaitzidakis et al (2003), Kodrzycki (2006)<sup>3</sup>, Axaroglou and Theoharakis (2003), Barrett et al (2000)<sup>4</sup> and Laband and Piette (1994)<sup>5</sup>. If a journal was ranked among the top-10 in all five rankings, we defined it as a top journal. In other words, there had to be consensus electing a journal as a top journal for it to be included in our selection. This criterion resulted in the following list of top journals: *American Economic Review*, *Econometrica*, *Journal of Economic Theory*, *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economic Studies*.

Crossing the information from the two databases allowed us to correct several mistakes and to exclude articles that could not be legitimately classified as scientific articles.<sup>6</sup> Also, throughout this period, several journals changed name. In this case, we used the latest designation to identify the unique journal. Moreover, for articles with more than three authors, Econlit would until recently only report the first author and affiliation, using “et al” to refer to the remaining authors. To obviate this problem, we completed the information on authors and affiliations by inspecting each individual article.

We identified the country of origin of each author of an article by using the first affiliation reported. In the analysis articles were assigned to countries in proportion to the origin of their authors<sup>7</sup> and the overall production of each country was computed by tallying up all these shares. This proportionality procedure was used to allocate both the number of articles and their citations. Countries were grouped into the following continental groups: North-America, Other America, Europe, Asia, Oceania, and Africa.<sup>8</sup>

When reporting the number of articles per capita, we considered the countries’ population in 2006 posted on the US Bureau of the Census International Database (US Bureau Census, 2009).

### **3. General trends in research in economics: Europe is catching up and Asia is rising**

Figure 1 reports the contribution of each continent to world academic production in economics, considering all journals included in our database. Europe has been steadily

---

<sup>3</sup> We used this author’s “rankings of economics journals by journal impact (within economic impact)”.

<sup>4</sup> Table 3, column 2.

<sup>5</sup> Table A2.

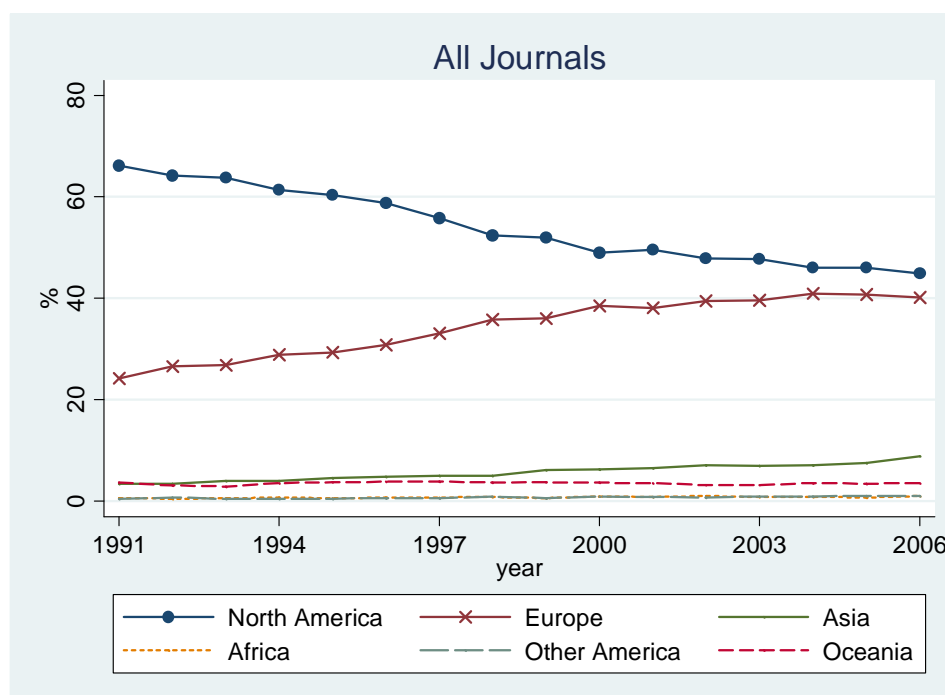
<sup>6</sup> We excluded errata, comments, obituaries, book reviews, editorials, rejoinders, messages, letters, prefaces, forewords, disclaimers, etc.

<sup>7</sup> To illustrate, the present article would contribute 1/3 to Spain, 1/3 to the US and 1/3 to Germany.

<sup>8</sup> The coding is self-explanatory for almost all countries; Israel, Turkey and Russia were coded as Europe.

increasing its contribution, while in recent years Asia is showing signs of a promising take-off. That has been achieved at the expense of a decline in the relative position of North-America. Indeed, in 1991 Europe had a share of 24% of the articles, while North-America had 66%. By 2006, the European share had risen to 40% and the North-American one had declined to 45%. Asia, on the other hand, increased its contribution from 3% to 9%. Throughout the period, Oceania's contribution remained close to 4%, while Other America and Africa had a minor contribution, close to 1% by 2006.

Figure 1 – Evolution of the share of articles by continent, all journals



Source: Authors computations based on Econlit and SSCI.

The major trend, a convergence of European and North-American research outputs, seems rather impressive. However, closer scrutiny should address two relevant questions. First of all, does that trend reflect an actual increase in European production or does it simply mirror a change in the way we count outputs? When comparing research performance across groups of researchers, it is standard practice to focus on all journals covered by a database<sup>9</sup> and to disregard the fact that the coverage of the database has broadened. However, it is often argued that Europe has been strengthening its “influence over the rules of the game”, by succeeding in including more of its journals in databases routinely used to measure academic production in economics, such as Econlit and SSCI. Therefore, the apparent increase in production could result from the extension of the data sources to outlets where Europeans are traditionally strong, bearing little relation to changes in actual research productivity as it would have been

<sup>9</sup> See for example Coupé (2003) and Combes and Linnemer (2003), or Shelton and Holdridge (2004) and Glaenzelet al (2008), who analysed the technology field.

captured had the criterion remained unchanged. A second issue that must be addressed is: To which extent are these trends in quantity related to trends in quality of scientific production? The two following sections address these issues.

**4. Journal coverage: Entrant journals in international bibliographic data sources reflect Europe’s search for a stronger role in world research**

The set of journals added over time to the database includes journals where Europeans have a relatively strong position (see table 1). In fact, in 2006 European authors had a share of 38% of the articles in journals present in the database throughout the 16 year period (incumbent journals), whereas in the journals that entered after 1991 their share rises to 45% and yet again to 55% when considering journals that entered the database after 1999. In that sense, Europe has been successful at influencing the rules of the game.

