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HOW SLOW? WHY SLOW? IS SLOW PRODUCTIVE? FIXING SLOW?

Aboozar Hadavand
Daniel S. Hamermesh
Wesley W. Wilson

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ABSTRACT

Publishing in economics proceeds much more slowly on average than in the natural sciences, and more slowly than in other social sciences and finance. It is even relatively slower at the extremes. We demonstrate that much of the lag, especially at the extremes, arises from authors' dilatory behavior in revising their work. The marginal product of an additional round of re-submission at the top economics journals is productive of additional subsequent citations; but conditional on re-submission, journals taking more time is not productive, and authors spending more time is associated with reduced scholarly impact. We offer several proposals to speed up the publication process. These include no-revisions policies; limits on authors' time revising articles, and limits on editors waiting for dilatory referees.

Aboozar Hadavand
Minerva University
1145 Market Street
Ninth Floor
San Francisco, CA 94103
hadavand.a@gmail.com

Wesley W. Wilson
Department of Economics
1285 University of Oregon
Eugene, OR 97403-1285
wwilson@uoregon.edu

Daniel S. Hamermesh
Department of Economics
Barnard College
3009 Broadway
New York, NY 10027
and IZA
and also NBER
hamermes@eco.utexas.edu

I. Introduction

The slowness of publishing in economics was pointed out by Ellison (2002), although scholars who had been active in the profession for at least a quarter century were by that date very aware of the changes that had occurred in the publishing process. Today the difficulties are well known and have been discussed by many editors (discussions in Szenberg and Ramrattan, 2014). In this study we first provide evidence on how the publishing process—in terms of the lags involved—compares to that in the “hard sciences” (very much slower) and in other social sciences (substantially slower).

There are many components that might explain the slowness of economics journals. Culprits might be dilatory editors/referees, authors’ delaying responding to initial encouraging editorial responses, or lags between a study’s acceptance and its publication. We cannot elucidate the underlying causes of each of these possible contributing factors. There is no way to infer why editors or referees might “sit on” a paper, why authors might hesitate to revise their work quickly, or why economics differs from other disciplines. All we can do is document the magnitude of each factor’s contribution to slow publication by providing the first evidence on this issue, one novel contribution of this study.

The central part of the empirical work here examines the productivity of slowness. We measure productivity by the professional attention that a study receives from other scholars—its post-publication (both online and in-print) citations. If a longer publication process increases the scholarly productivity of economic research, perhaps we should view these benefits as justifying the cost—although evidence suggests (Conley *et al.*, 2013) that a slow process reduces the quantity of publications, as measured by pages written. We cannot discover whether slowness in economics publishing makes it more productive than research in other disciplines, nor can we even analyze whether increasing slowness in economics has made economic research more productive. We can, however, analyze whether at a point in time published research with a longer gestation period has a greater impact, providing the first objective evidence on this crucial outcome of the publication process (although Laband, 1990, provided very useful subjective evidence on one aspect, the role of referees).

Answers to these questions require positive analysis. Making normative suggestions about how the publication process in economics might be speeded up with no loss of quality constitutes the second major section of this study. Although basically suggestive, it too has some positive bases, as we examine data describing publications in journals that have experimented with alternatives to standard practices in economics publishing.

II. Characteristics of Slowness in Economics Publishing

Much of the analysis in this section is based on a set of data collected from leading economics journals. We asked the editors of each of the “Top Five” journals in the field for details on each article, excluding Nobel/presidential addresses, comments, replies, etc., that was published in 2012 and 2013. The details for each paper include: Its initial submission date; date of the initial editorial response; the date of first re-submission, etc., until date of acceptance.¹ We use articles published in those two years to allow time for each article to influence subsequent research. Three of the five editors provided the data, showing these outcomes for each of 241 published articles and thus allowing charting how each article flowed through the editorial process.

A. Slowness in Economics—and Other Fields

Along with other, publicly available data, we use these data to examine the speed of publishing in economics, political science and psychology, and the natural sciences, both in 2012-13 and recently (2020). The *Review of Economics and Statistics* (arguably the most-cited general journal outside the “Top Five”), along with one of the two “Top Five” journals that did not provide complete information, do publish submission, acceptance (and obviously) publication dates with each article. Adding this information to that of the three journals in our main data set, we compare the process among them to that in three other social science journals: The *American Political Science Review (APSR)*, leading in its discipline; and the *Journal*

¹We view the “Top Five” as the *American Economic Review*, *Econometrica*, the *Journal of Political Economy*, the *Quarterly Journal of Economics*, and the *Review of Economic Studies*. We are very aware of differences in these journals’ average impacts, of the tremendous heterogeneity of impacts of articles within each journal (Hamermesh, 2018), and of the possibly deleterious effects of over-reliance on publication in these outlets (Heckman and Moktan, 2020). Nonetheless, we follow convention in bibliometric analyses and restrict this part of the study to these journals.

of *Applied Psychology* and the *Journal of Personality and Social Psychology*, two of a probable “Top Five” in psychology, which also publish this information with each article. The same information is included with each article in *Nature*, one of the two most widely cited scholarly journals, and in the *Proceedings of the National Academy of Sciences (PNAS)*, which has a five-year impact factor higher than all but one of the economics “Top Five.”²

The upper panel in Table 1 presents statistics describing the distribution of times from initial submission to acceptance and then to publication among articles published in 2012-13.³ Time to acceptance is crucial for young scholars seeking tenured positions and for more senior ones seeking new positions, since with an acceptance they can include the publication on their CVs. It may also be important for economists in obtaining public recognition of their work, as journalists often ask whether a study has been peer-reviewed. It is also crucial to establishing *bona fides* in expert testimony or in providing policy advice generally. Time to publication used to be an important indicator of how long it took from the time when authors viewed their research as complete to when others could see and use the finished product. Today, however, this measure seems less important, since many journals include widely available online final versions of articles shortly after acceptance.

