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A NEW ECONOMIC JOURNALS' RANKING THAT TAKES INTO ACCOUNT THE NUMBER OF PAGES AND CO-AUTHORS*

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ABSTRACT: In this article, I examine whether the academics reward policy must correlate positively with the published number of articles per co-author, number of pages and journals reputation. This is accomplished by estimating a non-linear model with a panel data from 169 economics journals covered in the ISI-Web of Knowledge database (59161 articles). The data reinforces the conjecture that published article value is slightly increasing with the number of co-authors and is proportional to the number of pages. The data also suggests that there are 4 distinct groups related to journal quality that I name A, B+, B and B–.

KEYWORDS: Co-authorship, Value of articles, Assessment of output.

JEL: J24, J31

1. INTRODUCTION

OECD countries devote an enormous quantity of resources to scientific activities, an important proportion of these activities being performed by academics. To promote an efficient resource allocation, more productive academics must be encouraged to the detriment of their counterparts. It is therefore important to quantify the value of academics' output. As a rule, in market economies, price is the measure of output value. However, academics are primarily devoted to basic science investigation that the market is unable to price (e.g., Freeman and Soete, 1997). Hence, it is essential to develop alternative ways of assessing scientific output.

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Universities have been using a panel of judges to compare candidates to a job position or a funding opportunity. But economic science has numerous different areas of expertise, making it difficult to include in the panel experts in all areas of candidates' specialisation. In addition, human beings are biased in favour of those individuals that are similar to them, Webster (1964). To overpass both of these difficulties, the articles published in scientific journals that implement blind refereeing are more and more important in the evaluation of academics.

With the data from 140 USA academic economists, Sauer (1988) provides empirical evidence that academic salaries are significantly increasing with the number of published articles, the number of published pages and journal reputation (divided by the number of co-authors). Among others, Ragan *et al* (1999) corroborate these findings.

In this paper, I intend to examine whether this reward policy is correct. More precisely, I intend to evaluate the hypotheses that there is not a positive correlation between the number of co-authors and article value, and that there is a positive and proportional correlation between pages and article value.

Although these issues have been partially addressed in the literature (e.g., Hudson, 1996, Heck and Zaleski, 1991, Johnson, 1997, Laband and Tollison, 2000; Hollis, 2001, Coupé, 2004), my perspective and methodology are new. First, I use an extended panel data sample (with approximately 60000 articles). Second, I estimate the explicative importance of the variables simultaneously. Third, I use a non-linear model (iso-elastic) where parameters are estimated using Ordinary Least Squares (*OLS*) and Bootstrapping (Efron, 1979; Efron and Tibshirani 1993) implemented in MS Visual Basic ™. This last issue, although technical, seems to me important because non-linear panel data models are increasingly required in economics and "the maximum likelihood estimator in non-linear panel data models with fixed effects is widely understood to be biased and inconsistent" (Greene, 2002: 1). In contrast, *OLS* estimators are centric, efficient and easily understood.

Given that the primary objective of publication is the diffusion of knowledge, it is acceptable to credit more value to the articles that were cited more often (Laband and Sophocleus, 1985). This association being accepted, it is possible to evaluate the hypotheses with historical data downloaded from the ISI Web of knowledge.

2. THE EMPIRICAL MODEL

The hypothesis that article value is positively correlated with journal reputation, the number of co-authors and the number of pages, results from the conjectures that referees are consistent over time in the evaluation of articles (i.e., rankings are stationary, Vieira, 2004), that each author introduces a different point of view in the article that enlarges its value, and that referees, due to space limitations, are exigent on the relevance of each page expurgating the articles from all non-essential text (Sauer, 1988).

Since the value of an article published in a top-ranking journal is, on average, higher that its counterpart (otherwise, it would not be a top-ranking journal), it seems adequate to assume that co-author and page effect in article value is relative to the journal average value. An adequate functional form of a model is then the exponential. The value (impact) *c* of an article published in the journal *j* with *a* co-authors and *p* pages after *t* periods since publication will be (where *e* is a random part with the expected value equal to 0):

$$c = \hat{c} + e = g(j) \cdot a^{a} \cdot p^{b} \cdot t + e \qquad (1)$$

The impact is proportional to *t* because citations occur as an arriving process.

The function *g*(*j*) condenses the fixed-effect of the journal *j* being a measure of the average value of a single authored page published in the journal *j* (see table 1 and table 2).

The journals fixed effect are modelled with dummy variables. As *OLS* estimators integrate the "average" point, fixed effects are easily estimated using this property:

$$g(j) = \frac{\bar{c}_j}{\bar{a}_j^{\,a} \cdot \bar{p}_j^{\,b} \cdot \bar{t}_j} \qquad (2)$$

Estimating the fixed-effects this way guarantees that substituting the average value of the explicative variables in the model (1) results in the journal average impact per article.

