

## Factoring “Impact” in the History of Economics (symposium title)

### Observing through 2-Year Impact Windows\*

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#### I. INTRODUCTION

In 2018, Clarivate Analytics, publisher of Journal Citation Reports (JCR), suppressed publication of the 2017 Journal Impact Factor (JIF) for three of four journals in the academic field of history of economics. Clarivate judged one of the journals, *History of Economic Ideas (HEI)*, to be the “donor” of citations that distorted the impact factors of the *European Journal of the History of Economic Thought (EJHET)* and the *Journal of the History of Economic Thought (JHET)*, together with its own *History of Political Economy (HOPE)*, the other journal, was not included in that judgment.

JIFs are commonly used in academe as indicators of the influence of scholarly journals. Committees of appointment and promotion use them as proxies of the importance of the articles published therein. Individual scholars use them in choosing whose work to read, what to cite, and where to submit. Clarivate’s suppression of them thus elicited controversy and protest among historians of economics.

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\* Draft prepared for the ASSA 2020 Conference, San Diego, CA.

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That decision also raised questions of scholarly concern. What is the JIF? What is it intended to measure, and does it in fact do that work? What substitute if any *could* do that work? This article introduces a symposium designed to address these questions. The present authors, together with the seven others whose ideas and analysis are canvassed in the six short articles here assembled, have a range of perspectives and answers. Our purpose here is to summarize the controversy that gave rise to this symposium, define the statistic at issue, and discuss some of the problems with its calculation and use in historical context. We show how these problems pertain differently to the scholarly field of the history of economics than to economics in general, and, on the whole, frame the five articles that follow in this issue.

## II. CLARIVATE'S IMPACT FACTOR SUPPRESSION: FOUR HISTORY AND FIVE GENERAL ECONOMICS JOURNALS

Clarivate's JIF is the current specific form of a simple statistic in longstanding use. Introduced by Eugene Garfield [1925-2017] as a tool for journal evaluation (Garfield 1972), it counts the number of citations in all of the literature canvassed during a given "citation year" to items published in a given journal within some previous window of time (2 years predominantly) and divides it by the number of "citable items" (i.e., articles and review articles), published in the same journal within the same time window.

Table 1 presents Clarivate's (2-year) JIFs for the four history of economics journals available in the JCR: *JHET*, *HOPE*, *EJHET*, and *HEI* (2011-2018). For purposes of comparison – so far as comparison is appropriate, a question to be taken up shortly – it does

the same for the so-called top five economics journals: *American Economic Review* (*AER*), *Quarterly Journal of Economics* (*QJE*) *Journal of Political Economy* (*JPE*), *Review of Economics and Statistics* (*REStat*), and *Review of Economic Studies* (*REStud*).

Table 1. 2011-2018 JIFs: four history and five general economics journals

	2011	2012	2013	2014	2015	2016	2017	2018
<i>JHET</i>	0.420	0.047	0.326	0.133	0.609	0.490	1.347	0.761
<i>HOPE</i>	0.247	0.227	0.120	0.308	0.467	0.595	1.415	1.152
<i>EJHET</i>	0.197	0.227	0.172	0.237	0.312	0.325	1.147	0.440
<i>HEI</i>	0.185	0.118	0.067	0.088	0.147	0.186	0.289	0.289
<i>AER</i>	2.693	2.792	3.305	3.673	3.833	4.026	4.528	4.097
<i>QJE</i>	5.920	5.278	5.966	6.654	5.538	6.662	7.863	11.775
<i>JPE</i>	2.902	3.483	3.617	3.593	3.750	3.923	5.247	6.342
<i>REStat</i>	2.664	2.346	2.718	2.749	2.979	2.926	3.510	3.636
<i>REStud</i>	2.810	2.860	3.235	4.038	4.077	4.030	4.455	4.767

Sources: Journal Citation Reports (Clarivate Analytics) and authors' estimates from Web of Science data

The table shows much variation of the JIF over time for any given journal as well as variation among journals at any given time – especially between history of economics and the top five economics journals, whose JIFs are higher by roughly an order of magnitude. Before delving into the causes of these variations we draw attention to the shaded cells, which hold the explanation for Clarivate's JIF suppression.

