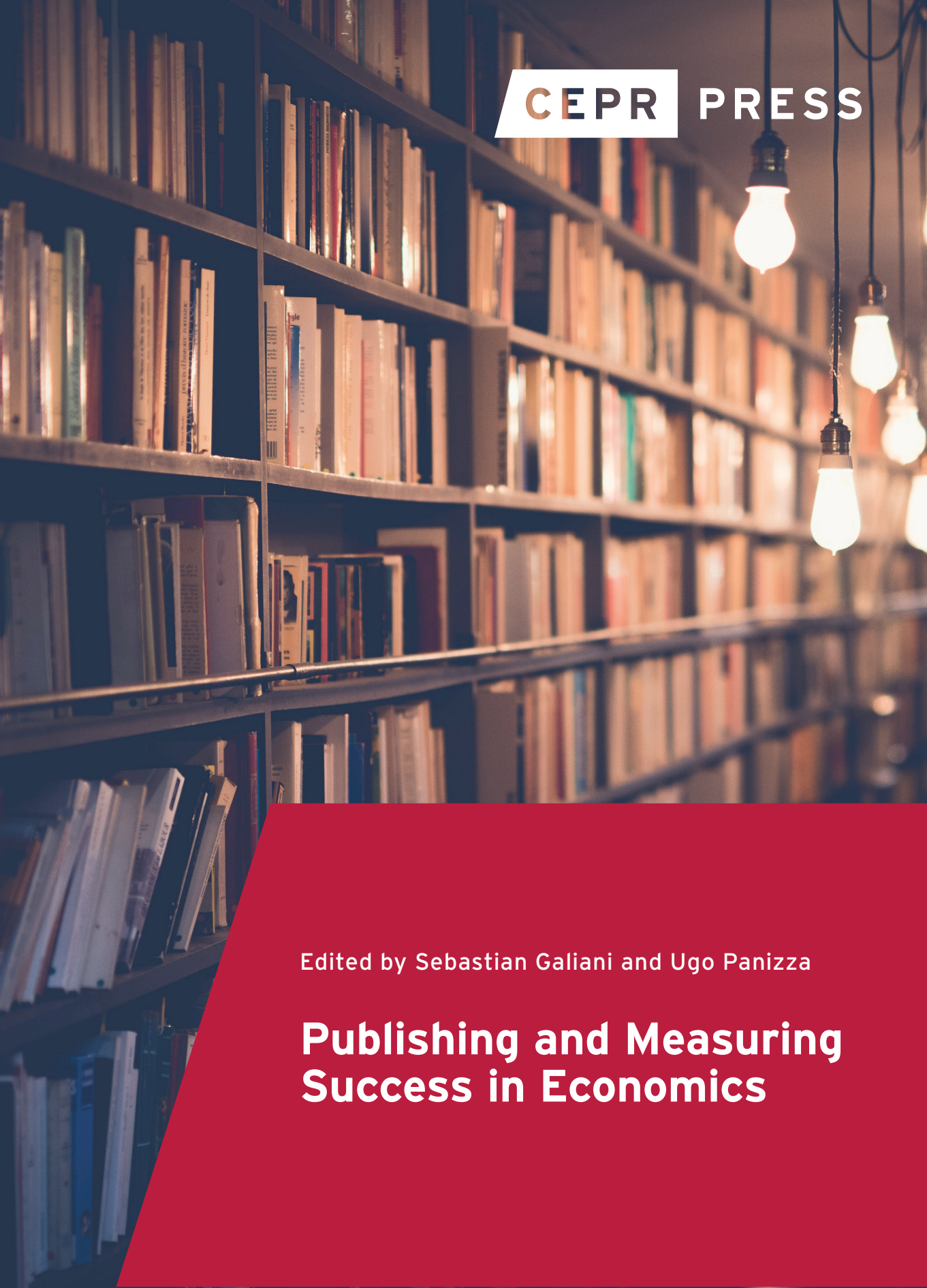


CEPR PRESS

Edited by Sebastian Galiani and Ugo Panizza

Publishing and Measuring Success in Economics

Publishing and Measuring Success in Economics

CEPR PRESS

Centre for Economic Policy Research
33 Great Sutton Street
London, EC1V 0DX
UK
Tel: +44 (0)20 7183 8801
Email: cepr@cepr.org
Web: www.cepr.org

ISBN: 978-1-912179-37-4

Cover photograph by Janko Ferlič.

Publishing and Measuring Success in Economics

Edited by Sebastian Galiani
and Ugo Panizza

CEPR PRESS

CENTRE FOR ECONOMIC POLICY RESEARCH (CEPR)

The Centre for Economic Policy Research (CEPR) is a network of over 1,500 research economists based mostly in European universities. The Centre's goal is twofold: to promote world-class research, and to get the policy-relevant results into the hands of key decision-makers.

CEPR's guiding principle is 'Research excellence with policy relevance'.

A registered charity since it was founded in 1983, CEPR is independent of all public and private interest groups. It takes no institutional stand on economic policy matters and its core funding comes from its Institutional Members and sales of publications. Because it draws on such a large network of researchers, its output reflects a broad spectrum of individual viewpoints as well as perspectives drawn from civil society.

CEPR research may include views on policy, but the Trustees of the Centre do not give prior review to its publications. The opinions expressed in this report are those of the authors and not those of CEPR.

Contents

Section 4: Social ties, co-authorship and publication patterns

Section 5: The race problem in economics

Section 6: Economic research in the time of COVID-19

Foreword

The academic economics profession has long been considered as being, in Angus Deaton's words, "remarkably open to talent, and free of nepotism and patronage". This perception has recently been challenged by many who feel that it is in fact the opposite: that it is hierarchical, clubby and characterized by gender and racial biases.

The genesis of this eBook was an exchange in spring 2019 between the two editors, Sebastian Galliani and Ugo Panizza, as to whether it was an opportune moment to publish an eBook which examined issues such as how publishing in economics has evolved; the length of time lags in publishing; the challenges for young authors without a well-established network; and the syndrome of the "Top Five".

Recent events, in fact, make this an exceptionally timely eBook. It includes sections on measuring success and citation patterns; publication lags; social ties and nepotism; the race problem in economics; and how the Covid-19 pandemic has impacted economic research. Notably, the eBook draws attention to the various barriers facing young economists and those from ethnic backgrounds in breaking into the profession, as well as highlighting the possible influence of nepotism and an over-emphasis on the weighting of research published in top journals.

The editors suggest that, while there is much to be proud of in the state of the economics profession, and in particular in the way that it has responded to the Pandemic, there is still work to be done to make economics more open and inclusive and the publication process fairer and more efficient. The over-arching importance of the "top five" journals is questioned, and it is suggested that higher weight in the assessment of economists' career success should be given to high quality, non-top five, journals.

CEPR is grateful to the editors of the eBook, Sebastian Galliani and Ugo Panizza. Our thanks also go to Anil Shamdasani for his excellent and swift handling of its production.

CEPR, which takes no institutional positions on economic policy matters, is delighted to provide a platform for an exchange of views on this topic which is extremely important for the future success of the discipline of economics.

Tessa Ogden
Chief Executive Officer, CEPR
September 2020

Introduction

Sebastian Galiani and Ugo Panizza
University of Maryland and NBER; The Graduate Institute, Geneva and CEPR

In a biographical essay published before receiving the Nobel Prize, Angus Deaton wrote:

> It has been a good time to spend a life in economics. Compared with many others, the profession is remarkably open to talent, and remarkably free of the nepotism and patronage that is common in professions in which jobs are scarce. (Deaton 2011).

This perception of openness is now being questioned by many who point out that economics tends to be hierarchical, clubby and characterised by gender and racial biases.

In this eBook, we take stock of these issues with a series of short essays focusing on how economists publish their research and measure academic success.[1] Our reading of the evidence is that while there is much to be proud of about the state of the economics profession, there is still work to be done to make economics more open and inclusive and the publication process fairer and more efficient. Promoting stronger competition among journals could help in dealing with many, though not all, of the issues highlighted in this eBook. One obvious way to achieve this is to assign a greater weight in the assessment of economists' career success to the high-quality, non-Top Five journals.

The eBook is divided into six sections. The first two sections focus on measuring success and citation patterns, Section 3 discusses publication lags, Section 4 concentrates on social ties and co-authorship, Section 5 discusses the race problem in economics with a specific focus on US academia, and Section 6 discusses how the Covid-19 pandemic has impacted economic research.

The last chapter of the eBook presents a short review of topics which are not covered in the volume and suggests a number of papers that complement some of the chapters of the eBook. It is worth noting that the eBook does not include a full discussion of the gender problem in economics because CEPR has recently published another eBook which focuses on this issue (Lundberg 2020).[2]

The eBook opens with a chapter by Daniel Hamermesh which presents a critical evaluation of how economists measure success. The central message of the chapter is that we should not rank individual scholars' achievements by summary measures, such as where their

1 Some of the chapters were prepared for this eBook while others are based on previously published VoxEU columns. Some of the proposals for improving the publication process and co-authorship weighting discussed in the eBook are controversial and we do not necessarily agree with all of them. However, we hope that the contributions in the eBook will help to fuel the conversation on these important issues.

2 Gender is, however, at the centre of Chapter 18, which studies the patterns of economic research in the time of Covid-19 (an issue not covered in Lundberg 2020)

research is published or the institution with which they are affiliated. Hamermesh shows that top journals publish more of the very best scholarly research than other journals, but that they also publish a lot of research that is mostly ignored. Properly judging success in economics requires paying special attention to individual outcomes, not to aggregates that are poor signals of the individual results of which they are comprised.

Hamermesh's suggestion to focus on individual results and on the quality of the research rather than on the outlet in which it is published is in contrast to the profession's tendency to heavily discount papers published in less prestigious outlets. Research by Nattavudh Powdthavee, Yohanes Riyanto, and Jack Knetsch (Chapter 2) shows that this discounting can be so steep as to give negative value to publications in lower-rated journals. The authors suggest that this negative weight could motivate individuals to withhold socially valuable research findings from publication rather than risk having it detract from their professional reputation.

James Heckman and Sidharth Moktan study the tyranny of the 'Top Five' economics journals (Chapter 3) and suggest that reliance on highly ranked journals as a screening device raises serious concerns both because of its weak empirical support (if judged on the ability to produce impactful papers) and because of the risk of clientele effects surrounding these journals and their editors. They suggest that the profession should start a conversation on alternatives for judging the quality of research – ideally a shift from the current publications-based system of deciding tenure to a system that emphasises departmental peer review of a candidate's work. The authors also point to a more radical solution to the problem that would involve shifting publishing away from the current journal system, with its long delays in refereeing and publication, towards an open source format with real-time peer review.

The second section of the eBook focuses on citation patterns. Maria Victoria Anauati, Sebastian Galiani and Ramiro Gálvez study citations patterns of more than 6,000 economics research articles published in different types of journals (Chapter 4). As emphasised by both Hamermesh and Heckman and Moktan, Anauati and co-authors find that there is a strong overlap in the distribution of received citations across tiers and that the influence (in terms of citations) of Top Five articles is overestimated. In a second chapter, the same authors use a dataset consisting of more than five million citations to nearly 60,000 articles spanning 12 disciplines, from astronomy to statistics, to study patterns of citation ageing (Chapter 6). They show that there are large differences in citation ageing across disciplines but also across fields within economics. Applied and applied theory papers follow citation patterns similar to those followed by highly cited fields of study (for example, biology and medicine), but econometric methods and theory papers behave like less-cited fields of study (for example, mathematics and statistics). The authors conclude that although citation counts can be a valuable tool for assessing the impact of academic research, there are caveats with 'one-size-fits-all' yardsticks and that citation counts should be adjusted by field- and discipline-specific factors.

Another possible issue with using citation counts as a measure of academic productivity is the that citation patterns may be driven by strategic considerations. In Chapter 6, Joshua Aizenman and Kenneth Kletzer study the potential importance of strategic citations by focusing on premature deaths of highly cited economists. Their findings support the view that citations are not a pure measure of scientific impact and may be affected by strategic considerations.

The section concludes with a chapter that studies whether certain journals are particularly important for policy institutions. Raphael Auer and Christian Zimmerman focus on central bank publications and show that only three of the Top Five journals are among the top five most-cited journals by central banks and that top finance journals do not seem to have a strong impact on central bank research. This is further proof that different journals have different audiences and that economists should not be evaluated on the basis of one-size-fits-all rankings.

Section 3 of the eBook studies publication lags. Ellison (2002) has documented that, between 1970 and 2000, the time an economics paper typically spends with a journal between submission and publication increased from eight to 16 months. Long lags are particularly damaging for junior faculty who are on a tenure clock. John Conley, Mario Crucini, Robert Driskill, and Ali Sina Önder study this phenomenon in Chapter 8 of the eBook. Their analysis of the publication patterns of young scholars shows a decrease in publications by young scholars which is especially marked for those who are not at the top of their cohort. In 1981, young scholars in the top 1% in terms of productivity published five times more AER-equivalent papers than young scholars in the top 20% in terms of productivity; in 2005, scholars in the top 1% published nine times more AER-equivalent papers than those in the top 20%. Conley and co-authors conclude that the profession should be careful when evaluating people for tenure and promotion, as the rules of the game have changed.

On a related subject, in Chapter 9 Daniel Hamermesh studies who publishes in top economic journals by focusing on age. He shows that through the 1990s, about half of the papers published in top journals were by authors under the age of 35 and almost nobody over 50 published a paper in these outlets. Things have changed, however. In 2011, under-35 authors accounted for only one-third of papers published in top journals and over-50s accounted for nearly 20% of these publications. Hamermesh attributes this change in publication patterns to a slowdown in the expansion of the technological frontier, which no longer provides young scholars with an edge over older researchers.

The next two chapters of this section use confidential data to evaluate possible strategies to speed up the publication process. Ivan Cherkashin, Svetlana Demidova, Susumu Imai, and Kala Krishna study the handling of more than 3,000 papers submitted to the *Journal of International Economics* (JIE) between 1995 and 2004 (Chapter 10). They note that during that period, JIE had high 'type 2 errors' (7% of published papers have no citations at all) and low 'type 1 errors' (very few papers rejected by the journal were

accepted at better-ranked journals). The authors also find that being well-connected (proxied by having published in network journals, where submissions are solicited) increased the likelihood of acceptance.

In Chapter 11, Raj Chetty, Emmanuel Saez, and László Sándor discuss the results of an experiment with 1,500 referees at the *Journal of Public Economics*. The authors randomly assigned referees to four groups: (i) a control group with a six-week deadline to submit a report; (ii) a group with a four-week deadline; (iii) a 'cash incentive' group rewarded with $100 for meeting a four-week deadline; (iv) and a 'social incentive' group in which referees were told that their turnaround times would be publicly posted. They find that shortening the deadline reduces median review times by nearly two weeks without any negative effect on the quality of the review, and that providing cash incentives reduces median review times by an additional week (social incentives, instead, reduce median review times by only 2.5 days but tend to have a larger effect for tenured professors who are less responsive to cash incentives). They also show that there is no evidence that cash incentives crowd out intrinsic motivation. The authors conclude that that a combination of sorter deadlines, cash incentives, and social incentives could play an important role in improving the refereeing process.

Section 4 of the eBook focuses on social ties and co-authorship patterns. John O'Hagan and Lukas Kuld (Chapter 12) show that the share of solo-authored published economics papers dropped from 50% to 25% between 1996 and 2014, with most of the rise in multi-authored papers accounted for by papers with more than two authors. They also find that papers by four or more authors have more citations than papers with fewer authors. O'Hagan and Kuld conclude by highlighting the need for a discussion on how tenure and promotion committees should evaluate contributions to co-authored papers. This is also the focus of Chapter 13 by Stan Liebowitz, who suggests that the system adopted by most departments promotes false authorship and may penalise honest researchers.

In Chapter 14, Tommaso Colussi discusses the role of connections in the publication process. He shows that there are the important benefits associated with being connected to an editor and that when an editor takes charge of a journal, his or her former PhD students and faculty colleagues experience an increase in the number of published articles. Studying how social ties affect the number of citations, he finds that papers authored by an editor's former PhD students increase the number of citations but that this positive effect on citations does not apply to articles authored by other types of connected scholars. He concludes that this latter evidence is consistent with the idea that for these connected authors, the positive effects generated by reduced communication costs and cooperation are offset by a dilution in quality due to nepotism.[3]

3 These findings, which are in line with some of the patterns described by Heckman and Moktan (Chapter 3) and Cherkashin et al. (Chapter 11), should be contrasted with the finding of Brodgaard et al. (2014) and Card and DellaVigna (2020) discussed in the concluding chapter of this eBook.

The last chapter of Section 4 focuses on the geography of published economic research. Jishnu Das and Quy-Toan Do use data on more than 75,000 empirical papers published between 1985 and 2004 in more than 200 economics journals to study whether publications in economics have become more representative of the world over time. They find that low-income countries are heavily under-represented in economic research and that the strongest determinant of research output on a given country is its per-capita GDP, which alone accounts for 75% of the variation in (per capita) publications across countries. In this sense the US, which accounts for nearly 50% of the papers included in their sample, is not an anomaly – it is 'different' only in that it is both large and rich. However, there is American exceptionalism in the Top Five journals. The probability of publication in these journals is much larger for papers on the US relative to other countries, and this pattern persists even after controlling for author 'quality'. The authors conclude that the correlation between publication patterns and GDP per capita is troubling because it suggests that it is hard to develop country-specific research-based policies in countries which have the highest development needs. These results also support Bardhan's (2003) concerns about a possible misallocation of talent across research institutions with limited incentives to focus on small and poor countries.

The recent events in the United States have sparked an intense debate on the race problem in economics. African American economists have pointed to the fact that economists who write about racial discrimination in the most prestigious journals often lack a full understanding of the problem, and those who do have a good understanding of the problem are rarely read and cited because their research is often published in specialised outlets which most economists do not read (Spriggs 2020).

Section 5 of the eBook discusses the race problem in economic with a focus on US academia. In Chapter 16, Trevon Logan and Samuel Myers point out that most modern economists are not trained to address questions of 'structural' or 'systemic' racism and that this has led to the structural determinants of current racial inequalities being ignored. They conclude that in order to remedy the problem of marginalisation of race in economics profession, four things must happen: (i) the profession needs to acknowledge and understand its racist roots; (ii) there must be serious accounting for why the research contributions of African American scholars often remain at the margins of the profession; (iii) those wishing to explore topics of race and racism must seek credentials in the history, culture and contributions of African Americans; and (iv) PhD students in economics need to be trained in economic history and the history of economic thought, including the contributions of African American scholars and researchers.

Chapter 17, by Gregory Price and Rhonda Sharpe, discusses the lack of African American economics professors in US universities. The authors show that while the number of African Americans who received a PhD in economics has increased over time, there has been no comparable increase of Black economic professors in US universities. The authors highlight that there are several reasons to be concerned about the lack of diversity in the economics profession because a diverse profession may provide multiple perspectives on

policies that emphasise the well-being of those marginalised in society. They argue that a penalty system for institutions that do not broaden participation could be a key element to promote initiatives or best practices that foster an inclusive profession.

The last section of the eBook discusses economic research at the time of Covid-19. In Chapter 18, Noriko Amano-Patiño, Elisa Faraglia, Chryssi Giannitsarou, and Zeina Hasna ask who is doing research at the time of Covid-19. The authors find that while there has been a surge of papers on the Covid-19 shock by senior male economists, the productivity of female and, more generally, midcareer research economists has been negatively affected by the lockdown measures. The most likely explanation for this pattern is that junior and midcareer female economists are more likely to be involved in both professional and administrative duties, while also probably tending to families with young children during lockdowns.[4]

In Chapter 19, John Cochrane asks who will publish all the papers on Covid-19 that are being produced right now. He points to the inefficiency of the current publications system and states that "economists believe in markets, but not for papers". He suggests that a possible solution for addressing some of the issues that plague the publication process in economics is to allow for simultaneous submissions and thus create a market which will allow papers to be better matched to journals.

As a response to long publication lags in economics, at the end of March, CEPR issued a call for papers for Covid Economics, Vetted and Real-Time Papers. The inspiration came from physics and the medical sciences, where there exists an old tradition of 'pre-prints' (working papers that are lightly refereed and posted quickly). A key innovation of Covid Economics is that it has opened up CEPR to quality publishing beyond its own set of Research Fellows and Associates while ensuring a high standard of quality. In chapter 20, Charles Wyplosz describes his experience as editor of Covid Economics.

The final chapter of the eBook provides some suggestions for further reading.

REFERENCES

Bardhan, P (2003), "Journal Publication in Economics: A View from the Periphery", *Economic Journal* 113(488): 332-7.

Deaton, A (2011), "Puzzles and Paradoxes: A Life in Applied Economics".

Lundberg, S (2020), *Women in Economics*, a VoxEU ebook, CEPR Press.

Spriggs, W (2020) "Is now a teachable moment for economists? An open letter to economists from Bill Spriggs".

4 Lundberg (2020) includes several essays that discuss the factors that contribute to the productivity gap between female and male economists.

ABOUT THE AUTHORS

Sebastian Galiani is Professor of Economics at the University of Maryland. He obtained his PhD in Economics from the University of Oxford and works broadly in the field of Development Economics. He is also a Fellow of the NBER and BREAD. Sebastian was Secretary of Economic Policy, Deputy Minister, Ministry of Treasury, Argentina, between January of 2017 and June of 2018. Sebastian is associate editor of the *Journal of Development Economics; Journal of Economic Behavior and Organization*, and *Latin American Economic Review*. He received the Konex Diploma in Development Economic (2006-2016). He has served as Scientific Director of JPAL-LAC and as member of the Board of Directors of JPAL, MIT. He has also worked as consultant for Gates Foundation, United Nations, Inter-American Development Bank, Innovations for Poverty Action, World Bank, and several governments around the world.

Ugo Panizza is Professor of Economics and Pictet Chair at the Graduate Institute, Geneva. He is also the Director of the Institute's Centre on Finance and Development and Vice-President of CEPR. Prior to joining the Institute, Ugo was the Chief of the Debt and Finance Analysis Unit at the United Nations Conference on Trade and Development (UNCTAD). He also worked at the Inter-American Development Bank and the World Bank and was an Assistant Professor of Economics at the American University of Beirut and the University of Turin. His research interests include international finance, sovereign debt, banking, and political economy. He is a former member of the executive committee of the Latin American and Caribbean Economic Association (LACEA) and an Editor of the Association's journal *Economia*. He is also a member of the editorial board of the *IMF Economic Review*, the *Review of Development Finance,* and the *Review of Economics and Institutions*. He holds a PhD in Economics from The Johns Hopkins University and a Laurea from the University of Turin.

SECTION 1

Measuring success in economics

CHAPTER 1

Measuring success in economics[1]

Daniel Hamermesh

Barnard College, Royal Holloway University of London, and University of Texas at Austin

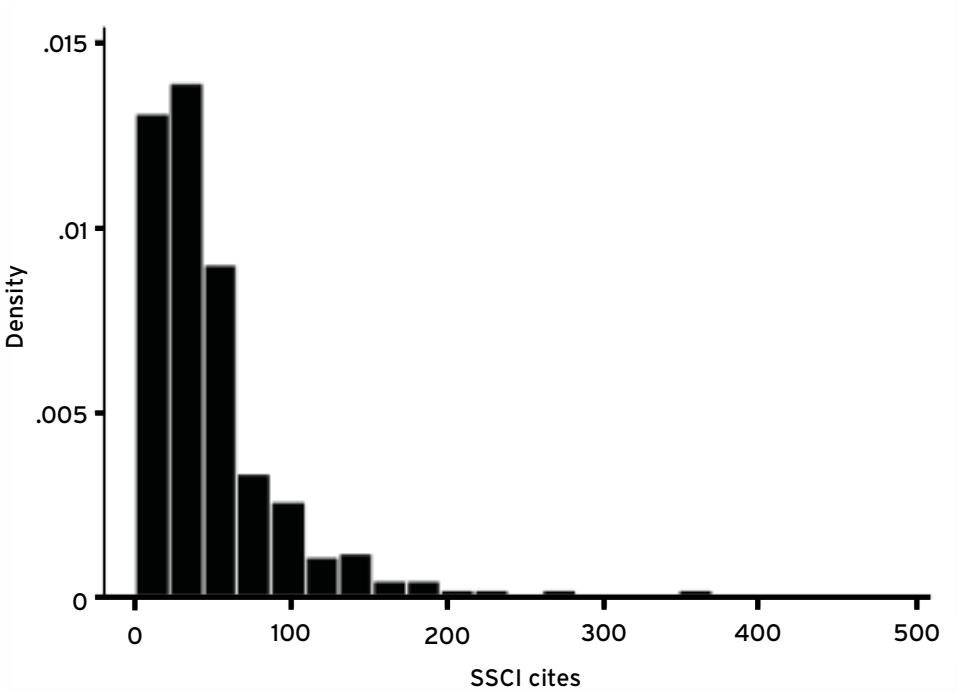
Academic economists are competitive and concerned with measuring their success – with professional navel-gazing. They are focused on the impact of their work on scholarship, on the wider world and on their standing compared to others in their profession.[2] Rankings and measures of success serve a broader purpose than within-group competition, however; they indicate the extent to which a scholar's achievements as a researcher affect other scholars and thus in the end affect public debate. The issue they face is how to compare achievements, and for that reason it is particularly important to have some agreed-upon measures of individual and group achievement.

Most academic economists judge their own and their peers' achievements by numbers of publications, with special emphasis given to publications in journals that are considered to be more prestigious. The reason is simple: these signals of achievement require very little effort in gathering information and necessitate almost no thought. A select group of economics journals is commonly referred to as the 'Top Four' or 'Top Five' – *American Economic Review, Econometrica, Journal of Political Economy, Quarterly Journal of Economics* (and *Review of Economic Studies*) – with publication in this group exerting an inordinate influence on careers (Heckman and Moktan 2020). But judging quality based simply on where an article appears is an extremely poor way of assessing quality. A tree may fall in a very popular forest; but if nobody hears it fall, does it matter?

Within this group of journals there is tremendous heterogeneity among published articles. Taking each article appearing in these five journals in 2007 and 2008, Figure 1 graphs the distribution of the number of citations received from its publication date up to January 2015, as measured in the Web of Science. While the average paper had been cited 50 times, the median paper had received only 35 citations; only 21% had received more than 100 citations. The prestige of the top journals in economics arises primarily because a few articles attract very wide attention. While others are not entirely ignored, their impact is small. The conclusion is unchanged if we take a much longer perspective and examine articles published in the 1970s or if we use Google Scholar citation counts.

2 Numerous rankings of individuals and groups of economists have been produced for over four decades, with some examples being Davis and Papanek (1984), Dusansky and Vernon (1998) and Ellison (2013).