3. DATA COLLECTION

Panel data was downloaded from the ISI Web of knowledge site isi4.newisiknowledge.com in July 2005. I selected all articles published in the 11 year period between 1986 and 1996 in journals classified as "Social and Behavioural Sciences > Economics" (232 journals) and whose data is downloadable from the "ISI Web of knowledge" (169 journals). I selected the time span between 1986 and 1996 because "approximately 2/3 of all citations occur 13 years after the paper being published", Vieira (2004). The 'excluded' journals have a low 'Impact Factor'.

The collected data includes 59161 articles from 169 journals that, on average, were cited 12.37 times in the time span between the day of publication and July 2005, have 1.60 co-authors and 15.50 pages. The distribution of the number of times each article is cited approximates the exponential negative distribution function, with 20.0% being never cited (see fig.1). Engle and Granger (1987) is the highest impact article (cited 3129 times).

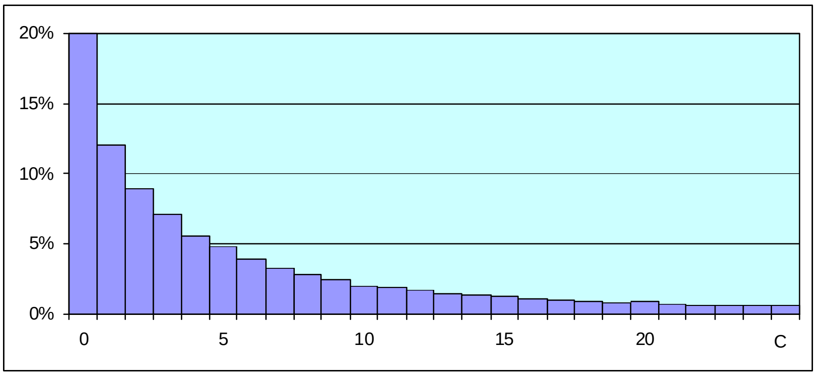

Fig.1 – Articles' frequency of citation

The distribution of co-authorship approximates the exponential negative distribution function as well, with 53.6% of the articles being single authored, 35.0% having two co-authors, 9.7% having three co-authors, 1.4% having four co-authors and the remaining 0.3% having 5 or more co-authors (the maximum is 22 co-authors).

The distribution of pages approximates the log-normal distribution function where 86.6% of the articles have between 4 and 25 pages (see fig 2) and the maximum is 216 pages. Zero page articles are assumed to be database errors (0.1%) and are excluded from the sample.

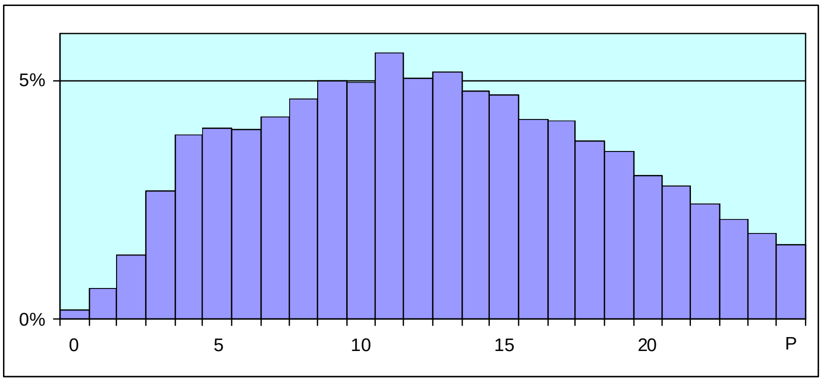

Fig.2 – Number of pages frequency

In the sample, the journal with higher average number of citations is *Econometrica* with 66.97 citations per article, and the one with lower average number of citations is *Politicka Ekonomie* with 0.05 citations per article (see table 2).

Similar to Hudson (1996), I observe that during this 11 years time span there is a significant increasing tendency in the number of co-authors, a, and pages, p (t-statistics in parentheses):

$$\underset{(502.8)}{\hat{a}=1.603}+\underset{(22.2)}{0.0219}\cdot(t-\bar{t}),\ R^2=0.83\% \tag{3}$$

$$\underset{(431.0)}{\hat{p}=15.503}+\underset{(21.3)}{0.237}\cdot(t-\bar{t}),\ R^2=0.77\% \tag{4}$$

This seems to be a co-evolution since on average an additional co-author adds approximately one page to the article:

$$\underset{(169.2)}{\hat{p}=13.962}+\underset{(20.8)}{0.961}\cdot a,\quad R^2=0.73\% \tag{5}$$

For a study of the patterns of co-authorship, see Sutter and Kocher (2004).

4. Estimation procedure

The explicative variable and the functional form of the model being known, one needs to estimate the magnitude of the parameters and to test their significance.