Table 1 – Share of articles in 2006, by geographic origin (percentage)

	Incumbent journals	Entrant journals in:	
		1992-2006	2000-2006
North America	48.25	36.61	33.02
Europe	38.07	45.38	55.02
Asia	7.70	11.81	3.75
Africa	1.02	1.08	0.32
Other America	1.09	1.02	1.42
Oceania	3.52	3.58	4.98

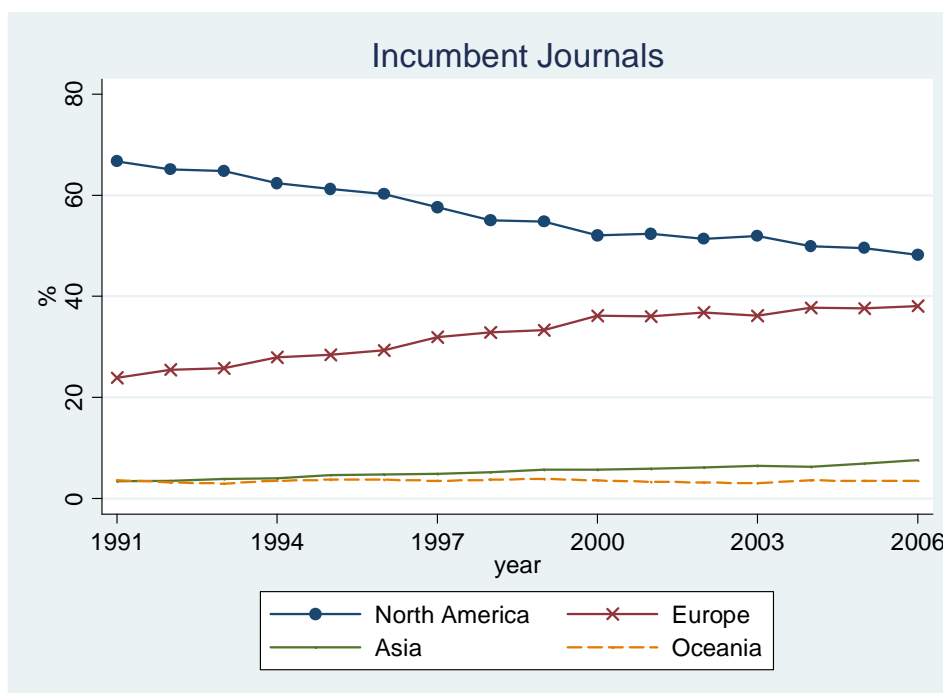
Note: Incumbent journal – journal listed in our database throughout the period 1991 to 2006; entrant journal – journal that entered the database after 1991.

Source: Authors computations based on Econlit and SSCI.

This leads us to perform the same exercise of computing the share of articles published by researchers from different geographical origins, but restricting now the sample to those journals that were in the database throughout the period (see figure 2). As such, we are measuring trends in research production keeping unchanged the criterion to define what is considered a research output.



Figure 2 – Evolution of the share of articles by continent, incumbent journals



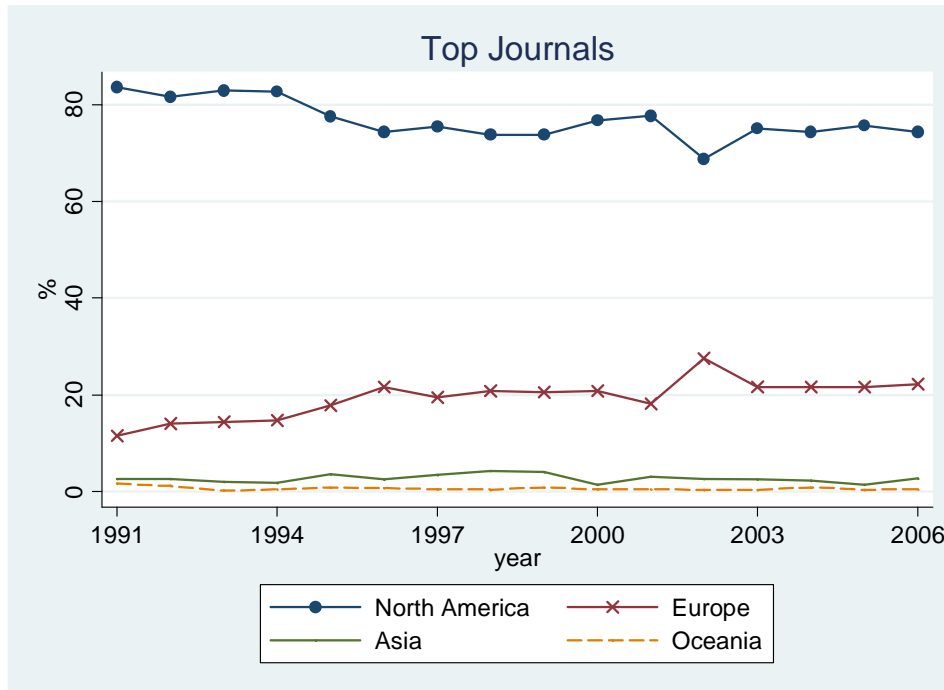
Source: Authors computations based on Econlit and SSCI.

Using the set of incumbent journals, figure 2 still reports a rising contribution of Europe to world scientific production in economics. Nevertheless, the trend is slightly less pronounced than in figure 1, which reported all journals. In incumbent journals, the share of Europe increases from 24% in 1991 to 38% in 2006; the Asian share goes from 3% to 8%; the North-American share, on the other hand, declines from 67% to 48%. Overall, we therefore find that Europe is catching up with North-American levels of production, both because it has been delivering more outputs and because it managed to have more of its journals considered in international databases that track academic work in economics around the world.

### **5. But in terms of influential research, North-America remains the uncontested leader**

To progress from an analysis of quantity of articles published to an indicator of its influence, we rely on two different criteria. First of all, we restrict the set of journals to a highly selective group of top journals in economics. Secondly, we consider the influence of the article among scholars by relying on the number of citations it received.