FIGURE 1 DISTRIBUTION OF *WEB OF SCIENCE* CITATIONS TO PUBLICATIONS IN TOP FIVE JOURNALS, 2007-08



Much scholarly research published in other journals has an impact that exceeds that of research published in the most prestigious outlets. Taking the two general economics journals that are viewed as the next steps down the publishing 'food chain' – the *Economic Journal* and *Review of Economics and Statistics* – we can ask where the citation record of articles published there in 2007-08 would stand compared to articles in a Top Five outlet. The majority of these articles do attract less attention, but even the median-cited article in these 'lesser' journals receives more attention than 30% of Top Five publications. Academic output is heterogeneous; in judging it one must consider individual cases and not simply evaluate research based upon where it is published.

Research in economics is increasingly characterised by co-authorship. The overwhelming majority of scholarly articles have two or more authors, with substantial fractions having three or more (Hamermesh 2013). In judging individuals' contributions to research, how can potential employers, students and outsiders evaluate contributions to what are typically the results of joint production?

There is no way to know the ex ante impact of a scholarly article, but we can relate the subsequent citations it receives to the number of its authors. This production function implicitly measures the marginal scholarly productivity of an additional co-author.

Table 1 presents the average number of subsequent Web of Science citations received by articles published in the Top Five journals in 2007 and 2008 as a function of the number of authors. Additional co-authors are on average productive of additional citations, but the marginal effect on scholarly impact of adding another co-author is far less than proportional. Going from sole-authored to two-authored works increases citations by 20%; going from one to four authors does not even double the scholarly impact of an article. The marginal productivity of an additional co-author is, as economic theory would suggest, diminishing in the number of co-authors.

TABLE 1 MEAN *WEB OF SCIENCE* CITATIONS TO TOP FIVE PUBLICATIONS IN FIRST SEVEN YEARS POST-PUBLICATION, BY NUMBER OF AUTHORS, 2007-08

	Number of authors			
	1	2	3	4 or more
Average citations	41.2	48.5	61.7	72.7

The diminishing marginal productivity of additional co-authors suggests that in evaluating the success of economics researchers one cannot simply count articles, or articles adjusted by journal quality, or even, as would be better, the citations an individual article receives. One should reduce an estimate of the impact of each author, perhaps by dividing by the number of authors, N, but at the very least by some number greater than one. At the end of the day, many years after publication, when the eventual scholarly impact of research has been nearly fully revealed, dividing credit by the number of authors is the only sensible approach to measuring an individual's contributions.

The degree of heterogeneity in the achievements of individual economists is also huge. Even taking elite senior scholars – those who received their doctorates over 15 years ago and who are located in schools ranked in the top 20 in the US – a 'superstar' (i.e. a scholar who is among the top 1% of researchers in this group) is cited 14 times as frequently as the median scholar in the group; the median scholar is cited 6 times as often as someone in the lowest decile of these researchers. Fifteen percent of these economists account for half of all the citations this elite group receives. There are a few superstar economists, more stars, even more planets, but the majority are scholarly asteroids.

In addition to judging individuals' success, we also judge the achievements of groups of economic researchers – i.e. the faculties with which individuals are affiliated – as these judgments are important for students considering post-graduate study, young researchers seeking employment, and outsiders seeking experts on economic issues. Using a wide variety of measures based on publications or citations, and looking at averages, medians, or the achievements of the best researchers at an institution, yields remarkably similar rankings, with Harvard, Princeton, Chicago, Stanford, MIT, and Berkeley being consistently ranked among the top ten faculties in the US. These rankings are very stable

over time: these schools ranked in the top seven in 1964 in the first comprehensive ranking of economics programmes in the US (Cartter 1966). Top economics faculties in Europe generally rank well below this group by these measures.

Here, too, paying attention to heterogeneity – considering the achievements of individual faculty members – is more important than looking at summary statistics. At least 25% of the researchers in economics faculties that are ranked 6th to 10th have records that place them above the median-cited scholar in at least one top-five economics faculty; the median researchers in schools ranked 11th to 20th have records that would place them above the median-cited scholar in at least one of the top ten faculties. The same is true for the very best European economics faculties. There is tremendous overlap in quality among elite institutions; judging faculties based on average achievements misses most of the variation in individual achievements.

The central message is that one cannot rank individual scholars' achievements – their careers or their individual research contributions – by summary measures, such as where their research is published or the institution with which a scholar is affiliated. Top schools have some mediocre scholars, while lower-ranked schools have some stars. Top journals publish more of the very best scholarly research than other journals, but they also publish a lot of research that is mostly ignored. Properly judging success in economics requires paying attention to individual outcomes, not to aggregates that are poor signals of the individual results of which they are comprised.

REFERENCES

Cartter, A (1966), *An Assessment of Quality in Graduate Education*, American Council for Education.

Davis, P and G Papanek (1984), "Faculty Ratings of Major Economics Departments by Citations", *American Economic Review* 74(1): 225-50.

Dusansky, R and C Vernon (1998), "Rankings of U.S. Economics Departments", *Journal of Economic Perspectives* 12(1): 157-70.

Ellison, G (2013), "How Does the Market Use Citation Data? The Hirsch Index in Economics", *American Economic Journal: Applied Economics* 5(1): 63-90.

Hamermesh, D (2013), "Six Decades of Top Economics Publishing", *Journal of Economic Literature* 51(1): 162-72.

Hamermesh, D S (2018), "Citations in Economics: Measurement, Uses and Impacts", *Journal of Economic Literature* 56(1): 115-56.

Heckman, J and S Moktan (2020), "Publishing and Promotion in Economics: The Tyranny of the Top Five", *Journal of Economic Literature* 58(2): 419-70.

ABOUT THE AUTHOR

Daniel S. Hamermesh is Distinguished Scholar, Barnard College, Professor Emeritus, Royal Holloway University of London, and Sue Killam Professor Emeritus at the University of Texas at Austin. His A.B. is from the University of Chicago (1965), his Ph.D. from Yale (1969). He taught from 1969-73 at Princeton, from 1973-93 at Michigan State, from 1993-2014 at the University of Texas at Austin, from 2009-12 at Maastricht University, from 2012-2017 at Royal Holloway University of London, and has held visiting professorships in the United States, Europe, Australia and Asia. He is a Fellow of the Econometric Society, a research associate of the National Bureau of Economic Research, and was President of the Society of Labor Economists in 2001. In 2013 that Society gave him the Mincer Award for Lifetime Contributions; he was awarded the IZA Labor Prize; and he received the John R. Commons Award from Omicron Delta Epsilon.

He authored *Labor Demand, The Economics of Work and Pay, Economics Is Everywhere, Beauty Pays*, *Spending Time* and a wide array of articles in labour economics in the leading general and specialized economics journals.

His research concentrates on time use, labour demand, discrimination, social insurance programs (particularly unemployment insurance), and unusual applications of labour economics (to suicide, sleep and beauty).

CHAPTER 2

Impact of lower-rated journals on economists' judgements of publication lists

Nattavudh Powdthavee, Yohanes E. Riyanto and Jack L. Knetsch
Warwick Business School; Nanyang Technological University; Simon Fraser University

Judgements of economists' contributions to the scientific literature, and their professional reputations, are influenced by both the number of times they publish and the perceived quality of the journals in which their publications appear. These judgements usually play an important role in hiring, promotion, and tenure decisions in research universities and many other institutions (Grimes and Register 1997, Combes et al. 2008, Conley et al. 2011).

The presence of well-recognised and prestigious journals on an author's publication list clearly has a favourable impact on that author's reputation, but much less is known about – and very little attention has been given to – the impact of publications in lower-ranked journals. Although these publications may have a positive social value in disseminating useful innovations and empirical findings, we do not know if this contribution is commensurately recognised in the judgements of other economists, and of those making decisions that affect the authors. It is not even clear if publications in lower-ranked journals, when added to publications in higher-ranked journals, have a positive or negative impact on other people's assessments of the author.

The evidence that additional publications may not contribute much to reputation, and might even detract from it, comes from experiments that demonstrate the 'less is better effect', which is a focal illusion by which people in some contexts compare the value of two related goods, and assess the one with higher objective value as being worth less. For example, Hsee (1998) found that one group were willing to pay more for a 24-piece set of dinnerware in good condition than a similar group were willing to pay for a set that contained 28 (that is, four more) pieces in good condition, but included another 11 that were broken. The second set had more usable pieces, so objectively was worth more, but it was valued less. A third group were shown both sets, and they gave a higher value to the second set.

AVERAGE QUALITY VERSUS TOTAL PRODUCTIVITY

In Powdthavee et al. (2017), we attempt to understand if this effect also applies to academic output. We ask if the inclusion of publications in well-known, respected, but lower-ranked journals alongside those in higher-ranked ones might not add positive impact to the assessments of other economists – or might even have a negative impact.

We sent out 1,827 email invitations to faculty members of 44 universities around the world (14 universities in the UK, 12 in the US, six in Australia, five in continental Europe, three in Singapore, two in Canada, and one each in Hong Kong and New Zealand) to take part in a survey. We also sent out email invitations to 502 PhD students from seven universities in the US, the UK, Australia, and Singapore. We did not incentivise our colleagues to complete the survey, and neither did we send reminders when questionnaires were not completed. We relied completely on their willingness to volunteer a few minutes of their time to participate in the survey, with only the promise that we would send them the results later if they were interested in having them. In total, we received 378 anonymous positive responses to our surveys, of which 52 were PhD students (a 16% response rate).

For every university in our list, we randomly allocated one of five different hypothetical publication lists for faculty members to rate. To find respondent valuations of the publication lists, we asked the following question:

"Without any other information, rate individual A's publications as contributions to the literature and individual A's professional reputation on the following 10-point scale, where 1 = worst possible CV, ... 10 = best possible CV".

For the publication lists we provided, the first four were the primary tests of the influence of lower-ranked journals on economists' judgements of publication lists. Two of them had two publications in 'top five' journals (*Quarterly Journal of Economics* and *Journal of Political Economy*) with one also including publications in lower-ranked journals ('long, top five' and 'short, top five', respectively, see Table 1). The other two provided a similar comparison test, with and without lower-rated journals. In this case, however, both lists had no top five journals ('long, no top five' and 'short, no top five').

Two further treatments asked for ratings of the same lists when each pair was viewed together by respondents – joint valuation of 'short, top five' and 'long, top five', and joint valuation of 'short, no top five' and 'long, no top five'. The seventh treatment contained only lower-ranked journals ('long, lower ranked') and provided a confirmation test of the sensitivity of people's judgements of the quality of publication lists to the rankings of the journals that are included.

TABLE 1 'SHORT, TOP FIVE' AND 'LONG, TOP FIVE' PUBLICATION LISTS

Short top 5 higher-ranked journals	Long top 5 higher-ranked journals
Journal of Econometrics	*Journal of Econometrics*
Quarterly Journal of Economics	*Journal of African Economics*
Economic Journal	*Quarterly Journal of Economics*
Journal of Labor Economics	*Economic Journal*
Journal of International Economics	*Pakistan Development Review*
Journal of Public Economics	*Journal of Labor Economics*
Review of Economics and Statistics	*Asian Economic Journal*
Journal of Political Economy	*Journal of International Economics*
	European Journal of Comparative Economics
	Pacific Economic Bulletin
	Journal of Public Economics
	Review of Economics and Statistics
	Journal of Political Economy
	South African Journal of Economics

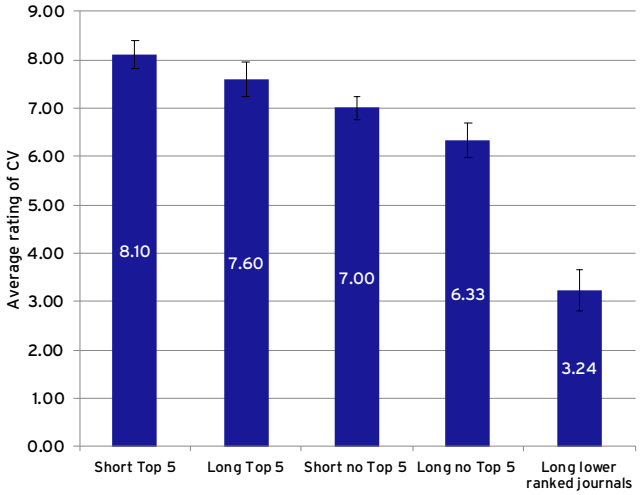
EVIDENCE FROM SURVEY EXPERIMENTS

Figure 1, which reports the means of the single valuation ratings of the five lists, shows that the inclusion of low-ranked journals has a negative and statistically significant impact on how other economists judge the value of the author's contribution.

Respondents given the 'short, top five' list gave it an average rating of 8.1, while those given the 'long, top five' list gave ratings with a 7.6 mean. The mean rating given by respondents seeing only the 'short, no top five' list of journals – in which the *Quarterly Journal of Economics* and *Journal of Political Economy* were replaced by two middle-tier general journals, *Economica* and *Economic Inquiry* – was 7.0. The mean rating given by economists shown only the 'long, no top five' list was 6.3. Not surprisingly, the lowest

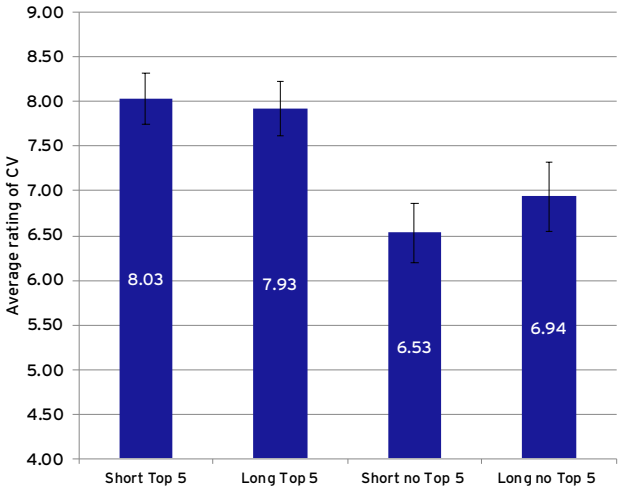
single-valuation ratings were given to the list included as a consistency check, comprised entirely of publications in unambiguously lower-ranked journals (the 'long, lower ranked' list).[1]

FIGURE 1 RATINGS OF DIFFERENT HYPOTHETICAL CVS: SEPARATE-EVALUATION TREATMENTS



Note: 95% confidence intervals (four-standard-error bars, two above and two below).

FIGURE 2 RATINGS OF DIFFERENT HYPOTHETICAL CVS: JOINT-EVALUATION TREATMENTS



Note: 95% confidence intervals (four-standard-error bars, two above and two below).

1 The Mann-Whitney test indicated a comfortable level of statistical significance between each pair of means. The differences in the mean values continue to be statistically significant when we held other potential confounding influences constant.

When judgements were based on examinations of isolated publication lists, adding publications in lower-ranked journals had a clear negative impact. The results were very different when respondents could carry out a simultaneous examination of both lists. Figure 2 reports the means of the joint valuation ratings of two pairs of publication lists. In this case, respondents could directly compare both lists, and could immediately see that the long list contained all of the journals in the short list, plus others. There was no negative impact from adding low-ranked journals in either test.

A 'LESS IS BETTER' EFFECT FOR PUBLICATIONS

Our survey of judgements of the contributions of individual economists suggests that the 'less is better' effect may compromise social efficiency and community welfare. These judgements could motivate individuals to withhold socially valuable research findings from publication rather than risk having it detract from their professional reputations. People would then be denied the benefits yielded by resources that have been expended to obtain them.

A further consequence of the way reputational and contribution judgements are made is that hiring and promotion committees and research granting bodies will receive somewhat distorted views of the social productivity of individuals. The possibility that this may occur often receives considerable credence from our finding that when people viewed both publication lists together, they valued the one that included lower-ranked publications as high or higher, so that the pattern that our findings suggest is likely to occur – i.e. negative value given to lesser journal publications – will give a distorted view of the social value of the contributions of individuals. This can lead to distorted signals to committees and granting bodies, which, of course, can only undermine efficient allocations.

REFERENCES

Combes, P-P, L Linnemer, and M Visser (2008), "Publish or Peer-Rich? The Role of Skills and Networks in Hiring Economics Professors", *Labour Economics* 15(3): 423-441.

Conley, J P, M J Crucini, R A Driskill, and A Sina Önder (2013), "The Effects of Publication Lags on Life-Cycle Research Productivity in Economics", *Economic Inquiry* 51(2): 1251-1276.

Grimes, P W, and C A Register (1997), "Career Publications and Academic Job Rank: Evidence from the Class of 1968", *Journal of Economic Education* 28(1): 82-92.

Hsee, C K (1998), "The Evaluability Hypothesis: An Explanation of Preference Reversals Between Joint and Separate Evaluation of Alternatives", *Organizational Behavior and Human Decision Processes* (46): 247-257.

Powdthavee, N, Y E Riyanto and J L Knetsch (2018), "Impact of Lower Rated Journals on Economists' Judgements of Publication Lists: Evidence from a Survey Experiment", *Journal of Economic Psychology* 66: 33-44.

ABOUT THE AUTHORS

Nattavudh (Nick) Powdthavee is a Professor of Behavioural Science at Warwick Business School. He obtained his PhD in Economics from the University of Warwick in 2006 and has held positions at the University of London, University of York, Nanyang Technological University in Singapore, University of Melbourne, and London a School of Economics. His research interests are quantitative social and behavioural sciences, and his research findings have been regularly discussed in the media, including the *Financial Times*, the *Economist*, and *The Times*. He is the author of the popular economics book, *The Happiness Equation: The Surprising Economics of Our Most Valuable Asset* (Icon Books).

Yohanes Eko Riyanto is Professor of Economics in the Division of Economics, Nanyang Technological University, Singapore. He received his PhD from Catholic University of Louvain, Belgium. He works in the area of Experimental Economics and Behavioral Economics and Applied Microeconomics. His current research mainly focuses on lab experimental investigations of the role of information and social network in asset and prediction markets, the emergence of cooperative behavior in dynamic social networks, social identity in the lab, contest design and prize structure in contests, and the interplay between linguistic rules and social and time preferences, among others.

Jack L. Knetsch has long been, and continues to be, a contributor to research in behavioural economics and to various applied fields such as environmental economics and policy analysis – work that has led to his being on most lists of most cited economists, including the Thomson—ISI selective listing of the world's most Highly Cited Researchers. Professor Knetsch has accepted visiting appointments at over 20 universities and research institutes in North and South America, Europe, Asia, and Australia. He obtained his PhD from Harvard University and is currently Emeritus Professor at Simon Fraser University.

CHAPTER 3

Publishing and promotion in economics: The tyranny of the Top Five

James J. Heckman and Sidharth Moktan
University of Chicago; LSE

Anyone who talks with young economists entering academia about their career prospects and those of their peers cannot fail to note the importance they place on publication in the so-called Top Five journals in economics (henceforth, the 'T5'): the *American Economic Review* (AER), *Econometrica* (ECMA), the *Journal of Political Economy* (JPE), the *Quarterly Journal of Economics* (QJE), and the *Review of Economic Studies* (ReStud). The discipline's preoccupation with the T5 is reflected in the large number of scholarly papers that study aspects of the T5 journals, many of which acknowledge the T5's de facto role as arbiters in tenure and promotion decisions (e.g. Anauti et al. 2015, Card and DellaVigna 2013, Colussi 2018, Ellison 2002, Frey 2009, Hamermesh 2013, 2018). While anecdotal evidence suggests that the T5 have a strong influence on tenure and promotion decisions, actual evidence on such influence is sparse. Our paper fills this gap in the literature (Heckman and Moktan 2020). We find that the T5 have a large impact on tenure decisions within the top 35 US departments of economics, dwarfing the impact of publications in non-T5 journals. Our survey of current tenure-track faculty hired by the top 50 US economics departments confirms the outsize influence of the T5.

Our empirical and survey-based findings of the T5's influence begs the question: are the T5 an adequate filter of quality? Extending the analysis of Hamermesh (2018), we show that appearance of an article in the T5 is a poor predictor of quality as measured by citations. Substantial variation in the citations accrued by papers published in the T5 and overlap in article quality across journals outside the T5 make aggregate measures of journal quality, such as the T5 label and Impact Factors, poor measures of individual article quality. This is a view expressed by many economists and non-economists alike.[1]

There are many consequences of the discipline's reliance on the T5. It subverts the essential process of assessing and rewarding original research. Using the T5 to screen the next generation of economists incentivises professional incest and creates clientele effects whereby career-oriented authors appeal to the tastes of editors and biases of journals.

1 See https://www.aeaweb.org/webcasts/2017/curse for a roundtable discussion on this topic by prominent economists; see Bertuzzi and Drubin (2013) for comments by biologists; see Schekman (2013) for comments by Randy Schekman, Nobel Laureate in Physiology or Medicine; for statements by Nobel Laureates in Chemistry, see Martin Chalfie's comments at https://www.youtube.com/watch?v=sCAsAKgNPjs and Brian Kobilka's comments at https://www.youtube.com/watch?v=eOd2O-IFCaE.

It diverts their attention away from basic research toward strategising about formats, lines of research, and favoured topics of journal editors, many with long tenures. It raises the entry costs for new ideas and persons outside the orbits of the journals and their editors. An over-emphasis on T5 publications perversely incentivises scholars to pursue follow-up and replication work at the expense of creative pioneering research since follow-up work is easier to judge, is more likely to result in clean publishable results, and hence is more likely to be published.[2] This behaviour is consistent with basic common sense: you get what you incentivise.

In light of the many adverse and potentially severe consequences associated with current practices, we believe that it is unwise for the discipline to continue using publication in the T5 as a measure of research achievement and as a predictor of future scholarly potential. The call to abandon the use of measures of journal influence in career advancement decisions has already gained momentum in the sciences. As of the time of the writing of this chapter, 2,045 organisations and 16,447 individuals have signed the San Francisco Declaration of Research Assessment, a declaration denouncing the use of journal metrics in hiring, career advancement, and funding decisions within the sciences.[3] Economists should take heed of these actions. We provide suggestions for change in the concluding portion of this column.

DOCUMENTING THE POWER OF THE TOP FIVE

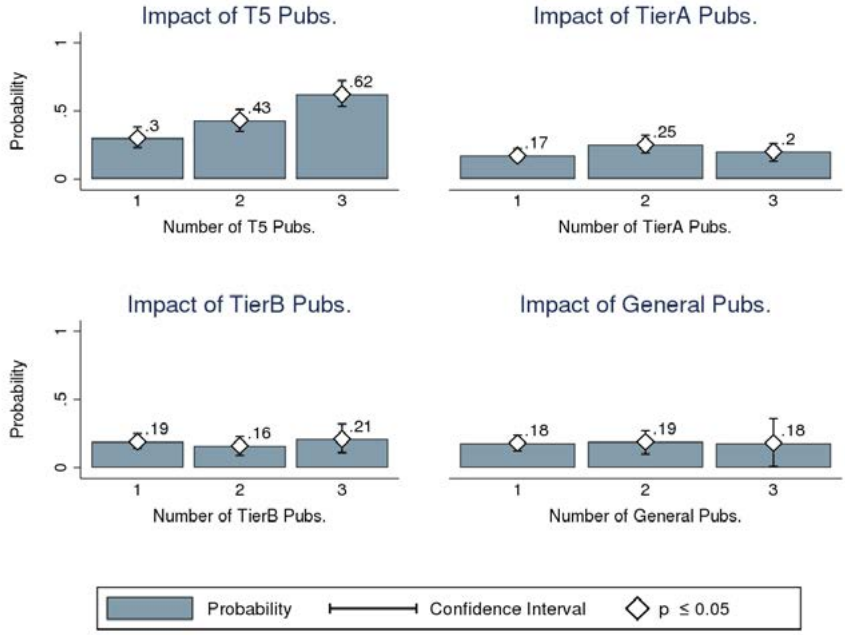
We find strong evidence of the influence of the T5. Without doubt, publication in the T5 is a powerful determinant of tenure and promotion in academic economics. We analyse longitudinal data on employment and publication histories for tenure-track faculty hired by the top 35 US economics department between 1996 and 2010. We find that T5 publications greatly accelerate the probability of receiving tenure during the first spell of tenure-track employment (see Figure 1), even after accounting for the quality of an author's publication portfolio as proxied by a vector of field-adjusted controls for citation.[4] This is true if we limit samples to the first seven years of employment. Estimates from duration analyses of time to tenure show that publishing three T5 articles is associated with a 310% increase in the rate of receiving tenure, compared to candidates with similar levels of publication in non-T5 journals. The estimated effects of publication in non-T5 journals pale in comparison.

2 See the discussion at https://www.aeaweb.org/webcasts/2017/curse

3 The San Francisco Declaration on Research Assessment (DORA) has garnered signatures from 2,045 organisations and 16,447 individuals as of the writing of this column (see https://sfdora.org/signers for the full list of signatories, which include prominent scientists such as Nobel Laureate Martin Chalfie). DORA presents recommendations for judging research output in hiring, advancement, and funding decisions within the sciences. Chief among its recommendations is the avoidance of journal-based metrics when assessing individual research articles and the contributions of individual scientists. DORA was developed by "a group of editors and publishers of scholarly journals [...] during the Annual Meeting of The American Society for Cell Biology (ASCB) in San Francisco, CA, on December 16, 2012" (see https://sfdora.org/read for the full declaration).

4 The vector of citation controls includes the following statistics that summarise the distribution of field-adjusted citations received by each author's portfolio of publications: 25th percentile, median, 75th percentile, minimum, maximum, and mean field-adjusted citations. Our adjustment for fields follows a citation rescaling procedure similar to the one introduced by Radicchi et al. (2008) and discussed by Perry and Reny (2016).

FIGURE 1 PREDICTED PROBABILITIES FOR TENURE RECEIPT IN THE FIRST SPELL OF TENURE-TRACK EMPLOYMENT



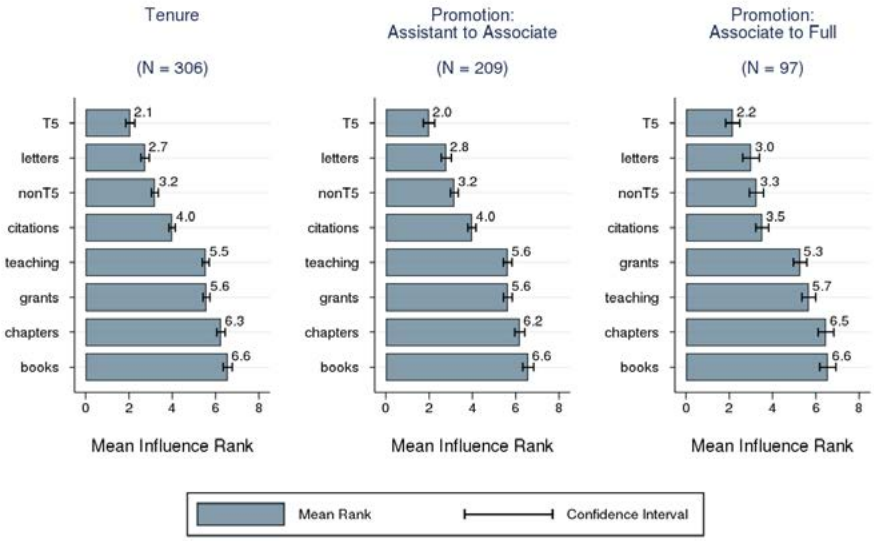
Note: This figure plots the predicted probabilities associated with different levels of publications in different journal categories, where the predictions are obtained from a logit model. White diamonds on the bars indicate that the the influence of publishing the corresponding number of articles in the journal category is significantly different than zero at the 5% level.

