An Elo Ranking for Economic Journals

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Abstract. Rankings for sports such as chess or table tennis are based on the so called Elo rating system. In this paper we apply this rating system to rank economic journals. One main advantage of the Elo ranking compared to existing ones is its explicit consideration of a journal's performance path. Another advantage is the easy application of the system to any journal metric that is published on a regular basis. Our application is based on data from Web of Science that comprises the impact factors of 382 economic journals for the period from 1997 to 2016. The most recent Elo ranking is quite different for rather 'middle-class' journals. However, also some differences for the top 30 emerge.

Keywords: Elo Rating System, Journal Rankings, Impact Factor
JEL-Codes: A19, Z00

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1. Introduction

Ranking scientific journals has a long tradition and is intensively monitored by several interest groups such as researchers and academic institutions. From a publisher's point of view, it is straightforward to accumulate high-quality journals in its portfolio. Modern tenure tracks and job market positions, however, require researchers to frequently publish articles in these high-quality outlets. Crucial for the definition of the quality is always the underlying ranking scheme. Since it is by no means obvious how such a scheme should look like, a heated debate is going on that is especially pronounced in the scientific field of economics (Butz *et al.*, 2017). This article does not want to form a meta-statement on how to rank economic journals, but to present a promising alternative that is commonly applied in sports: the Elo rating system.

Citations, the impact factor or the source normalized impact per paper (SNIP) indicator are three possible journal metrics for setting up a ranking. As it was brought forward by Lehmann and Wohlrabe (2017) for a data set containing more than 20 000 journals from a number of scientific sub-disciplines, the main disadvantage from rankings based on these metrics is the time invariance of the classification scheme. Many metrics more or less refer to a specific year, thus, a journal's prestige significantly drops if the chosen metric falls. However, one would agree that this drop is not equal to a loss of reputation. This shortcoming of rather standard classification schemes is attenuated by the Elo rating system, since the latest Elo ranking is based on the complete trajectory of a journal's performance. This is one main result of Lehmann and Wohlrabe (2017), who find that the ranking for rather middle-class journals can tremendously change on the basis of the Elo rating system compared to standard classification schemes. Since economics is a field with a very special ranking discussion, we adopt the Elo rating system to this scientific sub-discipline in this paper.

The underlying idea of the Elo system is the following. Each journal has an Elo score which is basically derived from its impact. At the end of a given year t, the journals 'compete' with each other such as in sports and earn Elo points that are based on the journal's expected value for a 'win' or a 'loss'. After all competitions, the journal's Elo score is adjusted accordingly. Based on these new scores, the journals compete with each other in $t+1$. Thus, the expected values as well as the resulting Elo points vary over time and therefore, the ranking approach becomes more dynamic. This procedure causes the latest ranking to depend on the complete time path of a journal's performance.

Our analysis is based on data from the Web of Science Journal Citation Reports. We rely on 382 economic journals from 1997 to 2016. As expected before, the time path of a journal's performance clearly matters for the most recent ranking. Thus, a rather 'bad' year in a journal's performance is no reason for a large drop in the ranking position. Compared to rankings based on average impact factors or data from Research Papers in Economics

(RePEc), it turns out that the Elo ranking is by no means identical to those resulting from the alternatives. Especially the rankings for 'middle-class' journals are quite different. We, however, also find differences for the top 30 ranked journals. The Elo rating system clearly makes its point and can be a promising alternative to existing ranking approaches.

The paper is organized as follows. Section 2 introduces the data and the Elo rating system. In Section 3 we present and discuss the new ranking. The last section concludes.

2. Data and Methodology

2.1. Data

Our analysis is based on the Journal Citation Reports (JCR) from the Web of Science platform by Clarivate Analytics at `http://clarivate.com`.[1] We rely on all JCRs from the Economics category, comprising the years from 1997 to 2016. The journal sample is unbalanced since a large number of entries and exits take place over time. In 1997, 166 journals were listed in the JCR, whereas the number increased to 347 in 2016. If we count the total number, 382 journals have appeared in the data, with 130 listed permanently over the observation period. In contrast, nine journals were listed only once.

As the bibliometric measure for journal quality we employ the standard two year Journal Impact Factor (JIF), since it is stated in every report and for each year. Thus, the JIF is the only impact measure that is available for the full sample period.[2] The definition of the two year JIF is the following (see Thomson Reuters Web of Science, 2015): *Total citations in a year to papers published in a journal in the previous 2 years* divided by *Total papers published in a journal in the previous 2 years*. Although often criticized in the bibliometric literature, the JIF is still one of the cornerstones to evaluate journals. For details and further references see Archambault and Larivière (2009) and Vanclay (2012).

2.2. The Elo Rating System

Fundamentals. The origin of the Elo rating system is chess. Arpad Emrick Elo, an American physicist born in Hungary and eponym for the rating, wanted to develop a system to rate chess players of the United States Chess Federation (USCF) that is based on well defined statistical properties. Nowadays, the rating is also adopted by the Fédération Internationale des Échecs (FIDE), the world chess federation, or transferred to many other sports such as

[1] The use of the Web of Science platform for bibliometric analyses has a long tradition in the literature. The characteristics of the database have been studied in detail by, for example, Michels and Schmoch (2012) or Moed (2005).

