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How robust are journal rankings based on the impact factor? Evidence from the economic sciences

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ABSTRACT

It is well-known that the distribution of citations to articles in a journal is skewed. We ask whether journal rankings based on the impact factor are robust with respect to this fact. We exclude the most cited paper, the top 5 and 10 cited papers for 100 economics journals and recalculate the impact factor. Afterwards we compare the resulting rankings with the original ones from 2012. Our results show that the rankings are relatively robust. This holds both for the 2-year and the 5-year impact factor.

1. Introduction

Journals rankings have gained more interest, visibility and importance recently. Scientists with publications in high-ranked journals have a higher probability of getting tenure, research funding or reputation. The number of journal rankings has increased in recent years, which might be both due to better data availability, the increased competition amongst the science community and the need for a permanent research evaluation. Finally, people seem to be fascinated by rankings. Still the most visible ranking is the one based on the 2-year impact factor from the *Journal Citation Reports*. For many journals publishers state the impact factor (IF) on the corresponding website. Furthermore, they note that it is ranked on position *X* in category *Y*. Although often criticized in bibliometric literature the impact factor is still one of the cornerstones for the evaluation of journals.[2]

In this short article we investigate the robustness of journal rankings based on the impact factor. We do this by acknowledging the well-known fact that the distribution of citations to articles in a journal is skewed (Folly, Hajtman, Nagy, & Ruff, 1981; Seglen, 1992 or Wall, 2009). Does the relative ranking change if we exclude the top paper or the best *x* papers in terms of citations? Suppose a specific article generates 90% of all citations relevant for the impact factor of the journal. Is then the quality of the journal overstated or misplaced in the journal ranking? We investigate this issue for 100 economics journals using the IF and the corresponding citations from 2012. We show that the rankings based on the impact factor only change

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[2] See Archambault and Larivière (2009) or Vanclay (2012) for details and further references.

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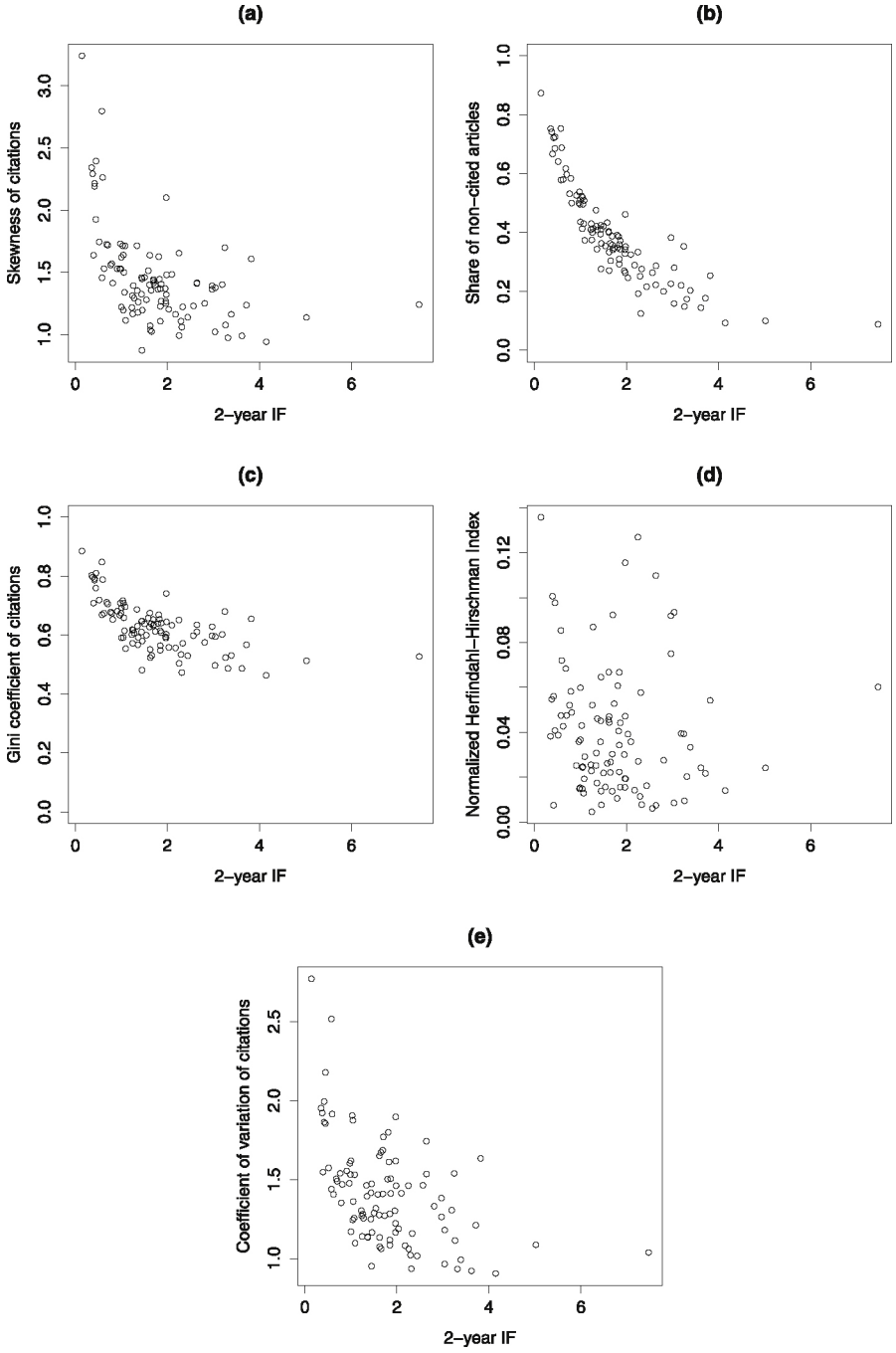

