



# A Citations-Based Appraisal of New Journals in Economics Education\*

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## Abstract

For three decades the *Journal of Economic Education* (JEE) has been virtually the sole producer of academic scholarship in the area of economics education. However, with the turn of the 21st century two new journals – *Journal of Economics and Finance Education* (JEFE) and *International Review of Economics Education* (IREE) – appeared on the scene. Until now there has been no attempt to examine the impact (or lack thereof) of these new journals in terms of the impact of the articles they each published in their early days. This study addresses that gap by comparing the impact of the 2003 through mid-2004 cohort of articles published in the IREE, the JEE and the JEFE. Remarkably, the portion of the articles in the 2003 through mid-2004 cohort published in the IREE are found to have been cited at a rate somewhat similar to that of the portion published in the JEE, though there are multiple grounds for strongly contesting the notion that the IREE has ‘caught up’ with the JEE. However, since 2003 both the JEE and the IREE have had a significantly greater impact than the JEFE.

## Introduction and background

For three decades the *Journal of Economic Education* has been virtually the sole producer of academic scholarship in the area of economics education. That this *status quo* was maintained for so long is surprising. Casual empiricism suggests that the ‘market for ideas’ in the area of economics education was recognised by economics journal editors as being far from saturated (Mixon, 2005). For years, the May issue of the *American Economic Review* (AER) – the *Papers and Proceedings* issue – has produced an entire section devoted to teaching-focused research. Other general-interest journals, such as *Economic Inquiry* (EI) and the *Southern Economic Journal* (SEJ) have, at one time or another, dedicated space to economics education research.<sup>1</sup>

The appearance of new journals in the economics education research environment seemed, at least by the mid-1990s, to be an inevitable event. This sense was intensified by the dramatic rise in influence of the JEE between the time of the Liebowitz and Palmer (1984) journal ranking study and the update to that study by Laband and Piette (1994). The latter of these two showed that, between 1980 and 1990, the JEE had risen from the 50th most influential economics journal to the 27th most influential (Laband and Piette, 1994: 663). In its 1994 Annual Report, the JEE noted:<sup>2</sup>

The *JEE* is ... proving itself to be a major source of information within the knowledge base of economics itself. For example, David Laband and Michael Piette, in a *Journal of Economic Literature* (June 1994) article, show the JEE ranked 27th out of 130 economics journals in terms of impact adjusted citations in 1990 to 1985–1989 articles. The 1980 impact adjusted citations to 1975–1979 articles showed the *JEE* ranked 50th out of the 108 journals considered. That is, in ten years the *JEE* moved from little better than the median to the top 21 per cent. Citation counts, which can be considered an academic market version of dollar voting by consumers, clearly indicate that the *JEE* is not only the source of information on the teaching of economics, it is also now central to the discipline of economics.

After the turn of the 21st Century, pressure on the JEE’s position as essentially the sole outlet specialising in economics education research became more visible. In a section of its 2005 Annual Report titled ‘Editorial Matters’, the JEE noted:<sup>3</sup>

One of the big issues facing the *JEE* in 2005 was the growing backlog of articles accepted and scheduled for publication well into 2007 at the *JEE*’s current size of 96 to 108 pages. The solution provided by Helderf was to, at least temporarily, increase its size to 128 pages in 2006, which should be sufficient to reduce the backlog ...

In addition to the JEE’s decision to increase its production space by about 25 per cent, two new economics education journals launched shortly after the turn of the 21st century. These are the *Journal of Economics and Finance Education* (JEFE) and the *International Review of Economics Education* (IREE). The first of these was launched in 2002 by the Academy of Economics and Finance as a companion to that organisation’s general-interest journal, the *Journal of Economics and Finance* (JEF).<sup>4</sup> The second of these, the IREE, was launched in 2003 by the Economics Subject Centre of the Learning and Teaching Support Network (LTSN) based at the University of Bristol (UK). Both of these outlets are available in an electronic (online) format, and in 2006 these journals produced 67 and 110 pages of economics education research, respectively. Combined with the output of the JEE, the three

outlets produced 305 pages of teaching-focused research during 2006, roughly three times the number of pages produced by the JEE alone before 2002.