By any measure, the record in economics is, at best, poor, perhaps epitomized by Figure 1. The mean time from submission to acceptance of articles published in these journals (the *REStat* and four of the “Top Five”) in 2012-13 was slightly more than two years. This outcome compares to slightly more than

²Care is required comparing impact factors across disciplines, since scholars in different fields differ in their propensity to cite other studies. The average article in the “Top Five” referenced 56 items in 2019, almost the same as in the *APSR*. Articles in the two natural science journals averaged 42 references to other studies. At the other extreme, articles in the two psychology journals averaged 106 references per article; and the two leading sociology journals, the *American Journal of Sociology (AJS)* and the *American Sociological Review (ASR)*, with impact factors of 5.9 and 8.2, averaged 110 references in each article (Clarivate Analytics, 2020).

³The means are simple averages of the average times in each journal in each group. Regrettably, several attempts to elicit this information from the leading sociology journals *AJS* and *ASR*, in a discipline arguably most comparable to economics, failed.

one year in the three other social science journals, and only six months in the two science journals.⁴ If the average time suggests problems, the extreme times can only be characterized as disgraceful.⁵ Even at the 75th percentile the time from submission to acceptance is twice as long in economics as in the other social sciences, and four times as long as in the science journals. Moreover, the uncertainty faced by economic researchers is greater: The 90-50 (90/10) ratios of time to acceptance are 2.0 (4.2) in economics, 1.8 (3.7) in the social science journals and 1.8 (3.0) in the natural science journals.

While we do not inquire why economics differs so greatly from other disciplines, it is worth noting that the acceptance rate in the “Top Five” journals currently averages six percent, compared to ten percent in the three social science journals, and to fifteen percent in the two natural science journals. At least in the natural science journals, the papers are shorter, and the supply of journal space is greater (with the *PNAS* publishing nearly weekly). This is an important difference; but why the very low acceptance rates in the “Top Five” could generate much longer publishing lags is unclear.⁶

One might argue that these figures reflect ancient history, and that the situation has improved greatly over the past decade.⁷ That argument would be wrong, as shown in the bottom panel of Table 1. Despite now-universal online submission procedures at these journals, the change over the decade was very small, with the mean time to acceptance rising slightly and, worse still, with an increase in the mass in the

⁴Upon seeing this Table, one distinguished economist remarked, “If Watson and Crick had to deal with economics publishing, their article would have been 70 pages long and taken three years to get into print.” Watson and Crick (1953) was published eight weeks after the discovery was announced; it was one page long.

⁵The 90th percentile statistics are bad enough. The maximum durations in the sample were 7 years 5 months from submission to acceptance, and 9 years 5 months from submission to publication.

⁶One is reminded of George Stigler’s perhaps apocryphal response to the then-Editor of the *AER*, who complained of having so many good papers to choose among, “Why not publish one occasionally?”

⁷One of the editors who kindly supplied the data underlying most of the work in this Section questioned our request for 2012-13 data, stating that the journal’s process may have been slow in the past but was no longer slow. We explained that we needed data from those years to examine articles’ impacts. We have not had the heart to note that, while the mean submit-to-accept time at that journal has speeded up slightly, the mass in the right tail has increased.

upper tail of the distribution.⁸ Of the five economics journals, the median time from submission to acceptance increased in two, fell in two and was unchanged in one. The duration at the 90th percentile increased in four and fell in one. Similar increases in the mass in the upper tails of the distributions of acceptance times in the other social science journals and in the natural science journals also occurred; but their average speed and the speed of the slowest publications remained far more rapid than in economics. To summarize today's situation succinctly, an economics article that is at the 50th percentile of time to acceptance would be at the 85th percentile of times to acceptance in the other social science journals and at the 97th percentile in the two natural science journals.⁹

The possible harm from slow publishing is not greatly mitigated by the ever-growing, at both the extensive and intensive margins, series of discussion/working papers. These are not peer-reviewed, and thus lack the *bona fides* of journal articles, in the eyes of other scholars, including university administrators, and the media. Moreover, the plethora of such papers creates congestion externalities, even in the most visible such series (Lusher *et al.*, 2021), making it difficult to keep up with what trusted experts view as important.

B. Contributors to Slow Publishing

There are many plausible explanations for the slowness in getting an economics paper accepted. These include the number of times a paper is resubmitted, the amount of time that it spends with editors and referees (denoted here by time in journal's hands), and the length of time that it spends in author(s)' revisions (time in author(s)' hands). Here we examine the relative contributions of each of these to the lags in publication and consider the characteristics of the papers and their authors in relation to these outcomes.

⁸The failure of submit-to-accept times to fall in the economic journals could not have been due to Covid-19 induced delays. Only 13 percent of the papers tabulated were accepted after April 1, 2020. Given the rapid turn-around in the natural science journals, however, Covid might explain their (small) increase in submit-to-acceptance times.

⁹Without one of the "Top Five" journals, the statistics in Table 1 are incomplete. We cannot solve this problem for 2012-13 for this journal, but we can piece together a good estimate for articles in 2020 using some in-publication information and an email survey of authors. The data suggest that its mean submit-to-publication time was 30 months, with a mean submit-to-accept time of 23 months. If these estimates were included in the statistics shown in the Table, they would reduce the mean times by one month each.

Using the descriptions of each stage of the submission/review process for each of the 241 articles published in the three “Top Five” journals in 2012-13, we calculated the number of rounds of submission/re-submission/re-re-submission/re-re-re-submission that each went through. We denote this number by 2 if the second editorial response—the response after the first re-submission—was an acceptance, 3 or 4 if the third or fourth was an acceptance.¹⁰ We can decompose the total time from submission to publication into three parts: Time spent in the journal’s hands, time in the author(s)’ hands, and time between acceptance and in-print publication.

In addition to these descriptors of the editorial process itself, we gathered other information on each article about: Its Web of Science citations in each year from the year of publication up through 2020 (thus nine years of citations to articles published in 2012, eight years to those published in 2013); the cumulative number of Google Scholar citations the article had received as of March 2021; its length in pages;¹¹ the number of references included; the number of authors; and the sub-field in which the article might be classified (theory; empirical with administrative data; other empirical, including calibration; experimental; econometric theory). Characterizing the articles’ authors, we obtained the Web of Science citations of each author in the year the article was submitted, used to construct the citations of the most-cited author; the post-Ph.D. experience of the most-cited author, and the number of female authors.