The JIFs for all history of economics journals jumped considerably in 2017. Contributing to the jump, although differently for each journal, was a single review article published in *HEI*: "From Antiquity to Modern Macro: An Overview of Contemporary Scholarship in the History of Economic Thought Journals, 2015-2016" (Lange,

Schumacher, and Svorenčík 2017)<sup>1</sup>. The subtitle indicates well the content. It also indicates the reason for suspicion of what Clarivate (2017, pp. 2-3) calls “citation stacking,” which produces “distortion” of the JIF statistic. Why else, one may justifiably ask, was the overview limited to 2015-2016, precisely the window for Clarivate’s 2017 JIF? An article published in the previous volume of *HEI* (Bianchi 2016) was likewise a survey of the history of economics literature over the preceding two years, 2014-2015, but it had not the same scope or effect. Its bibliographic entries numbered 69; the 2017 article’s entries, at 212, were more than three times as numerous. They were responsible for 42 of the 66 citations counted in 2017 to *JHET* articles published in the 2015-2016 window (64%), 48 of 92 citations to *HOPE* (52%), 44 of 86 citations to *EJHET* (51%), and 1 of 13 citations to *HEI* (8%)<sup>2</sup>.

These data were clearly in Clarivate’s view when suppressing the 2017 JIFs for the *JHET*, *EJHET* and *HEI*: the first two as recipients of JIF-distorting citations, the third as donor. But the reason for suppressing only those three history of economics journals’ JIFs, not *HOPE*’s, is murky. Clarivate did not explain in detail but released a policy statement on suppression (Clarivate 2017) and an annual list of suppressed journals including data that were implied to be relevant to the decision. One possibility is that the proportion of

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<sup>1</sup> Pinzón-Fuchs, Chassonnery-Zaïgouche and Herfeld (this issue) point out that this review article is coded as just an article in Clarivate’s Web of Science. That, despite the company’s policy according to which “any article containing more than 100 references is coded as a review. Articles in ‘review’ sections of research or clinical journals are also coded as reviews, as are articles whose titles contain the word ‘review’ or ‘overview’ (<http://clarivate.com/webofsciencegroup/essays/impact.factor/>).

<sup>2</sup> Phil Davis’ blog post of 6/27/2018 suggests 56% for the *EJHET* instead of our 51%. ([https://scholarlykitchen.sspnet.org/2018/06/27/impact-factor-denied-20-journals-self-citation-stacking/?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+ScholarlyKitchen+%28The+Scholarly+Kitchen%29](https://scholarlykitchen.sspnet.org/2018/06/27/impact-factor-denied-20-journals-self-citation-stacking/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+ScholarlyKitchen+%28The+Scholarly+Kitchen%29) )

citations from *HEI* to *HOPE* in *all years* up to 2017 that referenced the years 2015-2016 (a datum that Clarivate calls the “percentage exchange to Journal Impact Factor years”) was lower than the corresponding proportions for *HEI* vis-à-vis the *JHET* and *EJHET*. The possibility is consistent with the policy. But absent an explanation from Clarivate one can only guess at the specific and proximate reason. The upshot is that, for an unspecified reason, Clarivate judged the increment to the 2017 citation count for *HOPE* to be less decidedly among that year’s “extreme outliers in citation behavior” (Clarivate Analytics 2017, p. 3) than were the increments to the citation counts for *JHET* and *EJHET*.

### III. JIF VARIABILITY, ACADEMIC CONVERSATION AND CITATION PRACTICES

Consistent with Clarivate’s policy, the JIF suppression lasted one year (Clarivate 2017, p. 3) and then the company re-evaluated the journals with the 2018 data. Finding apparently no continued cause for concern, it released *JHET*, *EJHET*, and *HEI* from purgatory and published their 2018 JIFs (maintaining, however, suppression of the 2017 JIFs). As seen in Table 1, the 2018 JIFs for history of economics journals, like those for general economics journals, are consistent with a general upward trend over the eight years in evidence. But the variations about that trend, and the variations even in conformance with it between history of economics and the top five economics journals, are telling of something more interesting for our purposes than the incomplete story of Clarivate’s suppression.