A survey of current assistant and associate professors hired by the top 50 US economics departments corroborates these findings. On average, junior faculty rank T_5 publications as being the single most influential determinant of tenure and promotion outcomes (see Figure 2).[5]

Responses to our survey reveal a widespread belief among junior faculty that the effect of the T_5 on career advancement operates independently of differences in article quality. To separate quality effects from a T_5 placement effect, we ask respondents to report the probability that their department awards tenure or promotion to an individual with T_5 publications compared to an individual identical to the first individual in every way except that he/she has published the same number and quality of articles in non-T_5 journals. If the T_5 influence operates solely through differences in article impact and quality, the expected reported probability would be 0.5. The results in Figure 3 show large and statistically significant deviations from 0.5 in favour of T_5 publication. On average, respondents from top ten departments believe that the T_5 candidate would receive tenure with a probability of 0.89. The mean probability increases slightly for lower-ranked departments.

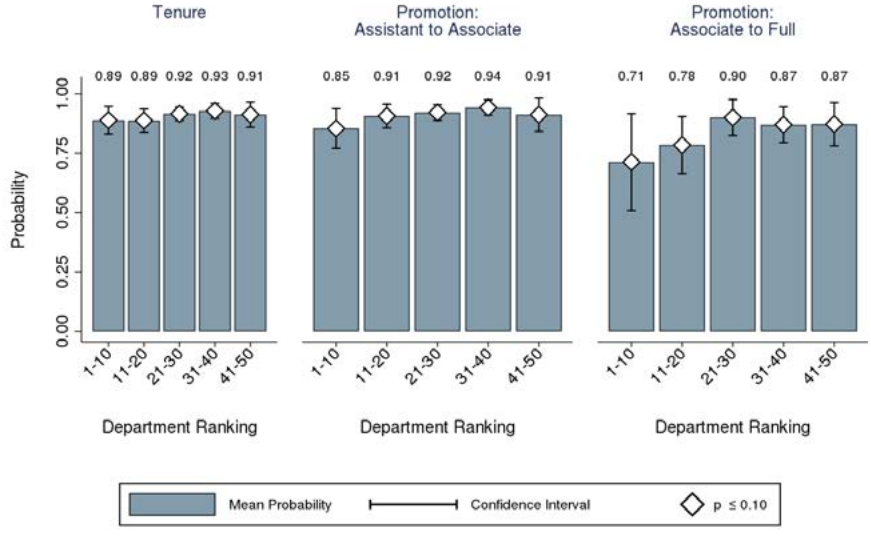
5 Pairwise Wilcoxon tests comparing the distribution of rankings provided by respondents for the eight different performance areas reject the null hypothesis of equality between the ranking distribution for T5 publication and each of the other seven performance areas at the 10% level.

FIGURE 2 RANKING OF PERFORMANCE AREAS BASED ON THEIR PERCEIVED INFLUENCE ON TENURE AND PROMOTION DECISIONS



Notes: This figure summarises respondents' rankings of eight performance areas. Responses are summarised by type of career advancement: tenure receipt, promotion to assistant professor, and promotion to associate professor. The bars present mean responses for each performance area. Respondents were given the option to not rank any of all of the eight performance areas. As a result, the number of respondents varies across the performance areas.

FIGURE 3 PROBABILITY THAT A CANDIDATE WITH T5 PUBLICATIONS RECEIVES TENURE OR PROMOTION INSTEAD OF AN IDENTICAL CANDIDATE WITH NON-T5 PUBLICATIONS, CETERIS PARIBUS



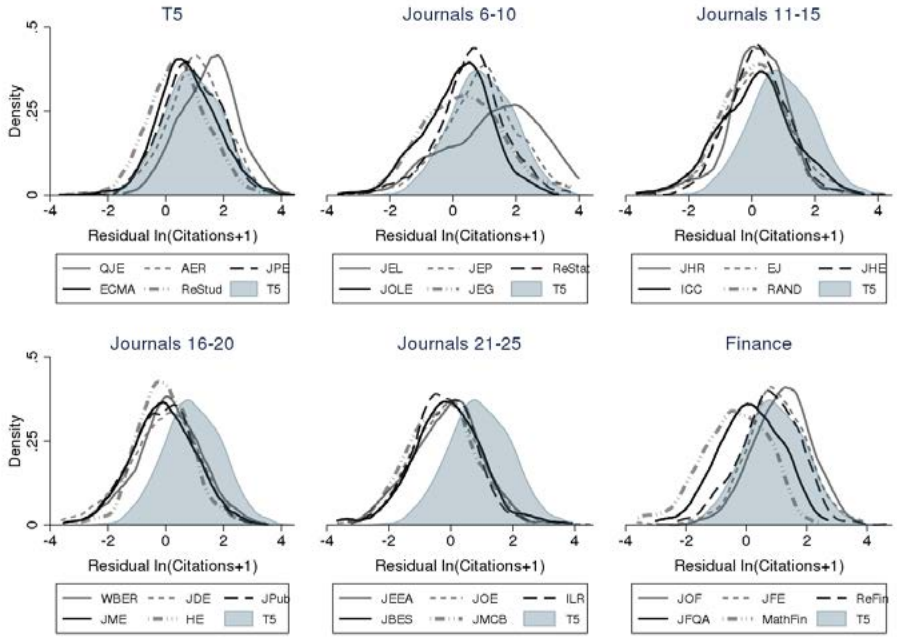
Notes: This figure summarises respondents' perceptions about the probability that a candidate with T5 publications is granted tenure or promotion by the respondent's department instead of a candidate with non-T5 publications, ceteris paribus. Responses are summarised by type of career advancement: tenure receipt, promotion to assistant professor, and promotion to associate professor. The bars present mean responses for each performance area. White diamonds indicate that the mean response is significantly different than 50% at the 10% level.

THE T5 AS A FILTER OF QUALITY

The current practice of relying on the T5 has weak empirical support if judged by its ability to produce impactful papers as measured by citation counts. Extending the citation analysis of Hamermesh (2018), we find considerable heterogeneity in citations within journals and overlap in citations across T5 and non-T5 journals (see Figure 4). Moreover, the overlap increases considerably when one compares non-T5 journals to the less-cited T5 journals. For instance, while the median Review of Economics and Statistics article ranks in the 38th percentile of the overall T5 citation distribution, the same article outranks the median-cited article in the combined JPE and ReStud distributions.

Restricting the citation analysis to the top of the citation distribution produces the same conclusion. Among the top 1% most-cited articles in our citations database,[6] 13.6% were published by three non-T5 journals.[7]

FIGURE 4 DISTRIBUTION OF ADJUSTED LOG CITATIONS FOR ARTICLES PUBLISHED BETWEEN 2000 AND 2010 (MEASURED UP TO JULY 2018)



Notes: The figure plots distributions of adjusted log citations obtained from a model that estimates log(citations + 1) as a function of a third-degree polynomial for years elapsed between the date of publication and 2018, the year citations were measured.This adjusts log citations for exposure effects, thereby allowing for comparisons of citations received by papers from different publication cohorts.

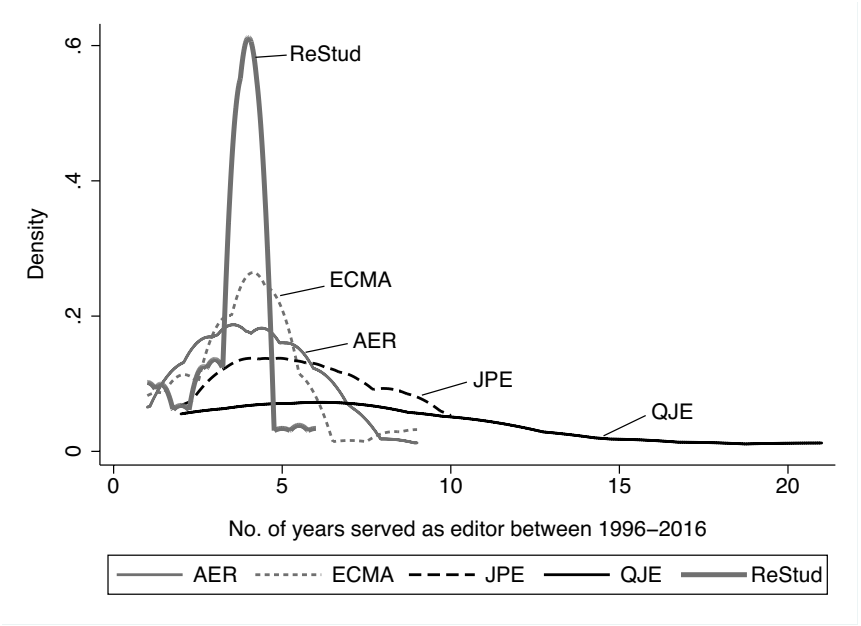
Source: Scopus.com. Copyright American Economic Association; reproduced with permission of the ***Journal of Economic Literature***.

6 The database is comprised of citations to all articles published by 25 top economics journals between 2000 and 2010.
7 Each of the three journals produced more top 1% articles than ReStud, and two of the three journals produced at least as many top 1% articles as JPE. ReStud is outranked by six additional non-survey non-T5 journals, which together contributed a further 16% to the pool of top 1% articles.

LOW EDITORIAL TURNOVER AND INCEST

Compounding the privately rational incentive to curry favor with editors is the phenomenon of longevity of editorial terms, especially at house journals (see Figure 5). Low turnover in editorial boards creates the possibility of clientele effects surrounding both journals and their editors. We corroborate the literature that documents the inbred nature of economics publishing (Brogaard et al. 2014, Laband and Piette 1994, Colussi 2018) by estimating incest coefficients that quantify the degree of inbreeding in T5 publications (see Table 1). We show that network effects are empirically important: editors are likely to select the papers of those they know.[8]

FIGURE 5 DENSITY PLOT OF THE NUMBER OF YEARS SERVED BY EDITORS BETWEEN 1996 AND 2016



Note: The plot presents the density for the number of years served by editors of each journal between 1996 and 2016.

Source: Brogaard et al. (2014) for data until 2011; data for subsequent years collected from journal front pages. Copyright American Economic Association; reproduced with permission of the ***Journal of Economic Literature***.

8 Whether this practice capitalises on the benefits of using inside information that improves journal quality as measured by citations or whether it is unproductive cronyism is much discussed. The evidence on this issue is not conclusive, but it appears to favour the story of net benefits to insider knowledge. Laband and Piette (1994) find that articles with author-editor connections are indeed more likely to be published, but these articles also tend to attract higher citations on average. Brogaard et al. (2014) estimate that authors publish 100% more papers in a journal when the journal is edited by a colleague, compared to periods when such department-editor networks do not exist. They also find that connected articles generate between 5% and 25% more citations than unconnected articles on average.

TABLE 1 INCEST COEFFICIENTS: PUBLICATIONS IN TOP FIVE JOURNALS BETWEEN 2000 AND 2016 BY AUTHOR AFFILIATION LISTED DURING PUBLICATION

	AER			ECMA			JPE			QJE			ReStud		
	Count	%	% All	Count	%	% All	Count	%	% All	Count	%	% All	Count	%	% All
Universities:															
Chicago	266	*14.7%*	*7.7%*	70	*12.8%*	*6.8%*	90	*23.8%*	*14.3%*	103	*20.8%*	*15.4%*	25	*7.4%*	*3.5%*
Columbia	169	*9.4%*	*4.9%*	28	*5.1%*	*2.7%*	27	*7.1%*	*4.3%*	43	*8.7%*	*6.4%*	33	*9.8%*	*4.6%*
Harvard	412	*22.8%*	*11.9%*	58	*10.6%*	*5.7%*	55	*14.6%*	*8.7%*	165	33.3%	*24.7%*	26	*7.7%*	*3.7%*
MIT	255	*14.1%*	*7.3%*	75	*13.7%*	*7.3%*	47	*12.4%*	*7.5%*	93	*18.8%*	*13.9%*	33	*9.8%*	*4.6%*
NYU	153	*8.5%*	*4.4%*	53	*9.7%*	*5.2%*	37	*9.8%*	*5.9%*	39	*7.9%*	*5.8%*	52	*15.4%*	*7.3%*
Northwestern	135	*7.5%*	*3.9%*	94	*17.2%*	*9.2%*	36	*9.5%*	*5.7%*	33	*6.7%*	*4.9%*	50	*14.8%*	*7.0%*
Princeton	166	*9.2%*	*4.8%*	54	*9.9%*	*5.3%*	24	*6.3%*	*3.8%*	39	*7.9%*	*5.8%*	34	*10.1%*	*4.8%*
Stanford	245	*13.6%*	*7.1%*	75	*13.7%*	*7.3%*	42	*11.1%*	*6.7%*	62	*12.5%*	*9.3%*	33	*9.8%*	*4.6%*
UCBerkeley	230	*12.7%*	*6.6%*	47	*8.6%*	*4.6%*	28	*7.4%*	*4.4%*	65	*13.1%*	*9.7%*	33	*9.8%*	*4.6%*
UPenn	162	*9.0%*	*4.7%*	48	*8.8%*	*4.7%*	38	*10.1%*	*6.0%*	26	*5.3%*	*3.9%*	46	*13.6%*	*6.5%*
Yale	134	*7.4%*	*3.9%*	88	*16.1%*	*8.6%*	23	*6.1%*	*3.7%*	33	*6.7%*	*4.9%*	22	*6.5%*	*3.1%*
UCL	53	*2.9%*	*1.5%*	39	*7.1%*	*3.8%*	15	*4.0%*	*2.4%*	11	*2.2%*	*1.6%*	32	*9.5%*	*4.5%*
University Combination:															
Harvard/MIT	597	*33.0%*	*17.2%*	122	*22.3%*	*11.9%*	94	*24.9%*	*14.9%*	225	45.5%	*33.7%*	53	*15.7%*	*7.5%*
Total (Top Afil.)	**1807**	***100.0%***	***52.0%***	**546**	***100.0%***	***53.4%***	**378**	***100.0%***	***60.0%***	**495**	***100.0%***	***74.2%***	**337**	***100.0%***	***47.5%***
Total (Non-Top Afil.)	**1667**	***n/a***	***48.0%***	**476**	***n/a***	***46.6%***	**252**	***n/a***	***40.0%***	**172**	***n/a***	***25.8%***	**373**	***n/a***	***52.5%***
Total (Top & Non-Top)	**3474**	***n/a***	***n/a***	**1022**	***n/a***	***n/a***	**630**	***n/a***	***n/a***	**667**	***n/a***	***n/a***	**710**	***n/a***	***n/a***

Notes: The table reports three columns for each T5 journal. The left-most columns report the number of articles that were affiliated to each university. The middle columns present the percentage of articles published in the journal that were affiliated to the university out of all articles affiliated to the list of top universities. The right-most columns present the percentage of articles published in the journal that were affiliated to the university out of all articles published in the journal. An author is defined as being affiliated with a university during a given year if he/she listed the university as an affiliation in any publication that was made during the specific year. An article is defined as being affiliated with a university during a specific year if at least one author was affiliated to the university during the year.

DISCUSSION

Reliance on the T_5 as a screening device raises serious concerns. Our findings should spark a serious conversation in the economics profession about developing implementable alternatives for judging the quality of research. Such solutions necessarily de-emphasise the role of the T_5 in tenure and promotion decisions, and redistribute the signalling function more broadly across a range of high-quality journals.

However, a proper solution to the tyranny will likely involve more than a simple redefinition of the T_5 to include a handful of additional influential journals. A better solution will need to address the flaw that is inherent in the practice of judging a scholar's potential for innovative work based on a track record of publications in a handful of select journals. The appropriate solution requires a significant shift from the current publications-based system of deciding tenure to a system that emphasises departmental and external review of a candidate's work. Such a system would give serious consideration to unpublished working papers and to the quality and integrity of a scholar's work. By carefully reading published and unpublished papers rather than counting placements of publications, departments would signal that they both acknowledge and adequately account for the greater risk associated with scholars working at the frontiers of the discipline.

A more radical proposal would be to shift publication away from the current journal system, with its long delays in refereeing and publication and possibility for incest and favouritism, towards an open source arXiv or PLOS ONE format.[9] Such formats facilitate the dissemination rate of new ideas and provide online real-time peer review for papers. Discussion sessions would vet criticisms and provide both authors and their readers with different perspectives in much faster time frames. Shorter, more focused papers would stimulate dialogue and break editorial and journal monopolies. Ellison (2011) notes that online publication is already being practiced by prominent scholars in economics. Why not broaden the practice across the profession and encourage spirited dialogue and rapid dissemination of new ideas? This evolution has begun with a recently launched economics version of arXiv.10

Under any event, the profession should reduce incentives for crass careerism and promote creative activity. Short tenure clocks and reliance on the T_5 to certify quality do just the opposite. In the long run, the profession will benefit from application of more creativity-sensitive screening of its next generation.

9 See Vale (2015) for a discussion of the use of arXiv in physics; see Eisen (2013) for remarks on PLOS ONE by Michael Eisen, its co-founder.

10 See https://arxiv.org/archive/econ

REFERENCES

Anauti, V, S Galiani and R Galvez (2015), "Quantifying the life cycle of scholarly articles across fields of economic research", *Economic Inquiry* 54(2): 1339-1356.

Bertuzzi, S and D Drubin (2013), "No shortcuts for research assessment", *Molecular Biology of the Cell* 24(10): 1505-1506.

Brogaard, J, J Engelberg and C Parsons (2014), "Networks and productivity: Causal evidence from editor rotations", *Journal of Financial Economics* 111(1): 251-270.

Card, D and S DellaVigna (2013), "Nine facts about top journals in economics", *Journal of Economic Literature* 51(1): 144-161.

Colussi, T (2018), "Social ties in academia: A friend is a treasure", *Review of Economics and Statistics* 100(1): 45-50.

Eisen, M (2013), "The Past, Present and Future of Scholarly Publishing", remarks by Michael Eisen, co-Founder of Public Library of Science (PLOS), at the Commonwealth Club in San Francisco.

Ellison, G (2002), "The slowdown of the economics publishing process", *Journal of Political Economy* 110(5): 947-993.

Ellison, G (2011), "Is Peer Review in Decline?", *Economic Inquiry* 49(3): 635-657.

Frey, B (2009), "Economists in the PITS?", *International Review of Economics* 56: 335-346.

Hamermesh, D (2018), "Citations in Economics: Measurement, Uses, and Impacts", *Journal of Economic Literature* 56(1): 115-156.

Hamermesh, D (2013), "Six Decades of Top Economics Publishing: Who and How?" *Journal of Economic Literature* 51(1): 162-172.

Heckman, J J and S Moktan (2020), "Publishing and Promotion in Economics: the Tyranny of the Top Five", *Journal of Economic Literature* 58(2): 479-470.

Laband, D and M Piette (1994), "Favoritism versus search for good papers: Empirical evidence regarding the behavior of journal editors", *Journal of Political Economy* 102(1): 194-203.

Perry, M and P J Reny (2016), "How to count citations if you must", *American Economic Review* 106(9): 2722.

Radicchi, F, S Fortunato and C Castellano (2008), "Universality of citation distributions: Toward an objective measure of scientific impact", *Proceedings of the National Academy of Sciences* 105(45): 17268-17272.

Schekman, R (2013), "How journals like Nature, Cell and Science are damaging science", *The Guardian*, 9 December.

Vale, R D (2015), "Accelerating Scientific Publication in Biology", *Proceedings of the National Academy of Science* 112(44): 13439-13446.

ABOUT THE AUTHORS

James J. Heckman is the Henry Schultz Distinguished Service Professor of Economics in the Department of Economics at the University of Chicago and the founding Director of the Center for the Economics of Human Development. Heckman is actively engaged in conducting and guiding empirical and theoretical research on skill development, inequality, and social mobility and continues his work on the econometrics of policy evaluation and the choice theoretic foundations of causal inference. Heckman has won the numerous prizes for his work, including the Nobel Prize in Economics in 2000, the John Bates Clark Medal in 1983, the Gold Medal of the President of the Italian Republic in 2008, the Frisch Medal from the Econometric Society in 2014, and the Dan David Prize in 2016. He has published more than 300 articles and 9 books. This work has influenced both the scholarly literature and public policy.

Sidharth Moktan is PhD Student in Economics at the London School of Economics.

SECTION 2

Citation patterns

CHAPTER 4

How different are citation patterns across journal tiers in economics?

María Victoria Anauati, Sebastian Galiani and Ramiro H. Gálvez
Universidad de San Andrés; University of Maryland; Universidad de Buenos Aires

As stated by Gibson et al. (2014), economics is unusual among academic disciplines in the emphasis it places on a narrow set of top journals. This emphasis is believed to exert a powerful influence on the direction of research in economics and the reputation and pay of economics scholars, as well as on departments' and universities' rankings (Hamermesh 2018, Serrano 2018, Gibson et al. 2014, 2017, among others). For this reason, it is not uncommon to read claims such as "[t]he economics profession rewards one research paper in a top five journal more than say five good publications in journals outside this narrow set…" (McKenzie 2014).

In parallel with 'Top Five' publication counts, economics scholars also have drawn more and more on quantitative indicators based on citation counts to assess the performance of researchers and research institutions (e.g. Seeber et al. 2019, Gibson et al. 2017, Hazelkorn 2015, Ellison 2013). However, excelling in terms of citation counts does not necessarily go hand in hand with publication venue reputation. As an illustrative example, a top-tier economics journal may focus on theory or econometrics papers, while a second-tier or top field journal may focus on applied papers. As we discuss in Chapter 5 of this eBook, since applied papers tend to receive more citations than theory papers and econometrics papers, the second-tier journal could end up surpassing the top tier one in terms of citation performance.

So, how do these two strategies for assessing researchers' performance relate? Do citation patterns differ between articles published in top five and well respected non-top five economics journal? Do the dynamics of citations (i.e. life cycles) differ across journal tiers and across fields of economic research within journal tiers?

In Anauati et al. (2020), we answer these questions by analysing citations patterns of more than 6,000 economics research articles published in Top Five, second-tier and top field economics journals. We find that citation patterns vary greatly across journal tiers, and that this variation is related to the field of economics research. Our analysis reveals a series of clear-cut patterns that we describe in this chapter.

To the best of our knowledge, our paper is the first to analyse heterogeneity in citation patterns across journal tiers taking into account field of economics research and impact (in term of citations). In general, most of the literature has focused on Top Five journals,

leaving out second-tier and field journals, or has ignored the methodology used by articles. For instance, in an earlier paper (Anauati et al. 2016), we study citation patterns across fields of economics research but limit our analysis to papers published in the Top Five journals, while Hammermesh (2018) analyses the overlap in citations among Top Five journals, the *Economic Journal* and the *Review of Economics and Statistics* but without focusing on field of economics research.

THE METHOD

As a first step in constructing our dataset, we selected a set of journals to include in each tier under analysis (Top Five, second tier and top field). While there is a consensus regarding which journals form the Top Five – the *American Economic Review* (AER), *Econometrica*, the *Journal of Political Economy* (JPE), the *Quarterly Journal of Economics* (QJE), and the *Review of Economic Studies* (ReStud) – classifying journals into a second tier or a top field tier is more subjective. For our analysis, we included as second-tier journals a sample of well-respected journals which publish articles covering general research topics, and as top field journals a sample of well-respected journals known for focusing on one particular area of research.

We then listed all research articles published between 1992 and 1996 in these journals and collected, from Google Scholar, data on citations received by each article from two years before publication up to 20 years after publication.

Finally, by skimming each paper, we classified each article into one of four fields of economics research following the methodology in Anauati et al. (2016):

- *Applied* papers have an empirical or applied motivation and rely on the use of econometric or statistical methods as a basis for analysing empirical data.
- *Applied theory* papers develop a theoretical model to explain a fact; the empirical analysis is not the most important feature, but a supplement.
- *Econometric* methods papers develop econometric or statistical methodologies.
- *Theory* papers do not contain an empirical fact section; they usually approach a topic by modelling and by making extensive use of formal mathematics and logic.

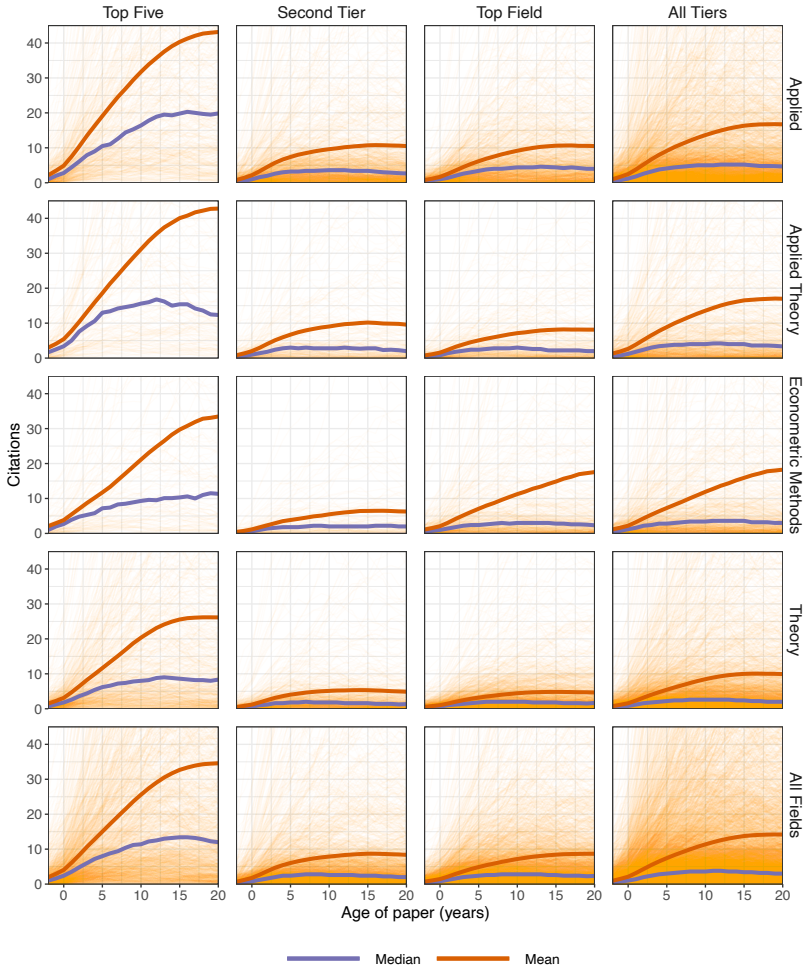
We end up with a fine-grained dataset including detailed information on 1,313,314 citations received by 6,083 economics articles. This allows us to focus not only on general patterns across tiers, but also on the interactions between journal tiers and fields of research (which we show are far from negligible).