Fig. 1. Citation distribution indicators against the 2-year impact factor.

marginally if we exclude the top, the top 5 or the top 10 cited papers for each journal, i.e. the ranking is robust with respect to the skewness of the citation distribution. There are some larger (downward) movements for certain journals which gather most of its citations on only few articles. As a consequence many journals show small ranking improvements.

Our paper is closely related to the literature concerning the uncertainty of impact factors. Vanclay (2012), Leydesdorff and Opthof (2010), and Moed et al. (2012) called for confidence intervals to be provided for the impact factors. Such uncertainty measures can be found in Schubert and Glänzel (1983), Nieuwenhuysen and Rousseau (1988), Opthof (1997), Chen, Jen, and Wu (2014), Greenwood (2007), and Stern (2013). The latter two articles show that, besides the very top journals, a distinct discrimination in terms of the level of the impact factor between closely spaced journals is not possible. It also adds to the

discussion whether authors can "free-ride" on power laws (Baum, 2011), i.e. profit from few articles which push the impact factor. Our results suggest that potential free-riding is even more pronounced for lower ranked journals.

2. Data

From *Web of Science* we collected all citations in 2012 to each article published in the years 2007–2011 in the Journal Citation Report economics subject category by Thomson Reuters. We focus on the top 100 journals in economics according to the impact factor in 2012. Based on our data set, we recalculated the 2-year and 5-year impact factors for all journals in our sample. We observed some minor differences to the official impact factors released in the Journal Citation Report which were caused by a different number of citations or articles. These differences were also found and discussed in other studies, e.g. Leydesdorff and Opthof (2010), Opthof (1997) and Stern (2013). In Fig. 1(a) we plot the empirical skewness coefficient against the 2-year IF. All citation distributions have positive skewness coefficients, i.e. they are skewed to the left. Furthermore, we see that the higher the 2-year IF the less skewed are the citations distributions.

In addition to the skewness we take a look at some other measures indicating skewness in the citation distribution: the share of non-cited papers, the Gini coefficient, the normalized Herfindhal–Hirschmann index and the coefficient of variation. The share of non-cited papers is defined as the number of papers which made no contribution to the impact factor in terms of citations. The Gini coefficient describes how equal the citations are distributed. If the Gini coefficient is zero, the citations are equally distributed across papers. In case that it is close to one all citations are concentrated on a single paper. The normalized Herfindhal–Hirschmann index is also a concentration measure which ranges from 0 (equal distribution) to 1 (completely unequal distribution). In contrast to the Gini coefficient it utilizes the squared values of the single subjects. The coefficient of variation is the ratio of the standard deviation of the citations and its average. As the variance is usually higher for journals with higher average citation count, the coefficient of variation is the more appropriate solution in our case as it normalizes the variance by the mean.

Table 1
Relative citation shares and ranking shifts for the 2-year IF.

