



## Journal impact factors and month of publication



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### HIGHLIGHTS

- We examine citation counts in economics journals.
- Month of publication has a significant impact on citation counts.
- This effect is stronger for general interest economics journals.
- The effect dissipates three years after the year of publication.

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### ABSTRACT

A growing literature examines the reliability of commonly used metrics for journal quality, such as journal impact factors. The present paper shows that month of publication can have a significant impact on the number of times an article is cited in the two years following publication. Combined with existing research, this finding suggests economics departments should rely less on these commonly used measures of journal quality when making tenure and promotion decisions and focus more effort on direct assessments of the faculty member's work. Given the shift towards online dissemination, the findings also suggest publishers should consider moving to a more frequent publication schedule in order to disseminate the research in a more timely fashion.

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### 1. Introduction

Measures of journal quality play a central role in hiring as well as tenure and promotion decisions for faculty (Gibson et al., 2014). Ideally, tenure and promotion decisions would rest on the actual impact of a faculty member's research. However, given the time frames involved, these decisions are heavily influenced by the expected impact of the individual's publications, with these expectations being driven by perceptions of the quality of the journals in which these papers are published, particularly at the college and university review level and in smaller departments where there is little overlap in faculty research interests. As Oswald (2007) explains, journal rankings also play an important role in assessing the quality of research across academic departments in the United Kingdom for the purpose of allocating scientific funding. Other countries (notably Australia and Italy) have followed the UK's example.

The Thompson Reuters Institute for Scientific Information (ISI) journal impact factors have gained a fair degree of prominence as measures of journal quality. Given the importance placed on journal quality in the allocation of university resources and government research dollars, and the use of impact factors to measure that quality, it does not come as a surprise that researchers have taken an interest in whether the ISI 2-year and 5-year impact factors represent accurate measures of journal quality. It is crucial to understand the extent to which these measures can be trusted to provide a good prediction of a paper's influence on the field and the overall quality of a faculty member's recent work.

A couple of recent papers call into question whether reliance on statistics such as impact factors can generate reliable predictions. Examining article level citations for six top economics journals, Oswald (2007) finds considerable variation in the citation counts for articles within a journal. He observes that after 25 years, 16% of the articles in the four lower ranked journals exceed the median number of citations for articles in the top two journals. Stern (2013) finds there is often significant overlap for journals' impact factor confidence intervals even when they are several places apart in the impact factor rankings. His findings suggest it may be difficult to truly rank journals according to their impact factor

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**Table 1**  
Citation counts and month of publication.

2-year citation count	Full sample	General	Field journals
Month of publication	−0.204** (0.053)	−0.307** (0.074)	−0.128*** (0.07)
Number of authors	1.263** (0.235)	1.771** (0.392)	0.881** (0.24)
Number of pages	0.147** (0.028)	0.177** (0.038)	0.135** (0.046)
Paper position	2.018* (0.912)	0.67 (1.458)	3.041* (1.188)
Top 30 department	1.267** (0.481)	1.842* (0.832)	0.829 (0.542)
Pseudo R-squared	0.0467	0.0575	0.0333
5-year citation count	Full sample	General	Field journals
Month of publication	−0.247*** (0.140)	−0.456* (0.185)	−0.06 (0.189)
Number of authors	3.482** (0.692)	4.788** (1.211)	2.478** (0.694)
Number of pages	0.419** (0.093)	0.436** (0.113)	0.45** (0.167)
Paper position	5.576*** (2.947)	2.173 (4.573)	8.529* (3.99)
Top 30 department	3.763** (1.307)	4.9*** (2.51)	2.818* (1.375)
Pseudo R-squared	0.316	0.0374	0.0229

Table shows the estimated impact of month of publication on citation counts. Standard errors are clustered at journal level.

All models include journal indicator variables.

2-year citation count is the total number of citations in 2009–2010.

5-year citation count is the total number of citations in 2009–2010.

\*\*\* Denotes significance at the 10% level.

\* Denotes significance at the 5% level.