Since the launch of these two new journals, there has been no scientific appraisal as to whether the two new journals are getting it right. That is, until now there has been no attempt to examine the impact (or lack thereof) of these two new journals in terms of the impact of the articles they each published in their early days. This study does that by comparing the impact of the 2003 through mid-2004 cohort of articles published in the IREE, the JEE and the JEFE. As such, this study forms the foundation for what might emerge as a new line of scientific inquiry based on the organisation of the economics education academic publishing market.

### Appraising new journals in Econ Ed: a cohort analysis

Our scientific appraisal of the impact of new journals in the field of economics education – the IREE and the JEFE – begins by gathering all articles published by these two outlets, along with those in the JEE, over 2003 and the first half of 2004.<sup>5</sup> Because the weight of opinion in the literature has tended to favour citations-based analysis as a ‘market test’ of research productivity/impact (see Graves, Marchand and Thompson, 1982; Davis and Papanek, 1984; Liebowitz and Palmer, 1984; Laband and Piette, 1994; Laband and Tollison, 2000; Kalaitzidakis, Mamuneas and Stengos, 2003), this cohort was chosen in order to provide ample opportunity for ‘market voting’ (i.e. citing) to occur.<sup>6</sup>

Using the Google Scholar search engine, we next collected citations to the articles cohort from each of the three economics education journals. The Google Scholar (GS) search engine was originally chosen because, unlike other databases such as the *Social Sciences Citations Index* (SSCI), it captures citations to published research that are contained in both published and unpublished scholarship. Given the relative newness of both the IREE and the JEFE, inclusion of citations to articles in these journals that appear in *unpublished work* at various stages (e.g. working papers, conference papers, journal submissions, etc.) seemed to be a beneficial supplement to the citations counts taken from published works. Citations in unpublished work are not captured by the SSCI. Also, citations to journal articles located in scholarly books are more likely to be captured by GS than by SSCI.

A search of the SSCI cites to the two most-frequently GS-cited articles in our 2003 through mid-2004 cohort – a 2003 article in the IREE by Elliott with 22 GS cites, and a 2003 article in the JEE by Greenlaw and DeLoach, also with 22 total GS cites – provides an example of the beneficial aspects of GS. Our search reveals only four SSCI cites to the former (i.e. Elliott, 2003) and only two SSCI cites to the latter (i.e.

Greenlaw and DeLoach, 2003). Some of this difference is due to the inclusion of unpublished articles and scholarly books in GS that are not also found in the SSCI.

In addition to this advantage favouring GS, we discovered that GS may offer other advantages over the SSCI. For example, GS produced 10 citations to Elliott (2003) that are located in published journal articles, while SSCI found only four. Among these four, three are included in the 10 found by GS. Thus, GS found seven in-journal citations to Elliott (2003) that were missed by SSCI, while the SSCI was able to find only one in-journal citation to Elliott (2003) that was missed by GS. In the case of Greenlaw and DeLoach (2003), GS produced 16 in-journal citations, while SSCI found only two. In each case, these in-journal citations were all unique to the particular database. As the GS engine is refined and improved, these advantages will likely lead to greater use of GS citations in scientific appraisals of the scholarly impact of articles and journals.

Given the three journals to be evaluated for our 2003 through mid-2004 cohort of articles published,  $a_i$  is the total number of articles published in journal  $i$  and  $C_{ij}$  is the number of citations to journal  $i$  from source  $j$ . The average number of citations for the journal  $i$  articles portion of the cohort is then defined as:

$$I_i = \sum_{j=1}^n C_{ij} / a_i. \tag{1}$$

Values of (1) above for the IREE, JEE and JEFE are presented below in Table 1.