Figure 3 – Evolution of share of articles by continent, top journals



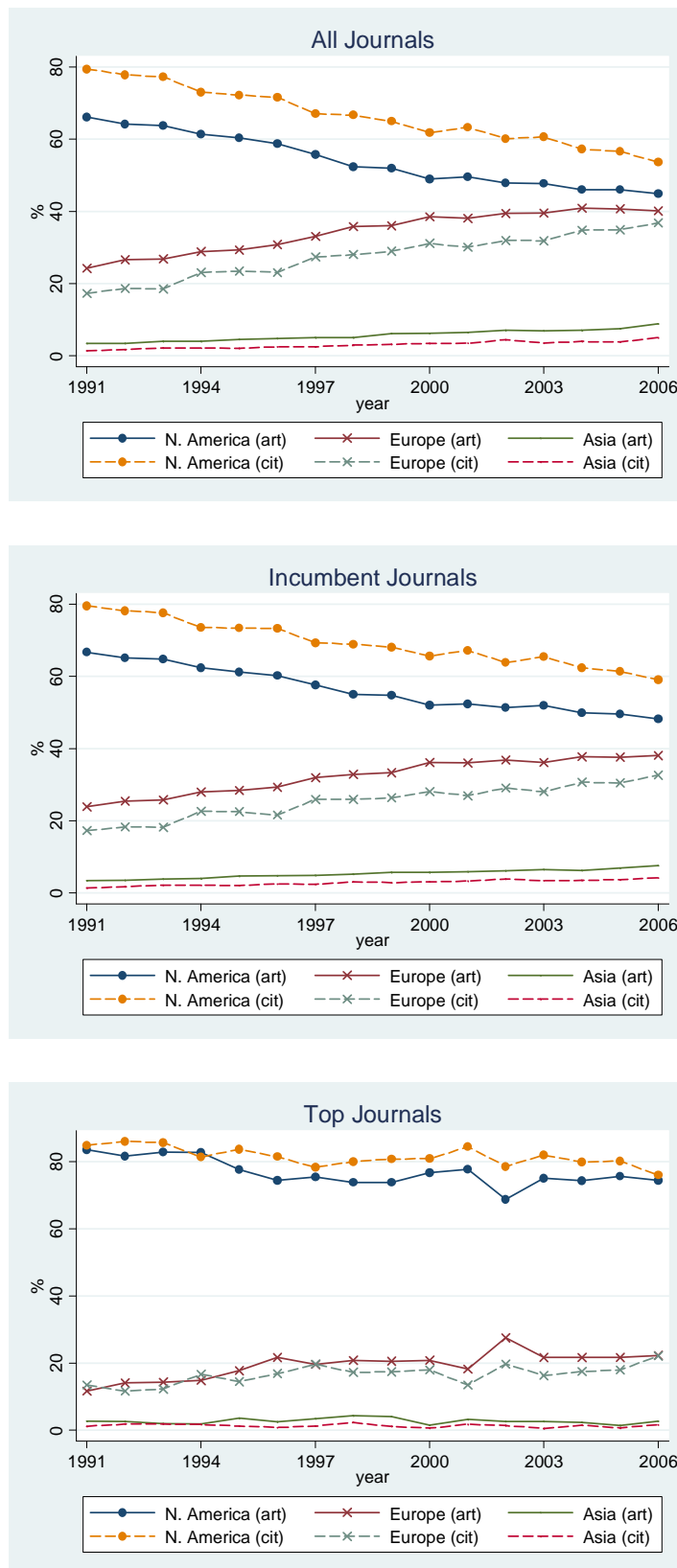
Source: Authors computations based on Econlit and SSCI.

The trend previously detected is different once the analysis is restricted to top journals. We now uncover that the dominance of North-America remains strong. In this group of journals, North-American authors accounted for 85% of the output in 1991 and 76% in 2006; the European share went from 14% to 22% and the Asian one from 1% to 2%.

One line of argument close to Europe’s heart would claim that the access of European scholars to top journals is restricted, when compared to the easier access those journals would grant to scholars based in North-America. An alternative index of quality of academic work could therefore be considered. The number of citations gathered by an article is widely used as an indicator of how influential the work is (see the arguments in Kim et al, 2006). We thus report in figure 4 the share of citations to European or North American authors, for the different sets of journals. Interestingly, we find that the share of citations to North American authors is consistently above their share of articles, with the opposite holding for European authors. This indicates that the average number of citations received by a North-American author is larger than the average number of citations received by a European author, irrespective of the set of journals considered: all, incumbents or top journals. This is largely driven by the over-representation of North-American authors in top journals, which gather a significantly larger number of citations per article. Another explanation for this gap could be the experience composition of the two sets of authors. It has been shown (eg. Laband, 1986) that work by researchers with a more firmly established reputation is more cited. Most likely,

the growth in the European contribution reflects the outputs of a new generation, junior researchers that begin to be active in Europe.

Figure 4 – Evolution of share of articles and citations by continent



Source: Authors computations based on Econlit and SSCI.

At this point, a finer level of analysis is called for. Efforts are underway to turn Europe into a transparent global academic market, but the fact is that currently a very strong segmentation still exists along national borders. Research traditions, as well as current research policies, diverge widely across Europe: while a few countries have long ago adhered to the so-called “Anglo-Saxonic model”, others are now at an initial stage of that process; the current policy in some countries has explicit quality aims, while in other countries such awareness is just starting to build up and it has not yet been translated into national policies; there are countries that aim at encouraging a few institutions of excellence, while others aim for a less concentrated basis of research production; a few research sub-areas can make a remarkable difference in some countries, while others rely on a more diversified basis of scientific sub-fields. We therefore progress to a within-country analysis.