Close inspection of the data in Table 1 shows greater variation about the upward trend for the history of economics than for the general economics journals. It may be argued that variation for the historical four is exaggerated by the 2017 citations. The

argument is easily accommodated. It is straightforward to calculate the 2017 JIF for each journal excluding from the numerator the citations by the *HEI* review article. Doing so deflates *JHET*'s 2017 JIF from 1.347 to 0.490; *HOPE*'s from 1.415 to 0.677; *EJHET*'s from 1.147 to 0.560; and *HEI*'s from 0.289 to 0.267.

The data is represented in Figure 1, including those four substitutions, and it accounts for the lower average level of JIF for the historical four than the general five by normalizing each journal's annual JIF by its 2011 value (2011=100). Figures 1a and 1b show the time series of normalized JIFs for both sets of journals.

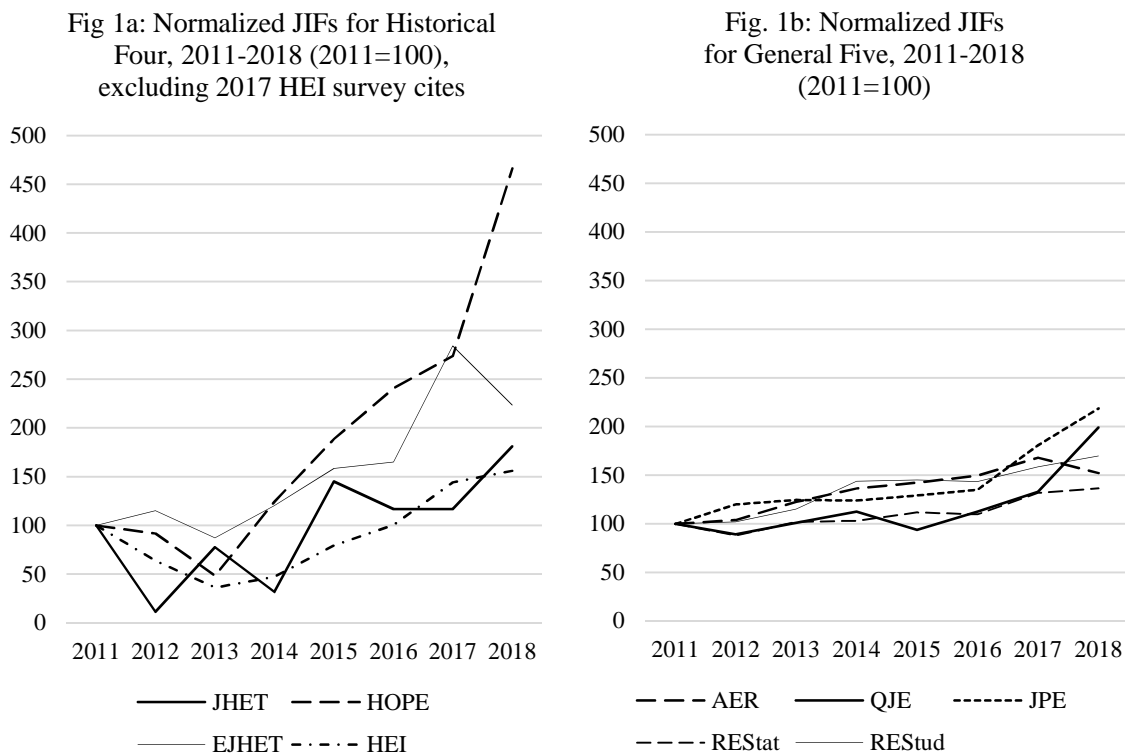


FIGURE 1. Normalized JIFs for four history and top five economics journals

Over the eight-year span, the five general economics journals have witnessed growth of JIFs of between approximately 150% to upwards of 200%; history of economics journals, between 150% to upwards of 450%. But that is not what the figures show most strikingly. What stands out is the much greater year-to-year variation of JIFs for the historical than for the top five economics journals.