Let e_i be the deviation from the observed to the estimated model:

$$e_i(\alpha,\beta)=c_i-\hat{c}_i(\alpha,\beta)=c_i-g(j,t)\cdot a_i^{\alpha}\cdot p_i^{\beta}\cdot t_i \tag{6}$$

The unknown parameters a and b are estimated by minimizing the sum of squared deviations:

$$R(a,b)=\sum_i\left[c_i-\hat{c}_i(a,b)\right]^2 \tag{7}$$

Observe that the model is non-linear and non-linearisable because the data contains articles with zero impact (20.0%). To overcome this difficulty, I use a computational procedure implemented in MS Visual Basic 6.0™ to minimize the expression (7) numerically. As there are just two variables, I use a simple algorithm: I repeat the one variable independent optimisation until a (alpha) and b (beta) stop varying (see fig. 3).

```
Function Min_R(alpha,beta) 'it minimises R, returning alpha and beta estimates
Dim alpha_a, beta_a
  Do
    alpha_a = alpha
    beta_a = beta
    Min_R = Min_direction_alpha(alpha, beta) 'it minimises R and returns alpha
    Min_R = Min_direction_beta(alpha, beta) 'it minimises R and returns beta
  Loop While ((alpha_a - alpha)^2 + (beta_a - beta)^2)^0.5 > 0.0001
End Function
```

Fig.3 – Optimisation algorithm

The results of the estimation procedure are:

$$\hat{a}=0.237;\quad \hat{b}=1.012;\quad R^2=20.88\% \tag{8}$$

The statistical importance of the model variables is related to the percentage of the sample variance that is reduced by the variables. The journal fixed-effect and the time span reduce the variance by 15.41%, the number of co-authors reduces the variance by 0.47%, and the number of pages reduces the variance by 5.00%. The total reduction is by 20.88%.

5. TESTING ESTIMATES STATISTICAL SIGNIFICANCE

Knowing the distribution function of the model stochastic term and the estimators' algebraic form, it is straightforward to obtain parameter statistics. But the estimator is obtained above through a minimization algorithm and the distribution function of the model stochastic term is not known. An ideal tool to be used in this situation is bootstrapping.

Bootstrapping assumes that statistical properties of the sample are identical to those of the population, being adequate to compute the statistical properties of the estimator by repeatedly re-sampling with reposition the data (see, Efron, 1979; Efron and Tibshirani 1993). I represent the bootstrapping algorithm in Fig. 4 and the estimators' frequency density distribution with 3000 re-samplings in Fig. 5.

```
Sub Var_est(alpha2,beta2) ‘it returns alpha and beta variance
Dim alpha, alpha_av, beta, beta_av
    Read_data 'Put data in a vector
    For i = 1 to 3000
        Resample_data 'stochastically re-samples the data vector
        Min_R(alpha,beta) 'minimises R and returns alpha and beta - see fig.3
        alpha_av = alpha_av + alpha
        alpha2 = alpha2 + alpha^2
        beta_av = beta_av + beta
        beta2 = beta2 + beta^2
    Next i
        alpha2 = alpha2/3000 + (alph_av/3000)^2
        beta2 = beta2/3000 + (beta_av/3000)^2
End Sub
```

Fig.4 – Bootstrapping algorithm

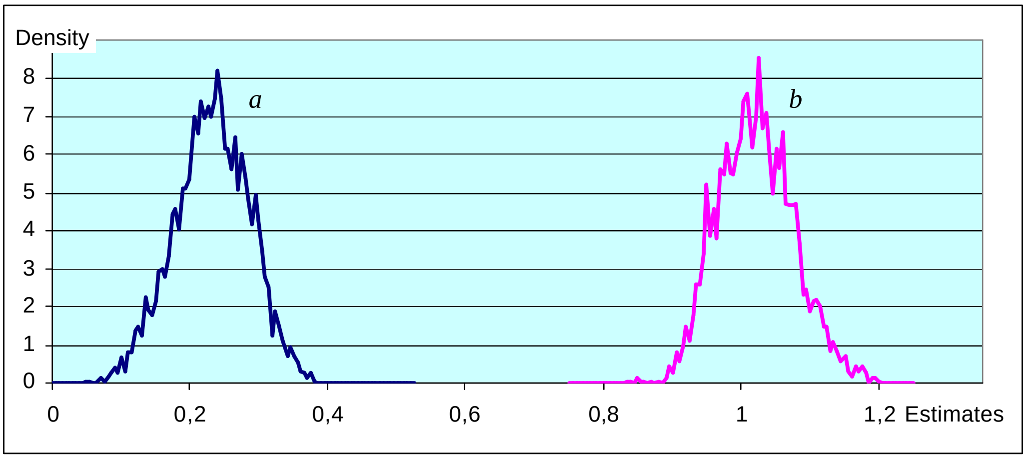

Fig. 5 – Frequency density distribution of the estimator of *a* and *b*

Using 3000 re-samplings, coefficients of variation are computed with approximate 1% error (the errors of coefficients of variation of *a* and *b* estimators are 0.0588 and 0.1824, respectively). This error is obtained by computing with a fraction of the bootstrapping re-samplings (I used 100) several 'examples' of the coefficient of variation (30 examples), being the computation error the average standard error of these several examples divided by √30.