**Table 1:** Descriptive statistics

	Citations means			‘Uncitedness ratios’		
	Same-Journal Cites Incl.	Same-Journal Cites not Incl.	In-Journal Cites Only	Same-Journal Cites Incl.	Same-Journal Cites not Incl.	In-Journal Cites Only
<b>IREE</b>	3.20	2.80	1.93	0.27	0.33	0.40
[n=15]	(5.49)	(5.23)	(4.06)	(0.46)	(0.49)	(0.51)
<b>JEE</b>	3.84	3.43	1.41	0.22	0.22	0.51
[n=49]	(4.71)	(4.34)	(2.25)	(0.42)	(0.42)	(0.51)
<b>JEFE</b>	0.17	0.17	0.11	0.89	0.89	0.94
[n=18]	(0.51)	(0.51)	(0.47)	(0.32)	(0.32)	(0.24)

Notes: The numbers in parentheses below the citations means and ‘uncitedness ratios’ (for each journal) are standard deviations.

Remarkably, the portion of the articles in the 2003 through mid-2004 cohort published in the JEE have been cited at a marginally greater rate (3.84 cites/article) than the portion published in the IREE (3.20 cites/article). On the other hand, the cohort portions from the IREE and the JEE have had a greater impact than that from the second new journal, the JEFE (0.17 cites/article).

It is possible that the IREE's near-parity with the JEE on a citations per-article basis is partially the result of same-journal citations, or citations to IREE articles in the 2003-mid 2004 cohort by studies that are also published in the IREE. To account for this possibility across all three journals examined in the study, we employ a modified version of equation (1) above, shown below as equation (2):<sup>7</sup>

$$I_i = \sum_{j=1, j \neq i}^n C_{ij} / a_i \quad (2)$$

The results using equation (2) above are shown in the second column of results in Table 1. Again, the JEE is the statistical leader among the three, with 3.43 non same-journal cites/article, followed by the IREE, with 2.80 non same-journal cites/article. However, the top two comparisons are remarkably similar, with the IREE producing 83.3 per cent of the JEE's total cites/article and 81.6 per cent of the JEE's non same-journal cites/article. Thus, it would appear that same-journal citations do not account for the IREE's proximity to the JEE based on the productivity of the 2003 through mid-2004 articles cohort.

One shortcoming of the methodology used in this study is that cites to articles in our cohort that appear in published and unpublished work are treated equally. To address the importance of citations found in published work we partitioned citations in all academic journals for each of the articles in our cohort and compared the numbers across the three economics education journals included in this study. As the third column of results in Table 1 indicates, surprisingly the IREE portion of the articles cohort is cited more heavily in academic journals than is the JEE portion of the cohort. The figures are 1.93 journal cites/article for the IREE, and 1.41 journal cites/article for the JEE. Once again the JEFE comes in third, with 0.11 journal cites/article.

Another evaluation of the impact of the articles in our cohort is to compare the incidence of 'dry holes' – articles that are un-cited (Laband and Tollison (2003) use the term 'uncitedness') – among the three portions of the articles cohort. We find that, while the rate of 'uncitedness' for both the IREE and the JEE is about the same as the (expected) rate for the population of economics articles published during the same time period, the rate of uncitedness in the IREE portion of the cohort is slightly

higher than that of the JEE portion.<sup>8</sup> As Table 1 below shows, only 22 per cent of the JEE articles in our cohort remain dry holes, compared to 27 per cent for the IREE and 89 per cent for the JEFE. As such, the IREE appears to have again achieved near-parity with the JEE using this metric, which is quite remarkable. At the same time, JEFE not only lags behind the JEE, it is also well behind the IREE. As the fourth column of results in Table 1 shows, only uncitedness of the IREE's articles changes when same-journal citations are extracted from the data. For the IREE, uncitedness rises from 27 per cent to 33 per cent when same-journal citations are extracted.

Although the near-parity between the IREE and JEE highlighted above is remarkable, there are multiple grounds for strongly contesting the notion that the IREE has actually 'caught up' with the JEE. To provide just one example, we further explored some of the information obtained from our citations-based analysis of the articles cohort. First, we ranked each of the 82 articles in the cohort based on the total number of citations. The Top 20 is presented as an Appendix. As one might expect, the JEE dominates the list, garnering 20 of the 24 spots (83.3 per cent) that make up the Top 20 (plus ties) in the ranking. This includes four of the top five positions. This ranking complements the result in Laband and Piette (1994) by showing that on other important grounds the JEE is clearly the top journal outlet in the field.