[2] Other possible impact measures are the five year JIF, the total number of citations and the Eigenfactor score. A newer measure that also accounts for citation practices within disciplines is, for example, the Source Normalized Impact per Paper (SNIP).

table tennis (see, for example, Glickman, 1995). Next to the sports application, the Elo rating system was also used by Veček *et al.* (2014) to rank evalutionary algorithms. Lehmann and Wohlrabe (2017) recently applied the system to rank more than 20 000 journals from all possible scientific disciplines.

The Elo rating system comprises two steps (see here and henceforth Glickman and Jones, 1999). First, the expected score is calculated. And second, the player's rating is adjusted according to the match outcome. For a very detailed description we refer to Elo (1978). The true strength of two players A and B is basically unknown, thus, the hypothetical match outcome between both is approximated with the following formula:

$$E_A = \frac{1}{1 + 10^{(R_B - R_A)/400}} \, . \tag{1}$$

The probability or the expected score for player A to win against player B is definded as E_A. This score is based on the unknown strengths of both players (R_A and R_B). We assume that a match between two players with strengths $R_A = 1\,400$ and $R_B = 1\,500$ takes place. The expected long-run score of player A to win the match is $E_A = 0.36$, thus, in 36 out of 100 cases player A will beat his opponent B or gain a draw. With $E_B = 0.64$, the opposite holds true for player B. However, a match can only end in three outcomes: 0/1 if player A loses/wins and 0.5 in the case of a draw. As the strengths are unknown, they are replaced by estimates called Elo score or Elo rating (R_A or R_B).

After the match, the Elo scores have to be updated. This is done by the following formula from the perspective of player A:

$$R_{A,t+1} = R_{A,t} + k(S_A - E_A) \, . \tag{2}$$

The new rating for player A in $t + 1$ ($R_{A,t+1}$) is the old rating ($R_{A,t}$) plus the difference between the match outcome and the expected long-run score ($S_A - E_A$), weighted by the factor k to allow how fast a player can catch up. For weaker chess players, k equals 32. Three match outcomes and thus resulting ratings can now emerge, again from player A's perspective:

- A **wins** ($S_{A,t} = 1$)**:** $R_{A,t+1} = 1\,420$, $R_{B,t+1} = 1\,480$,
- **Draw** ($S_{A,t} = 0.5$)**:** $R_{A,t+1} = 1\,404$, $R_{B,t+1} = 1\,496$,
- A **loses** ($S_{A,t} = 0$)**:** $R_{A,t+1} = 1\,388$, $R_{B,t+1} = 1\,512$.

Player A's rating increases either winning the match or gaining a draw since the expected long-run score is lower than the draw's point value ($0.36 < 0.50$). The expected values in $t + 1$ are then based on the updated Elo ratings. For the mathematics of such pairwise comparisons – the Elo rating system is a special case – we refer to Joe (1991).

Journal ranking. After the discussion of the fundamentals, we have to set parameter values for the application of the system to rank economic journals. We therefore follow Lehmann and Wohlrabe (2017) and apply their procedure. The match outcomes are defined as 0/1 if journal A has a lower/higher JIF compared to journal B and 0.5 if the JIFs are equal. Since we only look at economic journals, we set $k = 1$ in order to allow for the same 'catch-up speed'. However, we will elaborate more on the variation of k in Section 3. If the journals have no impact at all ($JIF_{A,t} = JIF_{B,t} = 0$), they will not play against each other. As an impact factor of zero would result in an inflationary number of draws, we want to avoid Elo ratings for journals to increase that have no impact. If a journal's JIF is missing in t, it will not play against the other competitors and we put its old Elo rating forward to $t + 1$. We also restrict the absolute maximum of the rating difference to $|R_{B,t} - R_{A,t}| \leq 400$ which is also recommended by FIDE.[3] By not setting this maximum, the ranking would become very volatile as stated by Lehmann and Wohlrabe (2017). As the initial Elo score, we set $R_{A,0} = 10\,000$ since we cannot estimate those figures from the data. However, the final ranking of 2016 is not effected by this value as we treat the journals as non-existing before 1997. The Elo scores develop onwards from this starting point. For 'newcomer' in the data set we cannot proceed as before. We rather place the new journal in the distribution of Elo scores in the following way. If a journal enters in year t, it will play a 'pre-tournament' against all journals from $t - 1$ beforehand, based on all rules mentioned before. Afterwards, the fictive number of wins and draws serve as the measure to calculate the position of the new journal in the whole distribution in $t - 1$. The resulting Elo score is then used for the new journal in t. For each year, the Elo scores are only adjusted ones, thus, the journals first play against each other. At the end of all pairwise comparisons, the new Elo rating is calculated. Taking the year 2016 as an example, the data set comprises 347 journals that end up in 346 pairwise comparisons each.

The overall journal ranking of 2016 is based on the latest Elo scores ($R_{A,2016}$). As one can see from the equations before, the latest ranking incorporates the complete trajectory or history of a journal's performance. This is basically the new feature of our paper.