From the bootstrapping procedure it results as a and b estimators' inverse of the coefficients of variation 4.35 and 18.33, respectively.

Considering "H_0: the parameter is zero" in opposition to "H_1: the parameter is different from zero" and assuming that the estimator distribution is normal, the parameter is significant at a certain level when the inverse of the coefficient of variation is greater than the t - distribution critical value.

The normality hypothesis of a and b estimators may not be rejected from the data. Indeed, using the Kolmogorov-Smirnov test at a 10% level of significance (the Kolmogorov-Smirnov critical value is 0.0223 = 1.22/√3000), observed a and b estimators' Kolmogorov-Smirnov statistics (0.0167 and 0.0193, respectively) are smaller than the corresponding critical value.

Testing the bilateral parameters significance at a 0.1% significance level (the critical value is 3.29), the hypothesis that a or b parameters are equal to zero can be rejected (both parameters are significant at a 0.1% significance level). In addition, one cannot reject the hypothesis that b parameter is equal to one (the value to test, $(\hat{b}-1)/S$, is equal to 0.23). *P*arameter b being equal to one suggests that reviewers are identically exigent on the relevance of each page, maximizing the journals' citation potential.

6. NON-LIREARITIES IN THE EFFECT OF THE NUMBER OF PAGES

One may test the existence of non-linearity by assuming an extended model where b evolves with the number of pages:

$$b = b_0 + b_1 \cdot \left(\frac{p_i}{\bar{p}_j} - 1 \right) \tag{9}$$

The result of the estimation is (the inverse of the coefficient of variation in parentheses):

$$\hat{a} = 0.235\ (5.03) \quad \hat{b}_0 = 1.068\ (2{,}86) \quad \hat{b}_1 = 0.064\ (0{,}14) \quad R^2 = 20.88\% \tag{10}$$

Being that the parameter b_1 is statistically non-significant, the data reinforces the assumption that the model (1) is adequate.

7. CLASSIFICATION OF JOURNALS IN GROUPS

It is certain that journals do not have identical fixed-effects. Nonetheless, from table 2 one sees qualitatively that fixed-effects of those journals that are proximal in the ranking are not statistically different. This suggests that journals can be clustered in a limited number of groups.

The division of the journals in N groups is done by determining the ranking cut-off values (inclusive) that maximizes R^2 (see the example $N = 2$ in fig. 6).

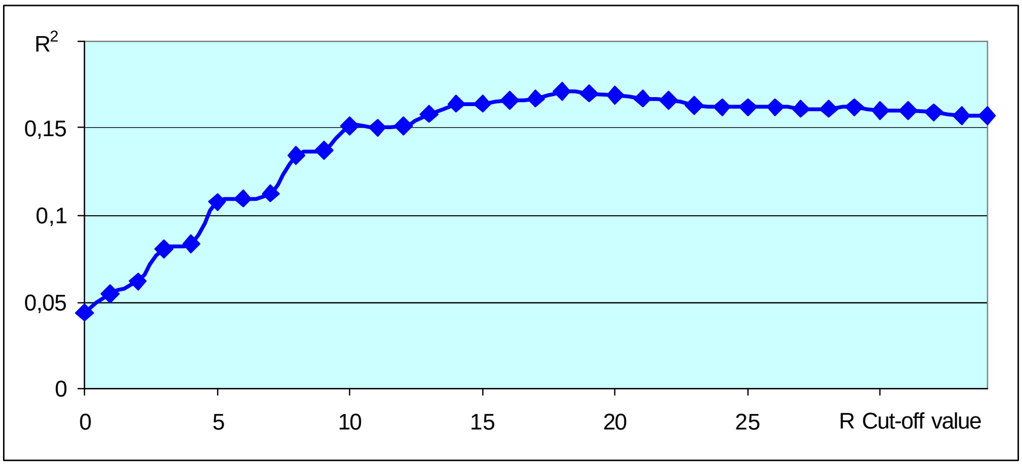

Fig. 6 – Evolution of R^2 with the ranking cut-off value

Testing journals divided in 1, 2, 3 or 4 groups, the model's R^2 becomes 21.0%, 80.3%, 89.7% and 91.2% of the R^2 computed with 169 'groups', respectively. Using as condition to maintain 90% of the model's R^2, it is adequate to consider journals divided in 4 groups (see table 1).

Table 1 – Journals groups' statistical information (ordered by *g*)

Class	*a*	*P*	*c*	*g*	*n*	*R cut-off (%)*	*g cut-off*	*G points*
A	1,702	15,64	37,759	0,1464	8801	17 (10%)	0,100	100
B+	1,703	16,78	15,906	0,0580	14646	52 (31%)	0,040	39,6
B	1,616	13,94	6,387	0,0281	20818	112 (67%)	0,020	19,2
B–	1,442	16,37	2,752	0,0098	14560			6,7

a – number of co-authors; *p* – Number of pages; *c* – Number of times that each article is cited; *g* – Journals average fixed effect; *n* – Number of articles; *G* points – *g* normalized to 100.