## Further discussion and concluding comments

In order to discover why the IREE has been able to make inroads to a much greater degree than the JEFE, we examined the list of authors across the articles in the cohort. These three lists are compared to the two rankings of economists in Lo, Wong and Mixon (2008). The Lo *et al.* (2008) study provides two separate rankings of economists, each based solely on a measure of the impact of their economics education (teaching-focused) research, the mission of the three journals examined in the instant study. As Table 2 points out, four of the Top 50 economists in Lo *et al.* (2008) appeared among the 15 articles published by the IREE in our cohort. This compares to seven of the Top 50 economists among the 49 articles published by the JEE, and none among the 18 articles published by the JEFE. On a per article basis, these figures are 0.267, 0.140 and zero, respectively. Thus, the IREE has been able to attract research from luminaries in the field of economics education to a degree similar to that of the JEE. Though it is not immediately clear what is driving these similar publication rates from luminaries, the fact that the Lo *et al.* (2008) Top 50 rankings include all of the editorial teams for both the IREE and JEE, as the 'Notes' to Table 4 point out, does not appear to be a trivial consideration. The average ranking among the highest individual rankings for the JEE editorial team is 10.3. With an editorial team average ranking of 19.5, the IREE compares quite favourably in this regard.

**Table 2:** Top 50 economic education scholars appearing in the trio of journals

IREE	JEE	JEFE
Becker, William E. [2, 2]	Becker, William E. [2, 2] Bosshardt, William [16, -] Brown, Eleanor [-, 33]	
Colander, David [7, -]	Colander, David [7, -]	
Hazlett, Denise [13, -]	Hazlett, Denise [13, -]	
Holahan, William L. [23, -]	Siegfried, John J. [1, 1] Watts, Michael [3, 4]	

Source: Lo, *et al.* (2008).

Notes: Rankings from Lo *et al.* (2008) are provided in brackets above. The Editors of both the JEE and the IREE are all highly ranked in the study by Lo, *et al.* (2008). In the case of the JEE they are, along with their highest ranking, General Editor William Becker [2], Peter Kennedy [9], Kim Sosin [16], Hirschel Kasper [27], William Walstad [5], and Michael Watts [3]. For the IREE they are Peter Davies [16] and Carol Johnston [23].

Another phenomenon observed in the research cohort is that there is more cross-over publishing between the IREE and the JEE than between the JEFE and the JEE. It could be the case that the cross-over publishing by economists in the Top 50 (e.g. David Colander, Denise Hazlett, etc.) has provided network effects that have benefited the IREE by enhancing its reputation in the field (Katz and Shapiro, 1985; Liebowitz and Margolis, 1994). Perhaps an example of this phenomenon is Steven Greenlaw, a recognisable name in the field of economics education. Greenlaw co-authored the most-cited article in our 82-articles cohort (see the Appendix table), a 2003 article in the *Journal of Economic Education*. He also co-authored a 2003 article in the *International Review of Economics Education* that has garnered a relatively large number of cites. It is possible that the cross-over publication phenomenon is both a result of network effects stemming from the well-recognised editorial teams of both the JEE and the IREE, and a factor in network effects related to subsequent submissions from other cross-over researchers between these same two journals.

One factor in the IREE's favour is the fact that IREE is available *both* online (free of charge) and in print. While the JEE is available in print as well, its free-of-charge online menu is available on a delayed publication basis only. On the other hand, JEFE is not available in print, though it does offer free-of-charge online access to its articles.<sup>9</sup> Also, though neither journal is currently indexed in the EconLit database

or the SSCI, the IREE is included in *Research Papers in Economics (REPEC)*, while the JEFE is not. These differences could explain some of the success that IREE has enjoyed relative to JEFE.