Smallest and largest relative shares		Maximum and minimum ranking shifts	
w/o Top 1			
Journal of Banking & Finance	1%	Value in Health	6
Energy Economics	2%	Economic Journal	6
World Development	2%	Journal of Environ. Econ. & Manage.	5
Review of Financial Studies	2%	Journal of Monetary Economics	5
Review of Economics & Statistics	3%	Economics & Human Biology	4
Journal of Economic Growth	22%	Economy & Society	−16
Japanese Economic Review	22%	Economic Systems Research	−16
Economic Systems Research	25%	Economic Geography	−7
Economy & Society	25%	Energy Journal	−6
Economic Geography	28%	Journal of Economic Growth	−6
w/o Top 5			
Journal of Banking & Finance	6%	Journal of Banking & Finance	18
Applied Economics	9%	World Development	18
Energy Economics	9%	Value in Health	16
World Development	9%	Journal of Health Economics	15
Review of Financial Studies	10%	Journal of Environ. Econ. & Manage.	12
Japan & the World Economy	58%	Economic Systems Research	−46
Brookings Papers on Econ. Activity	61%	Journal of Economic Growth	−44
Japanese Economic Review	67%	Economy & Society	−20
Economic Systems Research	68%	Brookings Papers on Econ. Activity	−18
Journal of Economic Growth	69%	Economic Geography	−16
w/o Top 10			
Journal of Banking & Finance	10%	Journal of Banking & Finance	32
Applied Economics	15%	World Development	28
World Development	16%	Journal of Health Economics	25
Energy Economics	17%	Journal of Public Economics	20
Review of Financial Studies	17%	Value in Health	20
Economic Systems Research	82%	Brookings Papers on Econ. Activity	−58
Brookings Papers on Econ. Activity	86%	Journal of Economic Growth	−56
Journal of Economic Growth	89%	Economic Systems Research	−49
Developing Economies	92%	IMF Economic Review	−36
Japanese Economic Review	100%	Rev. of Environ. Economics & Policy	−30

This table reports both the 5 lowest and highest relative shares of the top-cited, the top 5 and top 10 papers (left panel). It also shows the 5 maximum and minimum shifts within the relative rankings (right panel). Positive values indicate a rank increase whereas negative values indicate rank decreases. All results refer to the *2-year IF*.

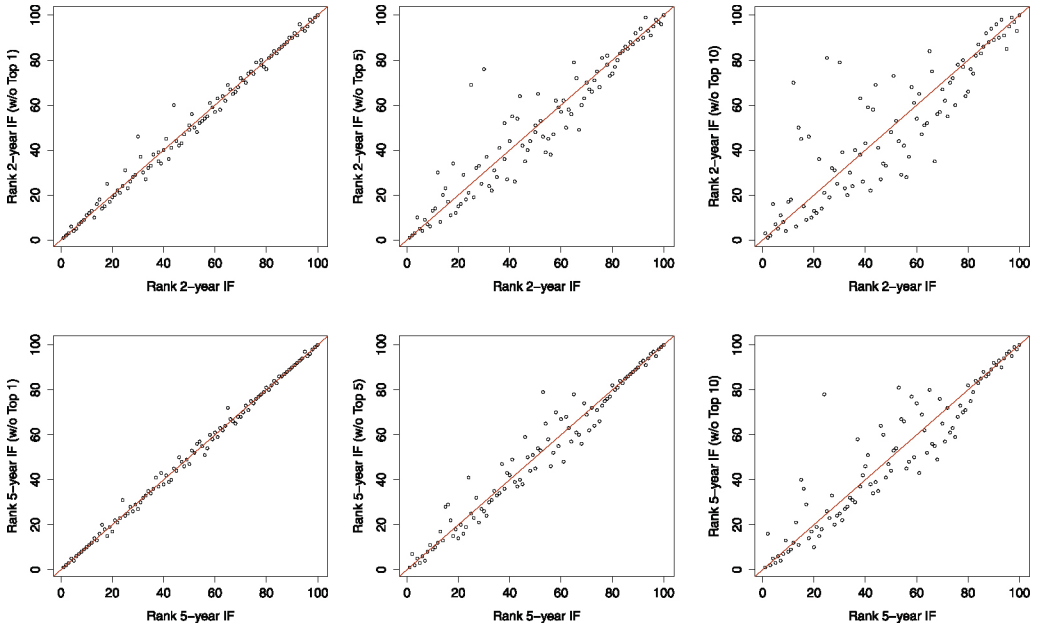

Fig. 2. Ranking comparisons for the 2-year and 5-year IF.

Table 2
Relative citation shares and ranking shifts for the 5-year IF.