The phenomenon is owing partly to the different sizes of the different scholarly communities engaged with the two sets of journals. It is owing decisively to the form in which conversation takes place, including different citation practices in our two subsets. What is more, for the latter reason it manifests the insignificance of the 2-year JIF windows, at least where history of economics scholarship is concerned, for the objective of measuring “impact.”

As for the conversation deployed in our two journal sets, a first thing to notice is the importance given to books in the four history of economics journals – a topic discussed by José Luís Cardoso (this issue). Book reviews represent, indeed, 38.4% of the 1,735 documents published in these journals for 2011-2018<sup>3</sup>. Another point here, is that there are just 0.77 authors by article (including review articles) involved in the four historical, compared to 1.4 in the top five economics journals.

Table 2 summarizes information about the cited references in all articles and review articles, for our two sets of journals (2011-2018). The Table shows no stable relation between the cited references to t-1 and t-2 (i.e., 2-year windows) and all cited references in

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<sup>3</sup> The rest are either articles (962), review articles (11), editorial material (58), biographical items (28), corrections (7) and letters (2). According Clarivate’s data (December 22, 2019), the top five economics journals (2011-2018) published 3,450 articles, 10 reviews, 108 editorial materials, 22 corrections, and 46 biographical items (3,594 total documents).

the four historical journals. This form of academic conversation (i.e., by citing written work) is, indeed, strikingly different between our two journal sets. Cited references from the top 5 fit much better (although by an average of just 12.7%) into 2-year windows. It takes 15-year windows for cited references from the historical four to cumulate over a quarter of the total cites, but less than 5 (the JCR also provides 5-year JIFs) in the case of the five general economics journals.

Table 2. Cited references (2011-2018): historical four (H4) vs. top five (T5) journals

	2011	2012	2013	2014	2015	2016	2017	2018
<u>H4 average cited references</u>	46.0	50.4	58.1	50.4	57.2	58.8	64.8	55.7
In 2-year windows (%)	4.1	2.9	2.6	2.6	3.5	3.7	6.4	3.9
In 5-year windows (%)	10.4	8.7	9.6	9.8	9.9	9.9	13.1	10.4
In 15-year windows (%)	27.2	25.8	26.8	27.6	28.2	28.1	30.4	27.0
<u>T5 average cited references</u>	30.1	33.1	34.9	36.8	38.3	37.0	37.8	52.3
In 2-year windows (%)	13.7	13.8	12.8	13.7	12.5	12.9	11.5	10.4
In 5-year windows (%)	32.8	33.7	31.7	33.4	31.3	32.5	29.2	28.4
In 15-year windows (%)	67.9	67.2	66.7	68.1	66.2	68.4	64.5	65.7

Source: own calculations using Web of Science data (November 5, 2019)

#### IV. THE USE AND ABUSING OF SCIENCE CITATION INDEXING AND 2-YEAR IMPACT FACTORS

Although historical surveys track the history of citation indexes back to legal writings from the 18<sup>th</sup> century or indexes of religious literature from the 12<sup>th</sup> (Smith 2012), the immediate



origin of the Science Citation Index (SCI) lays in the mid-1950s when *Shepard's Citations*, a system of printed volumes for legal research, was presented to scientists as a method to help them “thread [their] way through the existing labyrinthine mass of printed materials” (Adair 1955, p. 31).

When Eugene Garfield introduced citation indexing to science, he claimed that it would prove particularly useful for historical research “when one is trying to evaluate the significance of a particular work and its impact on the literature and thinking of the period” (Garfield 1955, p. 109). The concept of “impact” was thus present at that earliest stage in the history of the SCI<sup>4</sup>.