CLEAR-CUT PATTERNS ACROSS JOURNAL TIERS IN ECONOMICS

1. *Top Five journal articles receive more citations than second-tier and top field journal articles, and the life cycles of those citations are longer.*

We find that in its first 20 years after publication, the median Top Five article accumulates 4.25 as many citations as the median second-tier and top field articles. Compared to second-tier and top field journal articles, Top Five articles also experience a rise in yearly citations for longer periods – that is, their life cycles are longer. This can be seen in Figure 1, which plots the evolution of average and median yearly citations for every article from two years before its publication until 20 years after publication, by journal tier and field of economic research.

FIGURE 1 YEARLY MEAN AND MEDIAN CITATIONS RECEIVED



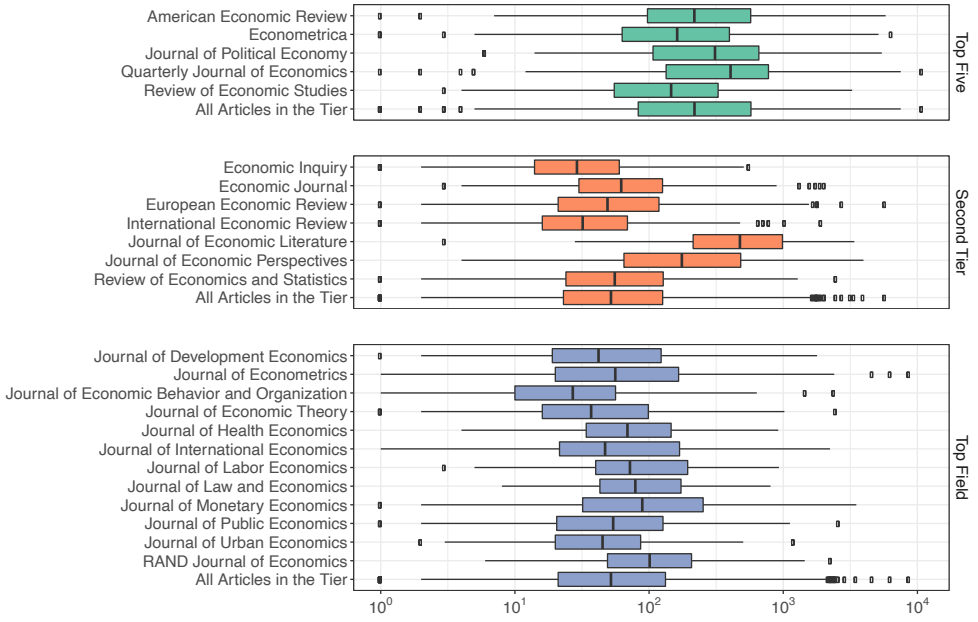
Note: Mean and median citations are smoothed using five-year centred moving averages. Light orange lines show the trajectory of individual papers' yearly citations.

The figure also shows that, no matter the journal tier, citation patterns are more favourable for applied and, to a lesser extent, applied theory papers – they receive more citations per year and reach a higher peak.

2. *There is a strong overlap in the distribution of received citations across tiers*

Figure 2 plots the distribution of total citations received by papers across journals as well as tiers as a whole. As can be seen, at least one third of articles received at least as many citations as the 10th percentile of AER articles.

FIGURE 2 DISTRIBUTION OF TOTAL CITATIONS BY PUBLICATION VENUE



3. *The influence (in term of citations) of Top Five articles is overestimated*

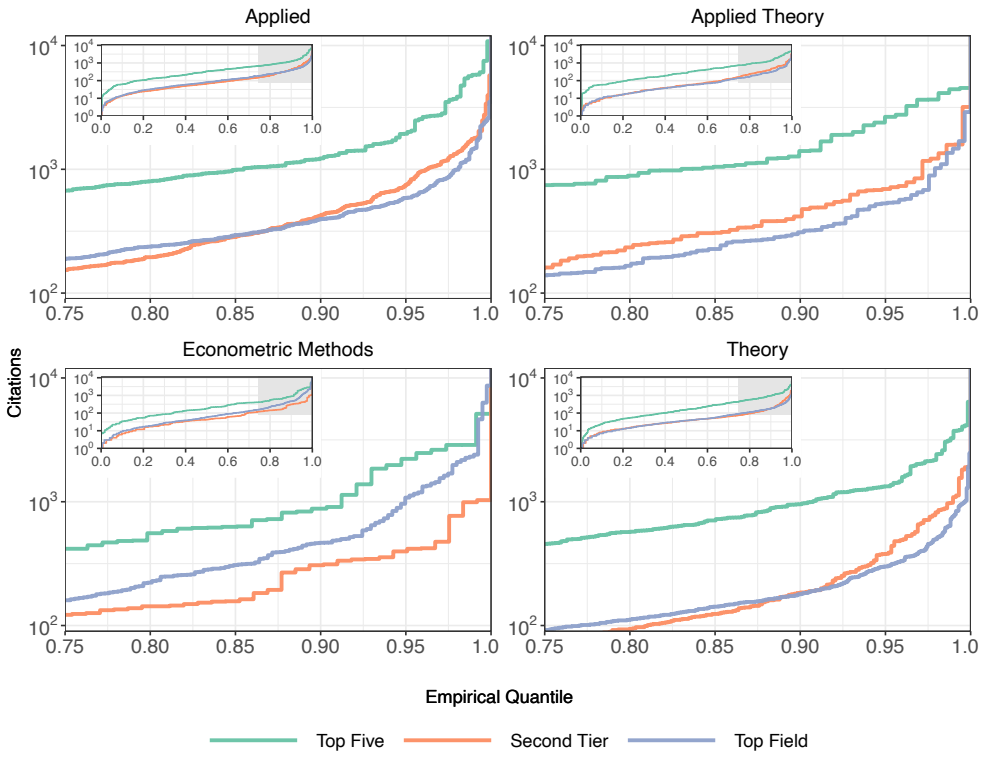
Our results show that the tenth least-cited (most-cited) Top Five article receives around four times (3.5 times) as many cites as the tenth least-cited (most-cited) second-tier or top field article. This suggests that no matter the impact of the articles, claims such as that an article in a Top Five journal should be valued more than five good publications in other journals may be oversimplifying the problem and overestimating the impact of the Top Five.

4. *The field of economics research matters*

The ratios between Top Five article citations and non-Top Five article citations are strongly associated with the field of economics research. They are larger for applied theory papers and smaller for econometrics papers.

This is evident in the Figure 3, which shows empirical quantile functions of articles' total citations. For almost all quantiles, total citations received by papers in Top Five journals are higher than those received by papers published in non-Top Five journals. The distribution of cites to Top Five papers stochastically dominates the distribution of citations for applied, applied theory and theory non-Top Five journals papers. However, in the case of econometric methods, the distribution of citations received by field articles crosses the distribution of Top Five articles at the 99.37th percentile, pointing to the presence of very successful (in terms of citation counts) econometrics articles published in top field journals – which even outperform the most successful econometrics articles published in the Top Five.

FIGURE 3 EMPIRICAL QUANTILE FUNCTIONS OF ARTICLES' TOTAL CITATIONS

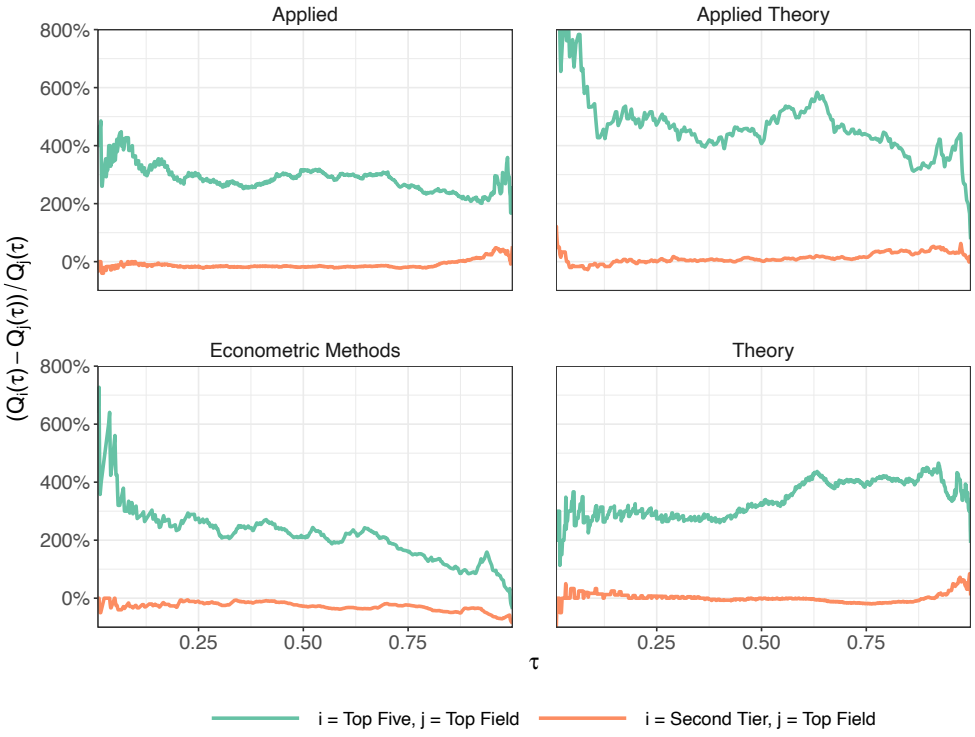


5. *The impact of articles also matters*

These ratios are also associated with the impact of articles within each field of research. Figure 4 shows percentage differences in the empirical quantile functions of total citations across journal tiers for applied, applied theory, econometric and theoretical papers. Specifically, it plots $(Q_i(\tau) - Q_j(\tau))/ Q_j(\tau)$, where $Q_i(\tau)$ stands for the empirical quantile τ of distribution i. In this way, a value of 2, for instance, indicates that the value of triples $Q_j(\tau)$.

For applied articles, the gap narrows very slightly as one moves toward high-impact articles, whereas the narrowing is sharp in the case of econometrics papers and applied theory papers. Notably, theory papers show the opposite pattern: the gap widens as one moves toward higher-impact papers

FIGURE 4 PERCENTAGE DIFFERENCES IN EMPIRICAL QUANTILE FUNCTIONS OF ARTICLES' TOTAL CITATIONS



6. *Citation patterns for the first five years after publication are similar to those for 20 years after publication*

Citation patterns remain stable when citations counts are restricted to the first five years after publication. However, differences across journal tiers are relatively smaller. This is because Top Five articles tend to age better (in particular applied and theory articles), exacerbating differences as time passes.

7. *In term of citations, top field journals behave relatively similar to second-tier journals*

This is true for applied, applied theory and theoretical papers; the exception is econometrics articles, for which top field outlets outperform second-tier ones.

CONCLUSIONS

In line with previous research, our results suggest that it may be convenient to assign a greater weight in the determination of economic and reputational rewards to factors such as citation counts, as suggested by Hamermesh (2018) and Heckman and Moktan (forthcoming). However, as economics is a far from homogenous discipline, our results also suggest that these criteria should be adjusted by factors related to the field of economics research.

A few caveats must be mentioned regarding the scope of our results. First, our results are descriptive and should not be interpreted as suggesting that a given paper will receive more citations simply because it is published in a top tier journal rather than a prestigious non-top tier outlet; the dynamics behind citations are more complex than this.

Second, given that we aimed to study differences in yearly citation patterns over long periods, our analysis focuses on articles published more than 20 years ago; patterns for present day articles may have changed. However, the literature suggests that factors that encourage the overemphasis on Top Five journals – such as acceptance rates – have deepened in the last decades, so the assumption that the patterns we report have also deepened does not seem to be too far-fetched.

REFERENCES

Anauati, V, S Galiani, and R H Gálvez (2020), "Differences in Citations Patterns across Journal Tiers: The case of Economics", *Economic Inquiry* (forthcoming).

Anauati, V, S Galiani, and R H Gálvez (2016), "Quantifying the life cycle of scholarly articles across fields of economic research", *Economic Inquiry* 54(2): 1339-1355.

Ellison, G (2013), "How does the market use citation data? The Hirsch Index in economics", *American Economic Journal: Applied Economics* 5(3): 63-90.

Gibson, J, D L Anderson, and J Tressler (2017), "Citations or Journal Quality: Which is Rewarded More in the Academic Labor Market?", *Economic Inquiry* 55(4): 1945-1965.

Gibson, J, D L Anderson and J Tressler (2014), "Which journal rankings best explain academic salaries? Evidence from the University of California", *Economic Inquiry* 52(4): 1322-1340.

Hamermesh, D S (2018), "Citations in economics: Measurement, uses, and impacts", *Journal of Economic Literature* 56(1): 115-56.

Hazelkorn, E (2015), *Rankings and the reshaping of higher education: The battle for world-class excellence* (2nd edition), Palgrave Macmillan.

Heckman, J J and S Moktan (forthcoming) "Publishing and Promotion in Economics: The Tyranny of the Top Five", *Journal of Economic Literature.*

McKenzie, D (2014), "Is the Impact Evaluation production function O-ring or a Knowledge Hierarchy?", *Development Impact*, 7 April.

Seeber, M, M Cattaneo, M Meoli and P Malighetti (2019), "Self-citations as strategic response to the use of metrics for career decisions", *Research Policy* 48(2): 478-491.

Serrano, R (2018), "Top5itis", working paper.

ABOUT THE AUTHORS

María Victoria Anauati holds a PhD in economics (San Andrés University, Argentina) and has experience in design and evaluation of public policies, education economics and microeconomics. She worked as an external consultant for the international organizations J-PAL and IDB, and in public administration. She is affiliated with the Centro de Estudios para el Desarrollo Humano from San Andrés University (Argentina).

Sebastian Galiani is Professor of Economics at the University of Maryland. He obtained his PhD in Economics from the University of Oxford and works broadly in the field of Development Economics. He is also a Fellow of the NBER and BREAD. Sebastian was Secretary of Economic Policy, Deputy Minister, Ministry of Treasury, Argentina, between January of 2017 and June of 2018. He has served as Scientific Director of JPAL-LAC and as member of the Board of Directors of JPAL, MIT. He has also worked as consultant for Gates Foundation, United Nations, Inter-American Development Bank, Innovations for Poverty Action, World Bank, and several governments around the world.

Ramiro H. Gálvez is a PhD candidate in Computer Science (FCEyN, UBA). His research interests focus on studying how techniques from the field of machine learning and the field of natural language processing — the latter applied to both text and speech — can be used to study complex social, behavioral and economic phenomena. His work has been published in high-impact international scientific journals and congresses both in the area

of economics and computer science. He has done consulting/technology transfer work for the European Center for International Political Economy (ECIPE), Jamaica Public Service Ltd., Inter-American Development Bank, among others.

CHAPTER 5

Differences in citation ageing patterns across economics research articles are as sharp as those observed across fields of study

María Victoria Anauati, Sebastian Galiani and Ramiro H. Gálvez
Universidad de San Andrés; University of Maryland; Universidad de Buenos Aires

A topic that has attracted longstanding attention in research is how citations received by articles evolve as time passes since their publication, a phenomenon known as citation ageing. Nowadays, the importance of understanding citation ageing comes mainly from the fact that it relates strongly to the outcomes of several popular citation metrics commonly used to evaluate researchers and institutions. This occurs because many metrics usually restrict the range of articles that they use as inputs on the basis of the number of years that have passed since their publication (for example, two- or five-year impact factors, or authors' *h*-indexes considering only publications from the last ten years).

Most literature focusing on the characterisation of the citation ageing process follows the approach of formulating and fitting mathematical models of diverse complexity (e.g. Burton and Kebler 1960, Avramescu 1979, Glänzel and Schoepflin 1995). An alternative – and less explored – way of characterising citation ageing is to simply estimate citation ageing functions from data without imposing any restriction on their shape.

In Anauati et al. (2016) and Galiani and Gálvez (2019), the latter strategy is followed. Concretely, these articles propose estimating citation ageing functions by means of combining quantile regression (QR) using a non-parametric specification able to capture citation inflation (the documented rise in citation counts over time, regardless of the cause – see Neff and Olden 2010).

Here, we present and compare the main results of the estimation exercises carried out in Galiani and Gálvez (2019) and Anauati et al. (2016). The former considers multiple fields of study (astronomy and astrophysics, biochemistry, biology, etc.), while the latter focuses on economics articles following different research strategies (applied, applied theory, econometric methods, theory).

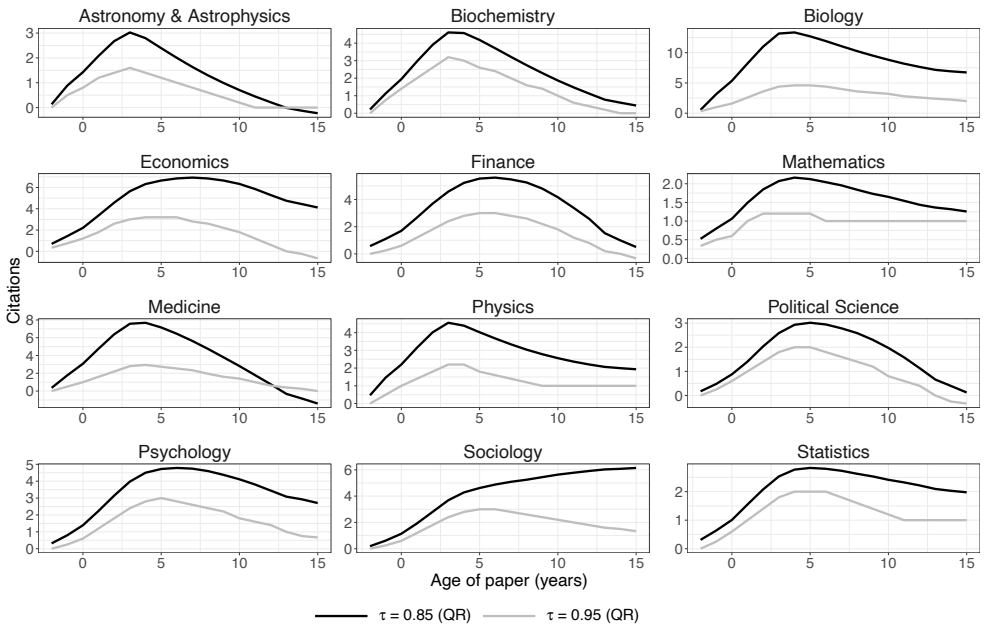
The comparison of the results from both exercises suggests that the variability observed in citation patterns within a discipline (in this case economics) is as sharp as the one observed across fields of study.

CITATION AGEING ACROSS FIELDS OF STUDY

In Galiani and Gálvez (2019), two of us collected a large dataset consisting of more than five million citations to 59,707 research articles spanning 12 dissimilar fields of research (astronomy and astrophysics, biochemistry, biology, economics, finance, mathematics, medicine, physics, political science, psychology, sociology, and statistics) and, with these data in hand, made use of their proposed estimation strategy.

Figure 1 presents estimated citation ageing patterns for every field of research considered. The curves shown in grey correspond to estimates obtained through QR and the curves shown in black correspond to estimates obtained through ordinary least squares regressions (OLS). Each curve shows estimated yearly citations received by articles in a given year since publication. Estimates are calculated taking as input citation received by articles published from 1985 up to and including 2000 in top outlets.

FIGURE 1 ESTIMATED CITATION AGEING ACROSS FIELDS OF STUDY



Notes: Estimations are presented for the conditional mean (estimated using OLS) and for $\tau = 0.50$ (estimated using QR). Values are smoothed using five-year centred moving averages. Note that the y-axis scales vary across sub-figures.

Figure 1 shows that across all fields of study, annual citations exhibit a clear lifecycle pattern: after publication, articles begin to be read and cited; eventually, the number of citations reaches a peak, after which it declines. Moreover, the figure shows that these patterns differ greatly across fields of study. In particular:

1. Peaks of annual citations are much higher for some disciplines than for others. For example, the peak level of annual citations is much higher for biology and medicine than it is in fields such as mathematics and statistics (more than three times as high according to the QR estimates).

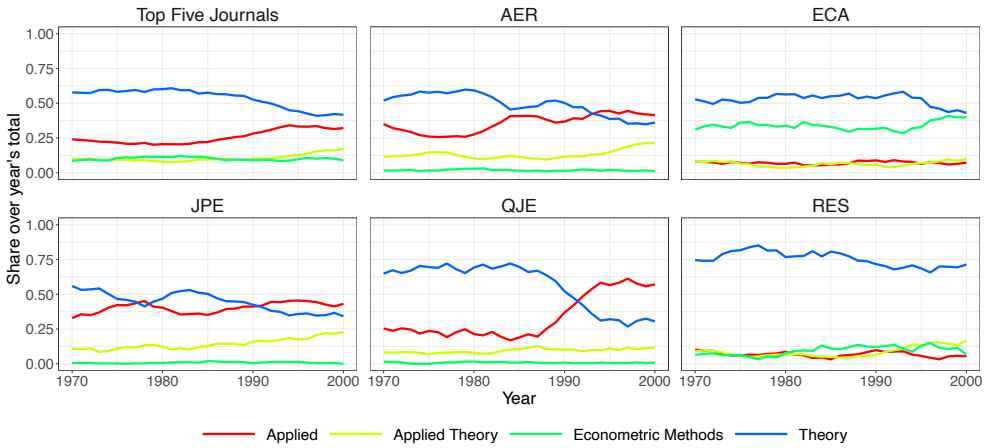
2. The peak in citations is not reached at the same time across fields and, after this peak is reached, annual citation values differ in the way they decline. For astronomy and astrophysics, biochemistry, biology, medicine, and physics, a peak is reached before the fifth year after publication and, once this peak is reached, annual citations fall off sharply. By contrast, for economics, finance, political science, and sociology, the peak is reached in the fifth year after publication and, from then on, annual citations fall off much more gradually.

CITATION AGEING ACROSS FIELDS OF ECONOMICS RESEARCH

In Anauati et al. (2016) we show that, for the case of economics, citation ageing patterns differ greatly across economics articles. Taking as the input a sample of 9,672 articles published in the 'Top Five' journals between 1970 and 2000, we assigned each article to one of four categories: applied, applied theory, econometric methods, and theory articles. We refer to these categories as 'fields of economics research'. Applied papers are papers that have an empirical or applied motivation. Applied theory papers develop theoretical models to explain a fact. Econometric methods papers are articles that develop econometric or statistical methodologies. Theoretical papers do not contain an empirical fact section and they usually approach a topic by making extensive use of formal mathematics and logic. (For more details, see Anauati et al. 2016.)

To get a grasp on the way these fields are distributed in economics research, Figure 2 plots trends in the appearance of papers dealing with different fields of economics research in every Top Five journal and in all the Top Five journals as a whole. The patterns that emerge are quite interesting. In particular, it is notable how applied papers have grown in importance since the beginning of the 1990s, whereas theory papers have done just the opposite.

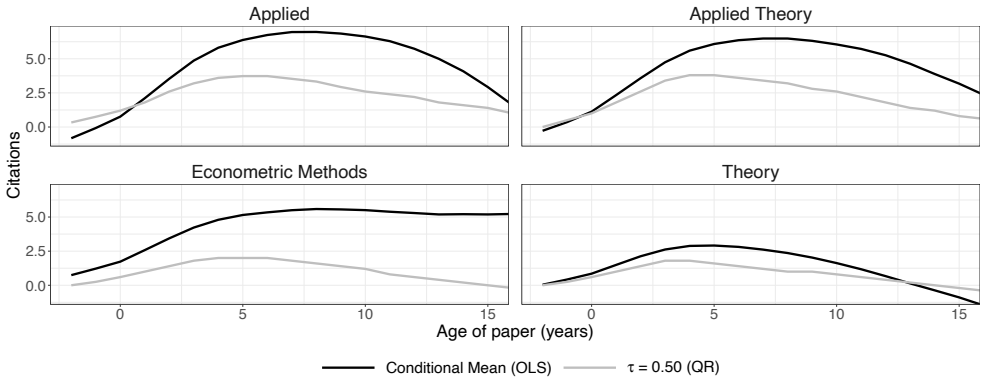
FIGURE 2 TREND IN THE SHARE OF ARTICLES BY JOURNAL AND FIELD OF ECONOMIC RESEARCH



Notes: Values are smoothed using five-year centred moving averages.

Figure 3 presents the results of estimating the lifecycle of economics papers across fields of research using the proposed methodology. It shows that within each field of economic research, annual citations also exhibit a clear lifecycle pattern.

FIGURE 3 ESTIMATED CITATION AGEING ACROSS FIELDS OF ECONOMIC RESEARCH



Notes: Estimations are presented for the conditional mean (estimated using OLS) and for $\tau = 0.50$ (estimated using QR). Values are smoothed using five-year centred moving averages.

Additionally, the figure also shows sharp differences across fields of economics research, in particular:

1. Theoretical papers are, in general, cited the least often and the performance of econometric method papers in this respect is almost identical to the performance of theoretical papers (although highly cited articles behave almost as applied ones).

2. Applied and applied theory economics papers are the clear winners in terms of citation ageing. During their first years of life following publication, they receive higher numbers of citations than the papers in the other categories, they reach a higher peak (more than twice as high as the peak for theoretical papers), and that peak level seems to last longer.

DISCUSSION

Our results suggest that, for economics, different fields of research can show behaviours as different as those observed across fields of study. Applied and applied theory papers follow citation patterns equivalent to those followed by highly cited fields of study (for example, biology and medicine), but econometric methods and theory papers behave quite similar to less-cited fields of study (for example, mathematics and statistics). We believe this may also be the case for disciplines other than economics.

Even though citation counts are an extremely valuable tool for measuring the importance of academic outcomes, our results seem to provide a basis for a caveat regarding the use of citation counts as a 'one size fits all' yardstick to measure research outcomes within a discipline. In this way, the incentives generated by naively using these metrics can be detrimental for fields of research which effectively generate valuable (but perhaps more specialised) knowledge, not only in economics but also in other disciplines as well.

REFERENCES

Anauati, V, S Galiani and R H Gálvez (2016), "Quantifying the life cycle of scholarly articles across fields of economic research", *Economic Inquiry* 54(2): 1339-1355.

Avramescu, A (1979), "Actuality and obsolescence of scientific literature", *Journal of the American Society for Information Science* 30(5): 296-303.