3. Results

In this section, we present our economic journals ranking based on the Elo rating system. Table 1 shows the outcome.[4] The table has four columns: the resulting ranking (i) from the Elo system with $k = 1$, (ii) based on the Elo system with $k = 10$, (iii) from the average JIF for the years 1997 to 2016 and (iv) on the basis of data from Research Papers in Economics (RePEc). Before we compare the Elo ranking with those based on other approaches or data,

[3] The official statement can be found in the handbook on FIDE Rating Regulations effective from 1 July 2014 at: `https://www.fide.com/fide/handbook.html?id=172&view=article`.

[4] The complete list containing all journals can be found in the Appendix.

Table 1: Top 30 ranked economic journals in 2016

Journal	**Elo 2016 (k = 1)**	**Elo 2016 (k = 10)**	**Average IF (1997-2016)**	**RePEc**
Journal of Economic Literature	1	1	1	2
Quarterly Journal of Economics	2	2	3	1
Journal of Finance	3	3	2	8
Journal of Economic Perspectives	4	4	5	9
Journal of Financial Economics	5	5	11	6
Journal of Political Economy	6	6	9	3
Review of Financial Studies	7	8	4	10
Econometrica	8	7	15	4
Review of Economic Studies	9	9	25	7
Review of Environmental Economics and Policy	10	13	7	66
American Economic Review	11	10	24	11
Economic Geography	12	12	18	178
Transportation Research Part B: Methodological	13	11	6	171
Journal of Economic Geography	14	16	8	61
Value in Health	15	15	13	–
Journal of Accounting & Economics	16	14	26	38
PharmacoEconomics	17	17	14	292
Journal of Economic Growth	18	19	21	5
Review of Economics and Statistics	19	20	37	22
Technological and Economic Development of Economy	20	30	12	–
Ecological Economics	21	21	42	110
Transportation Research Part A: Policy and Practice	22	26	20	175
American Economic Journal: Applied Economics	23	18	10	26
American Economic Journal: Economic Policy	24	24	23	39
Brookings Papers on Economic Activity	25	33	28	14
Economic Journal	26	32	46	19
Energy Economics	27	22	58	71
Economic Policy	28	28	34	12
Transportation Research Part E: Logistics and Transportation Review	29	27	22	181
Economic Systems Research	30	23	16	145

Note: The journals are ordered according to the Elo ranking in 2016. *Source:* Data taken from Web of Science and RePEc.

we take a closer look on the outcome by our new approach.

The top three journals in Economics are the *Journal of Economic Literature*, followed by the *Quarterly Journal of Economics* and the *Journal of Finance*. Almost all well-known journals are listed in the top 30. Also journals that are more or less classified as 'field-journals' are ranked, for example, in the top 20 (*Economic Geography* – 11, *Journal of Economic Geography* – 14 or *PharmacoEconomics* – 17). Based on subjective weights one might ask, however, how other well-known journals are ranked. Let us take a closer look at the complete ranking. The *Journal of the European Economic Association* (JEEA) is

Table 2: Spearman rank correlation between different rankings

	Elo 2016 (k = 1)	**Elo 2016 (k = 10)**	**Average IF (1997-2016)**	**RePEc**
Elo 2016 (k = 1)	1.000			
Elo 2016 (k = 10)	0.994	1.000		
Average IF (1997-2016)	0.932	0.915	1.000	
RePEc	0.614	0.597	0.593	1.000

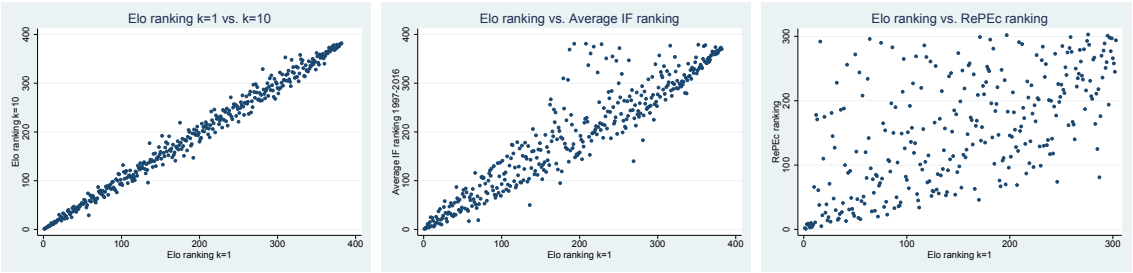
Note: The correlations with the RePEc ranking are based on a reduced sample ($N = 303$), while the other correlations are based on the full sample ($N = 382$). *Source:* Data taken from Web of Science and RePEc.

ranked on the 36th place. The JEEA started with a low JIF but improved its performance over the last years. However, the Elo system smooths the performance since it considers the complete trajectory of a journal. The same holds for the *American Economic Journal: Macroeconomics* which is placed on 58. There might also be an error in the data since the AEJ: Macro has on average a ten-times lower JIF at its launch compared to the other AEJ-Journals. This causes the journal to be ranked as it is by the Elo system.