Table 2 presents descriptive statistics of all these variables except times in the journal’s and author(s)’ hands, which we examine in detail below. The average or median published paper goes through three rounds: It is submitted, re-submitted, and then re-submitted again, when it is then accepted; but nearly one-fourth of all articles went through a fourth round. (For the empirical articles, we consider acceptance as the date when an acceptance email was sent, i.e., thus earlier than the final submission that includes a documented dataset.)

¹⁰Two of the articles went through a fifth round, although in one case the elapsed time was less than one month.

¹¹These are calculated based on the average number of characters per page in each journal, with the number normalized to the journal with the most characters per page.

Fifty-three percent of articles are empirical (11 percent using administrative data, 42 percent using other data), with pure theory accounting for 35 percent of the publications, and experiments and econometric theory accounting for the remaining 12 percent. The average article has slightly above two authors, but nearly ten percent have four or more authors, reflecting the stretching of the right tail of the distribution of authors/article noted by Hudson (1996), Ellison (2002), Card and DellaVigna (2013), Hamermesh (2013), and Jones (2021). The average article contains nearly 29 printed pages, not including the ubiquitous and often voluminous on-line appendices. There is substantial variation in the number of references included, and its correlation with article length is only +0.30. Of the articles' authors, 22 percent were women, with the incidence of female authors rising as the total number of authors increases.

The average article received 70 Web of Science citations in its first eight or nine years in print with, as is always the case in citations, substantial skewness in this measure (Hamermesh, 2018). The skewness is equally pronounced in the distribution of cumulative Google Scholar citations. Even more skewness exists in the distribution of citations at the time of submission to each article's most cited author. The average most-cited (on each article) author received over 270 citations in the year of submission, about average among tenured faculty members in economics departments that might be viewed as Top 30; but the median most-cited author of an article was cited only one-third as often. The post-Ph.D. experience of the most-cited authors averaged around 15 years—typical of a relatively young full professor and consistent with evidence on the age distribution of authors in leading economics journals (Hamermesh, 2013).

With our focus on the process by which articles are handled, we examine the contributions of the three components of time from submission to publication. Their distributions are presented in Figure 2, containing decompositions of the average time from submission to publication, measured in months on the vertical axis and shown within each of five deciles. (Each journal is weighted as one-third of the total.) Several aspects of the Figure are striking: 1) The main proximate determinant of inter-decile differences in speed of publication is the huge rise in the amount of time spent in author(s)' hands (the sum of times between receiving a response from a journal to re-submission) as the total time to acceptance and publication rises. Among papers in the middle decile, this is 10 months; among those in the slowest decile,

26 months are spent in author(s)' hands; 2) While the amount of time spent at journals increases with slowness of publication, moving from the middle to the slowest decile increases that duration much less, from 10 to 18 months; 3) Lengthier submit to-publication-times are essentially unrelated to changes in the time between acceptance and publication.

Figure 2 aggregates across the three journals and does not reflect the role of the heterogeneity of journals in the total publication lag. To examine how these contributing factors differ across the three journals, Table 3 shows the means and variances of the submit-to-acceptance lags among the 241 articles in total and for each journal separately, and it decomposes the variance into its two sources and their covariance. Most interesting in this Table are: 1) The substantial heterogeneity in the length of time articles are in process—the variance is quite large even within a journal. 2) The heterogeneity across the journals: Journal 1 handles the papers somewhat more quickly than the other two, but, most important, there is almost no variation in the amount of time a paper spends at the journal; and 3) Consistent with the evidence in Figure 2, over half the variation in lags in acceptance arises from authors spending more time on revisions.

The covariance between the time in a journal's and author(s)' hands is positive in Table 3, but in no case does it account for even a third of the total variance in the submit-to-acceptance time. Even this low correlation is due mainly to the fact that articles that go through more rounds necessarily take more time of both authors and editors/referees. The correlations between editor/refereeing time and author(s)' response times are shown for each round separately in Table 4, both for all papers handled in the round, and for those completed in that round. The correlations at each article's final round average +0.30. Thus, those articles that take more editor/referee time to handle are associated with authors spending more time, but the relationship is weak.

Various characteristics of the articles might cause them to go through more rounds of re-submissions at a journal; and they might lead editors and referees to spend more time handling the paper. The same characteristics might lead authors to take longer re-submitting an article that has received an encouraging initial editorial response. To examine the first issue, in Column (1) of Table 5 we present least-squares regressions of the number of rounds through which a paper travels at a journal as a function of all

the article/author characteristics on which we have information (except the number of references included, which may be partly affected by the number of rounds and time spent refereeing/revising). Column (2) presents the same regressions with journal indicators added to account for the heterogeneity demonstrated in Table 3. The estimates treat each article equally—the observations are unweighted.¹²

Authors' characteristics are unrelated to the number of rounds an article goes through: Neither how well-cited an author is, nor his/her post-Ph.D. experience, nor the gender of authors is related to this outcome. Characteristics of the article do, however, affect the number of rounds: Theory papers are handled in significantly fewer rounds, with differences across the other sub-fields being small and statistically insignificant. Papers with fewer authors are handled more rapidly. Articles that are longer when published are handled in no more rounds than shorter articles.

Columns (3) and (4) present estimates of the correlates of the length of time that the journals take to handle a submission. The clearest result is that theory papers are dealt with significantly and substantially more quickly (2-1/2 months on a mean of 10 months) at each journal (again with only small differences across the other sub-fields). Weaker evidence shows that having multiple authors is associated with more rapid treatment by the journals, perhaps because co-authors help iron out problems that might otherwise lead editors and referees to spend more time handling the article. There is weak evidence that better-cited authors receive somewhat faster treatment and that, conditional on an author's prior scholarly recognition, more senior authors' submissions are handled more slowly, other things equal. These last two results are consistent with the observation that one's prior impact on the profession matters much more than one's longevity in determining how one is treated. Other than these effects, none of an article's characteristics affects the time that it spends at a journal.