## **6. An analysis by country: Contrasts among paths**

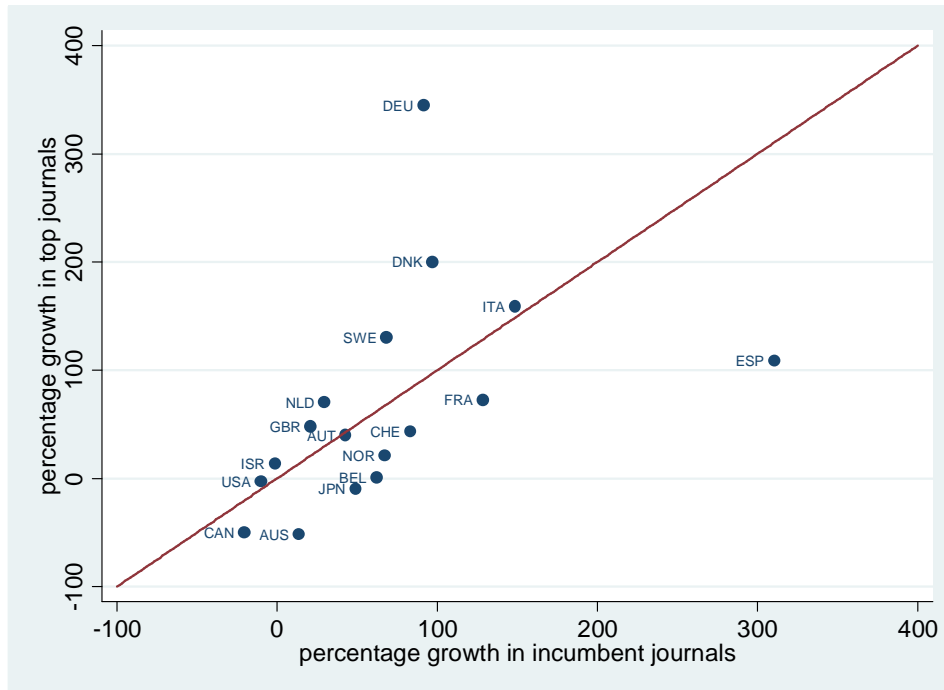
We focus in this section on the largest countries according to their share of articles in incumbent journals published in 1991-1995<sup>10</sup>: Austria, Australia, Belgium, Canada, Denmark, France, Germany, Israel, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, and the US.

Figure 5 reports for each country the growth rate in the share of articles in incumbent journals versus the growth rate in the share of articles in top journals. Roughly speaking, we could say that we are evaluating the growth in an indicator that emphasizes quantity against the growth in an indicator that favors quality. To compute the growth rates, we considered 1991-1995 as the initial period and 2002-2006 as the final period and as such we avoid the distortion that could be caused by a potential outlier year for a country.

---

<sup>10</sup> Share of world above 0.5%.

Figure 5 – Growth in the share of articles in incumbent and top journals, by country



Note: ISO country codes: AUT – Austria; AUS – Australia; BEL – Belgium; CAN – Canada; DNK – Denmark; FRA – France; DEU – Germany; ISR – Israel; ITA – Italy; JPN – Japan; NLD – The Netherlands; NOR – Norway; ESP – Spain; SWE – Sweden; CHE – Switzerland; GBR – United Kingdom; USA - USA.  
 Source: Authors computations based on Econlit and SSCI.

Figure 5 reports a general trend of increasing contribution by European countries to world academic output, both in terms of incumbent and top journals. The growth in the share of articles in top journals is particularly impressive for Germany, but also Denmark, Italy and Sweden showed fast progress, more than doubling their contributions. This increasing penetration of Europe in top world academic production has taken place at the expense of those countries whose contribution declined – mainly Australia and Canada but, to a lower extent, also Japan and the US. In terms of publication in a wider set of incumbent journals, Spain made the most notable progress, with a four-fold increase in its contribution, even though growth in top journals was not as impressive; Italy and France more than doubled their contributions to incumbent journals with Denmark and Germany having a slightly inferior performance. Out of the reported countries, only Canada and the USA registered a decline in the share of articles in incumbent journals.

Of course, growth rates are influenced by departure values, with the very smallest initial contributions more prone to grow faster and, conversely, the biggest countries more likely to grow slower. Table 2 therefore reports the initial and final shares of articles in incumbent and top journals for each country.

The UK reinforced over the period its position as the second largest producer of economic knowledge (table 2). In fact, it consolidated the second position in the share of articles in

incumbent journals, while in top journals it reached the second position (with 6.3% of the articles), followed by France (with 3.7%) and Canada, who lost its initial second position. The Canadian share of 2.8% now places the country as the fourth contributor to top journals. Israel ranks fifth, having slightly increased its share in top journals (to 2.1%), despite the slight loss in share in incumbent journals. Spain is now the sixth largest country contributing to top journals (2.1%), closely followed by Germany (1.7%).

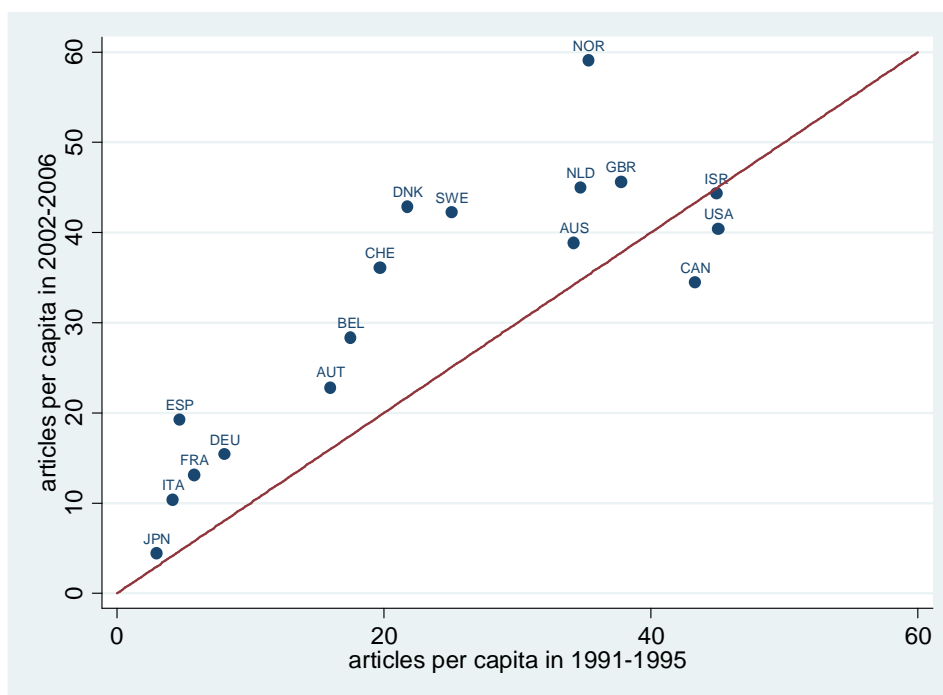
Table 2 – Shares of articles by country (percentage)

