Geographical Concentration. The case of economics journals

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The purpose of this paper is to investigate whether geographical concentration can act as a supplement to the Journal Impact Factor (JIF). The results indicate that the use of a geographical concentration measure opens up new possibilities for analyses of the development of geographic diversion over time. In contrast to measures used in earlier studies the precise strength of the geographical concentration index as a measure of diversion is that it represents diversion as a single value that can be followed over time. The results show wider geographic distribution of European economics journals in the 1980s compared to the American economics journals whereas there seems to be no difference in geographic dispersion in the 1990s.

Introduction

The number of scientific journals and the costs of subscriptions have increased significantly over the years. The needs for evaluating the journals have also increased and the use and relative impact has become increasingly central in these evaluations of scientific journals.

Evaluation purposes vary, and consequently the choice of evaluation method will also vary. Indicators that rank journals can be constructed in a number of different ways. According to BEED and BEED (1996) most analyses within economics are based on citation analysis and on the Journal Impact Factor (JIF) that exists in a number of different variations. An overview of earlier rankings is available in BEED and BEED (1996). Examples of recent rankings are KALAITZIDAKIS, MAMUNEAS and STENGOS (2001), SUTTER and KOCHER (2001a), SUTTER and KOCHER (2001b) and KOCHER and SUTTER (2001). A minority is based upon the opinions of experts, others on the amount of publications by institutions, but JIF is probably the central indicator in journal evaluation although according to ROUSSEAU (2002) there are alternatives. He stresses that a number of different indicators seem preferable. The reason is that influence of a journal is not fully described only by impact as we are dealing with a multifaceted notion. BONNEVIE (2003) is an example of such a multifaceted portrait of a journal. There exist several alternatives to the journal impact factor. ROWLANDS (2002) analyses the distribution of citing journals by calculating the number of different citing journals per 100 citing papers. Another alternative mentioned

by ROUSSEAU (2002) is analyses of geographic distributions. Geographic distributions contribute with a new dimension in the evaluation of journals that is related to the degree of internationality of the journals as it gives us insight into the ability of journals to reach out beyond the geographic borders. Analyses of geographic distributions give us a complementary indicator of journal influence that can be read alongside the JIF and other indicators.

Analyses of geographic distributions of e.g. authors have been the subject of several analyses. WORMELL (1998) stresses that the geographic distribution of a journal has to be analysed on the basis of several parameters, and she analyses citations, authors and subscribers. KORTELAINEN (2001) investigates the geographic distribution of a single journal and describes the journal on the basis of analyses of the geographic distributions of citations and authors. The study uses data collected for a number of years and concludes that the bibliometric methods can represent geographic distribution of a journal. Other examples of such analyses are DANELL and ENGWALL (2001), which investigates whether management research is becoming Americanised and DANELL (2001) that uses a dynamic framework to analyse the networks between management journals. Examples of analyses of geographic distributions within the field of economics are KOCHER and SUTTER (2001) that investigate the institutional concentration of authors in the top 15 economic journals, HODGSON and ROTHMAN (1999) which analyses the institutional background of editors and authors in 30 economic journals and ELLIOTT, GREENAWAY and SAPSFORD (1998) that studies the geographic distribution of authors in 8 economic journals.

The existing studies of geographic distributions focus less on the development in geographic distribution over time. DANELL (2000) analyses American and European management journals over a time period of 18 years, but focus on the interaction between the journals and not the geographic distribution. DANELL and ENGWALL (2001) investigate the geographic distribution of authors on the basis of data from 1981 to 1992, but do not use the time dimension in their analysis. It is concluded that "*Both European and the American journals are clearly dominated by North American authors. In comparison, European journals are more international in terms of the geographical origin of the authors*". An interesting question is if this is an increasing or decreasing tendency as that might point to whether science is becoming more or less international.

In order to be able to perform effective dynamic analyses we express the geographic distribution in a single value. This is possible with a concentration index that can represent the concentration with a single index value. Concentration indexes have been used before in bibliometric contexts. LABAND and PIETTE (1994) use a concentration index to measure the concentration of citing journals, and KOCHER and SUTTER (2001) studies the institutional concentration of authors in 15 journals by the use of concentration index. ROWLANDS (2002) uses a concentration index to measure the concentration of citing journals.