Smallest and largest relative shares		Maximum and minimum ranking shifts	
w/o Top 1			
Journal of Banking & Finance	1%	Environmental & Resource Economics	5
Applied Economics	1%	Ecological Economics	3
Journal of Finance	1%	International Journal of Forecasting	3
Ecological Economics	2%	Journal of Public Economics	3
Journal of Public Economics	2%	Review of Economics & Statistics	3
Socio-Economic Review	13%	Brookings Papers on Econ. Activity	−4
Open Economies Review	14%	International Environ. Agreements	−4
Brookings Papers on Econ. Activity	14%	Socio-Economic Review	−4
IMF Economic Review	16%	IMF Economic Review	−7
Journal of Economic Literature	17%	Applied Econ. Perspectives & Policy	−7
w/o Top 5			
Journal of Banking & Finance	4%	Journal of Banking & Finance	13
Applied Economics	4%	International Journal of Forecasting	12
Energy Economics	5%	Environ. & Resource Economics	10
World Development	6%	Journal of Economic Psychology	9
Ecological Economics	6%	Journal of Agricultural Economics	9
Brookings Papers on Econ. Activity	38%	Applied Econ. Perspectives & Policy	−13
Journal of Economic Growth	40%	Brookings Papers on Econ. Activity	−13
Journal of Economic Literature	44%	International Environ. Agreements	−13
Economic Systems Research	45%	IMF Economic Review	−17
IMF Economic Review	48%	Economic Systems Research	−26
w/o Top 10			
Journal of Banking & Finance	6%	International Journal of Forecasting	19
Applied Economics	7%	Journal of Banking & Finance	18
Energy Economics	9%	Journal of Economic Theory	16
Ecological Economics	10%	Journal of Economic Psychology	14
World Development	10%	Journal of Agricultural Economics	12
Applied Econ. Perspectives & Policy	55%	Brookings Papers on Econ. Activity	−20
Economic Systems Research	61%	Socio-Economic Review	−21
Journal of Economic Growth	62%	Journal of Economic Growth	−25
Journal of Economic Literature	68%	Economic Systems Research	−28
IMF Economic Review	78%	IMF Economic Review	−54

See Table 1 for explanations. All results refer to the *5-year IF*.

Table 3
Ranking comparison of journal in economics.

	2-Year IF				5-Year IF			
	Rank	w/o Top 1	w/o Top 5	w/o Top 10	Rank	w/o Top 1	w/o Top 5	w/o Top 10
Journal of Economic Literature	1	1(◯,11%)	1(◯,44%)	3(▼,70%)	2	2(◯,17%)	7(▼,44%)	16(▼,68%)
Quarterly Journal of Economics	2	2(◯,7%)	2(◯,23%)	1(▲,39%)	1	1(◯,4%)	1(◯,15%)	1(◯,23%)
Journal of Finance	3	3(◯,4%)	3(◯,15%)	2(▲,25%)	3	3(◯,1%)	2(▲,7%)	2(▲,12%)