In table 1, the column "*G points*" scales the fixed effects to 100, turning easier to compare journals' groups. For example, a person that publishes a 3 co-authored 10 pages article in a B+ class journal, a 2 co-authored 12 pages article in a B class journal and a single-authored 15 pages article in a B– class journal sums up 420 points:

$$\frac{39{,}6\cdot 3^{0.237}\cdot 10^{1.012}}{3}+\frac{19{,}2\cdot 2^{0.237}\cdot 12^{1.012}}{2}+\frac{6{,}7\cdot 2\cdot 1^{0.237}\cdot 15^{1.012}}{1}=420 \qquad (11)$$

Even though I do not have data on the journals that are covered by the ISI database and have been excluded from the analyses, I propose that they should be classified as B– and credited 6,7 points to each single authored page.

It remains to evaluate the hypothesis that there are differences in the influence of the number of co-authors and pages between journals groups. To do this I estimate the model (1) for A class journals (17 journals) and for B– class journals (56 journals) and I compare the estimates.

$$\begin{array}{ll} \hat{a}_A = \;\; 0.260\,(3.91) & \hat{b}_A = \; 1.045\,(14{,}89) \\ \hat{a}_{B-} = \;\; 0.368\,(5.62) & \hat{b}_{B-} = 0.812\,(14{,}45) \\ \hline \Delta\hat{a} = -0.108\,(-1.15) & \Delta\hat{b} = 0.233\,(2.60)^{*} \end{array} \qquad (12)$$

Statistically there are significant differences in the effect of the number of pages (1% level), being rejected the hypothesis that B– journals pages elasticity is 1 (see fig. 7). This result reinforces the conjecture that B– journals publish fewer articles and with a larger number of pages than optimal.

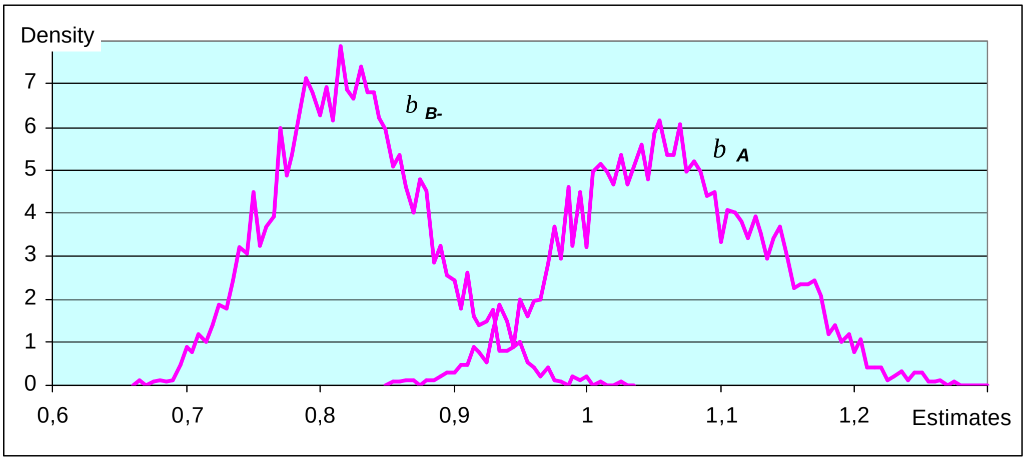

Fig. 7– Frequency density distribution of the estimator of *b*

8. CONCLUSION

In this work I validate that it is correct to correlate positively academics remuneration with the number of published articles per co-author, the number of pages and journal reputation although an increase in the number of co-authors causes a small increase in article value. For example, to each co-author of a two co-authored page, it would be more correct to credit value equivalent to 0,59 single authored pages. I have done the evaluation estimating a non-linear model with panel data from 169 economics journals covered by the ISI-Web of Knowledge database throughout 1986-1996. The model is estimated by minimizing the sum of the squares of deviations and I use bootstrap re-sampling to test estimates significance.

Additionally, relating to journals quality, data suggests that there are 4 distinct groups that I named A, B+, B and B–. The grouping of journals using a statistical measure is new in the literature.

Finally, the data reinforces the conjecture that, on average, reviewers maximize journals citation potential (citations/pages average elasticity is one) being that lower-ranking journals' reviewers are less capable of doing that (they accept fewer articles and with larger extension than optimal).

Upon request, the author provides used data and computer programs.