In the next step, we compare our Elo results to rankings based on other approaches or different data. First, we start by modifying the adjustment parameter k and recalculate the ranking (column 3 in Table 1). The changes are negligible as also the rank correlation of 0.994 in Table 2 points to. This high rank correlation is also confirmed by plotting both rankings against each other (see the left panel in Figure 1). The scatter shows an almost 45° line with few differences.

Second, we compare our basic Elo results with a ranking that is based on the average JIF for each journal over the period 1997 to 2016. The middle panel of Figure 1 reveals a higher dispersion in the rankings compared to the variation of parameter k. This dispersion is especially pronounced for rather 'middle-class' journals, which is also a main result by Lehmann and Wohlrabe (2017). We can observe, however, some huge outliers which points to our main contribution. Whereas the average JIF suggests that a journal is ranked bad, the Elo system corrects these outliers over time and rather smooths the ranking. This finding is confirmed by looking at the rank correlation in Table 2.

Figure 1: Scatter plots between the different rankings



For our third and final comparison we make usage of another data source for impact factors, Research Papers in Economics (RePEc, `http://www.repec.org`). RePEc has become a very important source for various rankings in economics. Based on a large but still expanding bibliometric database, RePEc publishes numerous rankings for journals, authors, economic departments, and institutions. RePEc covers more journals and working paper series compared to Web of Science. In addition, RePEc also includes chapters and books (further details can be found in Zimmermann, 2013). For our comparison, we use the Simple Impact Factor (SIF), which is defined as the ratio between cumulative citations of a journal and its total number of articles. In this sense, and in the spirit of our Elo system, the SIF more or less covers the complete history of a journal. We base our comparison on a subset of journals since not all that are included in Web of Science are also listed in RePEc. Thus, we recalculate our 2016 Elo ranking accordingly.

The rank correlation in Table 2 and the right panel in Figure 1 reveal large differences between the two rankings. A huge dispersion becomes obvious by scattering both rankings. We also find prominent examples in the top 30 (see again Table 1), for example, the journals *Economic Geography*, *Transportation Research Part B: Methodological* and *PharmacoEconomics*. The according ranking differences are 166, 158 and 275 places. At this point we could conclude that the RePEc ranking is quite different from the Elo one. But this conclusion should be formulated with caution, since the RePEc data base does not comprise all articles of all journals. The journals can decide on their own whether to upload all of its publications or not, thus, the Web of Science data are not fully comparable to those by RePEc.

4. Conclusion

One main criticism to be raised when it comes to rank economic journals is the negligence of a journal's performance over time. In this paper, a prominent ranking system in sports, namely the Elo system, is transferred to scientific publishing in economics. Our analysis is based on 382 journals from Web of Science that are listed in the Journal Citation Reports for the period from 1997 to 2016. It turns out that the performance time line of a journal is crucial for its latest ranking. Thus, the new Elo system clearly makes a point since the resulting ranking is by no means identical to those resulting from different alternatives (average impact factor or data from Research Papers in Economics – RePEc). A huge difference occurs especially for rather 'middle-class' journals. In the end, the Elo rating system seems to be a promising alternative to already existing and prominent approaches.