The general purpose of this study is to investigate whether another measure of journal characteristics can be applied as a supplement to JIF in the description of journal influence. We investigate whether geographic concentration by giving us insight to the degree of internationality could be such a supplement.

This paper is organised as follows: In the next section we will present the empirical data. In the following section the results are presented. The last section contains conclusions.

Methods

In this analysis we select journals from only one science, economics, as we want to keep the number of variables at a controllable level. DAVIS (1998) stresses that the structure of the subject categories in the citation indexes is not theoretically founded. Furthermore, LABAND and PIETTE (1994) point out that up to 15 per cent of the journals in the subject category e*conomics & business* are not economics and business journals. The journals included are therefore selected on the basis of two qualitative studies that identify the most significant economics journals. ELLIOTT; GREENAWAY and SAPSFORD (1998) identify the 8 most central journals. BRAÜNINGER and HAUCAP (2001) rank the journals on the basis of a qualitative German study of the most influential economics journals. In this study the 8 journals of the former study and the first 50 journals of the latter study are included.

In addition the journals have to fulfil some additional criteria. First of all the journals must be included in the citation indexes as we need to have geographic information about all the authors. The journals also have to publish a certain amount of articles every year to assure a reliable ranking of the geographic location. The limit is set as a minimum of 50 articles a year. For the same reason the journals have to receive a minimum of citations in the 7 5-year citation windows applied here and again we set the limit to 50. Finally, the journals have to be academic, and that is assured by the delineation of KALAITZIDAKIS, MAMUNEAS and STENGOS (2001).

The geographic origin of the journals is determined by the definitions in ELLIOTT; GREENAWAY and SAPSFORD (1998), HODGSON and ROTHMAN (1999) and PORTES (1987). The geographic origin of the remaining journals is determined in *Ulrich´s international periodicals directory,* but if the geographic location of a journal cannot be established definitely it is excluded from the study. Limiting the group of journals by using all of the above selection criteria produces a list of journals to be included in the study. This list is shown in table 1.

Take in table 1.

In this study a 2-year publication period and a 5-year citation window is used for the calculation of JIF. This means that we count citations received in 5 years to publications published in 2 years, e.g. citations received in 1985 to 1989 to articles published in 1985 to 1986.

The publication period is set to 2 years, as we need a data set of a certain size in order to rank the GL-field. To set the length of the citation window we need to take the speed of the obsolescence of economics literature into account as we wish to capture a considerable part of the received citations. Obsolescence studies within economics are few, but DORBAN and VANDEVENNE (1991) can be mentioned. Although the study uses only limited material it shows that 90 per cent of all references to economics articles are less than 15 years old, but only 24 per cent is 0 to 4 years old. Therefore we choose a citation window of 5 years, which is longer than those used by JCR.

The first publication period analysed in the present paper is 1985 to 1986. Preliminary searches showed that before this period the data material is too undersized and changeable for analysis. The last publication period is 1997 to 1998 as a 5-year citation period follows each publication period.

As we want to analyse the correlation between geographical concentration of authors and citations we need to connect the two which is done by connecting the concentration of authors in 2 years of publications to the concentration of the authors in documents citing those 2 years of publications.

For these analyses the three Dialog Classic implementations of Arts & Humanities Citation Index (A&HCI), Science Citation Index (SCI) and Social Sciences Citation Index (SSCI) have been used. All three databases have been

used, as citations received from journals outside the home discipline are just as relevant for this study as those from within the home discipline. In the analysis we only include citations from journals covered by ISI. A different, perhaps larger, pool of documents could have been chosen as citations received can come from journals not covered by ISI. But for these analyses the pool is all journals covered by ISI. We limit the searches and include only the document types review, article, note and letter.[2]

The geographical concentration of publishing authors is determined on the basis of the geographic locations of the authors publishing in the 19 journals. We use the following search commands: `S jn=econometrics/1997:1998`. A remark must be made concerning multi-authored documents, as they contain a built-in injustice in ranking of geographic locations. The ranked output of a document written by 4 UK based authors and one Swedish will consist of 1 GL=Sweden and 1 GL=UK. The 2 countries are given the same weight although 4 authors from the UK are listed in the document. This is due to the indexing policy of Dialog and it is a problem that cannot be addressed here. Since 65 per cent of all economics articles are multi-authored (LABAND, 2002) and this is an intensifying tendency (HUDSON, 1996) one must take this into consideration when drawing conclusions on the basis of the analysis.