Burton, R E and R W Kebler (1960), "The "half-life" of some scientific and technical literatures", *American Documentation* 11(1): 18-22.

Galiani, S and R H Gálvez (2019), "An empirical approach based on quantile regression for estimating citation ageing", *Journal of Informetrics* 13(2): 738-750.

Glänzel, W and U Schoepflin (1995), "A bibliometric study on ageing and reception processes of scientific literature", *Journal of information Science* 21(1): 37-53.

Neff, B D and J D Olden (2010), "Not so fast: inflation in impact factors contributes to apparent improvements in journal quality", *BioScience* 60(6): 455-459.

ABOUT THE AUTHORS

María Victoria Anauati holds a PhD in economics (San Andrés University, Argentina) and has experience in design and evaluation of public policies, education economics and microeconomics. She worked as an external consultant for the international organizations J-PAL and IDB, and in public administration. She is affiliated with the Centro de Estudios para el Desarrollo Humano from San Andrés University (Argentina).

Sebastian Galiani is Professor of Economics at the University of Maryland. He obtained his PhD in Economics from the University of Oxford and works broadly in the field of Development Economics. He is also a Fellow of the NBER and BREAD. Sebastian was Secretary of Economic Policy, Deputy Minister, Ministry of Treasury, Argentina, between January of 2017 and June of 2018. He has served as Scientific Director of JPAL-LAC and as member of the Board of Directors of JPAL, MIT. He has also worked as consultant for Gates Foundation, United Nations, Inter-American Development Bank, Innovations for Poverty Action, World Bank, and several governments around the world.

Ramiro H. Gálvez is a PhD candidate in Computer Science (FCEyN, UBA). His research interests focus on studying how techniques from the field of machine learning and the field of natural language processing — the latter applied to both text and speech — can be used to study complex social, behavioural and economic phenomena. His work has been published in high-impact international scientific journals and congresses both in the area of economics and computer science. He has done consulting/technology transfer work for the European Center for International Political Economy (ECIPE), Jamaica Public Service Ltd., Inter-American Development Bank, among others.

CHAPTER 6

Networking, citations of academic research, and premature death

Joshua Aizenman and Kenneth Kletzer
University of Southern California; University of California, Santa Cruz

One approach for measuring the impact and diffusion of academic research is by studying the quantity and pattern of citations to published research findings. For example, the literature on the diffusion of technological innovations frequently uses patent citation data to study the spread of technological knowledge (e.g. Jaffe and Trajtenberg 2002). Citations are a source of data for investigating linkages from results to subsequent research more generally in the study of the dissemination and creation of ideas and knowledge. The study of citation patterns may be useful for addressing a variety of policy concerns about organisation, funding and incentives in academic research.

Citations to scholarly publications are also often used to evaluate the contributions of individual researchers. In the natural and social sciences, citation counts have been used to evaluate the productivity of individuals for appointments, salaries, and research awards for years. Empirical studies by Hammermesh et al. (1982), Diamond (1986), and others find that the compensation of economists rises significantly with cumulative citations. Within economics, ranking university departments, journals and economists using raw citation counts or recursively weighted citation counts is increasingly popular.

THE ORIGINS OF CITATIONS

The use of citation data to allocate research resources and to reward individual effort has generated a substantial literature on the validity of this metric for measuring the value of research. Much of the analysis of the use and usefulness of citations is associated with the sociology of science following Robert K. Merton. Merton (1973) observed that citations to the publications of researchers by other researchers may be influenced by considerations beyond the strict linkage between new findings and old findings. Citation practices depend on academic culture and traditions, and the incentives to cite may not accord with the notion that citations provide an approximate record of the origin of ideas used.

Posner (2000) summarises the insights of the literature on the incentives to cite. He distinguishes between informational and strategic citations. Informational citations serve an important expositional role by identifying the context of an article, allowing the incorporation of supporting evidence without repetition, establishing linkages to

authoritative works, and acknowledging the priority of others. Each corresponds to the notion that citations measure the importance of a cited work. Strategic citations, on the other hand, are made simply to benefit the author and are due to the rewards to being cited and the role of others in the peer reviewing process. The possibilities of strategic citation behaviour and editorial bias have received attention in the economics literature (Posner 2000 and Laband and Piette 1994, respectively).

Information costs are also important for understanding citations. Because scholarship is costly, the rates of citation to specific articles can also depend on the promotion by the authors or more general personal networking by authors. Networking increases the familiarity with a researcher's work, lowering the information cost to others of citing that work. In the economics profession, networking has been studied in the context of citation circles based on graduate education (Stigler and Friedland 1975), gender differences in citation frequency (Ferber 1988) and the research gains associated with co-authorship (Sauer 1988, Laband and Tollison 2000).

DEATH AND CITATIONS

In Aizenman and Kletzer (2011), we considered whether citations depend only on the intrinsic contribution of a publication or if they are influenced by the author's professional presence. We did this by estimating the impact of premature death of productive economists on their citations. Premature death terminates activities that help enhance the prominence of scholar's publications, such as presenting papers, pursuing follow-up research, encouraging related research by others, and supervising PhD students. Some of these costs may be mitigated in circumstances where the research was done jointly with active and productive scholars. The loss of some citations may result from the termination of the incentives for strategic citation. A researcher's death can also have the direct effect of reducing research activity on a particular topic.

We consider the potential importance of professional presence and networking for citations by first constructing a sample of publications and citations to highly cited economists who died well before retirement age during the period from 1975 to 1997. We identified 16 such economists and used the Web of Science to assemble a panel of the annual citations of 428 papers written by these 16 economists over the years 1957 to 2006. The members of the sample vary in terms of prominence: five have an average of between 2 and 10; five receive an average of between 10 and 20 citations per year; four have average citations/year of between 20 and 100; and two, with average citations per year exceeding 100, died before co-authors – Fischer Black and Amos Tversky – received the Nobel prize. We removed citations by the authors to their own work.

The dynamics of the citations generally correspond to the expected life cycle pattern of an article in which its citation rate first rises sharply as awareness of the article spreads. Citations then gradually decline over time. This pattern is violated for publications by the two otherwise Nobel laureates in the sample. We constructed the intertemporal path

of missing citations of a paper in the sample relative to the hypothetical citations had the author been alive, and calculated for each paper the cumulative missing citations. The break in citations following the economist's death yields an estimate of the missing citations.

Our results are mixed. For half of the economists in the sample, we identify a large and significant 'citation death tax' for the average paper written by these scholars. For these authors, the estimated average missing citations per paper attributed to premature death ranges from 40% to 140% (the overall average is about 90%), and the annual costs of lost citations per paper are in the range of 3% to 14%. Hence, a paper written ten years before an author's death avoids a loss of citations that ranges between 30% and 140%. For the other half of the sample, there is no citation death tax; and for two extraordinary scholars in this second group – Black and Tversky – citations took off over time, reflecting the growing recognition of their contributions.

THE VALUE OF PRESENCE

Our sample of prominent economists who died early suggests that being there is important for generating citations. It is natural to expect that an author's premature death leads to a sudden drop in strategic citations to his publications. Informational citations may also fall following a researcher's death because he can no longer promote his own research or continue training students. Researchers play a role in promoting their own research simply by being visible to the research community and continuing to press a current research agenda through presentations and follow-up papers. Identifying the precise importance of all these factors requires much more detailed information about various dimensions of networking than is available in the data on publications and citations. Our results do suggest two directions of implication. The first is to confirm the conclusion of Robert Merton and successive sociologists of science that citations are not an especially pure measure of scientific impact and may be affected by strategic considerations or information costs. The other is that networking may have a significant impact on the dissemination of research findings and diffusion of valuable knowledge. This second bears on the organisation of research and can have implications for public policies towards the production of basic research.

The boundaries of networking were investigated by Azoulay et al. (2010). They estimated the magnitude of spillovers generated by 112 academic 'superstars' who died prematurely, and unexpectedly, on their co-authorship networks. Following the death of a superstar, they find that collaborators experience, on average, a lasting 5% to 8% decline in their quality-adjusted publication rates. In follow-up research, Azoulay et al. (2019) asked "Does Science Advance One Funeral at a Time?", as was conjectured by Max Planck. They looked at how the premature death of eminent life scientists alters the vitality of their fields. While the flow of articles by collaborators into affected fields decreases after the death of a star scientist, the flow of articles by non-collaborators increases markedly.

Though outsiders appear reluctant to challenge leadership within a field when a star is alive, the loss of a luminary provides an opportunity for fields to evolve in new directions that advance the frontier of knowledge.

Taken together, network externalities in research have their own life cycle, inducing a complex dynamic evolution of science and research. While in the short run "the victor writes history" (to quote Winston Churchill), research benefits over time by pruning-out exaggerated hypotheses and revitalising older but forgotten paradigms. In economics, the resurgence of interest in 'Minsky moments', 'liquidity traps', 'debt deflations' and other insights from deceased economists after 2008-2009 offers a recent example of these dynamics.

REFERENCES

Aizenman, J and K Kletzer (2011), "The life cycle of scholars and papers in economics–the 'citation death tax'", *Applied Economics* 43(27): 4135-4148.

Azoulay, P, J S Graff Zivin and J Wang (2010), "Superstar extinction", *Quarterly Journal of Economics* 125(2): 549-589.

Azoulay, P, C Fons-Rosen and J S Graff Zivin (2019), "Does science advance one funeral at a time?", *American Economic Review* 109(8): 2889-2920.

Diamond, A M (1986), "What is a Citation Worth?", *Journal of Human Resource*s 21: 200-215.

Ferber, M A (1988), "Citations and Networking", Gender and Society 2(1): 82-89.

Hamermesh, D S, G E Johnson and B A Weisbrod (1982), "Scholarship, Citations and Salaries: Economic Rewards in Economics", *Southern Economic Journal* 49(2): 472-481.

Jaffe, A and M Trajtenberg (2002), *Patents, Citations, and Innovations: A Window on the Knowledge Economy*, MIT Press.

Laband, D N and M J Piette (1994), "Favoritism versus Search for Good Papers: Empirical Evidence Regarding the Behavior of Journal Editors", *Journal of Political Economy* 102(1): 194-203.

Laband, D N and R D Tollison (2000), "Intellectual Collaboration", *Journal of Political Economy* 108(3): 632-662.

Merton, R K (1973), *The Sociology of Science*, University of Chicago Press.

Posner, R A (2000), "An Economic Analysis of the Use of Citations in the Law", *American Law and Economics Review* 2(2): 381-406.

Sauer, R D (1988), "Estimates of the Returns to Quality and Coauthorship in Economic Academia", *Journal of Political Economy* 96(4): 855-866.

Stigler, G and C Friedland (1975), "The Citation Patterns of Doctorates in Economics", *Journal of Political Economy* 83(3): 477-507.

ABOUT THE AUTHORS

Joshua Aizenman joined the faculty at USC in 2013, where he serves as the Dockson Chair in Economics and International Relations. His research covers a range of issues in the open economy. Joshua also serves as a Research Associate for the National Bureau of Economic Research, and co-editor of the Journal of International Money and Finance. Other affiliations have included teaching and research positions at UC Santa Cruz, Dartmouth, the University of Chicago GSB, the University of Pennsylvania, and the Hebrew University in Jerusalem. Consulting relationships include the International Monetary Fund, the World Bank, the Inter-American Development Bank, the Asian Development Bank, and the Federal Reserve Bank of San Francisco.

Kenneth Kletzer is Professor of Economics at the University of California, Santa Cruz. His primary research areas are international economics and macroeconomics. Much of Kletzer's research has concerned international financial integration, financial crises and economic growth. In recent years, he has published articles on sovereign debt, international financial reform and crisis resolution.

CHAPTER 7

A journal ranking based on central bank citations

Raphael Auer and Christian Zimmermann[1]
Bank for International Settlements; Federal Reserve Bank of St. Louis

Which journals attract and publish work that has high policy relevancy for central banks and international financial institutions? To answer this question, we develop a ranking of journals that is geared toward measuring the policy relevance of academic research for these institutions (for simplicity, referred to as "central banks" in what follows). Specifically, we compute journal impact factors counting only citations made in publications that are issued by central banks.

METHODOLOGY

We first construct a single impact factor ranking of journals based on citations in central bank publications in recent years. The computation of our ranking is based on the large set of journals that are registered in Research Papers in Economics (RePEc) and is as simple as possible to avoid the potential for manipulation. RePEc is one of the leading repositories for output measurement and citation analysis in economics (e.g. Seiler and Wohlrabe 2010, 2012, Hausken 2016, Chang and McAleer 2013).[2] We follow the same steps that are used to compute RePEc's "single impact factor over the last 10 years".[3] To this end, we count citations to all publications published from 1 January 2007 to 31 December 2016,[4] we exclude self-citations, and we compute single impact factors. For example, if over these ten years, a journal has published 200 articles that have been cited in total 1,000 times, the resulting journal impact factor is 5.

The main difference with the existing rankings is that we do not include all citations, but only those in publications that are issued by a central bank (see also Kohlscheen 2011).[5] We construct this set of citations from information directly available in RePEc, as many

1 The presented views are not necessarily those of the BIS, the Federal Reserve Bank of St. Louis, or the Federal Reserve System.
2 Of course, any ranking should be taken with a grain of a salt given the intrinsic noise due to granular citation patters and related uncertainty (Stern 2013). Kim et al. (2011) discuss potential bias in citation patterns.
3 For example, an up-to-date version of this ranking for journals can be found at https://ideas.repec.org/top/top.journals.simple10.html
4 We also include publications that have appeared in an earlier form before 1 January 2007 but that have also been published after this period. For example, this can happen if a study first appeared as a working paper in 2006 and was eventually published in a journal in 2009.
5 The criterion is whether the publication series is issued by a central bank, but the author(s) need not work for a central bank. Kohlscheen (2011) followed a very similar approach, albeit with a much smaller sample of 15 working paper series issued by central banks.

series are associated with an institution and this is typically the case for central bank publications.[6] This approach results in a sample of 390 publication series that may have some references, such as central bank working papers, their policy journals such as the Federal Bank of St. Louis' *Review*, and policy publications such as central banks' annual financial stability reports. Over the ten years we cover, 245 of these 390 series included published items with references within our sample period. The total number of distinct items is 20,467, which includes working papers as well as articles from central bank journals.

We exclude self-citations from within each of the 390 series. We note that this is a common procedure when compiling rankings to avoid excessive self-citations (Zimmermann 2013). After this exclusion, our sample includes 276,050 citations – on average a little under 14 per item.

We then rank all 1,492 series that are registered in RePEc, have received citations from our sample, and have published at least 50 items in the decade we cover. The reason for exclusion of series with fewer than 50 items is that, otherwise, the top of the ranking is dominated by series with only one or two items that have been highly cited for idiosyncratic reasons. The cut-off of 50 is chosen in accordance with the standard cut-off for all RePEc rankings.

While we count only citations in central bank publications, both central bank publications and all other items on RePEc are ranked. That is, while citations made in the *Journal of Political Economy* do not count towards the impact factors of other series, if a central bank publication cites an article published in the *Journal of Political Economy*, this counts toward the impact factor of the *Journal of Political Economy*.

Because of the nature of our exercise to count citations only in central bank publications, we cannot construct the popular recursive impact factors that RePEc also disseminates. We could construct recursive impact factors in the subset of central bank publications, but it is not obvious that this would result in a better measure of policy relevance.

We note that whenever a journal changes its publisher, a separate RePEc entry is created. Quite a few journals – including *Econometrica*, the *Journal of the European Economic Association*, and the *Quarterly Journal of Economics* – thus have two or more separate entries in the raw data. For our baseline central bank ranking, we chain those different entries, which we do by generating the weighted average single impact factor during the period we observe (i.e. we divided the number of central bank citations to both series by the number of articles appearing in both series).

6 We make one manual adjustment, which is adding the *International Journal of Central Banking* to the group of central-bank affiliated series (in RePEc, it is associated with its publisher).

DISCUSSION OF THE RESULTS

Table 1 presents the top 20 journals in the central bank ranking of peer-reviewed academic journals during 2007-2016. In a working paper version of this paper, we present a ranking of the top 175 journals according to the central bank impact factor (Auer and Zimmermann 2020).

TABLE 1 TOP 20 JOURNALS ACCORDING TO CENTRAL BANK CITATIONS

Journal Name	Central bank citation rank
Journal of Political Economy	1
The Quarterly Journal of Economics	2
Journal of Monetary Economics	3
Econometrica	4
Journal of Economic Literature	5
Review of Economic Studies	6
Brookings Papers on Economic Activity	7
Journal of Money, Credit and Banking	8
Journal of International Economics	9
American Economic Journal: Macroeconomics	10
Journal of Finance	11
International Journal of Central Banking	12
The Review of Economics and Statistics	13
Review of Economic Dynamics	14
Journal of the European Economic Association	15
American Economic Review	16
Journal of Business & Economic Statistics	17
Journal of Applied Econometrics	18
Journal of Economic Perspectives	19
International Economic Review	20

Note: This table presents the top 20 journals according to the central bank ranking of peer-reviewed journals and for the period 2007-2016. The underlying ten-year simple impact factor is computed by counting only citations made in central bank publications, such as their working paper series. See main text for details.

Three facts stand out regarding our ranking. The first is that among the journals generally considered to be among top five general interest ones in economics, three indeed make our top five, with the *Journal of Political Economy* leading the ranking, followed directly by the *Quarterly Journal of Economics*, and *Econometrica* ranked fourth. The *Review of Economic Studies* ranks 6th, while the *American Economic Review* ranks 16th.[7] We note that this is remarkable, as our ranking stacks the odds somewhat against general interest journals that also publish articles outside the field of interest to central banks.

Second, and much in contrast, top finance journals do not fare well in our ranking. This is quite surprising, given the backdrop of the increasing attention to the field of finance and financial stability in the aftermath of the 2008 Great Financial Crisis. The *Journal of Finance* is ranked at number 11, while the other two journals generally considered to make up the top three in the field of finance journals are ranked 27th (*Journal of Financial Economics*) and 25th (*Review of Financial Studies*), respectively.

This does not mean that finance is irrelevant for central banks, as those journals specialising in financial intermediation and stability rank favourably. The *Journal of Financial Intermediation* is actually ranked higher than the *Journal of Financial Economics* and the *Review of Financial Studies*, coming in at 22nd; the *Journal of Financial Stability* is ranked 35th.

Third, journals catering to the field of monetary economics and international economics, as well as journals geared towards econometric analysis, are comparatively highly ranked according to central bank citations. Most noteworthy, the *Journal of Monetary Economics* ranks at number 3, while the *Journal of Money, Credit, and Banking* ranks at number 8 and the *International Journal of Central Banking* ranks at number 12. Among journals specialising in international economics, the *Journal of International Economics* ranks 9th, while *International Finance* and the *Journal of International Money and Finance* come in at 26th and 28th, respectively. Among the journals specialising in econometrics, in addition to 4th ranked *Econometrica*, the *Journal of Business & Economic Statistics* comes in at 17th and the *Journal of Applied Econometrics* at 18th.

Next, Table 2 considers the journals that specialise in central bank issues. We identify these specialist journals by comparing the journal's central bank citation rank to the standard RePEc 10-year single impact factor ranking ("general ranking" from here on). The latter general ranking is computed using the same procedure and time interval as the central bank ranking, but it counts all citations (instead of only citations made in central bank publications). To focus on journals that specialise in central banking, yet are still known more broadly in economics and finance, the universe of journals considered for Table 2 are those ranked 100 or better in the general journal ranking. Of those, Table 2 displays

7 The observation that the American Economic Review is not among the highest-ranked publications is explained by the fact that during the time we observe, each May issue includes a large number of short Papers and Proceedings articles from the annual meeting which are not as highly cited, thereby diluting the journal's overall impact factor. This practice has been discontinued in 2018, when the AEA Papers and Proceedings became a standalone journal.

the top 20 entries according to the rank ratio, equal to the ratio of the journal's general rank and the central bank rank. The rank ratio is above one if a journal is comparatively more cited in central bank publications.[8]

TABLE 2 TOP 20 JOURNALS MOST SPECIALISED IN CENTRAL BANKING

Journal name	Rank Ratio
Journal of Money, Credit and Banking	6.20
Journal of Business & Economic Statistics	4.50
Journal of Monetary Economics	4.25
Journal of Applied Econometrics	4.14
Journal of Political Economy	3.00
International Economic Review	2.92
International Journal of Central Banking	2.56
Econometrica	2.50
Journal of the European Economic Association	2.00
Econometrics Journal	1.97
European Economic Review	1.77
Journal of Economic Dynamics and Control	1.71
Journal of International Money and Finance	1.68
Journal of International Economics	1.62
Review of Economic Dynamics	1.58
Journal of Financial Stability	1.53
Journal of Economic Theory	1.44
Oxford Economic Papers	1.41
Econometric Theory	1.31
Brookings Papers on Economic Activity	1.27

Notes: This table presents the 20 journals receiving comparatively the most citations in central bank publications. The universe of journals considered for this table are journals that are ranked 100 or better in the general ranking. The displayed rank ratio is equal to the ratio of the journal's general rank and the central bank rank, a number that is above one if a journal is comparatively more cited in central bank publications. Whenever a journal changes its publisher, a separate RePEc entry is created. In such instances, we include only the higher-ranking entry (the 'better' entry) in the central bank ranking. For construction of the central bank ranking and the general ranking, see main text.

8 We note that that whenever a journal changes its publisher, a separate RePEc entry is created. In such instances, we include only the higher-ranked entry (the 'better' entry) in the central bank ranking.

Here, it should be of little surprise that the *Journal of Money, Credit and Banking* tops the list, but it may be more surprising that the *Journal of Business Economics & Statistics* is second, the *Journal of Applied Econometrics* comes in fourth, while *Econometrica* is the sixth-most specialised journal.

CONCLUSION

Overall, the takeaways from our analysis are that while central banks indeed focus their research on their core fields, major contributions in the field are made in the top general interest economic journals. In contrast, a striking finding is the comparatively poor performance of the top three journals in finance, which may call for a revaluation of their standing in the internal journal rankings of central banks when compared to journals specialising on financial intermediation and stability.

Our ranking is also useful for a more granular understanding of policy impact within the field of central banking. For example, it confirms the dominance of the *Journal of Monetary Economics* over newer journals such as the *American Economic Journal: Macroeconomics* when it comes to relevance to central banks. And certainly, we document the success of the journal launched by the central banking community, the *International Journal of Central Banking*.

In ongoing work, we are updating this ranking, and we also augment it by an author and institution ranking. We feel that such efforts can be important to guide researchers who want to target policy audiences, and for central banks more generally to gauge and optimise the policy impact of their analytical output.

REFERENCES

Auer, R and C Zimmermann (2020), "A journal ranking based on central bank citations" BIS working papers, forthcoming.

Chang, C and M McAleer (2013). "Ranking Leading Econometrics Journals Using Citations Data from ISI and RePEc", *Econometrics* 1(3): 1-19.

Hausken, K (2016), "The Ranking of Researchers by Publications and Citations: Using RePEc Data", *Journal of Economics Bibliography* 3(4): 530-558.

Kim, J, I Min, and C Zimmermann (2011), "The Economics of Citation", *Korean Economic Review* 27: 93-114.

Kohlscheen, E (2011), "The Journal Rankings of Central Banks," Working Papers 11.05, Swiss National Bank, Study Center Gerzensee.

Seiler, C and K Wohlrabe (2010) ""RePEc – An Independent Platform for Measuring Output in Economics", *CESifo Forum* 11(4): 72-77.

Seiler, C and K Wohlrabe (2012) "Ranking economists on the basis of many indicators: An alternative approach using RePEc data", *Journal of Informetrics* 6(3): 389-402.

Stern, D (2013), "Uncertainty Measures for Economics Journal Impact Factors", *Journal of Economic Literature* 51(1): 173-189.

Zimmermann, C (2013), "Academic Rankings with RePEc", *Econometrics* 1(3): 1-32.

ABOUT THE AUTHORS

Raphael A. Auer is Principal Economist in the Innovation and Digital Economy unit of the Bank for International Settlements (BIS). He is a CEPR Research Fellow and president of the Central Bank Research Association, and holds a PhD in economics from MIT. Prior to joining the BIS, he was Deputy Head of International Trade and Capital Flows and Economic Advisor at the Swiss National Bank; as well as an associated research professor at the Konjunkturforschungsstelle of ETH. During 2009-10, he was a Globalization and Governance Fellow at Princeton University. His current policy work focuses on issues related to cryptocurrencies, stablecoins and central bank digital currency. His research interests also cover the interaction of international trade and macroeconomics, examining in particular how exchange rates pass through into domestic inflation and how the global production network gives rise to globally synchronized inflation dynamics.

Christian Zimmermann is Assistant Vice President at the Federal Reserve Bank of St. Louis. He holds an undergraduate degree from the Université de Lausanne and a PhD from Carnegie Mellon University. He has previously worked at the Université du Québec à Montréal, the Bank of Canada and the University of Connecticut. He has published articles in the *International Economic Review, Journal of Monetary Economics, European Economic Review, Journal of Population Economics, Journal of Comparative Economics, Journal of Macroeconomics*, and others. He is associate editor of the *Review of Economic Dynamics* and a core member of the RePEc team.

SECTION 3

Publication lags

CHAPTER 8

Publication lags and the research output of young economists

John P. Conley, Mario J. Crucini, Robert A. Driskill and Ali Sina Önder
Vanderbilt University; Vanderbilt University; Vanderbilt University;
University of Portsmouth

Ellison (2002) documents that, between 1970 and 2000, the typical time between submission of an economics paper to a journal and publication more than doubled from about eight months to about sixteen months. As Ellison notes, this has important implications:

> "The change in the publication process affects the economics profession in a number of ways: it affects the timeliness of journals, the readability and completeness of papers, the evaluation of junior faculty, and so forth" (p. 948).

While all of this is true, the stakes are probably highest when it comes to the evaluation of junior faculty. Slower turnaround times for papers – added to lower acceptance rates at top journals and increases in average page counts of published manuscripts – would seem to make it a mathematical certainty that equally capable and hardworking junior faculty today will end up with shorter CVs at the end of six years than they would have in the past, under a quicker and more accepting publishing regime.

In Conley et al. (2013), we show the impact of this publication slowdown on the early lifecycle publication profile of academic economists using a simple model of research production with either one-period or two-period lags between submission and publication. We assume that individuals begin their professional life with a stock of three manuscripts and write one new manuscript every year. Each year, individuals submit all of their unpublished manuscripts not currently under consideration to a journal, which we assume has a 20% acceptance rate. We find that individuals can expect to have 4.52 accepted papers after six years if the delay is one period, but only 2.58 accepted papers if the delay is two periods (i.e. a 43% drop in the length of their CV). Clearly, the 'Ellison effect' has the potential to be quite significant.