Journal of Accounting & Economics	4	6(▼,15%)	10(▼,42%)	16(▼,60%)	12	12(◯,6%)	12(◯,18%)	12(◯,30%)
Econometrica	5	4(▲,5%)	5(◯,23%)	7(▼,36%)	5	4(▲,4%)	3(▲,11%)	3(▲,19%)
American Economic Journal – Applied Economics	6	5(▲,6%)	4(▲,22%)	5(▲,36%)	14	13(▲,4%)	13(▲,17%)	11(▲,28%)
Journal of Political Economy	7	7(◯,6%)	9(▼,27%)	11(▼,48%)	6	6(◯,3%)	6(◯,14%)	6(◯,25%)
Journal of Economic Perspectives	8	8(◯,4%)	7(▲,19%)	8(◯,34%)	4	5(▼,8%)	5(▼,22%)	5(▼,31%)
Journal of Financial Economics	9	9(◯,3%)	6(▲,12%)	4(▲,21%)	7	7(◯,2%)	4(▲,7%)	4(▲,12%)
Technological & Economic Development of Economy	10	11(▼,11%)	13(▼,33%)	17(▼,51%)	51	53(▼,7%)	54(▼,23%)	53(▼,35%)
American Economic Journal – Macroeconomics	11	12(▼,10%)	14(▼,34%)	18(▼,53%)	9	9(◯,6%)	11(▼,24%)	13(▼,39%)
Brookings Papers on Econ. Activity	12	13(▼,14%)	30(▼,61%)	70(▼,86%)	16	20(▼,14%)	29(▼,38%)	36(▼,55%)
Review of Financial Studies	13	10(▲,2%)	8(▲,10%)	6(▲,17%)	8	8(◯,9%)	8(◯,16%)	7(▲,22%)
IMF Economic Review	14	16(▼,16%)	20(▼,48%)	50(▼,78%)	24	31(▼,16%)	41(▼,48%)	78(▼,78%)
Review of Environ. Economics & Policy	15	18(▼,22%)	23(▼,53%)	45(▼,76%)	13	14(▼,7%)	17(▼,28%)	21(▼,45%)
Review of Economic Studies	16	14(▲,7%)	17(▼,29%)	15(▲,41%)	11	11(◯,5%)	10(▲,15%)	9(▲,23%)
American Economic Review	17	15(▲,3%)	11(▲,11%)	9(▲,19%)	10	10(◯,3%)	9(▲,6%)	8(▲,10%)
Economic Geography	18	25(▼,28%)	34(▼,53%)	46(▼,72%)	17	18(▼,9%)	22(▼,31%)	29(▼,47%)
Ecological Economics	19	17(▲,3%)	12(▲,10%)	10(▲,17%)	20	17(▲,2%)	14(▲,6%)	10(▲,10%)
PharmacoEconomics	20	19(▲,4%)	15(▲,15%)	13(▲,27%)	29	29(◯,3%)	27(▲,12%)	24(▲,19%)
Energy Economics	21	20(▲,2%)	16(▲,9%)	12(▲,17%)	22	21(▲,2%)	16(▲,5%)	15(▲,9%)
Economic Policy	22	22(◯,11%)	29(▼,45%)	36(▼,66%)	47	48(▼,9%)	50(▼,27%)	60(▼,46%)
Review of Economics & Statistics	23	21(▲,3%)	18(▲,12%)	14(▲,21%)	18	15(▲,4%)	15(▲,13%)	14(▲,20%)
Journal of Economic Geography	24	24(◯,7%)	21(▲,27%)	21(▲,41%)	19	19(◯,5%)	18(▲,17%)	17(▲,27%)
Journal of Economic Growth	25	31(▼,22%)	69(▼,69%)	81(▼,89%)	15	16(▼,13%)	28(▼,40%)	40(▼,62%)
Journal of Development Economics	26	23(▲,3%)	19(▲,15%)	19(▲,25%)	28	26(▲,2%)	21(▲,8%)	20(▲,14%)
Journal of Regional Science	27	26(▲,9%)	32(▼,33%)	32(▼,50%)	57	54(▲,5%)	52(▲,17%)	48(▲,28%)
American Economic Journal – Economic Policy	28	28(◯,9%)	33(▼,34%)	31(▼,51%)	40	38(▲,6%)	42(▼,25%)	46(▼,40%)
Food Policy	29	29(◯,6%)	25(▲,21%)	25(▲,33%)	35	34(▲,2%)	33(▲,10%)	31(▲,17%)
Economic Systems Research	30	46(▼,25%)	76(▼,68%)	79(▼,82%)	53	56(▼,12%)	79(▼,45%)	81(▼,61%)