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A. Complete Journal Ranking

Table 3: Elo ranking for all economic journals in 2016

Journal	Elo 2016 (k = 1)	Elo 2016 (k = 10)	Average IF (1997-2016)	RePEc	Years
Journal of Economic Literature	1	1	1	2	20
Quarterly Journal of Economics	2	2	3	1	20
Journal of Finance	3	3	2	8	8
Journal of Economic Perspectives	4	4	5	9	20
Journal of Financial Economics	5	5	11	6	20
Journal of Political Economy	6	6	9	3	20
Review of Financial Studies	7	8	4	10	7
Econometrica	8	7	15	4	20
Review of Economic Studies	9	9	25	7	20
Review of Environmental Economics and Policy	10	13	7	66	8
American Economic Review	11	10	24	11	20
Economic Geography	12	12	18	178	20
Transportation Research Part B: Methodological	13	11	6	171	5
Journal of Economic Geography	14	16	8	61	13
Value in Health	15	15	13	–	8
Journal of Accounting & Economics	16	14	26	38	20
PharmacoEconomics	17	17	14	292	8
Journal of Economic Growth	18	19	21	5	16
Review of Economics and Statistics	19	20	37	22	20
Technological and Economic Development of Economy	20	30	12	–	7
Ecological Economics	21	21	42	110	20
Transportation Research Part A: Policy and Practice	22	26	20	175	5
American Economic Journal: Applied Economics	23	18	10	26	7
American Economic Journal: Economic Policy	24	24	23	39	7
Brookings Papers on Economic Activity	25	33	28	14	20
Economic Journal	26	32	46	19	20
Energy Economics	27	22	58	71	20
Economic Policy	28	28	34	12	18
Transportation Research Part E: Logistics and Transportation Review	29	27	22	181	5
Economic Systems Research	30	23	16	145	7
Journal of Health Economics	31	38	32	48	20
Health Economics	32	40	35	127	20
Journal of Environmental Economics and Management	33	35	47	30	20
Journal of Policy Analysis and Management	34	31	33	228	10
Journal of Labor Economics	35	34	54	15	20
Journal of the European Economic Association	36	25	29	17	10
Journal of International Economics	37	44	49	24	20
Journal of Transport Geography	38	37	27	–	5
Economics & Human Biology	39	47	31	186	9
Journal of Human Resources	40	39	55	27	20
Annual Review of Economics	41	43	30	41	7
Food Policy	42	36	87	188	20
World Development	43	41	64	100	20
Journal of Monetary Economics	44	46	57	13	20
European Journal of Health Economics	45	42	40	256	8
Energy Journal	46	49	61	88	20
Socio-Economic Review	47	48	36	–	6
Experimental Economics	48	51	39	31	11
Review of Finance	49	54	45	91	7
Journal of Urban Economics	50	53	73	49	20
Journal of Development Economics	51	52	81	32	20
Journal of Business & Economic Statistics	52	61	67	25	20
Journal of Agrarian Change	53	60	43	–	9
Journal of Applied Econometrics	54	56	84	21	20
Review of International Political Economy	55	45	76	272	18
Regional Studies	56	50	41	121	6
IMF Economic Review	57	74	38	47	6
American Economic Journal: Macroeconomics	58	29	17	18	7
Journal of Common Market Studies	59	59	66	244	13
Journal of Econometrics	60	70	60	16	20
Mathematical Finance	61	57	72	44	18
Transport Policy	62	65	48	208	5
Journal of Financial and Quantitative Analysis	63	69	83	51	20
World Bank Research Observer	64	67	62	40	20
Journal of Regional Science	65	63	56	120	10
Small Business Economics	66	58	116	80	20
Review of International Organizations	67	55	51	234	7

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Table 3: Elo ranking for all economic journals in 2016 – continued

Journal	Elo 2016 (k = 1)	Elo 2016 (k = 10)	Average IF (1997-2016)	RePEc	Years
Cambridge Journal of Regions, Economy and Society	68	62	44	–	6
International Journal of Forecasting	69	64	68	142	14
NBER Macroeconomics Annual	70	87	19	296	7
American Economic Journal: Microeconomics	71	78	52	95	7
Journal of Public Economics	72	75	90	28	20
Economy and Society	73	80	63	–	20
Environmental & Resource Economics	74	73	107	78	17
Work, Employment and Society	75	72	108	–	20
Journal of Banking & Finance	76	79	105	57	20
Journal of Economic Surveys	77	68	106	29	15
Journal of Financial Stability	78	66	53	85	7
Land Economics	79	77	94	83	20
RAND Journal of Economics	80	88	77	20	20
Quantitative Economics	81	84	59	68	4
Industrial and Corporate Change	82	89	74	72	13
New Political Economy	83	71	100	290	12
Resource and Energy Economics	84	90	115	79	20
European Review of Agricultural Economics	85	85	121	165	20
International Economic Review	86	92	110	35	20
American Journal of Agricultural Economics	87	83	125	154	20
Journal of Risk and Uncertainty	88	97	88	43	20
World Bank Economic Review	89	98	80	23	20
Journal of Agricultural Economics	90	86	130	108	20
Emerging Markets Review	91	82	71	106	6
Theoretical Economics	92	81	65	90	6
Applied Economic Perspectives and Policy	93	103	70	196	6
Marine Resource Economics	94	76	85	283	8
Journal of Economic Psychology	95	100	136	150	20
Journal of Law Economics & Organization	96	114	75	–	20
Review of Economic Dynamics	97	113	109	33	14
Australian Journal of Agricultural and Resource Economics	98	93	137	190	19
International Environmental Agreements: Politics, Law and Economics	99	102	69	–	7
Journal of Financial Econometrics	100	94	93	50	8
Agricultural Economics	101	91	141	104	17
Journal of Law & Economics	102	132	78	36	20
European Economic Review	103	118	114	37	20
Journal of Money, Credit and Banking	104	104	102	42	14
Eurasian Geography and Economics	105	116	117	–	4
Papers in Regional Science	106	120	82	149	6
Insurance Mathematics & Economics	107	106	150	–	19
International Review of Economics & Finance	108	95	92	214	7
American Journal of Health Economics	109	109	79	265	1
Cambridge Journal of Economics	110	111	131	126	20
European Journal of Political Economy	111	121	89	82	7
Journal of Economic Behavior & Organization	112	108	146	77	20
Journal of Risk and Insurance	113	105	174	151	20
Futures	114	99	173	–	20
China Economic Review	115	112	156	–	20
Econometric Reviews	116	107	99	64	10
Post-Soviet Affairs	117	101	127	–	20
Economics of Energy & Environmental Policy	118	119	86	192	2
Annual Review of Resource Economics	119	117	91	136	7
Economics of Education Review	120	110	179	158	20
Journal of Forest Economics	121	131	111	227	10
Journal of Comparative Economics	122	127	129	119	20
Post-Soviet Geography and Economics	123	123	166	–	8
Quantitative Marketing and Economics (QME)	124	136	97	134	9
Journal of Consumer Affairs	125	125	96	269	5
Journal of Population Economics	126	129	172	55	20
Oxford Bulletin of Economics and Statistics	127	126	151	45	20
Journal of Neuroscience, Psychology, and Economics	128	135	101	–	3
Journal of Economic Theory	129	138	124	34	20
Economic Theory	130	124	178	101	19
Feminist Economics	131	115	149	220	17
Regional Science and Urban Economics	132	134	145	93	20
Journal of International Financial Markets Institutions & Money	133	122	98	–	4
IMF Staff Papers	134	96	171	–	16
Spatial Economic Analysis	135	137	104	156	7
Journal of Business Economics and Management	136	177	50	286	8
Economic Development and Cultural Change	137	143	143	105	20
Economic History Review	138	139	126	268	20