¹²Using weights that are inversely proportional to the number of articles in each journal in the sample produces only minute changes in the estimates. Similarly, while ordered-probit estimation is more appropriate than least-squares, its implications differ little from those of the results in the Table. Similarly, replacing the variable "any female author" with indicators of the number of female authors and replacing "two or more authors" with indicators of their number do not change the qualitative conclusions about the effects of these measures.

The final two columns of Table 5 describe the determinants of the time that authors spend revising their papers in response to a requested re-submission. The only correlates whose relation to this outcome are even marginally significant are the presence of a female author (2-1/2 months extra on an average of 12 months) and the negative effect of an article classified as theoretical.¹³ There is no evidence that authors whose prior work has had a greater scholarly impact, or those who are more senior, are differentially slow in handling requests for revision. Here and throughout this table, variations in the length of articles have essentially no effect on the outcomes. The results demonstrate that most of the variation in authors' behavior is idiosyncratic.¹⁴

C. The Productivity of Slowness

The most important question in judging whether the uniquely lengthy publication process in economics is worthwhile is its effect on the scholarly impact of the research that survives this very lengthy treatment at these major outlets. We recognize that research published in these top journals often has important influences beyond those on other scholars, for example, on debates about policy or on inchoate popular feelings about economic issues. Nonetheless, economic research, indeed, any scholarly research is judged at least in part by the extent to which it influences subsequent work. We therefore answer this question by measuring the impact of the outcomes examined in Tables 3 and 5 on the annual patterns of (Web of Science) citations up through 2020 to the articles published in 2012 and 2013.¹⁵

Table 6 lists the results. Each observation is an article/year, necessitating clustering standard errors on the individual articles. In addition to the regressors included in Table 5, we add the number of references

¹³Less time is spent revising theory articles at each round of the publication process. There are no significant differences across the other sub-fields. Thus, articles using administrative data take no longer than other non-theory articles to revise, and similarly for articles based on experiments.

¹⁴Here and in the next sub-section we also experiment with a measure of heterogeneity—the standard deviation of citations across co-authors. This measure is uncorrelated with the time co-authors spend revising, and its inclusion has minute effects on the estimated impacts of the other regressors.

¹⁵Checchi *et al.* (2021) show that there is a remarkably high correlation between this objective bibliometric measure and subjective peer-based evaluations of individual research products, suggesting that a subjective approach to measuring impact would yield results that would arguably be similar.

included in each article, since additional references might, for scholarly or invidious reasons, generate more subsequent citations to the article. Column (1) shows the least-squares estimates of the relationship of citations to the number of rounds the article has gone through and to various control variables. With average annual citations of about eight, the productivity of additional authors is low (within this set of studies in these leading journals), although not much different from that found in other studies (Hollis, 2001; Medoff, 2003; Bosquet and Combes, 2013; Hamermesh, 2018). Having a female author on a study has a substantial but not quite statistically significant positive effect on the scholarly impact of the article, larger than found in other studies (Laband, 1987; Ferber and Brün, 2011; Hamermesh, 2018) perhaps because of within-subfield differences by gender in the topics on which economists work, or perhaps because these are better articles.¹⁶ Lengthier articles have no greater impacts than shorter ones, perhaps due to the relatively narrow range of page lengths in the sample. A one standard-deviation increase in the number of references increases citations to the article by a statistically significant 0.06 standard deviations.

Theory papers on average receive roughly half as many citations per post-publication year as do otherwise identical other articles, a result consistent with evidence comparing across leading specialized journals in different sub-fields.¹⁷ Articles by authors whose prior work has been more heavily cited receive more attention; but conditional on that measure, more senior authors' work is cited less. As with the impact of these measures on the time that journals spend handling the paper, this juxtaposition suggests an autocorrelation of scholarly impacts of one's work, and that those who have not "made it" earlier in their careers will not "make it" even with work published in a leading outlet.

The central variables of interest indicate the number of rounds at the journals. The results suggest, other things equal, that the 51 percent of articles that require a third round (two re-submissions) have greater

¹⁶The articles cited on this issue, which is quite secondary to the crucial points of this study, are part of a burgeoning and now voluminous literature.

¹⁷The average five-year impact factor among the *Journal of Development Economics*, *Journal of Econometrics*, *Journal of International Economics*, *Journal of Labor Economics*, *Journal of Monetary Economics*, and *Journal of Public Economics* was 3.67 in 2019. The average five-year impact factor of *Games and Economic Behavior* and *Journal of Economic Theory* was 1.49 (computed from Clarivate Analytics, 2020).

subsequent scholarly impacts than the 27 percent of papers that go through only two rounds (that are accepted after the first re-submission), the excluded category in Table 6. On the other hand, the marginal gain in scholarly impact from the fourth round (the 22 percent of articles that are re-submitted, re-submitted again, and then accepted after yet another re-submission) is smaller although positive.

One might think that greater editorial attention or more time that authors spend revising before re-submission(s) would improve the quality of the article in terms of its subsequent impact. The specification in Column (2) thus adds measures of time spent at the journal and with author(s). Given the number of rounds an article goes through, greater lags in the process reduce citations to the article.¹⁸ These effects are statistically significant, are not huge, but not small either: A one standard-deviation increase in the time at a journal reduces subsequent citations by 0.11 standard deviations. A one standard-deviation increase in the time that authors spend revising reduces them by 0.13 standard deviations.

These estimates ignore the tremendous heterogeneity across journals in the kinds of articles and how they are treated. This difficulty is accounted for in the estimates shown in Columns (3) and (4) of the Table by the inclusion of journal indicators. The major comparisons to the results presented in the first two columns are: 1) Not surprisingly, given the heterogeneity shown in Table 3, the negative impact on subsequent citations of the time that an article spends with the journal disappears; 2) The estimated marginal productivity of a fourth round at a journal is reduced but becomes about equal to that of a third round; and 3) Most important, the negative effect on citations of additional time spent in author(s)' hands remains essentially unchanged. 4) None of the estimated impacts of the controls is altered in any important way.