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[2] Notes, reviews and articles are included in the ISI calculation of JIF, and CHRISTENSEN, INGWERSEN and WORMELL (1997) recommend including letters to assure a more detailed picture. This search limit is not shown in the examples below.

The geographical concentration of citing authors is determined on the basis of the geographic locations of the authors citing publications in the 19 journals. In this study the concentration of citing authors refers to the geographic concentration or distribution of citations to the 19 journals. We use the following search: `S s1(s)cy=1997:1998/1997:2001 not ud=2002?` Where s1 is the different name forms the journal has in the cited work field. The "not ud=2002?"-command is added to exclude records added to the data base the year after the publication year as CHRISTENSEN et al (1997) point out this makes the searches reproducible.

The ranked outputs consisting of geographic locations have to be divided into regions, as the number of economic scientists in America is incomparable to the number in e.g. the Scandinavian countries. If we do not divide into regions it will imply that the Scandinavian journals will appear more international as authors origin from smaller countries. Several possibilities exist when deciding on regions, but it is worth remembering that the specific number of regions will affect the results, but to a lesser degree the relative results. WORMELL (1998) uses 6 regions, KOCHER and SUTTER (2001) uses 7 and KORTELAINEN (2001) 5. Some of these classifications are constructed on the basis of the specific analysis, e.g. the latter, and others are general classifications. Not all classifications are useful for this study. For example, the classification used by the United Nations is based on the acceptance of a country in a region or group by the concerned group and therefore Israel is a member of the Western European group. In this

study we apply the general division of regions by the World Trade Organisation (WTO), see appendix 1.

The concentration index is a measure used within economic theory to measure market concentration. The index is also called Herfindahl-Hirschman index (HHI) and was first used in 1951 to analyse the concentration within the steel industry. HHI is calculated by adding the squares of firms' market shares in per cent (WEINSTOCK, 1982).

$$HHI = \sum_{i=1}^{n} s_i{}^2$$

Where s_i is the market share of firm i measured in percentage points. This definition implies that the shares of the larger firms are given greater weight than those of the smaller companies. The maximum of the HHI value is 10,000 corresponding to a pure monopoly. The strength of the HHI compared to other measures of concentration is that the index gives a more complete picture by including the information of market shares of all the actors on the market and the weights according to their relative size. WEINSTOCK (1982) notes that this is also one of the drawbacks of the HHI as individual market shares for each of the firms in the market is required. For the purposes in this paper we understand the market share of a region as the share of authors from that region. This is not problematic in this study as all the information on market

shares is available as the citation indexes provide the geographic location of all authors and not just the first author. We must bear in mind, however, that the information provided by the citation indexes is limited to the set of journals indexed.

The primary shortcoming of a concentration index is that by merging information on the geographical distribution into one single value we lose information. But to be able to analyse the development over time we need to fuse the information to a single value.

Within economics a HHI value of 1800-2000 and more is said to indicate lack of competition although knowledge of the specific market is necessary in order to draw firm conclusions. Realising that this is an indicator used in economic theory one must be cautious about transferring thresholds values uncritically. However this is not problematic in this study as we only intend to use the HHI values comparatively.

The HHI values are being computed on the basis of the ranked outputs consisting of geographic locations divided into 7 regions. An example of such a computation is the HHI value of the authors of documents published from 1985 to 1986 in *American Economic Review*. The distribution of the regions was 387 authors from North America, 29 from Western Europe, 7 from the Middle East, 3 from Asia, 0 from Africa, Latin America, Central and Eastern Europe (that is a total of 426), which entails the following computation:

HHI = $(387/426*100)^2+(29/426*100)^2+(7/426*100)^2+(3/426*100)^2$ = 8302.4.

This is a fairly high HHI value but a quick inspection of the distribution also gives a picture of the domination of a single region.