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Table 3: Elo ranking for all economic journals in 2016 – continued

Journal	Elo 2016 (k = 1)	Elo 2016 (k = 10)	Average IF (1997-2016)	RePEc	Years
Econometric Theory	139	142	160	73	20
Review of World Economics	140	128	206	115	20
Economica	141	155	161	75	20
Journal of Choice Modelling	142	140	113	261	3
Journal of Industrial Economics	143	156	120	52	20
Scandinavian Journal of Economics	144	130	193	60	20
Oxford Review of Economic Policy	145	146	147	59	20
North American Journal of Economics and Finance	146	144	112	166	5
Journal of Economic History	147	149	164	254	20
Games and Economic Behavior	148	169	134	62	20
Economic Inquiry	149	154	177	86	20
Journal of Economic Dynamics & Control	150	159	163	56	20
Review of Economics of The Household	151	145	128	172	7
Inzinerine Ekonomika: Engineering Economics	152	192	103	–	7
Annual Review of Financial Economics	153	133	133	84	7
Cliometrica	154	157	122	215	7
Journal of Development Studies	155	150	138	94	11
Kyklos	156	168	194	123	20
Industry and Innovation	157	179	118	157	7
Labour Economics	158	160	169	53	15
Journal of Economics & Management Strategy	159	176	142	58	20
Journal of Productivity Analysis	160	152	159	92	20
Bulletin of Indonesian Economic Studies	161	191	132	238	19
Economic Theory, Econometrics, and Mathematical Economics	162	163	256	–	1
Communist Economies & Economic Transformation	163	161	267	–	4
Journal of Transport Economics and Policy	164	166	181	109	20
Canadian Journal of Agricultural Economics	165	148	201	243	12
Journal of Policy Reform	166	174	191	–	1
Journal of Policy Modeling	167	153	246	152	20
Review of Income and Wealth	168	158	220	114	20
Economic Modelling	169	141	240	185	20
Journal of Empirical Finance	170	170	135	54	7
Explorations in Economic History	171	167	185	179	20
Journal of Economic Inequality	172	181	123	89	7
Tijdschrift voor economische en sociale geografie	173	164	209	274	20
Journal of Regulatory Economics	174	173	202	98	20
Journal of Cultural Economics	175	219	95	199	8
International Journal of Industrial Organization	176	178	189	65	20
Socio-Economic Planning Sciences	177	165	119	247	2
Real Estate Economics	178	186	186	116	20
Australian Journal of Agricultural Economics	179	171	310	–	2
Journal of Economics	180	151	248	219	20
Journal of Evolutionary Economics	181	184	176	112	19
World Economy	182	183	168	124	20
Public Choice	183	182	224	148	20
International Journal of Health Care Finance & Economics	184	162	165	–	7
Review of Social Economy	185	190	307	255	3
World Trade Review	186	204	139	258	7
Quarterly Review of Economics and Finance	187	200	369	174	1
Quantitative Finance	188	187	162	170	12
Journal of Housing Economics	189	172	235	132	20
Economics and Philosophy	190	175	215	241	20
Oxford Economic Papers: New Series	191	197	167	63	20
Ekonomie a Management (E&M)	192	147	175	–	7
Japanese Economic Studies	193	205	381	–	1
European Review of Economic History	194	196	148	161	8
Information Economics and Policy	195	194	203	169	15
Journal of Real Estate Research	196	203	154	209	8
Econometrics Journal	197	211	152	46	10
Journal of Cultural Economy	198	193	155	299	1
Journal of Forecasting	199	198	157	138	5
Economic Systems	200	180	158	159	4
ASTIN Bulletin	201	185	192	223	10
Journal of Economic Interaction and Coordination	202	188	184	210	7
American Law and Economics Review	203	217	144	135	7
Agribusiness	204	202	180	229	6
Research in Transportation Economics	205	210	170	253	2
Emerging Markets Finance and Trade	206	201	219	249	11
Economic Development Quarterly	207	212	227	246	20
Japanese Economy	208	220	381	295	1
Review of Agricultural Economics	209	208	229	196	7
Journal of Real Estate Finance and Economics	210	215	221	143	20

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Table 3: Elo ranking for all economic journals in 2016 – continued