Country	Incumbent journals		Top journals	
	avg 91-95	Avg 02-06	avg 91-95	avg 02-06
USA	62.42	51.36	77.71	72.67
UK	10.63	11.78	4.43	6.37
Canada	6.57	4.79	5.96	2.86
Australia	3.26	3.39	0.93	0.43
Germany	3.08	5.40	0.46	1.96
Netherlands	2.66	3.16	0.95	1.57
Japan	1.77	2.41	1.40	1.22
France	1.69	3.55	2.19	3.65
Israel	1.43	1.30	1.94	2.13
Italy	1.13	2.57	0.70	1.76
Sweden	1.05	1.62	0.42	0.93
Spain	0.88	3.31	1.05	2.12
Norway	0.76	1.16	0.29	0.34
Belgium	0.84	1.25	0.64	0.61
Switzerland	0.69	1.16	0.55	0.76
Denmark	0.55	1.00	0.10	0.28
Austria	0.61	0.80	0.29	0.39

Source: Authors computations based on Econlit and SSCI.

However, country shares in academic output reflect to a large extent country sizes. A better indicator of the emphasis placed by the country on research or the success of its research strategy would be the academic output per million inhabitants. Figure 6 thus depicts for each country the average number of articles in incumbent journals per million inhabitants, in the initial and final periods (1991-1995 and 2002-2006, respectively).

Figure 6 – Trend in articles per million inhabitants in incumbent journals, by country

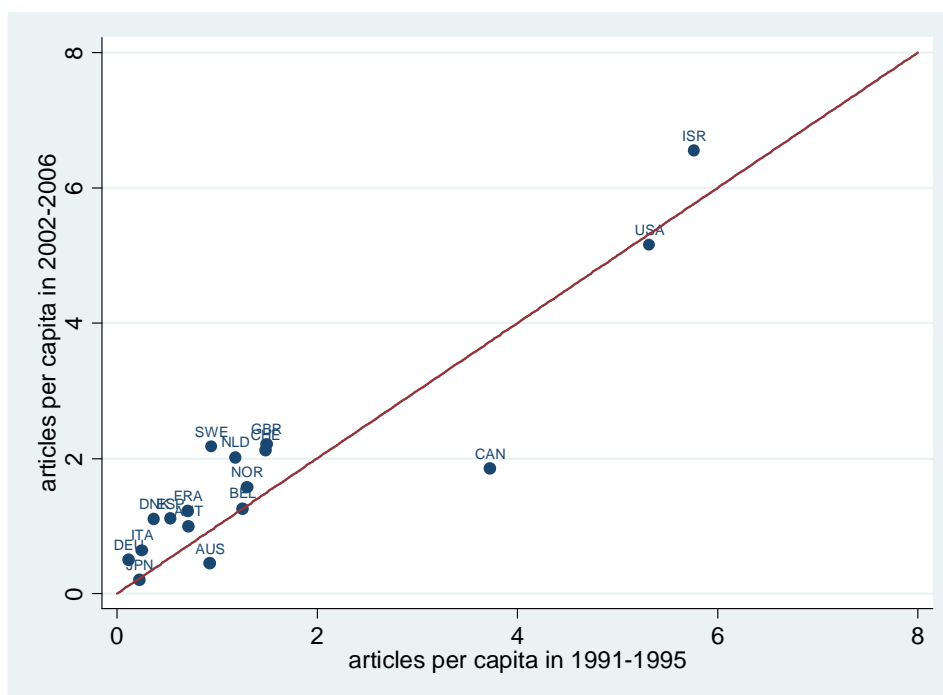


Source: Authors computations based on Econlit and SSCI.

The overall picture is very clear: almost all countries grew in terms of their average academic production per million inhabitants, with the only exceptions being Israel, where the figure remained roughly stable, and Canada and the USA, where it declined.<sup>11</sup> The USA and Israel had a clear leadership at the beginning of the period, followed by Canada. They lost it to Norway, currently the unambiguous leader in average academic output per capita, with approximately 60 articles in economics journals per million inhabitants. A broad group of countries follows, with more than 40 articles per capita: the UK, Israel, Netherlands, Denmark, Sweden, and the USA, in that order. A cluster with the four large countries in the European Union can be identified: Spain, Germany, France and Italy still rank rather low, with 10 to 20 articles in economics journals per million inhabitants, despite a sharp growth in the past couple of decades. In economics, Japan is clearly lagging behind in academic output per capita.

<sup>11</sup> Note that we have kept the denominator unchanged (country population in a reference year, 2006).

Figure 7 – Trend in articles per million inhabitants in top journals, by country



Source: Authors computations based on Econlit and SSCI.

Just like in the analysis by broad continents, a focus on top journals instead of a wider group of journals reveals a slightly different picture. Figure 7 shows the average number of articles in top journals per million inhabitants, in the initial and final periods, for each country. We now find that the top positions occupied by Israel and the USA remain unchallenged. There is however a difference between the trends in these two countries: while the USA kept its average number of articles in top economics journals per million inhabitants at roughly 5 (5.3 and 5.2), Israel increased it from 6 to 7 (more precisely, 5.8 to 6.8). Most other countries are bunched together, with a low average both at the beginning and at the end of the period. Canada is the exception, having lost its initial intermediate position to join the group of countries in the lower tail of the distribution of average number of articles in top journals per capita.

Table 3 reports other indicators of research trends across countries: the degree of academic collaborations (reflected in single- versus joint-authorship of the articles) and the degree of openness of the academic environment, as measured by international collaborations.