If institutions fail to internalise this new reality, fewer junior faculty will receive tenure than in the past. Of course, at the individual level, the cost of not gaining tenure is large. The costs are large for the profession in general as well. Failure to promote qualified scholars leads to more frequent and costly searches for new junior faculty, the exit of

qualified scholars who would otherwise enrich the stock of economic research, and the discouragement of talented undergraduate and graduate students from attempting a research career in economics.

It is possible, of course, that young scholars might realise all this and compensate for the new, more difficult publishing environment by working harder. Although this might make academic economics a less attractive career, it might also make the CVs of new PhDs more comparable to those of earlier cohorts.

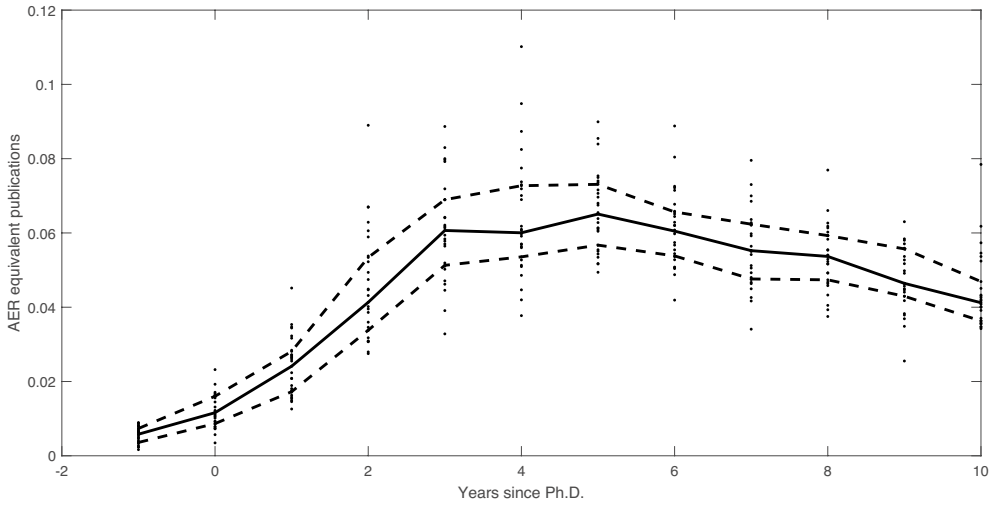
We therefore investigate the effect of these changes in the publishing environment on successive cohorts of new PhDs from an empirical standpoint. We combine data from various sources to reconstruct the JEL-listed journal publication records of the 23,886 graduates of US and Canadian PhD-granting economics departments from 1980 to 2006. Here, we focus on the approximately half of graduates who published at least one paper within six years of completing their PhD.

To begin, we document a consistent lifecycle pattern of scholarly productivity across cohorts. Figure 1 shows the average annual number of AER-equivalent publications published by graduates of the top 30 US and Canadian economics departments who are active in research.[1] All cohorts show a steep climb of annual productivity, peaking in the fifth year after graduation when they reach a median (across cohorts) publication rate of 0.065 AER-equivalent publications. In subsequent years, annual productivity starts its monotonic decline, which is gradual relative to the earlier rise and reaches 63% (median across cohorts) of peak productivity at the end of the first decade of an academic's career. Clearly, the tenure clock has a significant influence on scholarly productivity. The pattern is similar for graduates from non-top 30 economics departments.

For descriptive purposes, we group graduates into five cohorts, each pooling three consecutive years of PhD graduates (for example, the 1987 cohort consists of graduates of either 1986, 1987 or 1988). We find a consistent pattern of extreme skewness of productivity across graduates within each cohort. Table 1 shows part of an 'intellectual Lorenz curve' constructed from our data. We see that the most productive 1% of PhDs active in research produce between 12% and 14% of all quality-weighted publications regardless of cohort, while the top 10% produce between 56% and 59% and the top 20% produce between 76% and 80%.

1 We use previously established quality weights (e.g. Kalaitzidakis et al. 2003) to convert a publication in a given journal into its AER equivalence.

FIGURE 1 LIFECYLE OF PUBLICATIONS BY COHORT



Note: Each dot is the number of AER-equivalent publications produced by a particular cohort in the lifecycle year indicated on the horizontal axis; the solid line is the median, across cohorts, in each lifecycle year; and the dashed lines indicate the inter-quartile range across cohorts.

TABLE 1 INTELLECTUAL LORENZ CURVE

	1981	1984	1987	1990	1993	1996	1999	2002	2005
Top 1%	13.1%	11.9%	12.7%	13.4%	14.3%	12.9%	13.1%	13.3%	12.7%
Top 10%	55.7%	58.4%	58.4%	56.8%	56.2%	57.9%	58.3%	55.9%	59.4%
Top 20%	76.8%	79.2%	80.1%	78.0%	77.9%	79.3%	79.7%	76.4%	79.2%

Source: Calculations based on Conley et al. (2013) and Önder et al. (2019)

Our central question is the effect of the publication slowdown on the relative productivity of recent to past cohorts. To this end, we considered the number of AER-equivalent pages published at the end of the sixth year (the approximate time that tenure decisions are made). Among graduates of the top 30 programmes, the oldest cohort are on average more productive than the middle cohorts, and the middle cohorts are on average more productive than the youngest cohort. However, there is no such pattern of declining productivity for the departments outside of the top 30 using this productivity measure. Thus, there is only weak evidence of the Ellison effect.

When we look instead at the number of AER-equivalent *publications* rather than the *number of pages* published at the end of six years, a much clearer and more dramatic picture emerges. By this measure, among graduates of the top 30 programmes, the oldest cohort are 48% more productive than the middle cohorts and 68% more productive than the youngest. The middle cohorts, in turn, are 12% more productive than the youngest cohorts. For non-top 30 departments, the oldest cohort are 19% more productive than

the middle cohorts and 58% more productive than the youngest, while the middle cohorts are 33% more productive than the youngest cohort. These numbers are both large and statistically significant. Since tenure decisions are more likely to be made on the basis of the number of lines on a CV than the more abstract count of published pages, we think that this is the more relevant measure and the implications for the tenure process are important.

To give sense of the magnitude of the shift in the publication lifecycle, Table 2 shows the average number of AER-equivalent publications produced by the end of sixth year for PhDs ranked at the 99th, 90th, and 80th percentiles in their cohorts. This table shows both the extreme skewness of productivity and the significant drop-off of publication rates of younger generations of new economists – especially concerning the 90th and 80th percentiles.

TABLE 2 AER-EQUIVALENT PAPERS BY PRODUCTIVITY PERCENTILE AND COHORT

	1981	1984	1987	1990	1993	1996	1999	2002	2005
99th percentile	4.75	4.87	5.14	3.81	4.04	4.00	4.23	4.31	4.20
90th percentile	1.66	1.41	1.75	1.26	1.22	1.21	1.19	1.18	1.12
80th percentile	0.93	0.66	0.71	0.59	0.61	0.54	0.58	0.6	0.51

Source: Calculations based on Conley et al. (2011) and Önder et al. (2019)

We find that the institution from which students receive their PhDs has a significant impact on both the quality and quantity of their published research. Publishing graduates of top 30 departments produce more than three times as many AER-equivalent pages and papers than their counterparts from non-top 30 departments. In addition, the average quality of each published paper is about three times higher for graduates of the top programmes compared to the non-top programmes, and this holds for all cohorts. However, we do not see much change in the quality of the average publication over time for either top or non-top programmes.

Finally, these data allow us to investigate the relative performance of economics graduate programmes in terms of the research output of their PhDs. This in turn allows us to construct a new type of metric for ranking departments as an alternative to the more traditional methods, which focus on the publications of faculty members. We find that MIT, Princeton, Harvard, and Rochester do best by this quality measure, and more generally that the rankings of other departments do not entirely agree with more traditional measures that use faculty output.

These data show that the economics profession is extremely hierarchical, both in the sense that top scholars vastly out publish even average ones, and that top programmes produce graduates who are significantly better than non-top programmes. Our most important

conclusion, however, is that there has been a significant slowdown in the publication rates of junior faculty over recent years, and this is likely due to a more difficult publishing environment than to a drop in the quality of new PhDs. This suggests that our profession should be careful when evaluating people for tenure and promotion. The rules of the game have changed, and members of more recent cohorts – who may be just as talented and hard working as their predecessors – will almost certainly have shorter CVs in comparison.

REFERENCES

Conley, J P, M J Crucini, R A Driskill and A S Önder (2013), "The Effects of Publication Lags on Life Cycle Research Productivity in Economics", *Economic Inquiry* 51(2): 1251-1276.

Conley, J P, M J Crucini, R A Driskill and A S Önder (2011), "Publication lags and young economists research output", VoxEU.org, 24 October.

Ellison, G (2002), "The Slowdown of the Economics Publishing Process", *Journal of Political Economy* 110 (5): 947-993.

Kalaitzidakis, P, T P Mamuneas and T Stengos (2003), "Rankings of Academic Journals and Institutions in Economics", *Journal of the European Economic Association* 1(6): 1346-1366.

Önder, A S, S Schweitzer and H Yilmazkuday (2019), "Specialization, Distance, and Quality in Economists' Collaborations: How Diverse is Research Really?".

ABOUT THE AUTHORS

John Conley is Professor of Economics in the Department of Economics of Vanderbilt University. He completed his undergraduate work at the University of Chicago and received his Ph.D. from the University of Rochester in 1990. He is past-President of the Association for Public Economic Theory (APET) and is the Editor of the *Economics Bulletin* and the *Journal of Public Economic Theory*. His research focuses on public goods, externalities, political economy and cooperative and non-cooperative game theory.

Mario Crucini is a Professor of Economics in the Department of Economics at Vanderbilt University, a Research Associate at the National Bureau of Economic Research and a Senior Fellow at the Globalization and Monetary Policy Institute at the Federal Reserve Bank of Dallas. He is an Associate Editor of the *Journal of Monetary Economics* and Co-founder and Co-Director of the Center for International Price Research and the Midwest Macroeconomics Group. He received his M.A. and Ph.D. from the University of Rochester and an Honors B.A., from the University of Western Ontario. His research focuses on international business cycle transmission, microeconomic and macroeconomic aspects of international price determination and the role of commercial policy during the Great Depression.

Robert Driskill is Professor of Economics at Vanderbilt University, where he has been since 1992. He has taught previously at the University of California, Davis, Yale University, and the Ohio State University. His research includes contributions to open-economy macroeconomics, international trade theory, macroeconomic theory, and applications of dynamic games to industrial organisation. Most recently, he has worked on issues of multiple equilibria in dynamic rational expectations models, on models of oligopoly with network effects, and on what are and what are not the robust implications of the Dixit-Stiglitz model for international trade and gains from variety.

Ali Sina Önder is a Senior Lecturer in the Department of Economics and Finance, University of Portsmouth (United Kingdom). He received his PhD in Economics from Vanderbilt University (USA) in 2009. His research topics cover economics of science and innovation, applied network analysis, migration, and fiscal competition.

CHAPTER 9

Ageing and productivity: Economists and others[1]

Daniel Hamermesh

Barnard College, Royal Holloway University of London, and University of Texas at Austin

Sixty-five years ago, Harvey Lehman's path-breaking book examined the lifecycle of productivity in various scientific, humanistic, and artistic fields (Lehman 1953). He demonstrated the now widely accepted conclusion that the contributions of mathematicians and people in mathematics-related disciplines peak very early in their careers. He also showed that artists and humanists in many cases achieved their greatest successes much later in life. How do economists stack up along the age-productivity dimension, and how has that been changing? What does this tell us about the reasons why older people's productivity declines with age?

THE PATTERN CHANGES

TABLE 1 AGE DISTRIBUTIONS OF AUTHORS IN TOP US ECONOMICS JOURNALS, 1963-2011

Year of publication	Age (percentage distributions)			
	<=35	36-50	51-60	61+
1963	50.5	45.3	2.4	1.8
1973	61.5	32.6	5.9	0
1983	48.5	47.2	3.5	0.8
1993	49.8	43.1	5.6	1.5
2003	36.8	50.4	10.7	2.1
2011	33.0	48.1	13.0	5.9

Source: Hamermesh (2013).

Notes: The results are based on the *American Economic Review, Journal of Political Economy* and *Quarterly Journal of Economics*. The population excludes all Presidential and Nobel addresses, comments, replies and notes. The age of one author in 1963 was unavailable.

1 This chapter first appeared on VoxEU on 20 February 2013.

Table 1 shows the distribution by age of authors of articles published in the top three general US-based economics journals, which are recognised fairly widely as being among the top four scholarly economics journals (Hamermesh 2018). Studies published in these journals are the most prestigious and, on average, have the demonstrably largest impact on scholarship throughout the economics profession. Two things are noticeable from the table:

1. It is clear that up until the 1990s, top-level economic research was very much a young person's game – almost nobody over age 50 published a paper in these premier outlets.

2. This fact has changed in the last 25 years. Although 80% of authors are still below the age of 50, well above the fraction of PhDs teaching at North American and European universities who are in this age group, the percentage of 'old' (aged 51 and above) authors has increased from 7% to nearly 20%. Why?

EXPLAINING THE CHANGE

Simple economic theory and a lot of evidence for the entire work force (Mincer 1974) make it clear that there should be, and is, an inverse-J shaped relationship between age and productivity. When you're young, it pays to invest to improve your skills so that you can earn more over a long remaining work-life. When you're older, why bother? Improving skills is hard work, forces you to forego current earnings, and you don't have much time to benefit from the improvements in your skills. This holds for economists as well as anybody else – internal economic incentives to produce are important.

Outside opportunities matter too: as an economist ages and establishes a reputation, he or she has more outside opportunities such as consulting or academic administration. Technology also matters: younger scholars are tooled up in work at the frontiers of knowledge, using tools that are hard for older scholars to acquire, perhaps intellectually but also because they haven't got the time. The general observation about youth being more important in more mathematical endeavours is also demonstrated in economics: Nobel laureates whose prize-winning work was more mathematical tend to have been younger when they did that work (Weinberg and Galenson 2005). Sadly, one's physical energy, one's 'stick-to-it-ness' and one's ability to concentrate also diminish with age and reduce one's ability to do the hard work required to innovate.

I have seen no research that distinguishes the relative importance of these explanations. But why has the pattern changed recently? The profession is not becoming any older, nor are economists in their 50s and early 60s now any healthier than their predecessors were a generation ago. Nor are the incentives to produce changing; even though a few economists are staying on the job longer, real earnings still stop rising for most of us by our late 50s.

TECHNOLOGY SLOWDOWN

So what has changed? The answer lies in the changing nature of technology in the profession – a slowdown in the expansion of the technological frontier. The training in a top-notch PhD programme today is not that qualitatively different from what I received in the late 1960s. The majority of articles published in the 1970s and 1980s in empirical economics were direct tests of a previous formal model or even derived a model and then tested it. In the 2000s, fewer articles can be characterised this way. Theory has not disappeared, but it is less prevalent in empirical research than it was a generation ago (Biddle and Hamermesh 2017).

What does this discussion tell us about the economics profession? There's hope for older economists – the slowdown in technological advances has made the profession less like pure mathematics, and more like a humanistic field. Old folks are demonstrably more able to compete at the frontiers of research than before. For younger economists, it might be a bit depressing. They no longer have the same advantage of the novelty of their skills as my generation did – the earlier unlikelihood that an 'old guy' would be intellectually readily substitutable for them.

CONCLUSIONS

In no way should the implied slowdown in methodological advances be viewed as negative for the profession as a whole. For the role of economics in society, the question is whether the profession is keeping up with the problems of an evolving complex society, not how it solves them. While one might despair of our progress in understanding issues and offering solutions to macroeconomic difficulties, the remarkable advances in the application of microeconomic ideas to real-world problems should be reassuring.

The general question of what causes old folks to 'poop out' has not been solved, any more than the specific question of why older economists slow down. As an economist, I like to think that the role of incentives – both the economic returns to working and the increasing marginal value of household time (because fewer years of life remain and assets which are complements with household time are higher) – matter a lot. But physical ability matters, and so does the rate of technical progress (as Jones 2009 shows). It would be great to find examples that allow us to attribute the depressing decline in productivity with age to its varied causes.

REFERENCES

Biddle, J and D Hamermesh (2017), "Theory and Measurement: Emergence, Consolidation, and Erosion of a Consensus", *History of Political Economy* 49(4): 34-57.

Hamermesh, D (2013), "Six Decades of Top Economics Publishing: Who and How?", *Journal of Economic Literature* 51(1): 162-72.

Hamermesh, D (2018), "Citations in Economics: Measurement, Uses and Impacts", *Journal of Economic Literature* 56(1): 115-56.

Jones, B (2009), "The Burden of Knowledge and the 'Death of the Renaissance Man': Is Innovation Getting Harder?", *Review of Economic Studies* 76(1): 283-317.

Lehman, H (1953), *Age and Achievement*, Princeton University Press.

Mincer, J (1974), *Schooling, Experience and Earnings*, Columbia University Press.

Weinberg, B and D Galenson (2005), "Creative Careers: The Life Cycles of Nobel Laureates in Economics", NBER Working Paper No. 11799.

ABOUT THE AUTHOR

Daniel S. Hamermesh is Distinguished Scholar, Barnard College, Professor Emeritus, Royal Holloway University of London, and Sue Killam Professor Emeritus at the University of Texas at Austin. His A.B. is from the University of Chicago (1965), his Ph.D. from Yale (1969). He taught from 1969-73 at Princeton, from 1973-93 at Michigan State, from 1993-2014 at the University of Texas at Austin, from 2009-12 at Maastricht University, from 2012-2017 at Royal Holloway University of London, and has held visiting professorships in the United States, Europe, Australia and Asia. He is a Fellow of the Econometric Society, a research associate of the National Bureau of Economic Research, and was President of the Society of Labor Economists in 2001. In 2013 that Society gave him the Mincer Award for Lifetime Contributions; he was awarded the IZA Labor Prize; and he received the John R. Commons Award from Omicron Delta Epsilon.

He authored *Labor Demand, The Economics of Work and Pay, Economics Is Everywhere, Beauty Pays*, *Spending Time* and a wide array of articles in labour economics in the leading general and specialized economics journals.

His research concentrates on time use, labour demand, discrimination, social insurance programs (particularly unemployment insurance), and unusual applications of labour economics (to suicide, sleep and beauty).

CHAPTER 10

Evaluating journal performance using inside data

Ivan Cherkashin, Svetlana Demidova, Susumu Imai and Kala Krishna[1]
Australian National University; McMaster University; Queen's University;
Pennsylvania State University

There are many uncertainties associated with publishing in economics. A paper must be written, find sympathetic referees who do not demand impossible revisions, be somehow (and often iteratively) revised to the referees' satisfaction, be deemed acceptable by the editor, and finally published. At each stage, the process could end abruptly. Authors have horror stories about unfair and untimely rejections and endless rounds of revisions. Editors have their own horror stories about referees and authors from hell with whom they have had to deal. Publication lags have made it increasingly difficult to publish in time for one's tenure review.

Is there really a problem? What within the journals is behind this? How can journals do better? Using (not publicly available) data on all submissions to the *Journal of International Economics* (JIE), we are able to address a number of questions that previous studies of publishing in economics could not. For example, we are able to see whether it matters which editor handles the paper (i.e. test for editorial heterogeneity in standards) after controlling as best as possible for the quality of the paper itself. We can also ask whether the treatment of papers is even handed (i.e. whether being well-known or well-connected helps publish; Aizenman and Kletzer 2008) and about the extent of type 1 (rejecting a good paper) and type 2 (accepting a bad one) errors at the journal, as well as speculate on the likely effects of a policy of desk rejecting a significant fraction of papers after a cursory review.

THE LITERATURE

Examinations of publishing in economics typically study two kinds of question: those related to the determinants of the time it takes to publish, and those related to evidence of bias in acceptances. Coe and Weinstock (1967), Yohe (1980), and Trivedi (1993) find that there has been a significant slowdown in the publication process in recent years. Bowen and Sundem (1982) show that a lion's share of accepted papers went through one or more revisions, while most rejected papers were rejected in the first round. Ellison (2002a),

1 This chapter first appeared as a column on VoxEU on 28 June 2008.

using data on published papers only, finds no statistically significant relationship between the time from submission to acceptance and the authors' standing in the profession, as reflected in publications in top journals. He argues that while greater length and number of co-authors might account for a small part of the increase in the delay, greater emphasis placed on aspects of quality other than the main idea may well account for up to a quarter of the increase in the delay (Ellison 2002b).

The second direction taken in this literature has been to test for bias in acceptances and rejections based, for example, on gender, closeness to editors or co-editors of the journal, the ranking of the author's place of work (Blank 1991, Laband and Piette 1994), or the author's professional age (Hamermesh and Oster 1998).

However, lack of access to data on the inner workings of journals has constrained the kinds of questions that could be asked. Most previous work in this area, with a few rare exceptions, is based on data on published articles from one or more journals or small random samples obtained from the editors of these journals. Not having data on all articles submitted limits the set of questions that can be asked (for example, one cannot look at differences in accepted and rejected papers).

We compiled a unique data set on all submissions to the *Journal of International Economics* over a decade to tackle these issues. Our more direct evaluation of a journal's performance and its co-editors may help guide all the parties involved in the process.

THE DATA

From 1995 to 2004, the JIE received 3,032 submissions, of which almost 600 articles (20%) were accepted for publication. Despite the journal pages doubling (rising from 700 to 1,400 pages per year) over that time, the acceptance rate nearly halved from 27% to 14%! Most accepted papers go through at least one revision: only 0.6% of submitted papers were accepted with no revision, about 23% were sent for revision, and about 78% of these were finally accepted. The absence of a desk rejection policy makes the difference in the time to first decision for papers that are not rejected in the first round (162 days) and those that are rejected (132 days) relatively small.

For each submission between 1995 and 2004, we observe the authors' names, the title of the paper, the date of submission, the name of the co-editor who handled the article, the date of the first decision and subsequent decisions (if any), and the decisions. In addition, we collected detailed data on the authors' background from their CVs and data on the final outcomes with each submission such as its ultimate fate as well as its reception by the profession (citations).

FINDINGS

There are many parties involved in the publication process who can gain from a better understanding of the inside workings of this process. Since editors are, hopefully, interested in publishing good papers and rejecting bad ones, some indication of the extent of type 1 and type 2 errors should be very useful. The JIE has high type 2 errors (7% of published papers have no citations at all) and low type 1 errors (very few papers rejected by the JIE are accepted at better-ranked journals). Only 564 of 2,434 rejected papers went on to be published elsewhere. Of these, only 14% were published in places ranked above the JIE, and even these are cited roughly half as often as all JIE papers on average. This suggests that higher standards might be relatively costless. Our work also suggests that there is editorial heterogeneity in standards and that editors with worse papers allocated to them tend to be more lenient, which is consistent with their under-estimating the average quality of submissions to the JIE. Providing editors with feedback on how their standards seem to rank relative to other editors could help reduce heterogeneity in editorial standards.

There is also some evidence that there are entry barriers in the publication process: for example, being well-connected (having published in network journals, where submissions are solicited) is very significantly positive in all specifications. This could be innocuous: better academics are better connected and write better papers, so their work is accepted more readily. However, if this were so, then such papers should also be cited more often and controlling for citations should negate this effect. While this is partly the case in the data (publications in network journals go from being highly significant to being less so and the size coefficient falls), the effect remains, suggesting more work with better controls for quality is warranted.

Finally, we look at the determinants of acceptance using a probit model, as well as a variation (using maximum likelihood techniques) that controls for selection bias in the data arising from data not being available for authors without a web presence. We find that our model predicts acceptance (based on author characteristics alone) very well. Just running this regression out of sample and rejecting the papers whose probability of acceptance is in the bottom 25-33% results in almost no 'wrong' rejections. In fact, for single-authored papers, we could reject the lowest 40% of the papers and make no mistakes. One would expect that by taking a quick look at the paper, the editor could do much better than such a mechanical approach! This suggests that desk rejection of a good share of papers would be possible at low cost.

CONCLUSION

Overall, the *Journal of International Economics* seems to be doing a good job at identifying quality, although tighter standards, feedback to co-editors on their performance, and a desk rejection policy would likely improve efficiency. Refining the set of the papers being

sent to referees, in particular, would reduce the burden on all concerned at almost no cost in terms of performance. Moreover, providing feedback to co-editors, and possibly referees, on their relative performance and information on the quality composition of the papers they receive relative to the average could help to reduce heterogeneity in terms of standards. Whether such policy recommendations can be applied to other economic journals requires more analysis, which in turn requires more data.

REFERENCES

Aizenman, J and K Kletzer (2008), "Networking, citation of academic research, and premature death", VoxEU.org, 30 April.

Blank, R M (1991), "The Effects of Double-Blind versus Single-Blind Reviewing: Experimental Evidence from the American Economic Review", *American Economic Review* 81(5): 1041-1067.

Bowen, R M and G L Sundem (1982), "Editorial and Publication Lags in the Accounting and Finance Literature", *The Accounting Review* 57(4): 778-784.

Cherkashin, I, S Demidova, S Imai, Susumu and K Krishna (2009), "The inside scoop: Acceptance and rejection at the journal of international economics," *Journal of International Economics* 77(1): 120-132.

Coe, R K and I Weinstock (1967), "Editorial Policies of Major Economic Journals", *Quarterly Review of Economics and Business* 7(4): 37-43.

Ellison, G (2002a), "The Slowdown of the Economics Publishing Process", *Journal of Political Economy* 110(5): 947-993.

Ellison, G (2002b), "Evolving Standards for Academic Publishing: A q-r Theory", *Journal of Political Economy* 110(5): 994-1034.

Hamermesh, D S and S S Oster (1998), "Aging and Productivity among Economists." The Review of Economics and Statistics 80(1): 154-156.

Laband, D N and M J Piette (1994), "Favoritism versus Search for Good Papers: Empirical Evidence Regarding the Behavior of Journal Editors", *Journal of Political Economy* 102(1): 193204.

Trivedi, P K (1993), "An Analysis of Publication Lags in Econometrics", *Journal of Applied Econometrics* 8(1): 93-100.

Yohe, C W (1980), "Current Publication Lags in Economics Journals", *Journal of Economic Literature* 18(3): 1050-1055.

ABOUT THE AUTHORS

Ivan Cherkashin is Director of Quantitative Risk Managment - Credit Risk Modeling at USAA. Prior to joining USAA, he was an Assistant Professor of Economics at the Research School of Economics, College of Business and Economics at the Australian National University. He earned his Ph.D. from the Pennsylvania State University in August, 2010.

Svetlana Demidova is an Associate Professor of Economics at the Department of Economics at McMaster University. She earned her Ph.D. from the Pennsylvania State University in December 2008. Her major research interests are international trade, productivity and growth, competition policies.

Susumu Imai is an Associate Professor at the University of Technology Syndey. He holds a PhD in Economics from the University of Minnesota.