Using citation data for historical research was, indeed, one of first applications of the SCI devised by Garfield (1963, p. 289). He figured out computerized “topological network diagrams” showing chronological relationships between documents. That “algorithmic historiography” (Garfield *et al.* 2003) aimed at facilitating “the understanding of paradigms by enabling the scholar to identify the significant works on a given topic” (Garfield *et al.* 2003, p. 400). Drawing from T. Kuhn’s historiography, it represented paradigms using the “measurable impact” (i.e., citation counts, a topic explored by J. Forder, this issue) of their main elements:

“We want to show where a particular topic began and identify both the bibliographic antecedents and descendants of its principal, often primordial papers and authors.

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<sup>4</sup> Garfield created citation indexes for chemistry and genetics during the late-1950s, and then eventually a file of 1.4 million 1961 citations also including physics, medicine, and other life sciences. That file developed into the SCI in 1963. Funded initially by the National Science Foundation, National Institutes of Health, and Garfield’s Institute for Scientific Information (ISI), the SCI is still available, now through Clarivate’s Web of Science.

Once these basic structural elements (papers and books) of the field are identified, they are ‘summarized’ graphically as an interconnected historiograph involving, typically, the 5% that are the most-cited.” (Garfield *et al.* 2003, pp. 400-401)

Figure 2 reproduces Garfield et al’s (2003) historiograph for the “paradigmatic shift” from citation indexing to bibliographic coupling to co-citation analysis (*ibid.*, p. 405). Starting with M. Kessler (1963) and Garfield (1963), this historiograph includes a complementary search for “outer references”: documents that do not cite Kessler (1963) or Garfield (1963), but that are frequently cited together with them<sup>5</sup>.

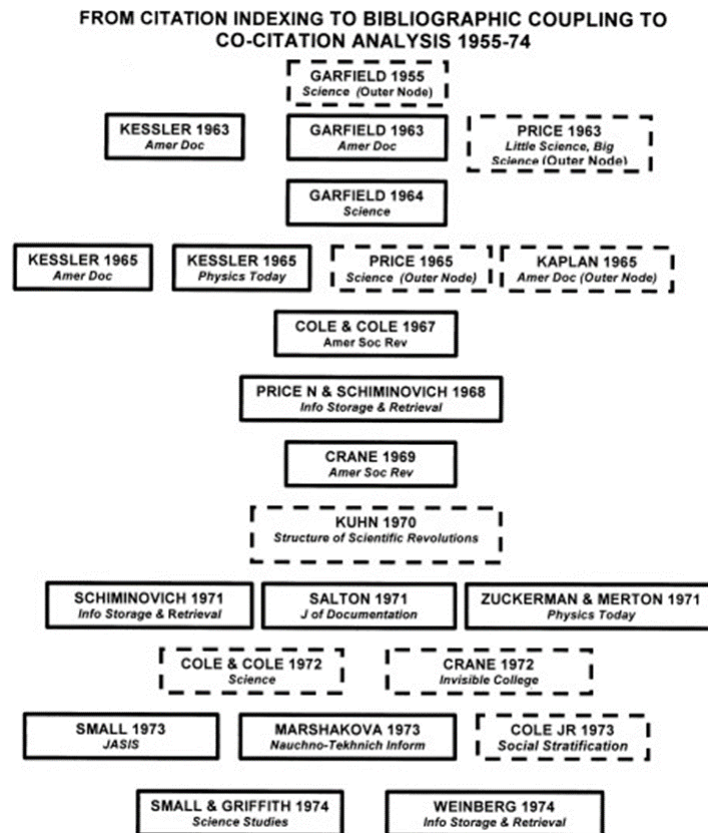


FIGURE 2. Historiograph. Dotted lines indicate outer references (Garfield et al. 2003).

<sup>5</sup> For an analysis of the bibliometric approach to the historiography and sociology of science, including E. Garfield, Derek Price, T. Kuhn, and Robert Merton (all in Figure 2), see Edwards (2020).