Table 3 – Share of articles according to authorship: single authorship, national collaborations and international collaborations (%)

	Incumbent journals						Top journals					
	avg 1991-1996			avg 2002-2006			avg 1991-1996			avg 2002-2006		
	Single	Nat collab	Intl collab	Single	Nat collab	Intl collab	Single	Nat collab	Intl collab	Single	Nat collab	Intl collab
Australia	49.1	26.8	24.1	33.4	35.7	30.9	45.5	27.3	27.3	18.8	0.0	81.3
Austria	59.9	15.1	25.0	27.6	28.8	43.6	25.0	25.0	50.0	45.5	0.0	54.5
Belgium	36.7	20.4	42.9	20.6	22.7	56.7	25.0	15.0	60.0	8.0	0.0	92.0
Canada	42.2	29.1	28.8	30.8	29.1	40.1	39.7	18.6	41.7	28.1	13.5	58.4
Denmark	57.5	23.9	18.7	29.8	27.5	42.7	100.0	0.0	0.0	20.0	10.0	70.0
France	38.9	22.5	38.5	23.2	31.0	45.7	35.6	18.6	45.8	17.7	23.0	59.3
Germany	58.9	21.8	19.4	36.0	28.5	35.4	38.5	7.7	53.8	20.9	11.9	67.2
Israel	34.4	19.8	45.8	22.9	27.2	49.9	22.8	15.8	61.4	24.2	13.6	62.1
Italy	46.8	21.4	31.9	29.8	26.4	43.8	35.0	10.0	55.0	11.5	12.7	76.2
Japan	60.4	18.7	21.0	51.8	27.7	20.5	54.1	5.4	40.5	48.5	12.1	39.4
Netherlands	38.5	40.6	20.9	21.9	38.6	39.5	29.6	22.2	48.1	12.5	35.4	52.1
Norway	56.9	24.3	18.8	31.4	37.7	30.8	57.1	14.3	28.6	13.3	0.0	86.7
Spain	40.5	26.7	32.8	22.6	42.1	35.3	32.3	12.9	54.8	11.1	23.6	65.3
Sweden	47.5	32.3	20.2	35.9	34.6	29.5	45.5	9.1	45.5	29.6	14.8	55.6
Switzerland	49.7	17.1	33.1	27.6	25.7	46.6	50.0	14.3	35.7	7.4	14.8	77.8
UK	48.5	33.7	17.9	31.0	35.4	33.6	38.3	24.3	37.4	26.2	15.9	57.9
USA	47.1	43.7	9.2	33.4	50.3	16.3	45.8	44.3	9.9	29.5	52.7	17.9

Source: Authors computations based on Econlit and SSCI.

A few key ideas emerge from table 3. There is a clear shift towards more collaborative research in economics, particularly pronounced in Austria, Denmark, Norway and Germany. Publishing in top journals was, already at the beginning of the period, more of a joint effort by different authors and the increasing penetration of European authors in top journals was to a large extent accomplished through international co-authorships. Japan, the country with the lowest per-capita output of economic research, stands out as the place where most authors work in isolation.

## **7. Conclusion**

We rely on an extremely comprehensive coverage of articles in economics over a long time frame and match different data sources to uncover trends in research productivity across countries. We approach the issue from several angles: research quantity and its quality, either one evaluated using alternative indicators.

Our findings indicate that Europe is catching-up with the US, both because it has been delivering more outputs but also because it has managed to include more of its journals in international databases. However, in terms of influential research, progress has been much slower and the US still maintains a dominant position.

The main continental European countries, Germany, France, Italy and Spain, experienced some of the largest growth rates in economic scientific output. Nevertheless, their per capita output is still substantially below the US. Other European countries, namely Norway, the Netherlands, Denmark, Sweden and the UK, have managed to pass the US in per capita output. However, when the count is restricted to top journals, only Israel shows better performance than the US.

Collaborative research seems to be a key factor in explaining the relative success of some European countries. This is particularly true for publications in top journals which, for most countries, are attained through international collaborations.

## References

- Aghion, Philippe, Mathias Dewatripont, Caroline Hoxby, Andreu Mas-Colell, and André Sapir (2010) "The governance and performance of universities: evidence from Europe and the US." *Economic Policy*, 61: 7-59.
- Axaroglou, Kostas and Vasilis Theoharakis (2003) "Diversity in Economics: An Analysis of Journal Quality Perceptions." *Journal of the European Economic Association*, 1(6): 1402-23.
- Barrett, Christopher B., Aliakbar Olia, and Dee von Bailey (2000) "Subdiscipline-specific Journal Rankings: Whither Applied Economics?" *Applied Economics*, 32: 239-252.
- Borghans, Lex and Frank Coervers (2009) "The Americanization of European Research and Higher Education." IZA discussion paper 4445. Bonn: Institute for the Study of Labor.
- Combes, Pierre-Philippe and Laurent Linnemer (2003) "Where are the Economists who Publish? Publication Concentration and Rankings in Europe Based on Cumulative Publications." *Journal of the European Economic Association*, 1(6):1250–1308.
- Coupé, Tom (2003) "Revealed Performances: Worldwide Rankings of Economists and Economics Departments, 1990-2000." *Journal of the European Economic Association*, 1(6): 1309-45.
- Drèze, Jacques H. and Fernanda Estevan (2007) "Research and Higher Education in Economics: Can We Deliver the Lisbon Objectives?" *Journal of the European Economic Association*, 5 (2-3): 271-304.
- Frey, Bruno and Reiner Eichenberger (1993) "American and European Economics and Economists." *Journal of Economic Perspectives*, 7(4): 185-193.
- Glaenzel, Wolfgang, Koenraad Debackere, and Martin Meyer (2008) „Triad’ or ,tetrad’? On Global Changes in a Dynamic World." *Scientometrics*, 74(1): 71-88.
- Grijalva, Therese C. and Clifford Nowell (2008) "A Guide to Graduate Study in Economics: Rankings of Economics Departments by fields of Expertise." *Southern Economic Journal*, 74(4): 971-996.
- Kalaitzidakis, Pantelis, Theofanis P. Mamuneas, and Thanasis Stengos (2003) "Rankings of Academic Journals and Institutions in Economics." *Journal of the European Economic Association*, 1(6): 1346-66.
- Kim, E. Han, Adair Morse and Luigi Zingales (2006) "What Has Mattered to Economics Since 1970." *Journal of Economic Perspectives*, 20(4): 189-202.
- Kirman, Alan and Mogens Dahl (1994) "Economic Research in Europe." *European Economic Review*, 38: 505-522.
- Kodrzycki, Yolanda and Pingshang Yu (2006) "New Approaches to Ranking Economics Journals." *Contributions to Economic Analysis & Policy*, 5(1), article 24.
- Laband, David (1986) "Article Popularity." *Economic Inquiry*, 24(1): 173-180.
- Laband, David N. and Michael J. Piette (1994) "The Relative Impacts of Economics Journals: 1970-1990." *Journal of Economic Literature*, 32(2): 640-66.
- Shelton, Robert and Geoffrey Holdridge (2004) "The US-EU Race for Leadership of Science and Technology: Qualitative and Quantitative Indicators." *Scientometrics*, 60(3): 353-363.
- US Bureau of the Census (2009) International Database, available in <http://www.census.gov/ipc/www/idb/>, accessed September 29.