Journal	Elo 2016 (k = 1)	Elo 2016 (k = 10)	Average IF (1997-2016)	RePEc	Years
Journal of Developing Areas	211	195	337	281	5
Review of International Economics	212	207	190	102	7
Journal of Socio-Economics	213	189	153	–	3
Revue Economique	214	214	361	–	3
Annals of Regional Science	215	242	182	184	5
Journal of Sports Economics	216	224	197	195	8
Journal of Institutional Economics	217	206	198	221	6
Nationalokonomisk Tidsskrift	218	218	375	–	3
Structural Change and Economic Dynamics	219	246	200	147	2
Spanish Economic Review	220	199	205	–	4
International Tax and Public Finance	221	234	212	76	14
Economics & Politics	222	227	195	67	6
Geneva Papers on Risk and Insurance Theory	223	229	322	248	6
Macroeconomic Dynamics	224	230	210	107	17
Journal of African Economies	225	216	261	111	18
China & World Economy	226	223	218	232	9
Asian Economic Policy Review	227	232	204	70	8
Problems of Economic Transition	228	228	380	302	3
Computational Economics	229	209	216	183	7
German Economic Review	230	245	188	96	8
Journal of Agricultural and Resource Economics	231	225	249	146	20
CESifo Economic Studies	232	243	214	113	10
Europe-Asia Studies	233	241	232	–	20
Journal of Taxation	234	222	351	–	6
National Tax Journal	235	248	207	–	18
Fiscal Studies	236	213	242	144	14
Politicka Ekonomie	237	238	282	–	20
Theory and Decision	238	244	269	213	20
Contemporary Economic Policy	239	236	241	182	20
Journal of Competition Law & Economics	240	271	187	–	6
Journal of Macroeconomics	241	231	284	155	20
Betriebswirtschaftliche Forschung und Praxis	242	226	355	–	6
Southern Economic Journal	243	250	251	128	20
International Finance	244	257	217	69	8
Empirical Economics	245	254	222	122	10
Agricultural Economics: Zemedelska Ekonomika	246	256	230	–	5
Economics of Planning	247	233	346	–	7
Revista Amfiteatru Economic	248	253	196	291	6
Review of Industrial Organization	249	247	260	153	20
Open Economies Review	250	221	300	160	20
Review of Black Political Economy	251	239	372	288	5
Economic Record	252	249	271	189	20
Social Choice and Welfare	253	261	237	173	20
New England Economic Review	254	255	319	133	10
Economics of Transition	255	275	199	87	18
Tourism Economics	256	252	223	–	4
Defence and Peace Economics	257	235	264	230	18
Journal of Demographic Economics	258	260	211	205	1
Journal of Human Capital	259	259	208	103	5
Mathematics and Financial Economics	260	273	226	–	2
International Journal of Game Theory	261	258	263	137	20
International Labour Review	262	262	233	224	7
Advances in Econometrics: A Research Annual	263	237	347	–	6
Economist-Netherlands	264	277	273	180	17
Canadian Journal of Economics	265	283	244	97	20
Journal of Economic Policy Reform	266	240	265	193	9
Applied Economics	267	263	286	168	20
Prague Economic Papers	268	251	245	271	7
Transformations in Business & Economics	269	297	140	–	10
Geneva Risk and Insurance Review	270	282	228	204	11
Pacific Economic Review	271	270	255	202	10
Review of Network Economics	272	298	213	129	7
Journal of the Japanese and International Economies	273	281	281	99	20
Federal Reserve Bank of St. Louis Review	274	292	236	–	9
Journal of Pension Economics & Finance	275	266	243	–	7
Economic Research: Ekonomska Istrazivanja	276	267	231	–	3
Journal of Economic Issues	277	280	259	263	20
China Agricultural Economic Review	278	264	238	284	7
Journal of Mathematical Economics	279	276	275	130	20
Post-Communist Economies	280	265	294	237	17
Econ Journal Watch	281	329	183	257	8
Journal of World Trade	282	287	234	–	16
Economics Letters	283	278	283	131	20

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Table 3: Elo ranking for all economic journals in 2016 – continued