Energy Journal	31	37(▼, 16%)	37(▼, 35%)	39(▼, 51%)	49	49(◯, 7%)	51(▼, 24%)	47(▲, 34%)
Journal of International Economics	32	30(▲, 6%)	24(▲, 20%)	23(▲, 33%)	21	22(▼, 6%)	20(▲, 15%)	19(▲, 22%)
Economic Journal	33	27(▲, 4%)	22(▲, 16%)	20(▲, 27%)	31	30(▲, 2%)	24(▲, 9%)	22(▲, 15%)
Journal of Urban Economics	34	32(▲, 8%)	31(▲, 28%)	30(▲, 45%)	30	27(▲, 2%)	26(▲, 11%)	25(▲, 19%)
Health Economics	35	33(▲, 5%)	28(▲, 19%)	24(▲, 28%)	33	33(◯, 2%)	31(▲, 8%)	28(▲, 15%)
Journal of Business Economics & Management	36	38(▼, 14%)	41(▼, 35%)	40(▼, 50%)	72	73(▼, 7%)	72(◯, 21%)	72(◯, 33%)
International Environ. Agreements	38	39(▼, 14%)	52(▼, 46%)	63(▼, 69%)	46	50(▼, 12%)	59(▼, 35%)	64(▼, 50%)
Journal of Human Resources	38	35(▲, 8%)	36(▲, 29%)	38(◯, 49%)	26	25(▲, 4%)	23(▲, 15%)	23(▲, 24%)
Journal of Environ. Econ. & Management	39	34(▲, 7%)	27(▲, 20%)	26(▲, 34%)	25	24(▲, 4%)	25(◯, 16%)	26(▼, 25%)
Journal of Business & Economic Statistics	40	40(◯, 13%)	44(▼, 34%)	43(▼, 49%)	42	39(▲, 5%)	39(▲, 15%)	38(▲, 25%)
American Economic Journal – Microeconomics	41	45(▼, 16%)	55(▼, 44%)	59(▼, 61%)	54	57(▼, 12%)	65(▼, 33%)	67(▼, 47%)
Value in Health	42	36(▲, 4%)	26(▲, 15%)	22(▲, 22%)	36	36(◯, 4%)	34(▲, 9%)	30(▲, 14%)
Socio-Economic Review	43	41(▲, 11%)	54(▼, 42%)	58(▼, 61%)	37	41(▼, 13%)	47(▼, 35%)	58(▼, 53%)
Economy & Society	44	60(▼, 25%)	64(▼, 49%)	69(▼, 67%)	41	42(▼, 8%)	49(▼, 30%)	51(▼, 46%)
Journal of Applied Econometrics	45	44(▲, 9%)	42(▲, 28%)	41(▲, 43%)	39	43(▼, 13%)	43(▼, 24%)	42(▼, 33%)
Journal of Econometrics	46	42(▲, 7%)	35(▲, 17%)	27(▲, 26%)	32	32(◯, 2%)	30(▲, 9%)	27(▲, 13%)
Economics & Human Biology	47	43(▲, 6%)	40(▲, 25%)	34(▲, 40%)	38	37(▲, 4%)	36(▲, 16%)	37(▲, 25%)
Environ. & Resource Economics	48	47(▲, 9%)	44(▲, 25%)	33(▲, 34%)	56	51(▲, 3%)	46(▲, 12%)	45(▲, 18%)
Journal of Labor Economics	49	51(▼, 12%)	48(▲, 35%)	48(▲, 54%)	27	28(▼, 8%)	32(▼, 25%)	33(▼, 37%)
Journal of Risk & Uncertainty	50	49(▲, 10%)	51(▼, 36%)	49(▲, 54%)	52	52(◯, 7%)	53(▼, 23%)	54(▼, 37%)
Cambridge Journal of Regions Economy & Society	51	56(▼, 18%)	65(▼, 46%)	73(▼, 65%)	60	61(▼, 9%)	67(▼, 28%)	74(▼, 46%)
Applied Econ. Perspectives & Policy	52	50(▲, 10%)	53(▼, 36%)	53(▼, 55%)	65	72(▼, 10%)	78(▼, 36%)	80(▼, 55%)
Journal of Monetary Economics	53	48(▲, 7%)	46(▲, 25%)	44(▲, 40%)	34	35(▼, 4%)	35(▼, 12%)	32(▲, 20%)
Journal of Health Economics	54	52(▲, 6%)	39(▲, 16%)	29(▲, 26%)	23	23(◯, 4%)	19(▲, 10%)	18(▲, 16%)
Journal of Financial & Quantitative Analysis	55	53(▲, 5%)	45(▲, 20%)	42(▲, 35%)	48	46(▲, 3%)	44(▲, 14%)	41(▲, 22%)
World Development	56	54(▲, 2%)	38(▲, 9%)	28(▲, 16%)	45	44(▲, 2%)	38(▲, 6%)	35(▲, 10%)
Journal of Public Economics	57	55(▲, 5%)	47(▲, 16%)	37(▲, 26%)	43	40(▲, 2%)	37(▲, 7%)	34(▲, 12%)
Post-Soviet Affairs	58	61(▼, 14%)	62(▼, 43%)	68(▼, 67%)	80	81(▼, 7%)	82(▼, 25%)	82(▼, 42%)
Rand Journal of Economics	59	59(◯, 11%)	59(◯, 35%)	61(▼, 54%)	50	47(▲, 4%)	45(▲, 14%)	44(▲, 24%)
Journal of Agricultural Economics	60	57(▲, 9%)	57(▲, 30%)	54(▲, 48%)	73	71(▲, 4%)	64(▲, 13%)	61(▲, 23%)
Annual Review of Economics	61	63(▼, 9%)	62(▼, 34%)	65(▼, 57%)	69	68(▲, 6%)	74(▼, 28%)	76(▼, 47%)
International Journal of Forecasting	62	58(▲, 4%)	50(▲, 17%)	47(▲, 30%)	68	65(▲, 3%)	56(▲, 10%)	49(▲, 18%)
Resource & Energy Economics	63	64(▼, 8%)	58(▲, 28%)	51(▲, 41%)	62	63(▼, 6%)	68(▼, 23%)	69(▼, 37%)
European Economic Review	64	62(▲, 5%)	56(▲, 22%)	52(▲, 39%)	67	66(▲, 3%)	60(▲, 12%)	55(▲, 20%)
Quantitative Marketing & Economics	65	69(▼, 19%)	79(▼, 54%)	84(▼, 81%)	58	60(▼, 9%)	70(▼, 32%)	77(▼, 53%)
Review of Finance	66	67(▼, 11%)	72(▼, 40%)	75(▼, 62%)	55	55(◯, 9%)	58(▼, 27%)	66(▼, 45%)
Journal of Banking & Finance	67	65(▲, 1%)	49(▲, 6%)	35(▲, 10%)	61	59(▲, 1%)	48(▲, 4%)	43(▲, 6%)
European Journal of Health Economics	68	66(▲, 6%)	60(▲, 22%)	56(▲, 36%)	74	75(▼, 4%)	71(▲, 13%)	63(▲, 22%)
China Economic Review	69	68(▲, 9%)	63(▲, 24%)	57(▲, 36%)	64	64(◯, 4%)	57(▲, 13%)	52(▲, 22%)
Journal of Risk & Insurance	70	72(▼, 7%)	70(◯, 24%)	67(▲, 41%)	77	77(◯, 3%)	75(▲, 13%)	73(▲, 24%)