Kala Krishna is Liberal Arts Research Professor of Economics at the Pennsylvania State University. From 1984 to 1991, she was Assistant and then Associate Professor of Economics at Harvard University. From 1991-1993 she was William L Clayton Professor of Economics at the Fletcher School of Law and Diplomacy. Professor Krishna has been a visiting Professor at a number of universities, including the Massachusetts Institute of Technology, Hebrew University, Stockholm University and The University of Copenhagen. She holds a B.A. from Lady Sriram College, Delhi University, a M.A. from the Delhi School of Economics and a Ph.D from Princeton University. She was Co-editor of the *Journal of International Economics* and serves on the editorial boards of a number of journals including *Economics Letters, IJIO, JITED* and *JIE*.

CHAPTER 11

Determinants of prosocial behaviour: Lessons from an experiment with referees at the *Journal of Public Economics*[1]

Raj Chetty, Emmanuel Saez and László Sándor
Harvard University; University of California Berkeley; University of Luxembourg

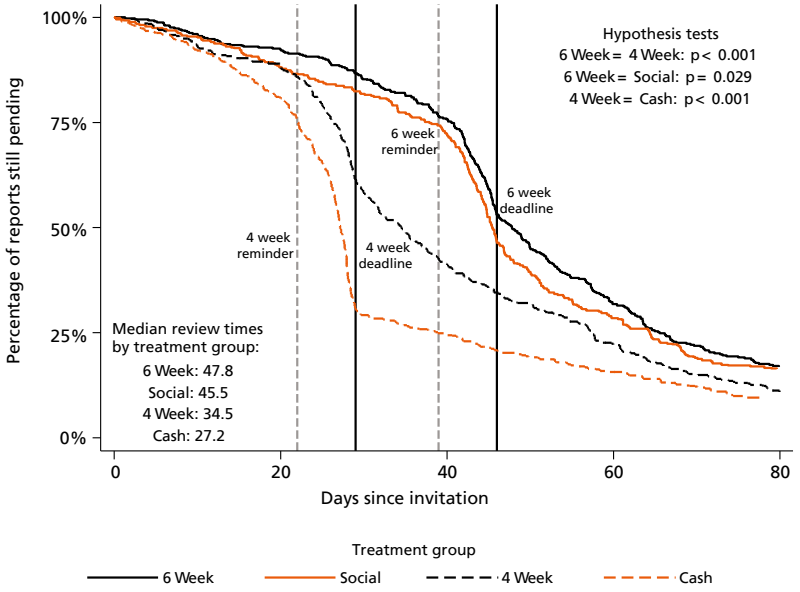
Many organisations rely on prosocial behaviours – choices that benefit others but have a personal cost – to achieve their objectives. For instance, foundations rely on charitable contributions for funding, governments partly rely on voluntary compliance for tax revenue, and employers rely on voluntary referrals for hiring. Because prosocial behaviours have positive externalities by definition, increasing such behaviour can improve welfare. What are the most effective policies to encourage prosocial behaviour? While there is a large body of evidence from the lab on the determinants of prosocial behaviour and altruism (e.g. Ledyard 1995, Vesterlund 2014), evidence from the field remains more limited.

In Chetty et al. (2014), we study this question by focusing on a setting familiar to academic researchers – the peer review process. Peer review is a classic example of prosocial behaviour – the personal rewards from submitting a high-quality referee report quickly are typically small, but the gains to the authors of the paper and to society from the knowledge produced are potentially large (Ellison 2002).

We evaluate the impacts of economic and social incentives on peer review using an experiment with 1,500 referees at the *Journal of Public Economics*. We randomly assign referees to four groups: a control group with a six-week (45-day) deadline to submit a referee report, a group with a four-week (28-day) deadline, a 'cash incentive' group rewarded with $100 for meeting a four-week deadline, and a 'social incentive' group in which referees were told that their turnaround times would be publicly posted.

1 This chapter first appeared on VoxEU on 11 August 2014.

FIGURE 1 REVIEW TIMES BY TREATMENT GROUP



Notes: This figure shows the distribution of review times by treatment group during the experimental period. Each survival curve plots the percentage of reports still pending versus the number of days elapsed since the referee received the invitation. The solid vertical lines depict the six-week deadline (45 days) and the four-week deadline (28 days). The dashed vertical lines depict the reminders sent one week before each deadline.

Figure 1 shows the impacts of the treatments on review times. It plots 'survival curves' by treatment group – that is, the fraction of reports that were submitted by the day shown on the horizontal axis. Based on the evidence in this figure, as well as other related analyses of referee performance, we obtain four sets of results.

First, shortening the deadline from six weeks to four weeks reduces median review times from 48 days to 36 days. Because missing the deadline has no direct consequence, we believe the shorter deadline acts as a 'nudge' (Thaler and Sunstein 2008) that changes the default date at which referees submit reports. Consistent with this interpretation, most of the increase in referees' speed occurs immediately after they receive an email reminding them that their report is due in one week.

Second, providing a $100 cash incentive for submitting a report within four weeks reduces median review times by an additional eight days. Prior work has debated whether extrinsic incentives such as cash payments are effective in increasing prosocial behaviour because they may crowd out intrinsic motivation (Titmuss 1971). The fact that monetary incentives work implies that the positive effect of the price subsidy predicted by traditional economic models dominates any crowding-out of intrinsic motivation in the context of peer review. We further assess whether cash incentives crowd out intrinsic motivation by testing whether referees who received cash incentives become slower than those in the four-week deadline group after the cash incentives end. We find no such evidence – again indicating that crowding-out of intrinsic motivation is not large in this context.

Third, we find that the social incentive treatment reduces median review times by approximately 2.5 days. This effect is much smaller than the impacts of the other treatments, but the degree of social pressure applied here is relatively light. The fact that even this treatment has an effect suggests that more direct forms of social pressure – such as personalised emails from editors – may have powerful impacts on referee behaviour.[2] Moreover, social incentives complement the other interventions by influencing individuals who are less responsive to other incentives. In particular, we find that tenured professors are less sensitive to deadlines and cash incentives than untenured referees, perhaps because they are busier or wealthier. Social incentives, in contrast, have much larger effects on tenured professors, as shown in Figure 2.

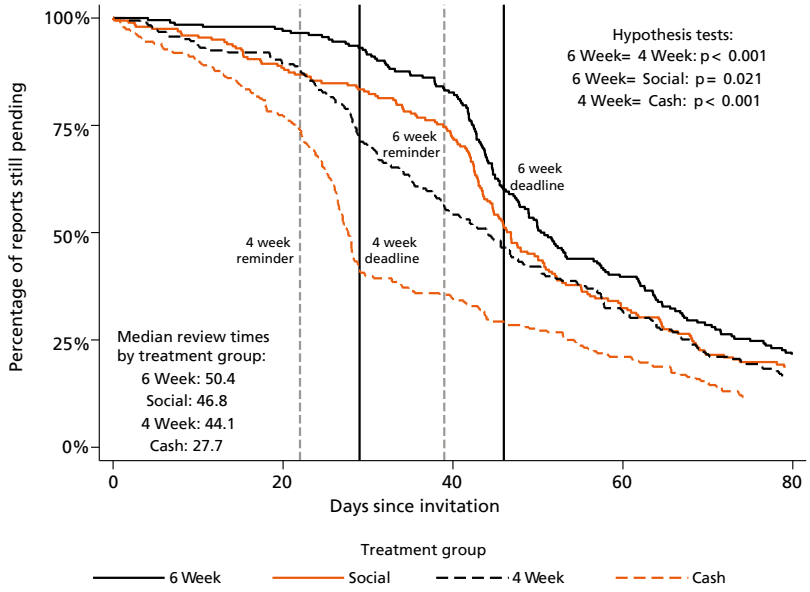
Finally, we evaluate whether the treatments have an impact on other outcomes besides review time.[3] Economic models of multi-tasking (e.g. Holmstrom and Milgrom 1991) predict that referees will prioritise the incentivised task (i.e. submitting a report quickly) at the expense of other aspects of performance, such as the quality of reviews. We find that the shorter deadline has no effect on the quality of the reports that referees submit, as measured by whether the editor follows their recommendation or the length of referee reports (Figure 3). The cash and social incentives induce referees to write slightly shorter referee reports, but do not affect the probability that the editor follows the referee's advice. We also find little evidence of negative spillovers across journals – the treatments have no detectable effects on referees' willingness to review manuscripts and review times at other journals published by Elsevier.

2 Similar social pressure interventions also have significant impacts on voting and charitable contributions (Gerber et al. 2008, DellaVigna et al. 2012).

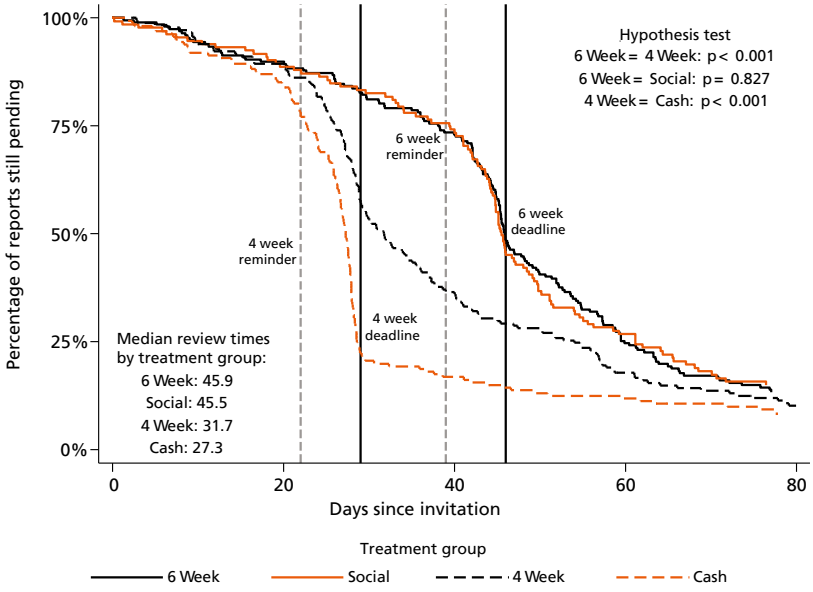
3 The cash incentive increases the fraction of referees who agree to review a manuscript. The social incentive reduces agreement rates, while the shorter deadline has no impact. We find that the selection effects induced by these changes in agreement rates are modest and are unlikely to explain the observed changes in review times.

FIGURE 2 IMPACTS OF TREATMENTS ON TENURED VERSUS UNTENURED REFEREES

a) Tenured referees

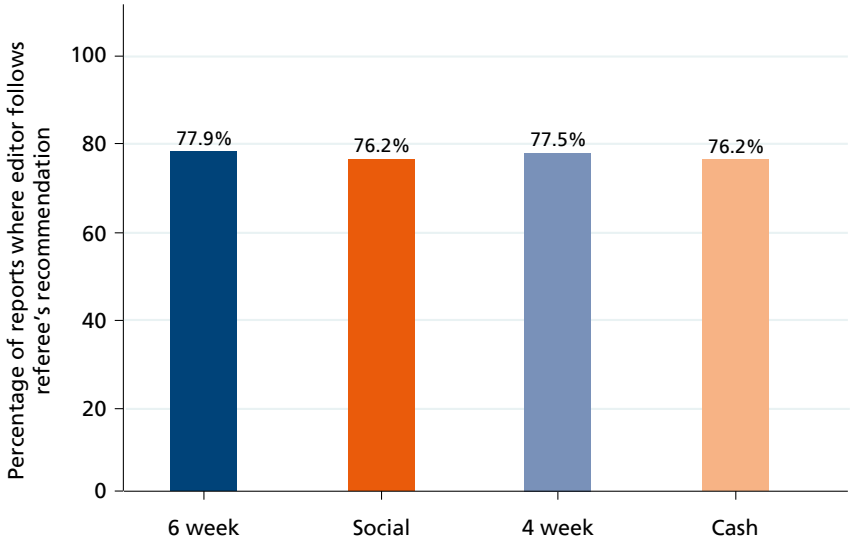


b) Untenured referees



Notes: This figure shows the distribution of review times for tenured referees (Panel A) and untenured referees (Panel B). Each survival curve plots the percentage of reports still pending vs. the number of days elapsed since the referee received the invitation.

FIGURE 3 IMPACT OF TREATMENTS ON REVIEW QUALITY



Notes: This figure shows the effects of the treatments on review quality, as measured by the percentage of cases in which the editor's decision to accept or reject the manuscript matches the referee's recommendation.

LESSONS FOR THE PEER REVIEW PROCESS

Our findings offer three lessons for improving the peer review process.

1. Shorter deadlines are extremely effective in improving the speed of the review process. Moreover, shorter deadlines generate little adverse effect on referees' agreement rates, the quality of referee reports, or performance at other journals. Indeed, based on the results of the experiment, the *Journal of Public Economics* now uses a four-week deadline for all referees.

2. Cash incentives can generate significant improvements in review times and also increase referees' willingness to submit reviews. However, it is important to pair cash incentives with reminders shortly before the deadline. Some journals, such as the American Economic Review, have been offering cash incentives without providing referees reminders about the incentives. In this situation, sending reminders would improve referee performance at little additional cost.

3. Social incentives can also improve referee performance, especially among subgroups such as tenured professors who are less responsive to deadlines and cash payments. Light social incentives, such as the *Journal of Financial Economics*' policy of posting referee times by referee name, have small effects on review times. Stronger forms of social pressure – such as active management by editors during the review process in the form of personalised letters and reminders – could potentially be highly effective in improving efficiency.

More generally, our results reject the view that the review process in economics is much slower than in other fields, such as the natural sciences, purely because economics papers are more complex or difficult to review. Instead, our findings show that small changes in journals' policies can substantially improve the peer review process at little cost.

LESSONS FOR INCREASING PROSOCIAL BEHAVIOUR

Beyond the peer review process, our results also offer some insights into the determinants of prosocial behaviour more broadly.

1. Attention matters – reminders and deadlines have significant impacts on behaviour. Nudges that bring the behaviour of interest to the top of individuals' minds are a low-cost way to increase prosocial behaviour, consistent with a large literature in behavioural economics (Thaler and Sunstein 2008).
2. Monetary incentives can be effective in increasing some forms of prosocial behaviour. We find no evidence that intrinsic motivation is crowded out by financial incentives in the case of peer review, mirroring the results of Lacetera et al. (2013) for the case of blood donations. While crowding-out of intrinsic motivation could be larger in other settings, these results show that one should not dismiss corrective taxes or subsidies as a policy instrument simply because the behaviour one seeks to change has an important prosocial element.
3. Finally, social incentives can be effective even when other policy instruments are ineffective. This result echoes findings in other settings – such as voting (Gerber et al. 2008), campaign contributions (Cruces et al. 2013), and energy conservation (Allcott 2011) – and suggests that social incentives are a useful complement to price incentives and behavioural nudges.

REFERENCES

Allcott, H (2011), "Social Norms and Energy Conservation", *Journal of Public Economics* 95(9-10): 1082–1095.

Chetty, R, E Saez, and L Sándor (2014), "How Can We Increase Prosocial Behavior? An Experiment with Referees at the Journal of Public Economics", *Journal of Economic Perspectives* 28(3): 169-188.

Cruces, G, R Perez-Trugliad, and M Tetaza (2013), "Biased perceptions of income distribution and preferences for redistribution: Evidence from a survey experiment", *Journal of Public Economics* 98: 100–112.

DellaVigna, S, J A List, and U Malmendier (2012), "Testing for Altruism and Social Pressure in Charitable Giving", *Quarterly Journal of Economics* 127(1): 1–56.

Ellison, G (2002), "The Slowdown of the Economics Publishing Process", *Journal of Political Economy* 110(5): 947–993.

Gerber, A S, D P Green, and C W Larimer (2008), "Social Pressure and Voter Turnout: Evidence from a Large-scale Field Experiment", *American Political Science Review* 102(1): 33–48.

Holmstrom, B and P Milgrom (1991), "Multitask Principal-agent Analyses: Incentives Contracts, Asset Ownership, and Job Design", *Journal of Law, Economics and Organization* 7: 24–52.

Lacetera, N, M Macis, and R Slonim (2013), "Economic Rewards to Motivate Blood Donations", *Science* 340(6135): 927–928.

Ledyard, J O (1995), "Public Goods: A Survey of Experimental Research", in J H Kagel and A E Roth (eds), *Handbook of Experimental Economics*, Princeton University Press: 111–194.

Thaler, R H and C R Sunstein (2008), *Nudge: Improving Decisions about Health, Wealth, and Happiness*, Yale University Press.

Titmuss, R M (1971), *The Gift Relationship*, George Allen and Unwin.

Vesterlund, L (2014), "Voluntary Giving to Public Goods: Moving Beyond the Linear VCM", in J H Kagel and A E Roth (eds), *Handbook of Experimental Economics*, Vol 2, Princeton University Press.

ABOUT THE AUTHORS

Raj Chetty is the William A. Ackman Professor of Public Economics at Harvard University and Director of Opportunity Insights. Chetty's research combines empirical evidence and economic theory to help design more effective government policies. His work on tax policy, unemployment insurance, and education has been widely cited in media outlets and Congressional testimony. His current research focuses on equality of opportunity: how can we give children from disadvantaged backgrounds better chances of succeeding? Chetty earned his AB summa cum laude from Harvard College in 2000 and his Ph.D. from Harvard University in 2003. He was elected as a fellow to the American Academy of Arts and Sciences in 2014 and as a member to the National Academy of Sciences in 2018.

Emmanuel Saez is Professor of Economics and Director of the Center for Equitable Growth at the University of California Berkeley. His research focuses on tax policy and inequality both from theoretical and empirical perspectives. Jointly with Thomas Piketty, he has constructed long-run historical series of income inequality in the United States that have been widely discussed in the public debate. He received his PhD in Economics from MIT in 1999. He was awarded the John Bates Clark medal of the American Economic Association in 2009 and a MacArthur Fellowship in 2010.

László Sándor is a Research Associate at the Department of Finance of the University of Luxembourg. His research focuses on public economics and household finance. He received his Ph.D. in Economics from Harvard University in 2015.

SECTION 4

Social ties, co-authorship and publication patterns

CHAPTER 12

Multi-authored journal articles in economics: Why the spiralling upward trend?

John O'Hagan and Lukas Kuld
Trinity College Dublin; Technical University Dortmund

The dramatic rise in multi-authored papers in economics is in itself a phenomenon of interest to economists. One issue of policy relevance, however, is how hiring and promotional bodies and funding agencies may have contributed to and/or responded to this change in the publication patterns of research economists. For example, what discount, if any, do they apply for articles published with one, two, three or more other researchers? Changes in this regard could be a key explanation for the phenomenon. But the literature has tended overwhelmingly to seek other explanations.

Perhaps the earliest substantive paper on this issue is McDowell and Melvin (1983), who used just ten journals in their sample. Barnett et al. (1988) widened the discussion considerably but used an even narrower data set, namely, the *American Economic Review* alone. Their starting argument for the rise in multi-authored papers in economics is what they term the 'division of labour' hypothesis, which is very similar to the specialisation focus of the earlier paper by McDowell and Melvin (1983) and is taken up in a later paper by Jones (2009).

Another argument that Barnett et al. (1988) make, and one that is also made by Hamermesh (2013), is that the increasing emphasis on publication in refereed journals as a criterion for appointment and/or promotion allows less time to assist colleagues, the 'reward' of an acknowledgement or 'thank you' being replaced with the offer of co-authorship to elicit such assistance. This opportunity cost of time hypothesis depends crucially on the discount factor applied, if any, to papers with more than one author; one would be very reluctant to add token or 'thank you' names if a discount factor did apply.

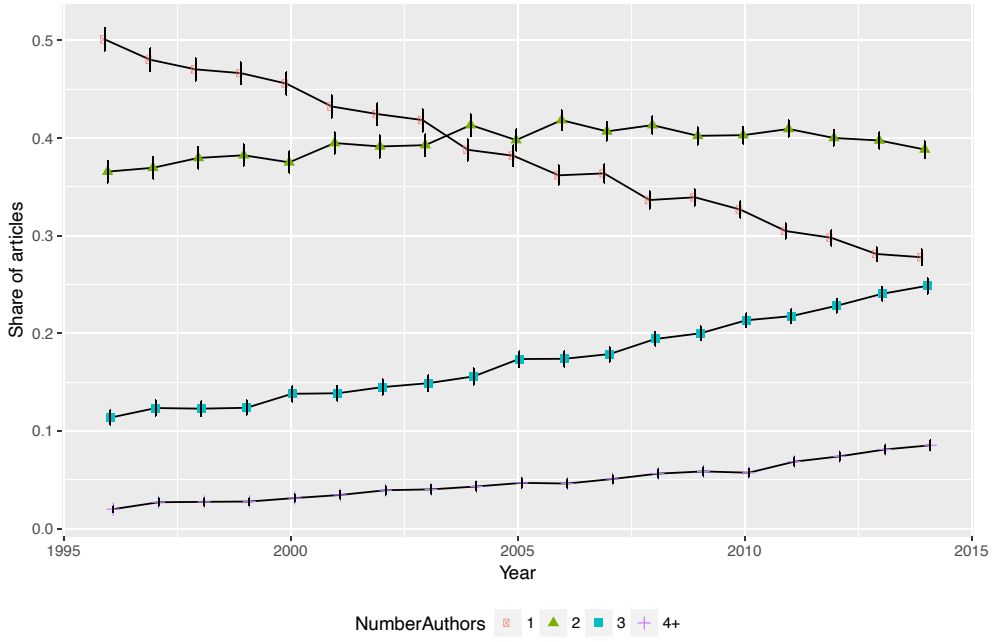
A perhaps more convincing hypothesis arising from the increased 'publish or perish' pressure relates to risk aversion, which says it is better to spread your risks by submitting, say, four papers written with three co-authors instead of one solo-authored paper. Rosenblat and Mobius (2004) and Catalini et al. (2016) argue that advances in communication and transportation technologies have created a 'global village' which has increased the possibilities for, and hence the incidence of, multi-authorship. Using large data sets, Henriksen (2016) and Rath and Wohlrabe (2016) document further the scale and breadth of the rise in multi-authorship in the social sciences, including economics.

Drawing on this literature, in Kuld and O'Hagan (2018) we provide substantial new findings on the rise of multi-authorship in economics, which we outline below.

KEY FINDINGS

As recently as 1996, single-authored papers accounted for 50% of all articles published in economics journals. This number had dropped to just over 25% by 2014. While the share of papers by two authors remained steady, the huge pickup was in papers by either three authors or four or more authors, particularly the latter (Table 1). The picture is the same whether looking at all economics journals (top 255) or just the top 20 journals. The rise in multi-authorship is particularly marked in the top 20 journals, with just over 20% of papers now by only one author. If present trends continue, the number of papers by four or more authors could soon exceed the number of single-authored papers.

FIGURE 1 MULTI-AUTHORSHIP IN ECONOMICS JOURNALS



Notes: Number of economic research articles published in the top 255 journal, classed by number of authors and divided bythe yearly total of articles. 95% confidence intervals as vertical lines.

Source: Own calculations based on Scopus data.

Turning now to trends in co-authorship across countries, we examined co-authorship between US researchers and economists from other countries. Since 1990 there has been a very large rise in co-authorship across countries. This is especially the case between the US and the UK, but the rises for the other country combinations are also large. This would tend to support the view that increased ease of communication and transport may have been key factors in the rise of multi-authorship.

We also looked at citations by multi-authorship type and found significantly higher citations for papers by four or more authors, especially compared to single-authored papers.

When this is adjusted to citations per author, however, a very different picture emerges: citations per article per author are much higher, and very significantly so, for single-authored papers. This is true no matter which category of journal is used, and one might argue that it is a better indicator of the contribution of an individual to the field.[1]

Another issue is the alphabetical ordering of author names on articles by author category.[2] Our findings show that a high proportion of articles use alphabetical ordering of names, even if adjusted for random alphabetical ordering. The figure is around 60% for papers with two or three authors, but only around 40% for papers with four or more authors. However, and importantly, these percentages did not vary much over the period examined.

The alphabetical ordering of names is particularly high in the top 20 journals, with no significant differences across papers with different numbers of authors. This implies that the contribution of each author is signalled to be approximately equal. In addition, this makes it impossible to directly identify roles within the author team (the lead author listed first, for instance, or the group supervisor listed last). In turn, this increases the costs of the token addition of names of supervisors or researchers who made no significant methodological or other contribution.

One further finding of interest relates to the career profiles of top economists who were awarded their PhDs between 1996 and 1999. An examination of articles by number of authors for the 133 top economists in the years following the award of their PhD reveals that the propensity for single-authored papers among these economists is highest in the first five years of their career, and thereafter the ratio to multi-authored publications is similar to all articles in top 20 journals.

EXPLANATIONS

Specialisation in the context of co-authorship could relate, as discussed, to the benefit of specialised roles within an author team. However, our empirical analysis provided no strong evidence for this hypothesis.

We also do not find a trend for team roles or contributions to be signalled by the ordering of names. The incidence of alphabetical listing of authors has been consistently high and for many years.

1 Sauer (1988) and Sommer and Wohlrabe (2017) also examine this issue.
2 See García-Suaza et al. (2020) for an interesting discussion of a special form of co-authorship, namely, that between supervisor and PhD student.

The internet and cheaper flights did lower the costs of communication and, subsequently, co-authorship between distant researchers. The evidence in relation to co-authorship across countries would tend to support the argument that technology and transport costs may have been key factors, as do some of the studies listed earlier. But such developments may simply have increased the options for co-authorship, and hence the nature but not the extent of co-authorship.

If the pressure on economists to produce more articles has increased over time, researchers can respond by increased co-authorship. First, shared work should be less time-consuming than working on papers alone if there are gains from the division of labour. Second, if co-authored papers are not discounted by the numbers of co-authors, this would provide overwhelming incentives for co-authorship. In addition, co-authorship diversifies the risk of individual research projects failing.

However, the high incidence of single-authored papers in the early career stage points to an ambiguity of co-authorship in relation both to the increasing specialism argument above and also to the hiring process. Interestingly, Sarsons (2017) shows that in tenure decisions, women receive less credit for co-authored work than men. It is likely that young authors are also perceived as not fully contributing to co-authored work, and therefore choose to write papers alone, as noted earlier.

What is needed, perhaps, is more evidence on hiring, promotional and funding decisions with regard to single- versus multi-authored papers. The patchy evidence would seem to suggest that there is very limited discounting of published articles by number of co-authors.

Ossenblok et al. (2014) analysed co-authorship patterns in the social sciences and humanities for the period 2000 to 2010. Two interesting findings in this study are as follows. The first is that the incentives for co-authorship have changed significantly. Output-based research funding offers researchers one of the most directly tangible publication incentives. Second, it seems that the Flemish performance-based research funding system actively encourages co-authorship through its use of whole counts (i.e. giving each institution named on an article full credit), as opposed to systems that use fractional counts (i.e. counting an article as a single unit and dividing up the credit for publication).