As the statistics in Table 2 demonstrate, citations to the articles in this sample are highly skewed, as are prior citations received by their authors. The regressions in Columns (1)-(4) describe the average experience of these published articles; but given the skewness in these variables, they do not describe what

¹⁸To account for citations to articles pre-publication, we re-estimate the equations here and in Table 7 using cumulative Google Scholar citations (through 2020) instead of annual Web of Science citations. This re-specification does not qualitatively alter any of the inferences. With cumulative Google Scholar citations equaling roughly 35 times annual Web of Science citations in this sample, the coefficient estimates are almost proportionately smaller. The measures that are significantly related in Table 6 remain significant.

the median author faces. To infer that, Columns (5) and (6) present least absolute deviation (LAD) estimates, with the same specifications as in Columns (3) and (4) and including journal indicators. While the parameter estimates of the control variables are smaller than in the OLS estimates, they are qualitatively quite similar. The estimated impacts of the number of rounds through which an article goes and the amount of time spent in editor/referees' or author(s)' hands are also smaller; but the basic inference remains the same. The marginal impact of another round at a journal is positive, but, conditional on the number of rounds, authors' slowness in revising their work has a significant negative relation to its citations.

Table 6 shows that there are differences in the scholarly impacts of theory and other articles, while Table 5 showed that journals spend sharply different amounts of time dealing with them and that authors of theory articles spend less time revising them in response to re-submission requests. Perhaps this is because upon submission a theory paper is clearly correct or incorrect, with fewer inherent possibilities for revision and the main issue being whether the result is sufficiently important. Regardless, to examine the theory-other sub-field distinction further, Table 7 presents estimates of equations specified like those in Columns (4) and (6) of Table 6, but with the articles separated into sub-samples of theory and other papers. For each type of article, the first column shows OLS estimates, the second LAD estimates.

Depending upon the type of article, the crucial variables—the marginal impact of an extra round of re-submission and the time spent at the journal and with author(s)—have different relations to scholarly impact. The conclusions from Table 6 apply mainly to non-theory articles: For them, the marginal product of a third re-submission (a fourth round) is positive; most important, additional time that authors spend revising is associated with a lesser scholarly impact. Among theory articles, the time spent either at the journal or by authors is unrelated to the paper's impact, although there is evidence that the marginal product of a second re-submission (a third round) is positive, while the marginal product of a fourth round is not.

The analysis of this sample leads to the conclusion that multiple rounds of editing/handling at these journals may be productive (in terms of articles' scholarly impacts). Publishing longer papers (within the range of full-length articles included in the sample) is, however, unproductive of scholarly impact. The

strongest conclusion is that authors' spending more time responding to requested re-submissions is unproductive—indeed, those papers over which authors *kvetch* longer have lesser impacts.

III. Solutions to Slowness

The results in Sections II.B. and II.C. do not reflect *ex ante* random assignment of papers to quicker or longer processes; nor were there random assignments of articles to differing amounts of time spent by editors/referees or by authors. (We do not see how such randomness could be ethical, although randomly nudging some submitting authors to choose faster decision routes might work.) Without a true experiment, we cannot be sure that articles that went through more rounds were not inferior to others *ab initio* and required extra attention to bring them up to par. Similarly, articles on which authors spent more time, conditional on the number of rounds, might have needed that time to rise to the quality level of the journal, even though the author(s)' efforts were insufficient to put their eventual impacts above average. The former caveat may be important, although we saw that additional rounds of handling were productive; the latter does not seem credible, especially given the low correlation of the time a journal takes to generate a first revise-resubmit request and the author(s)' time responding to it.

The findings in the previous section suggest three margins along which the publishing process might be improved with no loss of quality. Additional back-and-forth between authors and editors—more rounds with a journal—has some scholarly value. Even with a positive marginal product of third revisions, however, that gain must be traded off against the cost to (younger) scholars' careers, in that additional back-and-forth with journals postpones their ability to demonstrate their scholarly prowess. A second margin is in the time authors “sit on” their papers after hearing back from journals, time that our results suggest is unproductive. The final margin is the time that editors and referees spend handling papers, time that is not productive at the margin.

A. *Fast-track Publication: The Economic Inquiry Experiment*

In Hadavand *et al.* (2020) we analyzed the impact of an experiment introduced in 2007 at *Economic Inquiry (EI)* that created a two-track submission process. Authors could choose between a fast track, in which the article receives a simple yes or no; or a regular track, which might lead to acceptance with minor revisions, to one or more revise/re-submit responses with subsequent additional refereeing, or to rejection (McAfee, 2010) (<https://weai.org/view/EI-No-Revisions>). The evidence indicated that providing an up-or-down editorial process did not reduce the quality of publications, at least in a journal outside an elite group.

B. *Limiting Revision Time*

In the data set describing “Top Five” articles published in 2012-13, the time between receipt of the first decision and the first re-submission exceeded six months on 56 percent of the 241 articles; and it exceeded one year among 25 percent. Of the 176 articles that went through three or four rounds, 15 percent spent more than six months in the author(s)’ hands between the second response and the second re-submission. Most surprising is that nine of the 52 papers that went through four rounds were worked on for more than three months between the third editorial response and the final re-submission. While the times to re-submission decrease with the number of re-submissions, they remain long.

With the demonstration that additional time spent re-submitting is at best unproductive, the question arises as to why. One reason for this apparent negative marginal product may be that procrastinating authors produce lower-quality research, other things equal. Yet another may be that they are too busy to devote the real time necessary for producing high-quality revisions (although the estimates in Table 4 showed that these lags are unrelated to authors’ characteristics that might indicate that they are busier). An alternative explanation is that some authors may use the submission process to obtain comments on a paper that was not well-polished and was submitted prematurely, with revision time needed to bring the paper up to a minimally acceptable level. Yet a fourth possibility consistent with slowness on the second and subsequent re-submissions is that the feedback received in response to the first re-submission is of reduced quality because the authors and, especially, the editors and referees failed to remember all the nuances of a subject that they handled many months, or even years before. Regardless, the evidence

suggested that allowing authors free rein to delay re-submission does not add to their articles' scholarly value.