Table 3 (*Continued*)

	2-Year IF				5-Year IF			
	Rank	w/o Top 1	w/o Top 5	w/o Top 10	Rank	w/o Top 1	w/o Top 5	w/o Top 10
Journal of Money Credit & Banking	71	71 (◯, 5%)	67 (▲, 19%)	62 (▲, 33%)	66	67 (▼, 5%)	61 (▲, 14%)	56 (▲, 21%)
Insurance Mathematics & Economics	72	70 (▲, 4%)	66 (▲, 13%)	55 (▲, 23%)	78	78 (◯, 5%)	76 (▲, 12%)	70 (▲, 17%)
Small Business Economics	73	74 (▼, 6%)	71 (▲, 22%)	70 (▲, 36%)	44	45 (▼, 4%)	40 (▲, 13%)	39 (▲, 21%)
Labour Economics	74	75 (▼, 8%)	75 (▼, 26%)	72 (▲, 36%)	76	76 (◯, 3%)	73 (▲, 14%)	68 (▲, 22%)
Journal of Economic Psychology	75	74 (▲, 4%)	68 (▲, 16%)	60 (▲, 27%)	71	70 (▲, 4%)	62 (▲, 11%)	57 (▲, 19%)
Inzinerine Ekonomika	76	79 (▼, 14%)	81 (▼, 35%)	78 (▼, 51%)	89	89 (◯, 7%)	89 (◯, 20%)	89 (◯, 29%)
Annual Review of Resource Economics	78	80 (▼, 13%)	82 (▼, 41%)	80 (▼, 67%)	86	86 (◯, 8%)	86 (◯, 31%)	88 (▼, 52%)
International Economic Review	78	78 (◯, 10%)	78 (◯, 33%)	77 (▲, 49%)	59	58 (▲, 5%)	55 (▲, 19%)	50 (▲, 28%)
Journal of Economic Theory	79	77 (▲, 5%)	73 (▲, 18%)	64 (▲, 28%)	75	74 (▲, 2%)	66 (▲, 7%)	59 (▲, 12%)
Games & Economic Behavior	80	76 (▲, 4%)	74 (▲, 17%)	66 (▲, 28%)	79	79 (◯, 3%)	77 (▲, 10%)	71 (▲, 16%)
Economic History Review	81	81 (◯, 11%)	77 (▲, 29%)	76 (▲, 47%)	87	87 (◯, 5%)	87 (◯, 21%)	86 (▲, 35%)
Agricultural Economics	82	82 (◯, 7%)	80 (▲, 25%)	74 (▲, 37%)	81	80 (▲, 3%)	80 (▲, 12%)	75 (▲, 19%)
Kyklos	83	84 (▼, 12%)	83 (◯, 38%)	82 (▲, 58%)	82	82 (◯, 5%)	81 (▲, 19%)	79 (▲, 32%)
Feminist Economics	84	83 (▲, 8%)	84 (◯, 39%)	87 (▼, 66%)	84	83 (▲, 7%)	83 (▲, 22%)	83 (▲, 37%)
Journal of Law & Economics	85	85 (◯, 10%)	86 (▼, 43%)	83 (▲, 59%)	63	62 (▲, 4%)	63 (◯, 19%)	62 (▲, 31%)
Journal of Comparative Economics	86	86 (◯, 9%)	85 (▲, 36%)	86 (◯, 57%)	70	68 (▲, 4%)	69 (▲, 17%)	65 (▲, 29%)
Journal of Housing Economics	87	87 (◯, 13%)	88 (▼, 44%)	92 (▼, 75%)	83	84 (▼, 9%)	84 (▼, 23%)	84 (▼, 38%)
Explorations in Economic History	88	88 (◯, 9%)	87 (▲, 30%)	88 (◯, 53%)	88	88 (◯, 4%)	88 (◯, 18%)	87 (▲, 31%)
Journal of Evolutionary Economics	89	90 (▼, 13%)	92 (▼, 50%)	94 (▼, 74%)	85	86 (▼, 7%)	85 (◯, 26%)	85 (◯, 41%)
International Review of Law & Economics	90	90 (◯, 11%)	89 (▲, 35%)	89 (▲, 54%)	91	91 (◯, 8%)	92 (▼, 24%)	91 (◯, 37%)
Contemporary Economic Policy	91	92 (▼, 20%)	94 (▼, 53%)	96 (▼, 73%)	92	92 (◯, 7%)	93 (▼, 23%)	93 (▼, 36%)
International Journal of Game Theory	92	91 (▲, 9%)	90 (▲, 28%)	90 (▲, 50%)	94	94 (◯, 8%)	94 (◯, 24%)	94 (◯, 33%)
Japan & the World Economy	93	96 (▼, 19%)	99 (▼, 58%)	98 (▼, 77%)	96	95 (▲, 6%)	97 (▼, 28%)	97 (▼, 43%)
Manchester School	94	94 (◯, 10%)	93 (▲, 31%)	91 (▲, 50%)	97	96 (▲, 4%)	95 (▲, 19%)	95 (▲, 32%)
Applied Economics	95	93 (▲, 3%)	91 (▲, 9%)	85 (▲, 15%)	93	93 (◯, 1%)	91 (▲, 4%)	90 (▲, 7%)
Journal of African Economies	96	95 (▲, 9%)	95 (▲, 39%)	95 (▲, 64%)	90	90 (◯, 5%)	90 (◯, 23%)	92 (▼, 39%)
Developing Economies	97	98 (▼, 15%)	98 (▼, 54%)	99 (▼, 92%)	98	98 (◯, 8%)	98 (◯, 33%)	99 (▼, 53%)
Open Economies Review	98	97 (▲, 9%)	97 (▲, 38%)	97 (▲, 63%)	95	97 (▼, 14%)	96 (▼, 26%)	96 (▼, 41%)
Journal of Economic Issues	99	99 (◯, 7%)	96 (▲, 27%)	93 (▲, 50%)	99	99 (◯, 4%)	99 (◯, 16%)	98 (▲, 29%)
Japanese Economic Review	100	100 (◯, 22%)	100 (◯, 67%)	100 (◯, 100%)	100	100 (◯, 7%)	100 (◯, 26%)	100 (◯, 48%)