In order to analyse whether the application of the HHI provides us with information beyond the one contained in the JIF we need to analyse the correlation between the two. Diachronic JIFs are often preferred in evaluation studies and a recent example is GLÄNZEL et al (2003). We therefore calculate diachronic JIFs treating publication years differently as the citation periods of the different publication years vary in length as described in FRANDSEN and ROUSSEAU (2004). The searches for the JIF computation are already provided by the existing search procedures. But when determining the JIF we just use a correction (CHRISTENSEN, INGWERSEN and WORMELL, 1997).

Results

First of all this study confirms the conclusions of previous studies concerning the dominance of North America within economics. Table 2 demonstrates that North America dominates the North American journals as well as the European journals from 1985 to 1986. We can clearly see the asymmetry as the North American journals primarily accept documents from authors with affiliation in the same region whereas the European journals have a more equal distribution between the two regions.

Take in table 2

Table 3 illustrates the changes in the distributions at the end of the period covered by this investigation. The European shares in the North American journals are doubled. The other main alteration is the decrease in the North American shares in the European journals although the North American dominance persists in economics in the publication process as well as the citation process.

Take in table 3

The establishment of the North American domination corresponds to the results by existing investigations of geographic dispersion as mentioned in the introduction.

The results of this study also point to a correlation between the concentration of authors as well as authors citing the afore mentioned documents. This positive linear correlation is statistically significant at the 0.01 level and the value of a Pearson correlation is 0.6 also pointing to a strong correlation. A transcript of the SPSS output can be seen in appendix 2. This correlation corresponds to the results of WORMELL (1998) who finds so strong support for a positive correlation that it is concluded that "[I]t is possible to state that the

international characteristics and impact of the scientific journal can be defined by [the geographical distribution]" (Wormell, 1998, p. 598).

The present study finds different characteristics of North American and European journals concerning geographical concentration as well as different characteristics in their development over time. This is illustrated in figures 1 and 2 where the North American journals are marked with squares and the European with triangles.

Figure 1 illustrates the clear division between the North American and European journals in the beginning of the period. The North American journals generally have a much higher HHI value for authors than the European journals. But it also illustrated how this strong splitting up of the journals diminishes over time. At the end of the period the two groups of journals have come much closer. That development is primarily due to the North American journals as the European journals have relatively constant HHI values. The average HHI value of European journals is slightly increasing due to the fact that the journals publish slightly more documents from European authors and fewer from North American authors. This development is contrasted by the development of the North American journals that go through a development from an average HHI value of approximately 7000 to 5500. Over the time period the North American journals publish noticeably fewer documents from North American authors and more from authors elsewhere in particular from Asia, the Middle East and Western Europe.

These results imply that the North American journals have become less tied geographically to their own region relatively to the European journals; they have become more "international".

Take in figure 1

Figure 2 show the same division between the two groups of journals when considering the average concentration of citing authors. The European journals have a markedly lower average HHI value in the beginning of the period but at the end of the period this distinction is distorted. The average HHI value of citing authors of the European journals is relatively constant. The number of citations varies over the years, but the distribution of shares is relatively constant. The HHI value of the North American journals decreases evidently. This development is due to the fact that over the years the share of North American journals citing North American journals lowers in favour of journals from primarily Asia, the Middle East and Western Europe. The North American journals appear to achieve a greater geographical distribution of those citing the documents published in the journals, which is a development in immense contrast to the constant concentration of the European journals. This difference in their development over the years is so marked that in the period from 1997 to 1998 the HHI value of concentration of citing authors of the North American journals is lower than that of the European journals. In this respect it should be noted that the latest data is that of the concentration of citing

authors which is calculated on the basis of data from 1997 to 2001 whereas the concentration of publishing authors is calculated on the basis of data from 1997 to 1998. It will be interesting to analyse whether the tendency in the development of the concentration of publishing authors will follow that of the concentration of citing authors.

Take in figure 2

The developments in concentration over the years depicted in figures 1 and 2 give us insight into the differences due to geographical issues that seem to exist between journals within the same science. The only marked difference between these journals is their geographic location.