## Appendix 1 – Additional tables

Table A1 – List of journals and coverage by the database

JOURNAL	START	END
ACTA OECONOMICA	1991	1995
AGRICULTURAL ECONOMICS	1996	2006
<b>AMERICAN ECONOMIC REVIEW*</b>	<b>1991</b>	<b>2006</b>
<b>AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>AMERICAN JOURNAL OF ECONOMICS AND SOCIOLOGY</b>	<b>1991</b>	<b>2006</b>
<b>APPLIED ECONOMICS</b>	<b>1991</b>	<b>2006</b>
APPLIED ECONOMICS LETTERS	1995	2006
<b>AUSTRALIAN ECONOMIC HISTORY REVIEW</b>	<b>1991</b>	<b>2006</b>
<b>AUSTRALIAN JOURNAL OF AGRICULTURAL AND RESOURCE ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>BROOKINGS PAPERS ON ECONOMIC ACTIVITY</b>	<b>1991</b>	<b>2006</b>
<b>BULLETIN OF INDONESIAN ECONOMIC STUDIES</b>	<b>1991</b>	<b>2006</b>
<b>CAMBRIDGE JOURNAL OF ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>CANADIAN JOURNAL OF AGRICULTURAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>CANADIAN JOURNAL OF ECONOMICS</b>	<b>1991</b>	<b>2006</b>
CHINA ECONOMIC REVIEW	1995	2006
<b>CONTEMPORARY ECONOMIC POLICY</b>	<b>1991</b>	<b>2006</b>
DE ECONOMIST	1992	2006
<b>DEFENCE AND PEACE ECONOMICS</b>	<b>1991</b>	<b>2006</b>
DESARROLLO ECONOMICO	1991	2006
<b>DEVELOPING ECONOMIES</b>	<b>1991</b>	<b>2006</b>
<b>EASTERN EUROPEAN ECONOMICS</b>	<b>1991</b>	<b>2006</b>
ECOLOGICAL ECONOMICS	1993	2006
<b>ECONOMETRIC THEORY</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMETRICA*</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMIC DEVELOPMENT AND CULTURAL CHANGE</b>	<b>1991</b>	<b>2006</b>
ECONOMIC DEVELOPMENT QUARTERLY	1999	2006
<b>ECONOMIC GEOGRAPHY</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMIC HISTORY REVIEW</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMIC INQUIRY</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMIC JOURNAL</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMIC MODELLING</b>	<b>1991</b>	<b>2006</b>
ECONOMIC POLICY	1997	2006
<b>ECONOMIC RECORD</b>	<b>1991</b>	<b>2006</b>
ECONOMIC THEORY	1995	2006
<b>ECONOMICA</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMICS AND PHILOSOPHY</b>	<b>1991</b>	<b>2006</b>
<b>ECONOMICS LETTERS</b>	<b>1991</b>	<b>2006</b>
ECONOMICS OF EDUCATION REVIEW	1995	2006
ECONOMICS OF TRANSITION	1997	2006
ECONOMY AND SOCIETY	1994	2006
EKONOMISKA SAMFUNDETS TIDSKRIFT	1991	2005
<b>EL TRIMESTRE ECONOMICO</b>	<b>1991</b>	<b>2006</b>
<b>EMERGING MARKETS FINANCE AND TRADE</b>	<b>1991</b>	<b>2006</b>
<b>ENERGY ECONOMICS</b>	<b>1991</b>	<b>2006</b>
ENERGY JOURNAL	1994	2006
ENVIRONMENTAL AND RESOURCE ECONOMICS	1998	2006
<b>EUROPEAN ECONOMIC REVIEW</b>	<b>1991</b>	<b>2006</b>
EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS	1993	2006

<b>EXPLORATIONS IN ECONOMIC HISTORY</b>	<b>1991</b>	<b>2006</b>
FEMINIST ECONOMICS	1998	2006
FISCAL STUDIES	2001	2006
FOOD POLICY	1996	2006
<b>GAMES AND ECONOMIC BEHAVIOR</b>	<b>1991</b>	<b>2006</b>
GENEVA RISK AND INSURANCE REVIEW	1992	2006
HEALTH ECONOMICS	1996	2006
<b>HISTORY OF POLITICAL ECONOMY</b>	<b>1991</b>	<b>2006</b>
<b>HITOTSUBASHI JOURNAL OF ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>IMF STAFF PAPERS</b>	<b>1991</b>	<b>2006</b>
INDUSTRIAL AND CORPORATE CHANGE	2002	2006
INFORMATION ECONOMICS AND POLICY	2000	2006
INSURANCE: MATHEMATICS AND ECONOMICS	1992	2006
<b>INTERNATIONAL ECONOMIC REVIEW</b>	<b>1991</b>	<b>2006</b>
<b>INTERNATIONAL JOURNAL OF FORECASTING</b>	<b>1991</b>	<b>2006</b>
<b>INTERNATIONAL JOURNAL OF GAME THEORY</b>	<b>1991</b>	<b>2006</b>
<b>INTERNATIONAL JOURNAL OF INDUSTRIAL ORGANIZATION</b>	<b>1991</b>	<b>2006</b>
INTERNATIONAL REVIEW OF LAW AND ECONOMICS	1995	2006
INTERNATIONAL TAX AND PUBLIC FINANCE	1998	2006
<b>JAHRBUCHER FUR NATIONALOKONOMIE UND STATISTIK</b>	<b>1991</b>	<b>2006</b>
JAPAN AND THE WORLD ECONOMY	1993	2006
JAPANESE ECONOMIC REVIEW	1999	2006
<b>JOURNAL OF ACCOUNTING AND ECONOMICS</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF AFRICAN ECONOMIES	1997	2006
JOURNAL OF AGRICULTURAL AND RESOURCE ECONOMICS	1992	2006
<b>JOURNAL OF AGRICULTURAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF APPLIED ECONOMETRICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF BANKING AND FINANCE</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF BUSINESS AND ECONOMIC STATISTICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF COMMON MARKET STUDIES</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF COMPARATIVE ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF DEVELOPMENT ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF DEVELOPMENT STUDIES</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMETRICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC BEHAVIOR AND ORGANIZATION</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC DYNAMICS AND CONTROL</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC EDUCATION</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF ECONOMIC GEOGRAPHY	2002	2006
JOURNAL OF ECONOMIC GROWTH	1999	2006
<b>JOURNAL OF ECONOMIC HISTORY</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC ISSUES</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC LITERATURE</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC PERSPECTIVES</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMIC PSYCHOLOGY</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF ECONOMIC SURVEYS	2000	2006
<b>JOURNAL OF ECONOMIC THEORY*</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF ECONOMICS (ZEITSCHRIFT FUR NATIONALOKONOMIE)</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF ECONOMICS AND MANAGEMENT STRATEGY	1995	2006
<b>JOURNAL OF ENVIRONMENTAL ECONOMICS AND MANAGEMENT</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF EVOLUTIONARY ECONOMICS	1996	2006
<b>JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF FINANCIAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF HEALTH ECONOMICS</b>	<b>1991</b>	<b>2006</b>