\*\* Denotes significance at the 1% level.

given the uncertainty associated with this metric. These papers suggest impact factors provide at best an incomplete measure of journal quality and a very noisy predictor of an individual article's likely influence on the knowledge base.

This paper postulates that month of publication has a significant impact on the standard citation metrics: the immediacy index, 2-year and 5-year impact factors. Journals published quarterly typically use either a January–April–July–October or a March–June–September–December publication schedule. Adjusting for differences in publication patterns will alter the relative rankings of some journals. The findings provide further evidence that common measures of journal quality are, at best, noisy and incomplete. Overreliance on these metrics in determining the allocation of research dollars and in tenure and promotion decisions can lead to a misallocation of resources and bad recommendations on hiring, tenure and promotion.

## 2. Data and methodology

The analysis uses data on citations for articles from 35 economics journals listed in the Social Sciences Citation Index published in 2008. For every article published in these journals in 2008, we gather the number of citations by other articles published in journals in the SSCI in the years 2008–2013. The five year period is selected in order to construct article specific “impact factors” mirroring ISI's two and five year journal impact factors (2YIF and 5YIF). The journals selected represent 16 of the top general interest journals and 19 of the top field journals (see Appendix for the list of the journals). In addition to the number of citations, we also gather the month of the issue in which the article appeared.

The 2YIF and 5YIF are measures aimed at capturing the short and medium term impact of the average article in a particular

journal. The Immediacy Index (IMMED) captures the very near term impact of a journal article by measuring the number of citations garnered by an article in the same year as its publication. We construct citation measures analogous to the 2YIF, 5YIF and the immediacy index. However, in our dataset, the measures are constructed at the article level, rather than the journal level. Each measure serves as a different dependent variable. They are constructed as follows:

- (1) 2-Year Citation Count = # of citations by articles published in 2009–2010,
- (2) 5-Year Citation Count = # of citations by articles published in 2009–2013,
- (3) 2008 Citation Count = # of citations by articles published in 2008.

The key explanatory variable is the month of publication for the issue in which the article appeared. We fit each model via Tobit estimation and include journal indicator variables to control for journal fixed effects. Standard errors are corrected for clustering at the journal level. The use of journal indicator variables ensures that we are not picking up any unobserved correlation between journal quality and journal publication patterns. Each model also includes a set of article characteristics: number of authors (top-coded at five), number of pages, the paper's position in the issue (set as a percent so that the first article takes a value of 0 and the last article takes a value of 1), and an indicator variable capturing whether any of the authors is affiliated with a top thirty economics department as ranked in Kalaitzidakis et al. (2003). Table A.1 presents mean values for article characteristics by quarter of publication. The only clear trend is a decline in average page length. However, only the mean for the average page length in the first quarter is statistically significantly different from the mean for the other quarters. These statistics do highlight the importance of controlling for article characteristics. We also estimate each model separately for articles published in general interest journals versus field journals.

## 3. Results

The results of the main exercise are presented in Table 1. For the citation counts including self-citations, we estimate publishing an article one month later in the calendar year results in a reduction of 0.204 citations over the next two years and 0.247 citations over the next five years. Thus, an article published in January will average 0.4 more citations over the next two years than an article published in March, controlling for journal quality. Month of publication has a larger impact on citations accrued for the top general interest journals relative to the top field journals. For general interest journals, a two month difference in publication results in a difference of 0.9 citations on average over five years. For field journals, month of publication only affects 2-year citation counts. Excluding self-citations results in slightly larger and more statistically significant coefficient estimates.

Next, we investigate the persistence of this month of publication effect by estimating the impact of month of publication on citations by year (see Table 2). An article appearing two months later in the year generates 0.56 fewer same year citations. This is a significant difference given the mean of 0.31 same-year citations and the fact that only 20% of the articles in the sample generated any same-year citations. We see a declining impact over time. For the full sample, the coefficient estimate declines through 2011 citations (more than two years after publication) becoming insignificant in that year. A similar pattern appears for the general interest and field journal subsamples. However, it appears the decline in impact is larger for the field journals. For these journals, the impact dissipates after 2009, and turns positive in 2013 (a result driven by a handful of observations).

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