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Table 2 – Journals statistical information (ordered by *g*)

R	Journal Title (abbreviated)	*a*	*p*	*c*	*g*	*N*	Class
1	J MARKETING	2.027	13.362	63.091	0.270750	298	A
2	J CONSUM RES	2.085	12.520	44.198	0.204743	425	A
3	AMER ECON REV	1.582	10.176	31.495	0.193538	1638	A
4	J MARKET RES-CHICAGO	2.171	11.712	35.054	0.175033	368	A
5	ECONOMETRICA	1.673	23.538	66.972	0.169115	568	A
6	HARVARD BUS REV	1.491	6.005	15.870	0.166175	562	A
7	J ECON LIT	1.258	27.955	65.438	0.161881	89	A
8	J POLIT ECON	1.612	23.812	60.545	0.150609	611	A
9	J ECON PERSPECT	1.314	15.129	31.425	0.143103	433	A
10	QUART J ECON	1.662	24.230	54.288	0.136693	473	A
11	J BUS ECON STAT	1.691	9.241	18.256	0.118319	527	A
12	HEALTH ECONOMICS	2.411	11.589	17.300	0.117988	90	A
13	J FINAN ECON	1.892	26.160	52.743	0.117453	424	A
14	J FINAN	1.847	21.639	39.418	0.108276	699	A
15	REV ECON STATIST	1.772	9.646	16.410	0.102671	653	A
16	REV ECON STUD	1.578	17.658	30.653	0.102549	479	A
17	RAND J ECON	1.606	16.054	27.651	0.102157	464	A
18	J MONETARY ECON	1.541	20.812	32.011	0.094915	473	B+
19	MARKET SCI	1.943	16.833	22.882	0.083116	228	B+
20	J HEALTH ECON	1.946	18.339	24.194	0.079155	242	B+
21	ECON J	1.633	13.851	16.503	0.075379	858	B+
22	J ENVIRON ECON MANAGE	1.738	14.968	17.977	0.074755	443	B+
23	J ECONOMETRICS	1.720	21.758	25.347	0.071679	803	B+
24	REV FINANC STUD	1.865	29.847	31.088	0.071199	215	B+
25	J RISK UNCERTAINTY	1.842	17.063	16.579	0.068677	190	B+
26	ECOL ECON	1.872	11.694	9.461	0.067321	219	B+
27	J INT BUS STUD	1.799	18.932	21.346	0.067122	309	B+
28	OXFORD BULL ECON STAT	1.640	16.132	16.814	0.065097	302	B+
29	J PROD ANAL	1.846	17.423	13.058	0.064628	52	B+
30	AMER J AGR ECON	1.957	8.719	9.286	0.062335	1424	B+
31	J LAW ECON ORGAN	1.590	23.133	21.029	0.060554	173	B+
32	J ROY STATIST SOC SER A STAT	2.009	17.202	18.039	0.060283	233	B+
33	J ACCOUNT ECON	1.879	25.481	23.699	0.056869	206	B+
34	J BUS VENTURING	1.989	15.876	14.847	0.056797	275	B+
35	J APPL ECONOM	1.702	17.011	14.672	0.056551	265	B+
36	J BUS	1.712	21.510	21.158	0.055986	292	B+
37	J BUS ETHICS	1.591	9.437	8.327	0.055806	1031	B+
38	GAME ECON BEHAV	1.685	19.451	13.749	0.055273	295	B+
39	J ECON THEOR	1.562	21.323	17.710	0.053754	651	B+
40	J IND ECON	1.560	15.090	13.175	0.053709	332	B+
41	ECONOMET THEORY	1.465	18.116	13.050	0.052497	301	B+
42	J HUMAN RES	1,756	24,051	19,917	0,052177	336	B+
43	J FINAN QUANT ANAL	1.771	15.984	13.962	0.052132	367	B+
44	J RETAIL	2.095	20.837	18.168	0.049662	185	B+
45	J LABOR ECON	1.545	24.335	19.715	0.048594	319	B+
46	J INT ECON	1.499	17.517	13.930	0.047855	445	B+
47	J MONEY CREDIT BANKING	1.530	15.741	11.186	0.047363	474	B+
48	J LAW ECON	1.606	26.614	19.287	0.044779	251	B+

Table 2 – Journals statistical information (continuation)