The explanations of these developments in geographical concentration may be explained in different ways. FREY and EICHENBERGER (1993) points out that there are differences between European and American economists in their perception of economics, behaviour and practise. MCCAIN (1991) reaches a similar conclusion as the bibliometric map of economics shows a cluster named the *Western European point of view*. The other clusters are primarily based on subjects, but a group of journals are separated solely by the fact that they are European. Thus both these studies seem to confirm the tendency pointed out by this study. DANELL and ENGWALL (2001) finds that the European and American management journals are becoming indistinctive over time as both groups of journals are increasingly being dominated by American research also called

A*mericanisation of science*. However, this point of view cannot be fully supported by the results of this study as the shares of North American authors in the European journals and citers of European journals have decreased over time. If the European journals are becoming Americanised we are not able to detect it in the North American shares, but that doesn't necessarily mean that the finding is not correct.

The results of this study give further understanding of the hypothesis that international journals are completely dominated by North America. The North American dominance is unquestionably strong both at the beginning of this study and at the end. However, this study has found that this dominance is decreasing both in Europe and North America. The North American journals have experienced increasing shares of authors from Asia, the Middle East and Western Europe. The European journals have experienced increasing or stable shares of authors from their own region. The latter tendency of the European journals gives further insight to the hypothesis that European journals have wider geographic distribution than the North American journals. This used to be the picture, but the results here show that the geographical concentration of the North American journals has decreased while the geographical concentration of European journals has remained constant.

Correlation with JIF

The correlation between the concentration measures and JIF is interesting as it may give us hints to whether geographical distribution can supplement JIF as an indicator in journal evaluation or if this information is already contained in JIF. We analyse the linear correlation between JIF and HHI-values of both publishing authors and citing authors and control for other variables that can influence the correlation. This is done by employing a linear regression model that estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. When employing a linear regression model the dependent and independent variables must be quantitative. Thus we recode the categorical variables, such as regions into binary (dummy) variables. We use a confidence interval of 5%.

We compute one model for the North American journals and one for the European journals. In both cases JIF is the dependent variable, while the independent variables are the journals, the two concentration values (publishing authors and citing authors) and the specific time period (in this variable we enter the beginning year of the period). The total number of observations is 126 for the North American journals and 140 for the European journals. In each case one journal is excluded as a variable as it is used as a constant. In the case of the North American journals the constant is Canadian journal of Economics and in the case of the European journals the constant is Economica. But it could be any of the journals, as it only has to do with managing the dummy variables.

The outcome of the linear regression is presented to us as an overview of the selected variables, a model summary that gives a summary of the fit of the model, ANOVA that analyses the variance, regression coefficients and excluded variables (the constant). Some of the central information in the outcome is the adjusted R square of the model that summarises the fit of the model. In this case the R squares of the models are 0.828 and 0.783, which is a good fit. This is also confirmed in the analysis-of-variance tables, which for both models show that the means of the predictors are not significantly different at the 0.01 significance level.

Other important information is held in the tables of regression coefficients. Estimates displays regression coefficient B, standard error of B, standardized coefficient beta, t value for B, and two-tailed significance level of t. Tables 4 and 5 are transcripts of the SPSS outcome of the model for the North American and European journals. Note that the concentration values are denoted by HH-AU for publishing authors and HH-CW for citing authors. The specific time period is denoted by TIME.PER.

In table 4 we can see that all but one journal have a JIF that is significantly different from that of the constant. Some have higher JIFs and others have lower. The JIFs of the North American journals are also influenced by the time period. There is a positive correlation between JIF and HHI values of publishing authors and citing authors for the North American journals. That correlation

implies that a higher concentration is likely to be seen together with a higher JIF. High concentration values are achieved by the journals with the strongest connection to a specific region, and in all the cases of these journals it is their home region: North America. From this we can see that North American journals tied mostly to North America also are the ones with the highest JIF. We have no further information of the causality of this correlation, but it could be that North American journals have little interest in opening up to authors outside the North American region as it implies a lower JIF. We cannot conclude that on the basis of this correlation analysis and further studies are necessary.

Take in table 4

Table 5 is a transcript of the SPSS output of the model for the European journals. Table 5 illustrates that fewer of the European journals have a JIF that is significantly different from that of the constant. Contrasting the North American journals we can also see that the JIFs of the European journals are not statistically significantly influenced by the time period. There is no statistically significant correlation between JIF and HHI values of publishing authors and citing authors for the European journals.