Notes: This tables compares the original 2-year IF with the new rankings, where the top-cited (w/o Top 1), the top 5 (w/o Top 5) and top 10 (w/o Top 10) papers are excluded. A ◯ denotes that the relative position remained unchanged compared to the original rankings. An improvement or decline is marked with a ▲ and ▼, respectively. The numbers in brackets report the share of citations represented by the top 1, 5 and 10 papers.

In Fig. 1(b)–(e) we plot all four indicators in relation to the respective impact factor.[3] The results are clear cut: the higher the impact factor the lesser the values of skewness indicators. For a journal with a higher impact factor the citations are usually less unequally distributed, the share of non-cited papers and the coefficient of variation are lower.[4]

3. Results

In Table 3 we rank the 100 economics journals with respect to the 2-year IF from 2012. In a second step we exclude the top cited paper for each journal, recalculate the impact factor and rank them again. We do the same by excluding the top 5 and the top 10 papers in terms of citation counts. In case that the relative position remained unchanged compared to the original 2-year IF ranking we labeled this with a ◯. An improvement or decline is marked with a ▲ and ▼, respectively. Furthermore, we report in brackets the share of citations represented by the top 1, 5 and 10 papers. In order to get an overall impression we plot in Fig. 2 the ranking based on the standard 2-year IF against our new calculated rankings. Circles on the 45° the line denote that the relative rank remained unchanged. Journals above or below line lost or gained ranking positions. Looking at the new ranking without the top-cited paper one can see that the ranking remains strongly robust. The Spearman rank-correlation is extremely high (0.994) and only minor ranking shifts were found. This is confirmed if we look at the largest gains and losses reported in Table 1. The largest drops are 16 positions for the two journals *Economy & Society* and *Economic Systems Research* which have also large shares of the top-cited paper (25%). These losses are compensated by rather small ranking improvements. The *Journal of Economic Literature*, which publishes only reviews and survey articles, stays at the top compared to the original ranking. The other top 10 journals remain the same with one exception: the journal *Technological & Economic Development of Economy* leaves the top 10 and is replaced by the *Review of Financial Studies*. If we drop the top 5 and 10 papers than Fig. 2 seems to suggest that the rankings are not that robust as in first place, when we drop only the top-cited paper. Taking a closer look shows there are some journals with large drops (see Table 1) which leads to automatic (small) position gains for many journals. The rank correlations with 0.944 and 0.862 are still very high. *The Review of Financial Studies* also enters in both cases the top 10 journals after excluding the top cited papers.

We repeat the whole analysis for the 5-year IF. The individual ranks for each journal are given in the right panel of Table 3, the summarizing graphs are shown in the lower panel of Fig. 2. The rank correlations are with 0.997, 0.978 and 0.936 even higher, i.e. the rankings are more robust compared to the 2-year IF. This also confirmed by Table 2 where the largest relative ranking movements are smaller compared to Table 1. *The Quarterly Journal of Economics* is the top journal in all four rankings.

4. Conclusion

This paper investigates the robustness of journal rankings incorporating the well-documented skewness in citation distribution of articles. Using the best 100 economics journals from 2012 we show that the relative ranking remains relatively stable after excluding the best, the top 5 and top 10 papers. The results hold both for the 2-year and the 5-year IF. For the latter one they are even more robust. Therefore, the skewness of citations has no major impact on journal rankings based on the impact factor. Future research should investigate whether our results also hold in other scientific areas.

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[3] The corresponding values are reported in the working paper version of this article, see Seiler and Wohlrabe (2014).
[4] The results remain qualitatively the same for the 5-year IF.