R	Journal Title (abbreviated)	*a*	*p*	*c*	*g*	*N*	Class
49	J ACCOUNT RES	1.818	21.888	16.578	0.042807	258	B+
50	EUR ECON REV	1.597	15.283	10.221	0.041474	1050	B+
51	J PUBLIC ECON	1.581	19.088	12.641	0.041224	740	B+
52	J URBAN ECON	1.558	17.155	11.599	0.041047	491	B+
53	J PUBLIC POLICY MARKETING	1.949	12.445	8.327	0.040736	254	B+
54	WORLD BANK RES OBSERVER	2.044	21.778	11.000	0.038852	45	B
55	INT J FORECASTING	1.810	11.785	7.765	0.038377	405	B
56	J ECON DYN CONTROL	1.554	18.557	11.149	0.037708	542	B
57	ECON LETT	1.482	5.324	3.266	0.037474	2311	B
58	SMALL BUS ECON	1.594	11.639	5.426	0.037326	155	B
59	J INT MONEY FINAN	1.524	16.160	9.455	0.036939	431	B
60	J FINANC INTERMED	1.750	26.143	10.857	0.035834	28	B
61	HOUS POLICY DEBATE	1.395	31.977	13.093	0.035763	43	B
62	ECON DEV Q	1.558	12.250	4.750	0.035418	52	B
63	INT J IND ORGAN	1.508	17.085	9.201	0.035213	329	B
64	ACCOUNT REV	1.806	18.889	11.126	0.034872	341	B
65	J ECON BEHAV ORGAN	1.487	17.083	8.919	0.034357	528	B
66	J BUS RES	2.071	12.534	7.155	0.034295	562	B
67	INT ECON REV	1.585	16.826	9.306	0.034086	602	B
68	POST-SOV AFF	1.409	22.788	9.364	0.033918	66	B
69	J ECON MANAGE STRATEGY	1.667	25.714	9.714	0.033715	42	B
70	J EVOL ECON	1.800	19.067	7.000	0.033675	15	B
71	INT REV LAW ECONOMICS	1.525	16.339	5.915	0.033605	59	B
72	CONTEMP ECONOMIC POLICY	1.690	11.595	4.587	0.033325	126	B
73	ECON INQ	1.561	14.779	8.073	0.033143	560	B
74	J MATH ECON	1.479	16.609	8.482	0.032026	353	B
75	WORLD BANK ECON REV	1.703	21.473	11.100	0.031886	279	B
76	APPL ECON LETTERS	1.617	3.872	1.329	0.031772	298	B
77	FINAN MANAGE	1.997	10.906	5.897	0.030925	331	B
78	J AGR RESOUR ECON	2.304	13.328	5.688	0.030727	125	B
79	ECONOMIC THEORY	1.678	17.240	5.901	0.030534	121	B
80	ECONOMICA	1.507	14.696	7.268	0.030304	364	B
81	OXFORD REV ECON POLICY	1.419	16.831	6.775	0.030223	160	B
82	ACCOUNT ORGAN SOC	1.652	18.168	9.090	0.029625	345	B
83	ECON PHIL	1.106	21.203	9.252	0.029586	123	B
84	NAT TAX J	1.533	12.641	6.004	0.029174	454	B
85	SOC CHOICE WELFARE	1.356	13.284	5.990	0.028609	289	B
86	J TRANSP ECON POLICY	1.723	14.404	6.545	0.027673	207	B
87	J REGUL ECON	1.749	16.777	6.402	0.027483	179	B
88	J DEVELOP ECON	1.508	19.905	9.138	0.027445	567	B
89	OXFORD ECON PAP-NEW SER	1.546	17.277	7.746	0.027345	467	B
90	J BANK FINAN	1.990	17.654	7.316	0.025748	624	B
91	ENERGY J	1.943	20.931	6.989	0.025604	87	B
92	J POPUL ECON	1.716	17.385	5.670	0.025364	109	B
93	J COMMON MARKET STUD	1.352	20.174	7.687	0.025084	230	B
94	RESOUR ENERGY ECON	1.693	19.560	6.053	0.025082	75	B
95	J REAL ESTATE FINANC ECON	2.045	14.917	4.865	0.025009	133	B
96	J AGR ECON	1.702	11.377	4.798	0.024928	342	B
97	CHINA ECON REV	1.438	20.875	5.500	0.023915	16	B

Table 3 – Journals statistical information (continuation)