Take in table 5

These differences between North American and European journals imply that there is no general correlation that can explain geographical concentration on the basis of information about JIF. In other words calculating HHI values of geographical concentration provides us with new information about journals.

Conclusion

The purpose of this paper has been to investigate whether geographical concentration can act as a supplement to JIF by adding information that is not included in JIF. However, the results should be weighted against the criticism that the chosen methods are subject to. One has to be aware of the limits of these methods such that conclusions are not necessarily generalised.

Bearing the above reservations in mind the results of the paper clearly indicate that a concentration index may be used for analyses of geographic dispersion. The concentration index calculated in the paper shows that not only are the results from previous studies retained, but they also enables us to make a new type of analysis which gives us information not already included in the JIFs of the journals. Primarily this concerns the possibility that we can analyse the journals over time. In contrast to the methods used in previous studies the strength of the concentration index is that concentration is represented by a single index value which can be computed at different points in time, and thus enables us to follow journals over time. In the present paper it was shown that although there were large differences in concentration in the beginning of the

analysed time period, concentrations had converged by the end of the time periods analysed.

Furthermore, the results found in the paper allow us to question the results of some of the previous studies in this area. Earlier studies have concluded that European journals are broader than North American journals in a geographic sense. Although based on a different methodology and region division the results of the present study only confirm this picture for the 1980s whereas there seems to be no difference in geographic dispersion in the 1990s. Geographic concentration can therefore act as a supplement to JIF in the description of scientific journals as it adds new information that is not already included in the JIF.

References

BARRETT, C. B; OLIA, A., VON BAILEY, D. (2000). Subdiscipline-specific journal rankings: Whither Applied Economics. *Applied Economics*, 32, 239-252.

BEED, C., BEED, C. (1996). Measuring the Quality of Academic Journals: The Case of Economics. *Journal of Post Keynesian Economics*, 18(3), 369-396.

BONNEVIE, E. (2003). A multifaceted portrait of a library and information science journal: the case of the Journal of Information Science. *Journal of Information Science*, 29, 11-23.

BRÄUNINGER, M., HAUCAP, J. (2001). Was Ökonomen lesen und schätzen: Ergebnisse einer Umfrage. *Perspektiven der Wirtschaftspolitik*, 2, 185-210.

CHRISTENSEN, F. H.; INGWERSEN, P., WORMELL, I. (1997). Online determination of the journal impact factor and its international properties. *Scientometrics*, 40(3), 529-540.

DANELL, R. (2000). Stratification among the journals in management research: A bibliometric study of interaction between European and American journals. *Scientometrics*, 49(1), 23-38.

DANELL, R. (2001). Internationalization and homogenisation: A bibliometric study of international management research. Umeå University.

DANELL, R., ENGWALL, L. (2001). Hello Dolly! The European cloning of US managemant research. In: Internationalization and homogenisation: A bibliometric study of international management research. Umeå University.

DAVIS, J. B. (1998). Problems in using the Social Sciences Citation Index to rank economics journals. *The American Economist*, 42(2), 59-64.

DORBAN, M., VANDEVENNE, A. F. (1991). Bibliometric analysis of bibliographic behaviours in economic sciences. *Scientometrics*, 25(1), 149-165.

ELLIOTT, C., GREENAWAY, D., SAPSFORD, D. (1998). Who´s publishing who? The national composition of contributors to some core US and European journals. *European Economic Review*, 42, 201-206

FRANDSEN, T. F., ROUSSEAU, R. (2004). Article impact calculated over arbitrary periods. *JASIST*. In press.

FREY, B., EICHENBERGER, R. (1993). American and European Economics end Economists. *Journal of Economic Perspectives*, 7(4), 185-193.

GLÄNZEL, W., DANELL, R., PERSSON, O. (2003). The decline of Swedish neuroscience: decomposing a bibliometric national science indicator. *Scientometrics*, 57, 197-213.

HODGSON, G., ROTHMAN, H. (1999). The editors and authors of economics journals: a case of institutional oligopoly? The Economics Journal, 109, 165-186.

HUDSON, J. (1996). Trends in multi-authored papers in economics. *Journal of Economic Perspectives*, 10(3), 153-158.