Requiring rapid re-submission is standard in the natural sciences but very rare in economics. One journal, the *American Journal of Agricultural Economics (AJAE)*, the oldest and most distinguished in its sub-field, does not impose a deadline but does include in its revise-resubmit letter, "please submit the revised manuscript and separate responses to the reviewers ... within six months of receiving this letter."¹⁹ It had a median submit-to-acceptance time of 10 months in 2020, with the 90th percentile being 22 months.²⁰ Both statistics are unsurprisingly far below the comparable statistics shown in Table 1 and well below those of the six leading specialized applied journals. Of those six, none had a median submit-to-accept time as low as the *AJAE*, and in only one was the 90th percentile of the distribution at least as fast.

We cannot tell whether turnaround times in this journal are relatively rapid because of the moral suasion in its revise/re-submit letters, because for some reason the ethos that generates publishing lags in the "Top Five" has not infected it as much as other specialized journals, or something else unique to its sub-specialty. Regardless, this admonition might be included in all revise/re-submit letters. By providing at least a soft deadline, journals might take advantage of incentives that induce collaborators to move together more quickly (Bonatti and Hörner, 2011). Going further, the evidence in this study of the negative relation between subsequent citations and lags in authors' revisions suggests that imposing and enforcing a six-month limit on time spent revising would not be harmful to their eventual scholarly impact. If nothing else, it would help pull the right tail in the distribution of submit-to-acceptance times to the left.

An objection to this proposal is that authors are busy. Of course, they are. But for most authors publishing an article in these journals is a jackpot prize, one that merits putting an invited re-submission on the "front burner" of activities. Very few, if any, requested revisions take more than six months of actual

¹⁹Email communication, Amy Ando, Co-editor, *AJAE*, March 19, 2021.

²⁰The *AJAE* has an impact factor of 3.44, almost identical to the average of the six journals specialized non-theory journals listed in Footnote 17.

work; more likely is that the delays simply result from author(s)' procrastination. Given the rewards, procrastination is difficult to explain; and it can be costly.²¹

While some journals specify length limits on submissions, published versions of accepted articles suggest that those limits are often violated. Aside from the flouting of these limits incentivizing journals and authors to drag out the decision process, it also sacrifices journal space that might be devoted to other authors' work. Raising the remarkably low acceptance rates (compared to other fields) at top economics journals would be a beneficial result of limiting page counts. The well-documented "page-creep" in economics journal publishing may accompany the increasing lags in editorial decisions, lags that might be reduced if page limits were enforced both *ab initio* and throughout the refereeing process.

C. Limiting Refereeing/Editing Time

The evidence in Section II made it clear that editor/refereeing lags are not the more important contributor to the excessive times from submission to acceptance and publication at the "Top Five" economics journals. It also demonstrated, however, that conditional on the number of rounds of back-and-forth, additional time spent by referees and editors has little positive effect on an article's eventual scholarly impact. This suggests that there is room for marginal improvements along this dimension too.

While the data used here cannot distinguish between the contributions to publication lags of dilatory editors and the referees whom they assign, we do know (Hamermesh, 1994) that most referees who complete their assigned task do so quickly. The difficulty is that a small fraction take a very long time or more commonly refuse (5 percent) or decline (15 percent) a refereeing request. The theory of procrastination (see, e.g., Akerlof, 1991) suggests that people backload completion of tasks until just before a deadline. While there are deadlines in requests to referees, they are not enforced: Referees can backload indefinitely. Monetary incentives merely shift a few delayed reports across the margin to qualify for the payment (Hamermesh, 1994); non-monetary incentives, for examples, the *American Economic Review's* or *Journal of Political Economy's* lists of referees, or free journal subscriptions to reward rapid refereeing, are

²¹In at least one case, an author delayed 18 months in responding to a revise-resubmit request from a "Top Five" journal; the eventual re-submission was quickly rejected by the new editor who was uninterested in the topic.

unlikely to provide much motivation to overcome procrastination. Public shaming of delinquent referees is a possibility, but journals may be unwilling to engage in it; and, in any case, it is unclear whether such shaming would reduce delinquents' misbehavior.

Many referees are simply unreliable; since refereeing deadlines are not enforceable, journal editors may feel stuck with delinquents. There is a solution: "Fire" the delinquent after some short period of non-response. If an article is so narrowly focused that only two or three scholars can provide useful comments/recommendations to the editor, it probably does not belong in a top general-interest journal. A reasonable argument is thus that no referee should be allowed more than two months to handle an article (a policy that is currently implicit and tightly enforced by the *Quarterly Journal of Economics*). If a referee fails to respond within that time limit, the editor should immediately request a report from another referee.

We showed in Section II that 22 percent of articles at "Top Five" journals went through four submissions/re-submissions, back-and-forth with the journal. While these additional rounds did generate positive marginal products in terms of additional subsequent citations, is that worth the delay in making research more visible and in authors' improving their CVs? Perhaps journal editors should not plan on soliciting more than two re-submissions, with the second requesting only "cleaning-up" and "polishing." If implemented, this would also reduce the incidence of multiple rounds of re-submissions that end in rejection. This recommendation requires that editors exercise judgment when soliciting the first re-submission, being clear that, as one former "Top 5" editor suggested, an initial re-submission will only be sought if the additional work is "doable" and can be handled by the author(s) in a reasonable length of time, as recommended in the previous sub-section.

The editors of most "Top Five" journals are paid for their work, with substantial time released from teaching and/or monetarily and often quite lucratively. (One "Top Five" journal pays its editors \$51,500 per annum; another pays \$32,000—with \$64,000 to the Editor-in-Chief.) They should be well-paid—their work is important and time-consuming. Asking that they abide by the dictum that they only solicit re-submissions on papers on which there is a clear path to publication is not unreasonable. Moreover, given

their remuneration, “sitting on” a paper longer than two weeks upon submission/re-submission or upon receipt of a sufficient number of referee reports is inexcusable.

IV. Escaping the Low-level Equilibrium

The economics profession is in a low-level equilibrium trap, with much longer decision times than any other discipline that communicates ideas through scholarly journals. Today the lags between an article’s acceptance and publication are unimportant. Online publication often occurs within a few weeks of an article’s acceptance; and most articles published in “Top Five” and other journals have long circulated in working-paper form. Even ignoring the now technologically irrelevant lag between acceptance and publication, however, economics publishing remains woefully slower than that in other disciplines.