Another explanation for the difference in the scientific impact of articles in the IREE and the JEFE worth considering is any difference in editorial focus between the two journals. An examination of the editorial policies statement of each journal reveals three potentially significant differences between these two outlets. First, the JEFE focuses on three areas of scholarship: research, instruction and content. The IREE, on the other hand, concentrates on two: research and practice (teaching). It is possible that the narrower focus of the IREE results in a collection of articles that have greater impact in the scientific community. Second, while the IREE 'seeks to promote critical dialogue on educational theory,' the JEFE 'encourages empirical ... contributions,' entertaining theoretical articles 'in some instances' only. Again, this difference in focus might relate to differences in the productivity patterns of the research coming out of these two new journals. Finally, the inclusion of research in 'finance education' by the JEFE, and not the IREE, introduces a separate dimension to the focus of the JEFE that has potential impacts on a variety of fronts, including citations data to published articles. Any sociological differences between the economics and finance professions that relate to citations practices will likely affect any comparison of these two journals.

Finally, as stated earlier this study forms the foundation for what might be a new line of scientific inquiry based on the organisation of the economics education market. That line of inquiry might address topics including, but not limited to, the increase in page numbers per issue (by the JEE) as an 'entry deterrence' strategy, and a determination as to whether new journals are simply taking a share of the existing market or expanding and/or changing the market. These extensions, and others, will rely on larger sets of citations data and information on submissions patterns, acceptance rates and other important dimensions from each of the journals (new and old) in the field.

#### Appendix: Top 20 articles by total citations

Rank	Authors	Article	Journal Info #	Cites
1	Elliott, C.	'Using a Personal Response System in Economics Teaching'	IREE, 1.1, 2003	22
	Greenlaw, S.A. and DeLoach, S.B.	'Teaching Critical Thinking with Electronic Discussion'	JEE, 34.1, 2003	22
3	Fuller, D. and Geide-Stevenson, D.	'Consensus Among Economists: Revisited'	JEE, 34.4, 2003	21

Rank	Authors	Article	Journal Info #	Cites
4	Budd, J.W.	'Mind Maps as Classroom Exercises'	JEE, 35.1, 2004	11
5	Ballard, C.L. and Johnson, M.F.	'Basic Math Skills and Performance in an Introductory Economics Class'	JEE, 35.1, 2004	10
6	Colander, D.	'Integrating Sex and Drugs into the Principles Course: Market Failures vs. Failures of Market Outcomes'	JEE, 34.1, 2003	9
7	Bodenhorn, H.	'Economic Scholarship at Elite Liberal Arts Colleges: A Citation Analysis with Rankings'	JEE, 34.4, 2003	8
	Schmidt, S.	'Active and Cooperative Learning Using Web-Based Simulations'	JEE, 34.2, 2003	8
9	Grove, W.A. and Wasserman, T.	'The Life-Cycle Pattern of Collegiate GPA: Longitudinal Cohort Analysis and Grade Inflation'	JEE, 35.2, 2004	7
	Ortmann, A.	'Bertrand Price Undercutting: A Brief Classroom Demonstration'	JEE, 34.1, 2003	7
11	Reimann, N.	'First-Year Teaching-Learning Environments in Economics'	IREE, 3.1, 2004	6
	Beckman, S.R.	'Cournot and Bertrand Games'	JEE, 34.1, 2003	6
	Grimes, P.W., Millea, M.J. and Woodruff, T.W.	'Grades – Who's to Blame? Student Evaluation of Teaching and Locus of Control'	JEE, 35.2, 2004	6
	Naevdal, E.	'Solving Continuous Time Optimal Control Problems with a Spreadsheet'	JEE, 34.2, 2003	6
15	Leet, D. and S. Houser	'Economics Goes to Hollywood: Using Classic Films and Documentaries to Create an Undergraduate Economics Course'	JEE, 34.4, 2003	5
	Ruffle, B. J.	'Competitive Equilibrium and Classroom Pit Markets'	JEE, 34.2, 2003	5
	Schenk, R.	'CyberEconomics'	JEE, 34.2, 2003	5
18	Colander, D.	'The Art of Teaching Economics'	IREE, 3.1, 2004	4
	Laband, D. and Hudson, J.	'The Pricing of Economics Books'	JEE, 34.4, 2003	4
	Lengwiler, Y.	'A Monetary Policy Simulation Game for the Classroom'	JEE, 35.2, 2004	4