R	Journal Title (abbreviated)	*a*	*p*	*c*	*g*	*N*	Class
98	SCAND J ECON	1.471	14.987	6.013	0.023721	399	B
99	INT J GAME THEORY	1.566	15.329	5.655	0.023224	249	B
100	ENERG ECON	1.613	9.131	3.485	0.023212	344	B
101	J PORTFOLIO MANAGE	1.683	6.473	2.454	0.022940	497	B
102	CAMB J ECON	1.248	16.718	5.695	0.022894	298	B
103	SOUTHERN ECON J	1.677	12.555	4.646	0.022681	776	B
104	J INST THEOR ECON	1.253	14.622	4.942	0.022311	415	B
105	INSUR MATH ECON	1.604	9.792	3.538	0.022248	318	B
106	J COMP ECON	1.441	18.694	6.578	0.022199	320	B
107	N ENGL ECON REV	1.454	15.593	4.296	0.022176	104	B
108	J ECON PSYCH	1.785	18.853	6.687	0.021857	326	B
109	J FUTURES MARKETS	1.840	15.403	5.479	0.021305	524	B
110	APPL ECON	1.646	10.335	3.478	0.021069	1580	B
111	EUR REV AGRIC ECON	1.760	17.219	4.604	0.020225	96	B
112	CAN J ECON	1.526	14.470	4.413	0.020136	749	B
113	INT MONETARY FUND STAFF PAP	1.531	27.429	8.934	0.020071	303	B
114	KYKLOS	1.438	18.109	5.838	0.019613	265	B–
115	J HOUS ECON	1.879	20.879	4.667	0.019391	33	B–
116	J FINAN SERV RES	1.596	16.956	5.175	0.019087	114	B–
117	J ECON EDUC	1.511	10.136	3.050	0.018884	351	B–
118	REV INDUSTRIAL ORGAN	1.452	16.721	3.337	0.018183	104	B–
119	REAL ESTATE ECON	2.020	21.694	4.571	0.018151	49	B–
120	J INT MARKETING	1.903	18.290	4.065	0.017978	31	B–
121	AGR ECON	2.051	14.180	3.581	0.017788	217	B–
122	GENEVA PAP RISK INSUR THEORY	1.578	17.022	3.667	0.017122	45	B–
123	AUDITING-J PRACT THEOR	1.896	16.240	4.470	0.016471	183	B–
124	J JPN INT ECON	1.641	22.992	5.221	0.016144	131	B–
125	MATH SOC SCI	1.464	17.228	4.442	0.016064	351	B–
126	ECON REC	1.575	11.450	2.945	0.015716	327	B–
127	J RISK INS	1.825	17.495	4.512	0.015254	297	B–
128	J ECON ISSUE	1.212	15.309	3.560	0.015061	693	B–
129	COMMUNIST ECON ECON TRANSFORM	1.569	17.804	2.941	0.014948	51	B–
130	THEOR DECIS	1.449	20.241	4.775	0.014640	316	B–
131	FUTURES	1.246	12.137	2.550	0.014506	660	B–
132	FOOD POLICY	1.518	11.021	2.479	0.014485	382	B–
133	DEFENCE PEACE ECONOMICS	1.564	15.600	2.709	0.014176	55	B–
134	WELTWIRTSCHAFTL ARCH	1.553	18.464	4.297	0.013506	394	B–
135	SCOT J POLIT ECON	1.405	15.483	3.101	0.012989	296	B–
136	WORLD ECON	1.346	17.354	3.360	0.012827	367	B–
137	REV INCOME WEALTH	1.618	17.406	3.534	0.012642	244	B–
138	BROOKINGS PAP ECON ACTIV	1.906	52.801	12.063	0.012490	184	B–
139	J MARKET RES SOC	1.565	13.473	2.697	0.012339	294	B–
140	CAN J AGR ECON-REV CAN ECON R	1.905	12.712	2.590	0.011947	546	B–
141	J POST KEYNESIAN ECON	1.256	15.054	2.707	0.011421	410	B–
142	OPEN ECON REV	1.436	17.692	2.154	0.011257	39	B–
143	MANCHESTER SCH ECON SOC STUD	1.457	16.242	2.836	0.011176	256	B–
144	BULL INDONES ECON STUD	1.362	24.147	4.190	0.010956	163	B–
145	J CONSUM AFF	1.957	19.995	3.672	0.010915	186	B–
146	J POLICY MODELING	1.827	22.346	4.016	0.010677	306	B–

Table 4 – Journals statistical information (continuation)

R	Journal Title (abbreviated)	*a*	*p*	*c*	*g*	*N*	Class
147	J MACROECONOMICS	1.436	15.693	2.543	0.010080	473	B–
148	ECON PLANN	1.778	18.889	2.278	0.010031	18	B–
149	JPN WORLD ECON	1.449	15.757	1.364	0.007451	107	B–
150	J WORLD TRADE	1.293	18.912	2.086	0.007193	443	B–
151	ECON SOC REV	1.493	17.657	1.995	0.007029	206	B–
152	J ECON	1.429	18.238	2.073	0.006979	273	B–
153	REV BLACK POLIT ECON	1.345	16.800	1.894	0.006776	235	B–
154	ECON MODEL	1.927	20.171	2.081	0.006111	234	B–
155	REV SOC ECON	1.181	17.815	1.551	0.005754	227	B–
156	S AFR J ECON	1.292	15.042	1.323	0.005589	260	B–
157	ECONOMIST	1.550	20.087	1.821	0.005386	229	B–
158	HITOTSUBASHI J ECON	1.238	16.590	0.975	0.003812	121	B–
159	NAT TIDSSKR	1.231	12.487	0.384	0.001984	372	B–
160	EAST EUR ECON	1.272	20.942	0.427	0.001339	204	B–
161	REV ETUD COMPAR EST-OUEST	1.156	19.601	0.396	0.001295	318	B–
162	J REAL ESTATE TAX	1.358	12.021	0.238	0.001224	282	B–
163	RUSS EAST EUR FINANC TRADE	1.311	21.864	0.252	0.000949	103	B–
164	PROBL ECON TRANSIT	1.315	15.613	0.154	0.000816	292	B–
165	EKON CAS	1.151	12.622	0.145	0.000727	642	B–
166	JPN ECON STUD-ENGL TR	1.085	30.517	0.271	0.000567	118	B–
167	EKON SAMF TIDSKR	1.093	8.419	0.062	0.000465	226	B–
168	JPN ECON	1.000	35.000	0.091	0.000281	11	B–
169	POLIT EKON	1.151	11.868	0.051	0.000262	826	B–

R – Ranking; *a* – Average number of co-authors; *p* – Average number of pages; *c* – Average number of times that each article is cited; *g* – Journal fixed effect; *N* – Number of published articles.

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