KALAITZIDAKIS, P.; MAMUNEAS, T., STENGOS, T. (2001). Rankings of Academic Journals and Institutions in Economics. Forthcoming: *European Economic Review.*

KOCHER, M., SUTTER M. (2001). The Institutional concentration of authors in top journals of economics during the last two decades. *Economic Journal*, 111, 405-421.

KORTELAINEN, T. A. M. (2001). Studying the international diffusion of a national scientific journal. *Scientometrics*, 51(1), 133-146.

LABAND, D. N., PIETTE, M. (1994). The relative impact of Economics Journals: 1970-1990. *Journal of Economic Literature*, 32, 640-666.

LABAND, D. N. (2002). Contribution, attribution and the allocation of intellectual property rights: economics versus agricultural economics. *Labour economics*, 9, 125-131.

MCCAIN, K. W. (1991). Mapping Economics through the Journal Literature: An Experiment in Journal Cocitation Analysis. *JASIS*, 42(4), 290-296.

PORTES, R. (1987). Economics in Europe. *European Economic Review*, 31, 1329-1340.

Rousseau, R. (2002). Journal evaluation: Technical and practical issues. *Library Trends*, 50(3), 418-439.

Sutter, M., Kocher, M. (2001a). Power laws of research output. Evidence for journals of economics. *Scientometrics*, 51(2), 405-414.

Sutter, M., Kocher, M. (2001b). Tools for evaluating research output. Are Citation-Based Rankings of Economics Journals Stable? *Evaluation Review*, 25(5), 555-566.

Rowlands, I. (2002). Journal diffusion Factor: a new approach to measuring research influence. *Aslib Proceedings*, 54(2), 77-84.

Weinstock, D. (1982). Using the Herfindahl Index to measure concentration. *Antitrust Bulletin*, 285-301.

Wormell, I. (1998). Informetric analysis of the international impact of scientific journals: How "international" are the international journals. *Journal of Documentation*, 54, 584-605.

Appendix 1. Composition of country groups.

North America: Canada, United States of America, and territories in North America n.e.s.

Latin America: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela and other countries and territories in Latin America n.e.s.

Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, Bosnia and Herzegovina, Croatia, former Yugoslav Republic of Macedonia, Slovenia, Yugoslavia (the last five countries mentioned comprise the former Yugoslavia), and territories in Western Europe n.e.s.

Central and Eastern Europe, the Baltic States and the Commonwealth of Independent States (transition economies), of which Central and Eastern Europe: Albania, Bulgaria, Czech Republic, Hungary, Poland, Romania and the Slovak Republic; the Baltic States: Estonia, Latvia and Lithuania; and the Commonwealth of Independent States (CIS): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. The grouping former USSR refers to the Baltic States and the CIS.

Africa, of which North Africa: Algeria, Egypt, Libyan Arab Jamahiriya, Morocco and Tunisia; and Sub-Saharan Africa comprising: Western Africa: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo; Central Africa: Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Rwanda, and Sao Tome and Principe; Eastern Africa: Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Seychelles, Somalia, Sudan, United Republic of Tanzania and Uganda; and Southern Africa: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe and territories in Africa n.e.s.

The Middle East: Bahrain, Cyprus, Iraq, Islamic Republic of Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United

Arab Emirates, Yemen and other countries and territories in the Middle East n.e.s.

Asia, of which West Asia: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka; and East Asia (including Oceania): Australia; Brunei Darussalam; Cambodia; China; Fiji; Hong Kong Special Administrative Region of China (Hong Kong, China); Indonesia; Japan; Kiribati; Lao People's Democratic Republic; Macau, China; Malaysia; Mongolia; Myanmar; New Zealand; Papua New Guinea; Philippines; Republic of Korea; Samoa; Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu (Taipei, Chinese); Singapore; Solomon Islands; Thailand; Tonga; Tuvalu; Vanuatu; Viet Nam and other countries and territories in Asia and the Pacific n.e.s.

Appendix 2. Correlation between publishing and citing authors.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	,774a	,600	,597	617,340	,600	196,298	1	131	,000

a. Predictors: (Constant), Publishing.authors

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1890,174	231,748		8,156	,000
	Publishing.authors	,556	,040	,774	14,011	,000

a. Dependent Variable: Citing.authors