Meanwhile, Garfield (1972) also introduced the concept of “relative impact factor” to evaluate which additional journals to include in the SCI and then in the Social Sciences Citation Index (SSCI, 1973). Listed in the JCR as (2-year) JIFs since 1975, this second use of citation counts controlled for size effects among scientific journals:

“We have attempted to do this by calculating a relative impact factor – that is, by dividing the number of times a journal has been cited by the number of articles it has published during some specific period of time [...]. An analysis of the distribution has shown that the typical cited article is most heavily cited during the 2 years after its year of publication.” (Garfield 1972, pp. 536-40)

Unlike historiographs, using the SCI for evaluative purposes blossomed following Garfield’s (1972) first JIF descriptions, which has cumulated series of criticism. Displayed in a lengthy “Special Discussion Issue on Journal Impact Factor” (*Scientometrics*, 2012, Vol. 92, No. 2), controversy around JIFs reveals multiple misuses (and misunderstandings) of the metric, which may be summed up in the following four statements:

- (i) Citation frequencies depend on many variables besides scientific merit, and JIFs do not serve as measures of quality (despite widespread opinion they do). They were created to help managing library journal collections.
- (ii) JIFs are not comparable across disciplines. They are field specific, as local citation practices will show differently in 2-year (or any other time) windows.
- (iii) Citation frequencies are skewed and capture many different sorts of anecdotal citing behavior. JIFs, however, are calculated as averages to “citable items” by journal, and may be also affected by coding mistakes in the JCR system.

(iv) The use of JIFs to evaluate individuals is controversial. Evaluators should read the articles to make their personal judgments about the authors, instead of using JIFs for such evaluative purposes.

## V. THIS MINI-SYMPOSIUM

As pointed out earlier, this and the following articles in this symposium use Clarivate's 2018 JIF suppression for *HEI*, the *JHET* and *EJHET*, as a starting point to examine a series of related issues.

In line with this introductory article describing the JIF suppression and exploring a few elements in the history of that metric, the following by Erich Pinzón-Fuchs, Cléo Chassonnery-Zaïgouche and Catherine Herfeld use the occasion to examine the role of review articles in different scholarly disciplines. One issue specific to review articles, is that they are generally cited more frequently than research articles, affecting the calculation of impact factors (unwanted consequences aside, as evidenced by the Clarivate case). Besides presenting the different functions fulfilled by review articles, the authors list a series of elements to be considered for future reviews by historians of economics.

In "Down with High Citation Counts," James Forder casts doubt on the view that a highly-cited paper – and therefore a journal containing highly-cited papers – can be reliably presumed to be "worthy." Proceeding by counter-example, that article presents the case of a very highly-cited paper: Milton Friedman's "The Role of Monetary Policy" (1968), compared to another paper by the same author, at about the same time, making very much

the same argument, but doing it “altogether better.” In doing so, Forder points at citing as a “tribal ritual”: citing something because it was cited by others.

Also related to citation counts, Melissa Vergara Fernández’ article claims that whereas JIFs might be useful as a selection devices, they are not as tools for measuring any intrinsic feature of academic journals. Using a theory of measurement, her contribution shows how many of the uses given to the JIF as a metric are not warranted. That is especially the case of misuse by those associating JIFs with quality.

The last two articles in this set discuss JIFs in the context of the history of economics community. In “Understanding the Effects of Journal Impact Factors on the Publishing Behavior of Historians of Economics,” Jimena Hurtado and Erich Pinzón-Fuchs show how historians of economics – as well as their journals, departments, and institutes – are measured, compared, and ranked. In order to understand the effects of these systems of evaluation on historians of economics as individuals, and on the configuration of the academic field, they use data collected from an anonymous online survey conducted through several disciplinary mailing lists.

Finally, José Luís Cardoso explains “The Reduced Impact of Impact Factors in the History of Economics Community.” Historians of economics, he claims, are not obsessed with measuring the value of their contributions by means of impact factors, neither are they eager to sacrifice the quality assessment of their writings to any imposed metric rule. One of the reasons for that is the modest performance of the history of economics as registered through current citations indexes. Another is the publication culture of this community, based, to a large extent, on the weight attributed by authors to books and chapters published in edited volumes. The development of new assessment instruments, which take into account books and also the use of online information

management systems, are already encouraging new forms of communication, and that regardless the impact of Clarivate's impact factors.

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