Journal	Elo 2016 (k = 1)	Elo 2016 (k = 10)	Average IF (1997-2016)	RePEc	Years
Asian Journal of Technology Innovation	284	269	258	–	7
Studies in Nonlinear Dynamics and Econometrics	285	284	268	139	17
International Review of Law and Economics	286	289	247	201	20
Economics of Governance	287	300	250	117	5
Economic and Social Review	288	274	308	200	11
Journal of Public Economic Theory	289	293	252	141	8
Review of Development Economics	290	310	239	118	10
Metroeconomica	291	286	254	191	7
Review of Keynesian Economics	292	316	270	273	3
Japan and the World Economy	293	296	313	177	20
Annals of Economics and Finance	294	285	276	74	8
Journal of Behavioral and Experimental Economics	295	272	225	226	2
Economics: the Open-Access, Open-Assessment e-Journal	296	309	257	198	6
Ekonomicky Casopis	297	268	339	–	20
Asian Economic Papers	298	302	262	206	7
Panoeconomicus	299	299	253	225	7
Review of Radical Political Economics	300	290	277	285	6
Review of Derivatives Research	301	279	291	217	7
Desarrollo Económico – Revista de Ciencias Sociales	302	288	357	–	12
Mathematical Social Sciences	303	322	272	212	5
South African Journal of Economics	304	291	323	252	20
Journal of Economic Education	305	301	316	240	20
Australian Economic History Review	306	318	312	275	12
Zeitschrift für Wirtschaftsgeographie	307	295	287	–	7
Pacific Economic Bulletin	308	307	335	–	3
Scottish Journal of Political Economy	309	306	278	162	20
Economia Politica	310	353	266	282	8
Journal of Australian Political Economy	311	317	292	–	8
Iktisat Isletme ve Finans	312	305	325	299	3
Journal of Korea Trade	313	319	296	–	8
International Journal of Transport Economics	314	326	302	276	10
Manchester School	315	308	318	167	20
Ekonomiska Samfundets Tidskrift	316	303	377	–	12
Empirica	317	294	285	163	5
The B.E. Journal of Economic Analysis & Policy	318	348	274	140	8
Australian Economic Review	319	323	301	250	9
Journal of Institutional and Theoretical Economics	320	333	288	222	20
Journal of Post Keynesian Economics	321	321	298	235	20
Ekonomista	322	311	354	–	2
Developing Economies	323	312	324	242	20
Asian-Pacific Economic Literature	324	334	290	279	8
Journal of Behavioral Finance	325	313	305	–	7
International Journal of Health Economics and Management	326	332	289	–	1
History of Political Economy	327	304	336	261	16
European Journal of Law and Economics	328	320	299	239	7
International Journal of Economic Theory	329	358	294	233	7
Romanian Journal of Economic Forecasting	330	349	293	–	8
Journal of Media Economics	331	341	304	280	20
The B.E. Journal of Theoretical Economics	332	347	297	187	8
SERIEs – Journal of the Spanish Economic Association	333	331	303	216	6
Acta Oeconomica	334	315	317	293	8
Economic and Labour Relations Review	335	314	280	–	5
Economic Computation and Economic Cybernetics Studies and Research	336	337	311	303	7
Latin American Economic Review	337	327	279	287	2
Journal of the Asia Pacific Economy	338	325	306	–	8
Applied Economics Letters	339	324	340	231	20
Asian Economic Journal	340	345	314	207	8
Journal of International Trade & Economic Development	341	330	315	203	8
American Journal of Economics and Sociology	342	336	327	264	20
Revista de Historia Economica	343	335	309	–	7
Eastern European Economics	344	343	332	267	20
FinanzArchiv	345	350	328	164	9
Bulletin of Economic Research	346	339	321	211	7
Journal of Applied Economics	347	346	329	125	10
Japanese Economic Review	348	344	343	218	16
Ekonomska Istrazivanja: Economic Research	349	328	353	–	5
The B.E. Journal of Macroeconomics	350	362	320	81	8
Review of Economic Design	351	355	326	176	7
Actual Problems of Economics	352	342	379	–	2

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Table 3: Elo ranking for all economic journals in 2016 – continued

Journal	Elo 2016 (k = 1)	Elo 2016 (k = 10)	Average IF (1997-2016)	RePEc	Years
Global Economic Review	353	338	330	270	7
Australian Economic Papers	354	359	333	236	8
European Journal of the History of Economic Thought	355	352	338	278	10
Proceedings of Rijeka Faculty of Economics	356	354	334	289	8
Hacienda Publica Espanola	357	357	331	–	9
Jahrbücher für Nationalökonomie und Statistik	358	360	350	251	20
Economia Chilena	359	351	376	–	4
Baltic Journal of Economics	360	340	345	260	8
Revista de Ciencias Sociales	361	356	378	–	4
Cepal Review	362	364	342	–	8
Independent Review	363	363	341	–	10
Revista de Economia Mundial	364	361	349	–	8
Singapore Economic Review	365	366	352	301	8
Portuguese Economic Journal	366	373	344	194	10
Revista de Historia Industrial	367	365	348	–	5
Asia-Pacific Journal of Accounting & Economics	368	367	356	298	6
South African Journal of Economic and Management Sciences	369	369	358	277	9
Korean Economic Review	370	375	365	297	5
Hitotsubashi Journal of Economics	371	370	363	266	20
Investigacion Economica	372	378	364	–	10
Estudios de Economia	373	368	359	258	7
Economia Mexicana: Nueva Epoca	374	372	374	–	5
Revista de Economia Aplicada	375	371	360	245	9
Louvain Economic Review	376	379	367	–	7
History of Economic Ideas	377	374	362	294	5
Argumenta Oeconomica	378	377	366	–	7
Revue d'Economie Politique	379	376	368	–	10
Trimestre Economico	380	380	371	–	20
Custos e Agronegocion	381	381	373	–	5
Revue d'Etudes Comparatives Est-Ouest	382	382	370	–	20

Note: The journals are ordered according to the Elo ranking in 2016. *Source:* Data taken from Web of Science and RePEc.