The long lags hurt the profession and, as we have shown, are at least partly unproductive. They have especially severe negative impacts on younger scholars facing tenure/job-security decisions, with cases where Ph.D. essays are hanging in the balance at a journal even when a person’s tenure case is being considered. In many institutions junior economists are compared to peers in other disciplines, even in other social sciences, whose research *oeuvres* do not suffer the same lags in acceptance/publication. Economists making decisions about their colleagues’ future understand this problem, but “higher-level” administrators often do not, creating needless stumbling blocks to tenure for active junior economists.

We have outlined several steps that might reduce the time between an article’s submission and its acceptance. While the evidence supporting these recommendations comes from data describing “Top Five” journals, they are equally valid at lower-level journals (whose decision process, as shown in Section III.B, is also distinctly slow). The initiatives of a few journals, such as the *AER: Insights* and *Economic Inquiry*, are laudable, but their examples are unlikely to become widespread until the leading journals improve their turnaround times.

In all these journals, the burden of improving the situation—of putting the economics profession on the same footing as other disciplines—rests on their editors. They need to change their behavior, to insist that referees behave as gatekeepers rather than co-authors, and to be sure that authors respond reasonably

rapidly to editors' requests for re-submissions. The low-level equilibrium trap developed because editors let it develop. We will not escape it until editors change how they deal with referees and authors.

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Table 1. Acceptance and Publication Lags (in Months), Economics, Other Social Sciences, and “Hard” Sciences, 2012-13 and 2020*

	Weighted		Percentile				
	Mean	Std. Error	10	25	50	75	90
2012 -13							
Four “Top 5” + <i>REStat</i> (535)**							
Submission to acceptance	24.72	(0.63)	10	14	21	32	42
Submission to publication	33.15	(0.66)	17	25	35	43	52
 <i>APSR, JApplPsy, JPersSocPsy</i> (371)							
Submission to acceptance	12.84	(0.36)	6	8	12	16	22
Submission to publication	18.05	(0.37)	11	13	17	22	38
 <i>Nature, PNAS</i> (195)							
Submission to acceptance	5.77	(0.22)	3	4	5	7	9
Submission to publication	7.80	(0.24)	5	5	7	9	11
2020							
Four “Top 5” + <i>REStat</i> (308)**							
Submission to acceptance	26.38	(1.00)	10	15	22	35	50
Submission to publication	34.31	(0.93)	18	25	32	44	59
 <i>APSR, JApplPsy, JPersSocPsy</i> (212)							
Submission to acceptance	14.37	(0.52)	6	8	13	17	24
Submission to publication	22.99	(0.56)	14	17	21	26	32
 <i>Nature, PNAS</i> (183)							
Submission to acceptance	7.16	(0.41)	3	4	6	8	13
Submission to publication	9.35	(0.41)	5	6	8	11	15

*Number of articles in parentheses. Means weighted by the inverses of the numbers of articles from the journal in the samples. Several articles (fewer than five in each case) accepted within a month of submission were deleted from the samples of psychology journals.

**In addition to the *REStat* and the three “Top 5” journals that provided us with confidential information, we also included published information from one of the two “Top 5” journals that did not provide such data.

Table 2. Descriptive Statistics from the Three-Journal Sample, Articles 2012-13 (N=241)

Variable means:

Number of rounds:		Field:	Number of authors (fraction with any female):		
2	0.27	Theory	0.35	1	0.21 (0.12)
3	0.51	Admin. data	0.11	2	0.43 (0.18)
4	0.22	Other data	0.42	3	0.27 (0.28)
		Experiment	0.09	4+	0.09 (0.39)
		Econometric theory	0.03		

Variable:	Mean	Std. Error	Percentile				
			10	25	50	75	90
Page equivalents*	29.18	0.41	21	25	29	33	37
References included	46.08	1.18	26	33	44	55	67
Cumulative Web of Science citations	69.52	5.15	10	20	44	86	168
Cumulative Google Scholar citations	299.24	21.67	42	78	168	402	739
Web of Science citations of most-cited author during year of submission	271.81	36.53	7	28	97	284	701
Post-PhD experience of most-cited author	16.41	0.66	4	8	14	24	32

*Pages standardized to the journal with the densest format.

Table 3. Decomposition of Variance of the Submit-to-Acceptance Lag (in months)

	Mean	Variance	Due to Author(s)	Due to Journal	2* Covariance
All journals	22.20	16.68	9.24	4.32	3.12
Journal 1	15.36	12.12	10.44	0.24	1.44
Journal 2	24.60	14.16	3.72	6.36	4.08
Journal 3	26.28	17.52	10.32	2.88	4.32

Table 4. Correlations of Time in Journals and Author(s)' Hands

Round	All Papers		Completed in Round	
	Correlation	N =	Correlation	N =
2	0.023	241	0.255	65
3	0.260	176	0.256	124
4	0.364	52	0.364	52

Table 5. Determinants of the Editorial Production Process, OLS Estimates, N=241

Ind. Var.	No. of rounds		Months at journal		Months with author(s)	
Citations to most- cited author/100	0.009 (0.008)	0.005 (0.008)	-0.256 (0.086)	-0.129 (0.070)	-0.161 (0.127)	-0.121 (0.126)
Experience of most-cited author	-0.006 (0.005)	-0.006 (0.005)	0.072 (0.049)	0.071 (0.039)	0.074 (0.073)	0.079 (0.071)
Any female author	0.044 (0.112)	0.028 (0.109)	-0.902 (1.145)	-0.413 (0.920)	2.467 (1.696)	2.570 (1.659)
Two or more authors	-0.171 (0.115)	-0.162 (0.118)	-1.577 (1.190)	-1.700 (0.955)	-0.013 (1.762)	0.078 (1.722)
Equivalent pages	-0.004 (0.007)	-0.005 (0.007)	0.121 (0.075)	0.039 (0.064)	0.043 (0.112)	-0.074 (0.115)
Theory	-0.238 (0.098)	-0.205 (0.096)	-1.070 (1.000)	-2.235 (0.810)	-1.808 (1.481)	-2.142 (1.461)
Adj. R ²	0.018	0.081	0.041	0.383	0.006	0.052

*Standard errors in parentheses. Columns (2), (4), and (6) contain journal indicators. The correlation of the residuals in Columns (3) and (5) is 0.24, between the residuals in Columns (4) and (6) is 0.31.