---

JOURNAL OF HOUSING ECONOMICS	1995	2006
<b>JOURNAL OF HUMAN RESOURCES</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF INDUSTRIAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF INSTITUTIONAL AND THEORETICAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF INTERNATIONAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF LABOR ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF LAW AND ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF LAW, ECONOMICS, AND ORGANIZATION</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF MACROECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF MATHEMATICAL ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF MONETARY ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF MONEY, CREDIT, AND BANKING</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF POLICY ANALYSIS AND MANAGEMENT</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF POLICY MODELING</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF POLITICAL ECONOMY*</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF POPULATION ECONOMICS	1992	2006
<b>JOURNAL OF POST KEYNESIAN ECONOMICS</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF PRODUCTIVITY ANALYSIS	1994	2005
<b>JOURNAL OF PUBLIC ECONOMICS</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF REAL ESTATE FINANCE AND ECONOMICS	1993	2006
<b>JOURNAL OF REGIONAL SCIENCE</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF REGULATORY ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF RISK AND INSURANCE</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF RISK AND UNCERTAINTY</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF THE JAPANESE AND INTERNATIONAL ECONOMIES</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF TRANSPORT ECONOMICS AND POLICY</b>	<b>1991</b>	<b>2006</b>
<b>JOURNAL OF URBAN ECONOMICS</b>	<b>1991</b>	<b>2006</b>
JOURNAL OF WORLD TRADE	1991	2003
<b>KYKLOS</b>	<b>1991</b>	<b>2006</b>
LABOUR ECONOMICS	2000	2006
<b>LAND ECONOMICS</b>	<b>1991</b>	<b>2006</b>
MACROECONOMIC DYNAMICS	1998	2006
<b>MANCHESTER SCHOOL</b>	<b>1991</b>	<b>2006</b>
MATHEMATICAL FINANCE	1997	2006
<b>NATIONAL TAX JOURNAL</b>	<b>1991</b>	<b>2006</b>
OPEN ECONOMIES REVIEW	1995	2006
<b>OXFORD BULLETIN OF ECONOMICS AND STATISTICS</b>	<b>1991</b>	<b>2006</b>
<b>OXFORD ECONOMIC PAPERS</b>	<b>1991</b>	<b>2006</b>
<b>OXFORD REVIEW OF ECONOMIC POLICY</b>	<b>1991</b>	<b>2006</b>
POLITICKA EKONOMIE	1998	2006
POST COMMUNIST ECONOMIES	1999	2006
POST-SOVIET AFFAIRS	1992	2006
<b>PUBLIC CHOICE</b>	<b>1991</b>	<b>2006</b>
<b>QUARTERLY JOURNAL OF ECONOMICS*</b>	<b>1991</b>	<b>2006</b>
<b>RAND JOURNAL OF ECONOMICS</b>	<b>1991</b>	<b>2006</b>
REAL ESTATE ECONOMICS	1994	2006
<b>REGIONAL SCIENCE AND URBAN ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>RESOURCE AND ENERGY ECONOMICS</b>	<b>1991</b>	<b>2006</b>
REVIEW OF ECONOMIC DYNAMICS	2001	2006
<b>REVIEW OF ECONOMIC STUDIES*</b>	<b>1991</b>	<b>2006</b>
<b>REVIEW OF ECONOMICS AND STATISTICS</b>	<b>1991</b>	<b>2006</b>
<b>REVIEW OF INCOME AND WEALTH</b>	<b>1991</b>	<b>2006</b>
REVIEW OF INDUSTRIAL ORGANIZATION	1994	2006

---

---

REVIEW OF INTERNATIONAL POLITICAL ECONOMY	1997	2006
REVISTA DE ECONOMIA MUNDIAL	1999	2006
REVUE D ETUDES COMPARATIVES EST-OUEST	1998	2006
<b>SCANDINAVIAN JOURNAL OF ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>SCOTTISH JOURNAL OF POLITICAL ECONOMY</b>	<b>1991</b>	<b>2006</b>
SMALL BUSINESS ECONOMICS	1992	2006
<b>SOCIAL CHOICE AND WELFARE</b>	<b>1991</b>	<b>2006</b>
<b>SOUTH AFRICAN JOURNAL OF ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>SOUTHERN ECONOMIC JOURNAL</b>	<b>1991</b>	<b>2006</b>
STUDIES IN NONLINEAR DYNAMICS AND ECONOMETRICS	1997	2006
THEORY AND DECISION	1995	2006
<b>WELTWIRTSCHAFTLICHES ARCHIV/REVIEW OF WORLD ECONOMICS</b>	<b>1991</b>	<b>2006</b>
<b>WORLD BANK ECONOMIC REVIEW</b>	<b>1991</b>	<b>2006</b>
WORLD BANK RESEARCH OBSERVER	1993	2006
<b>WORLD DEVELOPMENT</b>	<b>1991</b>	<b>2006</b>
WORLD ECONOMY	1992	2006

---

Note: Includes journals listed in both Econlit and SSCI for at least five years; in bold if the journal is listed throughout the period 1991-2006.