Rank	Authors	Article	Journal Info #	Cites
	Shanahan, M.P. and Meyer, J.H.F.	'Measuring and Responding to Variation in Aspects of Students' Economic Conceptions and Learning Engagement in Economics'	IREE, 1.1, 2003	4
	Shor, M.	'GameTheory.net'	JEE 34.4, 2003	4
	Harter, C.L., Becker, W.E., and Watts, M.	'Changing Incentives and Time Allocations for Academic Economists: Results from 1995 and 2000 National Surveys'	JEE, 35.1, 2003	4
	Santos, J. and Lavin, A.M.	'Do as I Do, Not as I Say: Assessing Outcomes when Students Think Like Economists'	JEE, 35.2, 2004	4

## Notes

- \* The authors thank three anonymous referees of this journal for helpful comments. Any remaining errors are our own.
- <sup>1</sup> Each of these general-interest journals (i.e. EI and the SEJ) has used variously named section headings to partition its economic education pieces. These are 'Teaching Tools' and 'Focus on Teaching', respectively.
- <sup>2</sup> For the 1994 JEE Annual Report, see <http://www.indiana.edu/~econed/anrpts/anrpt94/anrpt94.htm>.
- <sup>3</sup> For the 2005 JEE Annual Report, see <http://www.indiana.edu/~econed/anrpts/anrpt05/rep05.htm#matters>.
- <sup>4</sup> The Academy of Economics and Finance was formerly known as the MidSouth Academy of Economics and Finance.
- <sup>5</sup> Articles in the IREE and the JEFE bearing 2003 dates were chosen because IREE was not launched until 2003. Also, we trimmed the collection process at mid-2004 in order to provide sufficient time for the latest articles in the cohort (those published around mid-2004) to diffuse into the academic community.
- <sup>6</sup> The quote above from the JEE's 1994 Annual Report supports the use of citations-based analysis as well. Because our study gauges the success of the new entrants (i.e. IREE and JEFE) against a standard set by the JEE, a citations-based appraisal would seem to be appropriate on this basis alone.
- <sup>7</sup> Equations (1) and (2) are also found in Lo *et al.* (2008).
- <sup>8</sup> Laband and Tollison (2003) point out that about 26 per cent of all published articles in economics are 'dry holes.' For more on this phenomenon, see Laband and Tollison (2003 and 2004) and Mayer (2004).
- <sup>9</sup> One mitigating factor with the JEFE is its (historical) practice of uploading articles to the 'current issue' as they are accepted for publication. Thus, articles in the JEFE are available on a more timely basis than is the case with the IREE. The JEFE's practice has been similar to that of *Economics Bulletin*, an online general economics journal.

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# A Classroom Inflation Uncertainty Experiment\*



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## Abstract

This classroom experiment uses a double oral auction credit market to demonstrate how inflation uncertainty causes a wealth transfer between borrowers and lenders. The experiment also shows the social cost of inflation uncertainty when borrowers and lenders cannot agree on a nominal interest rate that compensates each for their risk. In this case, the credit market fails to allocate funds to the highest-valued investment projects. The experiment provides hands-on experience with the effects of anticipated and unanticipated inflation, giving students a common background for a discussion of the economic costs of inflation. It can be used in principles, intermediate macroeconomics, money and banking, or financial economics courses, with 8–60 students. It takes approximately 50 minutes to run and requires no computers.

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## Introduction

This paper describes how to run and debrief a classroom experiment that demonstrates some of the economic costs of inflation uncertainty. In the experiment, students take the roles of potential borrowers and lenders in a double oral auction credit market. Borrowers have the opportunity to undertake investment projects with relatively high real returns. However, they have no funds of their own with which to finance their projects. Lenders do have funds. Lenders also have the opportunity to undertake investment projects, but their projects have relatively low real returns. Gains from trade reach their maximum when all of the lenders agree to lend their funds to the borrowers, so that the highest-valued projects get financed.