Table 6. Determinants of Annual Post-publication Citations (N=241 articles, 2,049 citation-years)*

Ind. Var:	OLS				LAD	
3 rounds	2.541 (0.956)	3.261 (1.038)	1.314 (0.924)	1.827 (1.033)	0.815 (0.323)	1.020 (0.357)
4 rounds	3.066 (1.671)	5.909 (2.145)	2.349 (1.645)	3.987 (2.209)	0.977 (0.382)	1.295 (0.552)
Journal hands	-----	-0.145 (0.071)	-----	0.010 (0.086)	-----	0.259 (0.306)
Author(s) hands	-----	-0.147 (0.057)	-----	-0.140 (0.062)	-----	-0.662 (0.170)
Citations to most-cited author/100	0.508 (0.091)	0.447 (0.085)	0.463 (0.088)	0.446 (0.086)	0.407 (0.057)	0.409 (0.079)
Experience of most-cited author	-0.114 (0.041)	-0.091 (0.042)	-0.118 (0.040)	-0.106 (0.041)	-0.103 (0.013)	-0.095 (0.016)
Any female author	2.953 (1.695)	3.064 (1.638)	2.696 (1.610)	3.011 (1.600)	0.755 (0.372)	0.918 (0.376)
Two or more authors	1.206 (1.108)	1.301 (1.111)	1.139 (1.097)	1.360 (1.104)	0.494 (0.322)	0.429 (0.344)
Equivalent pages	-0.099 (0.078)	-0.068 (0.076)	-0.027 (0.082)	-0.037 (0.083)	0.005 (0.022)	0.011 (0.023)
Number of references	0.072 (0.026)	0.065 (0.025)	0.058 (0.025)	0.061 (0.025)	0.029 (0.007)	0.029 (0.007)
Theory	-4.087 (0.898)	-4.224 (0.913)	-3.734 (0.937)	3.859 (0.967)	-1.969 (0.257)	-2.036 (0.266)

*Standard errors in parentheses, clustered on the articles. Columns (3)-(6) contain journal indicators. Each equation also includes a vector of indicators of year post-publication.

Table 7. Determinants of Post-Publication Citations, Theory Articles vs. Others*

Ind. Var.:	Non-theory		Theory	
	OLS	LAD	OLS	LAD
3 rounds	0.916 (1.670)	-0.206 (1.048)	1.578 (1.283)	0.727 (0.637)
4 rounds	3.628 (3.255)	0.559 (1.368)	1.082 (1.406)	0.314 (0.922)
Journal hands	0.099 (0.124)	0.069 (0.063)	0.025 (0.075)	0.033 (0.042)
Author(s) hands	-0.193 (0.076)	-0.083 (0.038)	-0.004 (0.068)	-0.004 (0.030)
R ²	0.288	0.273	0.315	0.270
N (articles, observations)	(158, 1,345)		(83, 704)	

*Standard errors in parentheses, clustered on the articles. Each equation also includes a vector of indicators of year post-publication. Also included in each equation are journal indicators and all the other independent variables shown in the estimates of Table 6.

Paper submitted / Paper accepted



Figure 1. Depiction of Publishing Lags in Economics*

*Rafael Pereira @UrbanDemog

Figure 2. Contributions to Slowness, by Decile of Speed

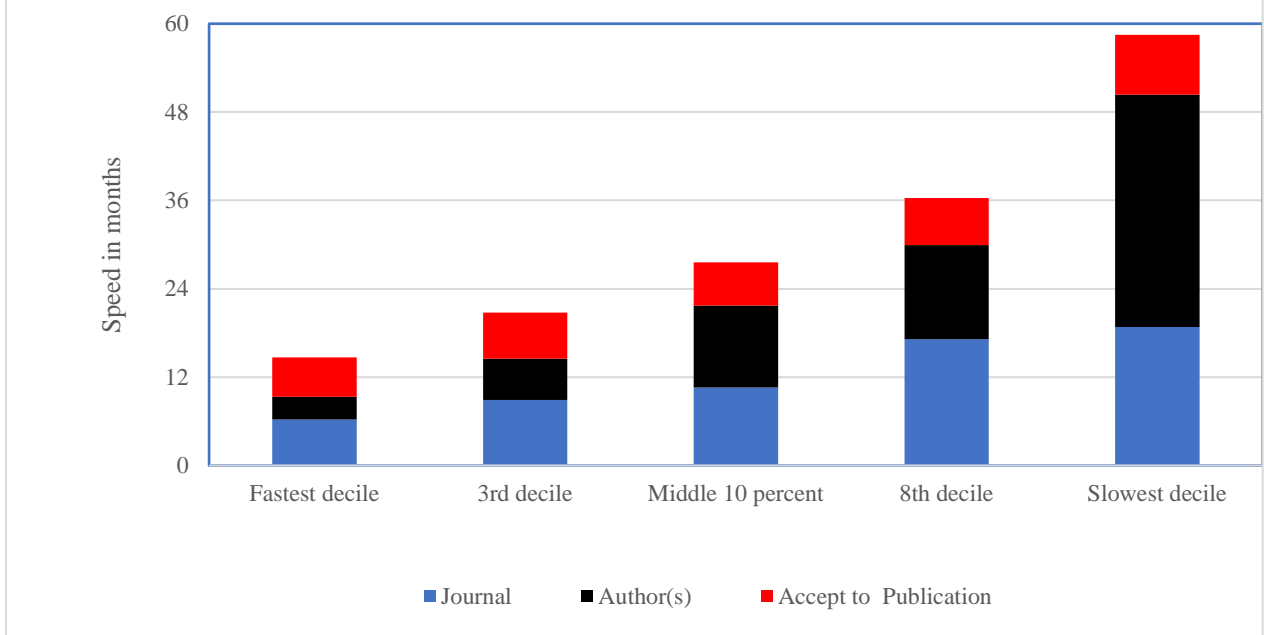


Figure 3. Average Citations/year by Rounds of Submissions