An interesting policy issue is how university hiring and promotional bodies and funding agencies have responded to these trends. They may even have partly caused them. How is a young researcher to decide between working on, say, five papers with six co-authors or two single-authored papers if he/she has no idea of the extent to which a discount factor applies?

This is especially the case given that our data show the quality of co-authored papers (as measured by citations) is not much higher than that of single-authored papers, even when there are three or more authors. The issue of how to rate different articles by number of authors, adjusted for quality, is perhaps a standout – if so far neglected – issue facing economists and hiring/promotional bodies today.

REFERENCES

Barnett, A H, R W Ault and D L Kaserman (1988), "The rising incidence of co-authorship in economics: further evidence", *Review of Economics and Statistics* 70: 539-543.

Catalini, C, C Fons-Rosen and P Gaule (2016), "Did cheaper flights change the direction of science?", CEPR Discussion Paper 11252.

García-Suaza, A, J Otero and, R Winkelmann (2020), "Predicting early career productivity of PhD economists: Does advisor-match matter?", *Scientometrics* 122(1): 429–449

Hamermesh, D S (2013), "Six decades of top economics publishing: who and how?", *Journal of Economic Literature* 51(1): 162-72.

Henriksen, D (2016), "The rise in co-authorship in the social sciences (1980-2013)", *Scientometrics* 107(2): 455-476.

Jones, B F (2009), "The burden of knowledge and the 'death of the renaissance man': is innovation getting harder?", *Review of Economic Studies* 76(1): 283.

Kuld, L and J O'Hagan (2018), "Rise of multi-authored papers in economics: Demise of the 'lone star', and why?", *Scientometrics* 114(3): 1207–1225.

McDowell, J M and M Melvin (1983), "The determinants of co-authorship: an analysis of the economics literature", *Review of Economics and Statistics* 65: 155-16

Ossenblok, T L B, F T Verleysen and T C E Engels (2014), "Co-authorship of journal articles and book chapters in the social sciences and humanities (2000-2010)", *Journal of the Association for Information Science and Technology* 65(5): 882-897.

Rath, K and K Wohlrabe (2016), "Recent trends in co-authorship in economics: evidence from RePEc", *Applied Economics Letters* 23(12): 897-902.

Rosenblat, T S and M M Mobius (2004), "Getting closer or drifting apart?", *Quarterly Journal of Economics* 119(3): 971.

Sarsons, H (2017), "Recognition for group work: gender differences in academia", *American Economic Review: Papers and Proceedings* 107(5): 141–145.

Sauer, R D (1988), "Estimates of the returns to quality and co-authorship in economic academia", *Journal of Political Economy* 96(4): 855-866.

Sommer, V and K Wohlrabe (2017), "Citations, journal ranking and multiple authorships reconsidered: evidence from almost one million articles", *Applied Economics Letters* 24(11): 809-814.

ABOUT THE AUTHORS

John O'Hagan is Professor of Economics, Emeritus, Trinity College Dublin. His main research interests are the economics of economists, cultural economics and Irish and European economic policy.

Lukas Kuld is a postdoctoral researcher at TU Dortmund, working on the economics of science and the labour market of literary writers. He holds a PhD from Trinity College Dublin and is a graduate of ENSAE Paris and the University of Mannheim.

CHAPTER 13

Our uneconomic methods of measuring economic research[1]

Stan Liebowitz
University of Texas at Dallas

In the movie *Moneyball*, a nerdy Ivy League economics major, working for a general manager played by Brad Pitt, finds undervalued baseball players by applying clear-headed logic and statistical techniques.[2] Many economists watching this movie probably felt a tinge of pride in seeing our tools portrayed as rigorously objective. After all, economists have long been proponents of using logic to eliminate inefficiencies and rent-seeking in the economy (e.g. Tullock 1967). Given this, it is surprising how infrequently that penetrating gaze has been focused on our own profession.

But some attention is warranted. Our methods for measuring and rewarding research – the key component for promotions and salaries – create inefficiencies and are inconsistent with what we teach our students about efficient production. Further, this inefficiency might be caused by economists' own rent-seeking through the vehicle of departmental politics.

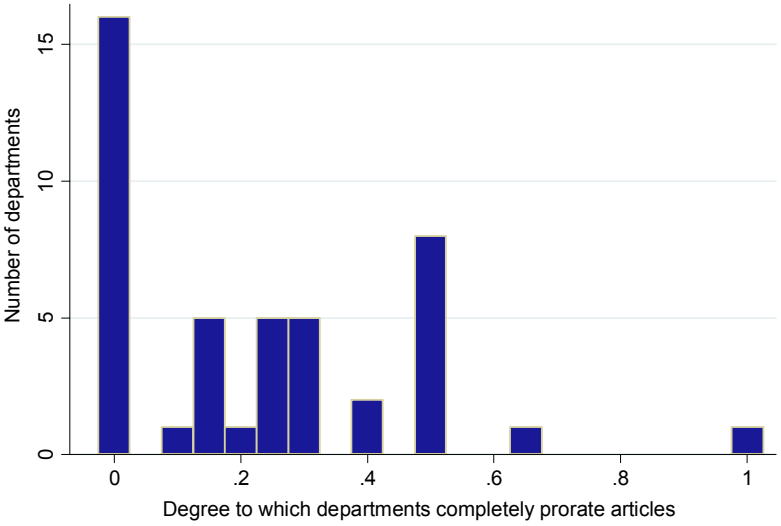
The manner in which we credit co-authorship and evaluate articles induces overly large research teams, encourages false authorship, enhances subjectivity, and penalises honest researchers.

EVALUATING CO-AUTHORSHIP CREDIT

It is easy to create a division-of-credit system that gives researchers the correct incentives to choose efficiently sized authoring teams. Simply put, a rule where the co-authors' credit shares sum to one (i.e. full proration of credit) provides the correct incentives for choosing team sizes, and any other division rule does not. Yet, as Figure 1 shows, full proration of credit is almost never used in economics departments, according to my recent survey of department chairs (Liebowitz 2014).[3] More than a third of departments (16 out of 45) give each co-author full credit for the entire article; only one department completely prorates credit.

1 This chapter first appeared on VoxEU on 6 December 2013.
2 Pitt was playing a real-life baseball executive, Billy Beane, who used 'sabermetrics' to help pick the players on his team who would provide the highest return per dollar. The movie was based on the book of the same name by Michael Lewis.
3 The survey consists of a questionnaire given to department chairs at the top 100 or so mainly American universities, almost half of which were answered.

FIGURE 1 DISCOUNTING OF AUTHORSHIP



Zero proration is a flagrant violation of economic logic. For two articles of identical quality – one written by a single author and the other written by four authors – should the credit to each of the four co-authors really be the same as the reward to the sole author? Do we normally say that efficient production requires that inputs get paid their marginal revenue product multiplied by the number of co-workers?

If the paper by four authors is not written with each author providing one-fourth or less effort compared to each author working alone, then that size of team is inefficient. But if each co-author is given full credit, they have an incentive to co-author even when the number of papers written by the four-author team is much lower than the number of equal quality papers they could write working alone or with smaller teams.

Departments that fail to discount by the number of co-authors should be embarrassed to use a measurement process that incorporates a logical error that would not be allowed in a micro principles course.

Are research-oriented departments more likely to award research credit rationally? The answer, found in Table 1, is 'yes and no'. Higher-quality departments are more likely to prorate co-authorship than are lower-quality departments. Strangely, the amount of proration for those departments that prorate is somewhat greater for low-quality departments, leading to about the same overall degree of proration regardless of departmental quality.[4]

4 Full proration (100% in Table 1 and Figure 1) implies that each of n (equal) authors receives 1/n credit for the article. Zero proration implies that each author receives credit for the entire article. Other percentages are a linear combination of these two.

TABLE 1 PRORATING AUTHOR CREDIT BY DEPARTMENTAL QUALITY

Department quality ranking	Share of depts. prorating	Size of proration for proraters	Average proration for all depts.
Top third	75%	30%	23%
Middle third	71%	37%	26%
Bottom third	47%	43%	20%

Note: Based on authors' survey of department chairs, 45 observations.

Because the failure to fully prorate will lead rational researchers to use more than the optimal number of authors, too few papers will be produced relative to the population of authors – a result consistent with a finding by Hollis (2001) that co-authorship decreased total output. If, as we like to think, our research has a net positive impact on society, then inefficient research practices would imply social harm. The failure to fully prorate may also have helped cause the doubling in co-authorship that has occurred in economics (and other fields) over the last 50 years.

The failure to prorate is also likely to lead to 'false authorship', where an individual not involved with the research is added to a paper's list of authors. The 'real' authors benefit from a personal gain in friendship (or a quid pro quo) and suffer, if at all, only from potential guilt about being dishonest or the potential punishment if this 'fraud' is found out. I suspect that the expected punishment cost approaches zero, since it is unclear that the profession even acknowledges this as a problem. Because false authorship does not change the size of the actual research team, however, there is no direct negative impact on the creation of research. Nevertheless, important social costs may well occur when honest researchers are under-rewarded and possibly displaced by less qualified researchers engaging in false authorship.

In light of these inefficiencies, why do we use these reward structures? For self-interest to be the answer, it must be that the more powerful members of a department are the more intensive practitioners of co-authorship. This possibility is supported by evidence that faculty seniority is positively associated with a greater incidence of co-authorship (Conley et al. 2011, McDowell and Melvin 1983). In addition, given that this reward structure has been in place for decades (Liebowitz and Palmer 1988), faculty engaging in greater-than-average co-authorship would command an inappropriately high status among the senior faculty. Self-interest among senior, high co-authoring faculty members would imply a push for less-than-full proration – even if these faculty members understood that it would reduce the (quality-adjusted) number of publications emanating from their department.

JUDGING THE QUALITY OF PAPERS

The self-interest of senior faculty in the measurement of productivity might also explain what otherwise appear to be irrational choices among departments in judging the quality of research papers.

There are generally three sources of information used to judge the quality of a paper: the quality of the journal in which it was published, the number of citations garnered by the paper, and opinions formed from reading the paper. Because a journal's decision depends on the opinion of only an editor and a few referees chosen by the editor, there is a great deal of latitude for gratuitous decisions. By way of contrast, the number of citations that a paper receives is determined by the entire academy, likely reducing the influence of gratuitous behaviour. The value of reading a paper depends on who is doing the reading, their qualifications for making a judgment, and their objectivity. Consequently, it is also the method of evaluation most easily abused by the senior faculty.

Table 2 presents the relative importance of these three information sources for senior promotions, according to department chairs. The journal of publication is the leading measure of a paper's quality (although top departments have less reliance on this measure). The main problem with this measure – other than the possibility of gratuitous acceptances – is that article quality can vary widely within any given journal, making the attribution of average journal quality to a publication potentially misleading. Further, although journal-quality measurements can be reasonably objective, it is possible for departments to use their own journal rankings based on their own biases, unmoored from any consistent ranking system.

TABLE 2 RELATIVE IMPORTANCE OF ARTICLE CHARACTERISTICS IN SENIOR PROMOTIONS

Department quality ranking	Share of depts. prorating	Size of proration for proraters	Average proration for all depts.
Overall	49%	25%	26%
Top third	39%	29%	32%
Middle third	54%	20%	29%
Bottom third	55%	27%	19%

Note: Based on authors' survey of department chairs, 46 observations.

Although the numbers in Table 2 might seem to imply that citations are given fairly high prominence in measuring faculty research, I would suggest that citations are given far too small a role in these senior promotions. For example, there seems little justification in giving any role to the journal of publication as a measure of paper quality if citation

information is otherwise available. Citations tell us whether a paper is influencing the literature or not, whereas the journal of publication – even assuming the journal's acceptance decision was fully impartial – was merely a predictor of whether a paper was thought likely to have such an impact. It seems probable that the reason that citations are not given more influence in measuring article quality is because the number of citations is the measure that can be least manipulated to fit the department's tastes (biases).

Naturally, citations should be prorated for the same reason that article credit should be prorated. But according to the survey, citations are hardly ever prorated. Although prorating citations used to be time consuming, the advent of programmes like Harzing's 'Publish or Perish' has made it much easier to perform the proration.

Table 2 shows that lower-ranked departments are less likely to rely on their own opinions of papers. This is one of the few findings consistent with efficiency, since these departments are presumably, on average, less qualified to judge a paper's quality than are the members of more highly ranked departments.

CONCLUSION

Are academic economists little different than the old-school baseball scouts in Moneyball, clinging to unexamined rules of evaluation? Or is our profession dominated by inefficient rent-seeking? Either way, our measurement systems do not appear suited to promote productivity. Maybe Brad Pitt should play a Provost imposing some 'scientific' logic on our university sanctuaries.

REFERENCES

Conley, J P, M J Crucini, R A Driskill, and A S Onder (2013), "Incentives and the Effects of Publication Lags on Life Cycle Research Productivity in Economics", *Economic Inquiry* 51(2): 1251–1276.

Hollis, A (2001), "Co-authorship and the output of academic economists", *Labour Economics* 8(4): 503–530.

Liebowitz, S J (2014), "Willful Blindness: The Inefficient Reward Structure in Academic Research", *Economic Inquiry* 52(4): 1267-83.

Liebowitz, S J and J P Palmer (1984), "Assessing the relative impacts of economics journals", *Journal of Economic Literature* 22(1): 77–88.

Liebowitz, S J and J P Palmer (1988), "Assessing Assessments of the Quality of Economics Departments", *Quarterly Review of Economics and Business* 28(2): 88–113.

McDowell, J M and M Melvin (1983), "The determinants of co-authorship: an analysis of the economics literature", *Review of Economics and Statistics* 65(1): 155–160.

Tullock, G (1967), "The Welfare Costs of Tariffs, Monopolies and Theft", *Western Economic Journal* 5(3): 224–232.

ABOUT THE AUTHOR

Stan Liebowitz is the Ashbel Smith Professor of Economics in the Management School at the University of Texas at Dallas and Head of the Center for the Analysis of Property Rights and Innovation (CAPRI). He was educated at Johns Hopkins (BA) and UCLA (PhD). He is best known for his work on the economics of networks and standards, intellectual property and piracy, and his occasional forays into quantifying economic productivity.

CHAPTER 14

The role of connections in the economics publishing process

Tommaso Colussi
Università Cattolica del Sacro Cuore

A vast empirical literature in economics has shown that membership of a network is beneficial for those involved: social ties positively affect labour market outcomes (Bayer et al. 2008, Bandiera et al. 2009, Cappellari and Tatsiramos 2015), ease credit access (Fisman et al. 2017), and influence the voting behaviour of politicians (Cohen and Malloy 2014).

In academia, as well as in other environments, knowing the right people can make a career. Professional proximity affects committees' decisions regarding academic promotions (Zinovyeva and Bagues 2015) and resource allocation to scientific research (Li 2017). Anecdotal evidence also suggests that connections may influence editorial decisions in academic journals, ultimately improving the research output of connected scholars. In economics, the high concentration editors and authors of the top journals in a few elite institutions has perpetuated the belief that editors favour their network members at the expense of unconnected scholars (Fourcade et al. 2015).

In Colussi (2018), I address this issue by investigating the role of connections in the publication process. I focus on ties between authors and editors of top journals in economics, specifically looking at whether an author is a faculty colleague, former PhD student or co-author of an editor, or from the same PhD programme. In this chapter, I demonstrate the important economic benefits of an author-editor connection: the results show that an editor's former PhD students and faculty colleagues experience an increase in the number of published articles when the editor takes charge of a journal.

SETUP

Assessing the effect of social ties on scholars' publication outcomes is challenging for several reasons.

First, reliable information on existing ties between scholars is generally not available. I therefore constructed a dataset on articles, authors and editors of the top general interest journals in economics (the *American Economic Review, Econometrica*, the *Journal of Political Economy*, and the *Quarterly Journal of Economics*) over the period 2000 to

2006. These data provide unique and detailed information on the academic careers of editors and authors, thus allowing me the identify ties between scholars along various dimensions, such as PhD advisor-student or faculty-colleague connections.

Second, authors that are connected to an editor may have a higher probability of publishing in top economics journals than non-connected authors for reasons other than the existence of the connection. For instance, as editors are usually selected among highly reputed scholars, connected authors are likely to be similarly skilled, ultimately having better publication records. Moreover, scholars in the same network may share the same field of research, and thus be exposed to similar shocks. These circumstances may induce a positive correlation between the appointment of an editor and the publications of his or her connections. To overcome this empirical issue, I compare publication outcomes of the same group of scholars connected to an editor when she/he is in charge and when she/he is not. By only considering scholars that have ever been connected to an editor, I am able to net out any unobserved differences between connected and unconnected authors.

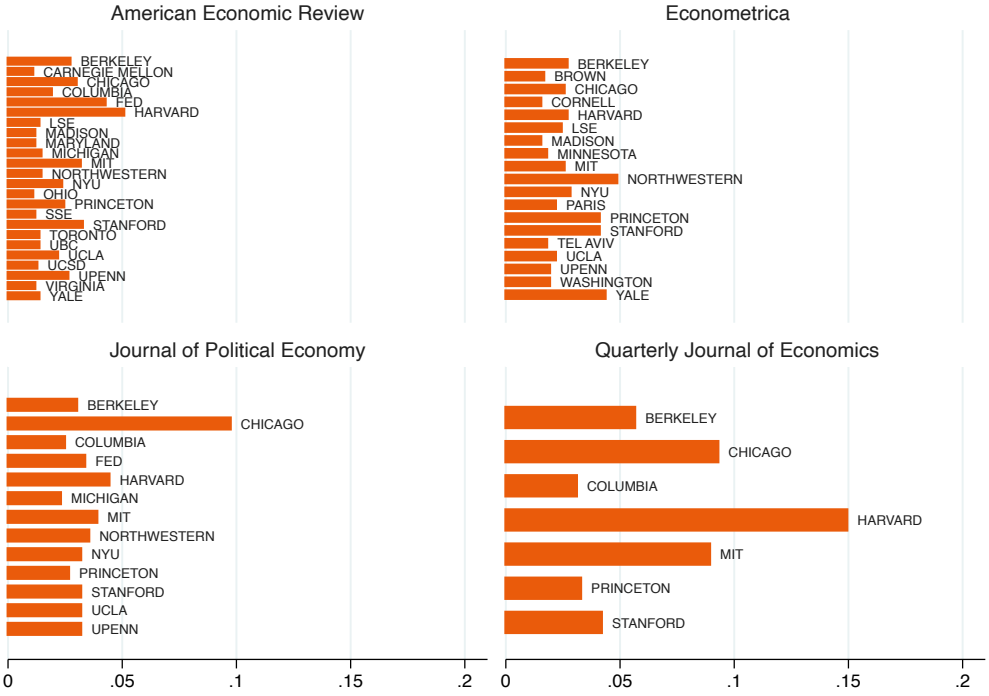
FINDINGS

Simple descriptive statistics reveal interesting stylised facts. About 43% of articles published in 'top four' journals over 2000-2006 were authored by at least one person connected to an editor in charge at the time of the publication. The data also reveal a large concentration of authors and editors in just a few institutions. Figure 1 plots the distribution of authors according to their institution of appointment at the time of the publication: 13 universities contributed to 50% of the articles published by the *Journal of Political Economy*.

The bias of economics journals towards authors linked to their host institutions is even more striking when looking at the distribution of authors based on their PhD institution (Figure 2): Harvard and MIT alone account for about 50% of all papers published in the Quarterly Journal of Economics, while the share in other 'top four' journals ranges from 15% to 22%.

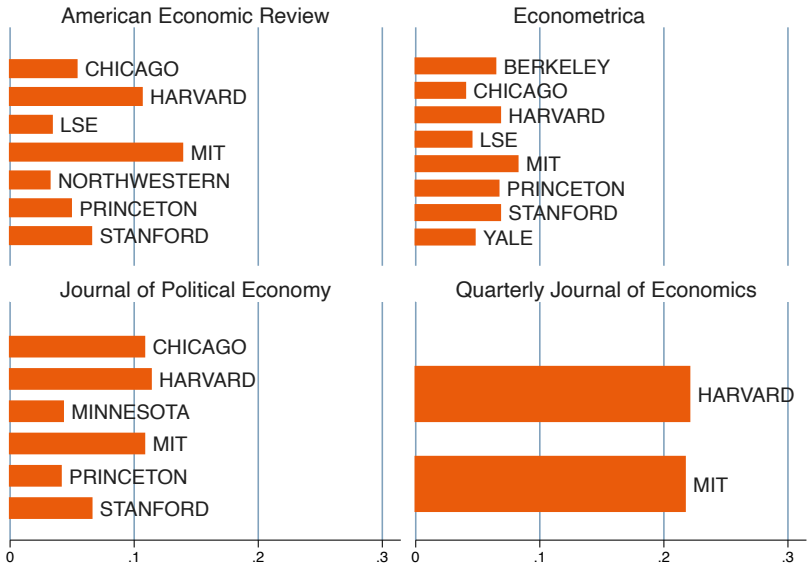
These stylised facts reinforce the widespread perception of economics being a small world. Are these figures driven by editors' bias towards connected authors? To address this question, I perform a regression analysis showing that when a scholar becomes an editor of a journal, the publication outcomes of her/his connections significantly improve – an editor's former graduate students and faculty colleagues increase the number of articles in that journal by about 14% and 8%, respectively. Authors benefitting from these two types of connections are also more likely to publish lead articles and longer articles.

FIGURE 1 AUTHORS' INSTITUTION AT TIME OF PUBLICATION



Note: The figure plots authors' appointment institutions, which, combined, account for 50% of published articles over the 2000–2006 period (Colussi 2018).

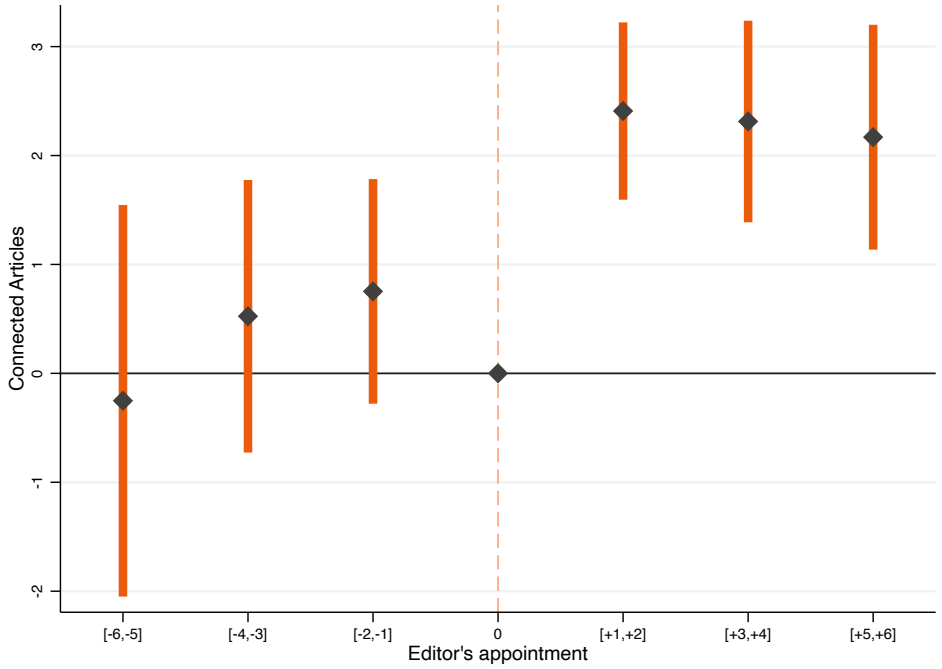
FIGURE 2 AUTHORS' PHD INSTITUTION



Note: The figure plots authors' Ph.D. institutions, which, combined, account for 50% of published articles over the 2000–2006 period (Colussi 2018).

Figure 3 provides a graphical representation of the results. The number of articles published in a journal by connected authors increases right after the connected editor takes charge of that journal. It is also interesting to observe that there are no significant differences in the number of 'connected articles' before the editor steps in, suggesting that the appointment of a particular editor is independent of unobservable characteristics affecting the past publication record of her/his connections.

FIGURE 3 SOCIAL TIES AND PUBLICATION OUTCOMES



Note: The figure plots estimated coefficients of the effect of editors' appointment on the number of articles authored by their connections. The year in which an editor becomes appointed is set as reference year. Red vertical bars indicate 95% confidence intervals.

One may wonder whether these results could also be explained by other factors. For example, a journal's preference for a particular research field could simultaneously affect the appointment of an editor in that field and the publication of articles authored by her/his connections. To test whether a 'field effect' is driving these findings, I estimate whether editors accept more papers by authors in their field of research when they are in charge. This empirical exercise does not provide significant results: doing research in the same field of an editor does not improve a scholar's probability of publication.

MECHANISMS AND CONCLUSIONS

Do connections improve or harm the quality of published papers? On the one hand, professional links may increase the quality of papers through reduced communication costs and increased cooperation between editors and authors. On the other hand, editors may favour connected authors because of taste or nepotism so the publication standards applied by the editor to connected authors may be lower than for unconnected ones, possibly lowering the quality of publications. These two potential mechanisms have the same implication for the publication probability of connected authors, but they predict opposite effects on the quality of published papers.

I also analysed the effect of social ties on the number of citations that papers receive. I find that papers authored by an editor's former PhD students receive 27% more citations when this editor is in charge of the publication. However, this positive effect on citations does not apply to articles authored by other types of connected scholars, possibly implying that the positive effects generated by reduced communication costs and cooperation are offset by a dilution in quality due to nepotism.

REFERENCES

Bandiera, O, I Barankay and I Rasul (2009), "Social Connections and Incentives in the Workplace: Evidence from Personnel Data", *Econometrica* 77(4): 1047- 1094.

Bayer, P, S L Ross, and G Topa (2008), "Place of work and place of residence: Informal hiring networks and labor market outcomes", *Journal of Political Economy* 116(6): 1150-1196.

Cappellari, L and K Tatsiramos (2015), "With a little help from my friends? Quality of social networks, job finding and job match quality", *European Economic Review* 78: 55-75.

Cohen, L and C J Malloy (2014), "Friends in High Places", *American Economic Journal: Economic Policy* 6(3): 63-91.

Colussi, T (2018), "Social Ties in Academia: A friend is a Treasure", *Review of Economics and Statistics* 100(1): 45-50.

Fisman, R, D Paravisini, and V Vig (2017), "Cultural Proximity and Loan Outcomes," *American Economic Review* 107(2): 457-492

Fourcade, M, E Ollion, and Y Algan (2015), "The superiority of economists", *Journal of Economic Perspectives* 29(1): 89–114.

Li, D (2017), "Expertise versus Bias in Evaluation: Evidence from the NIH", *American Economic Journal: Applied Economics* 9(2): 60-92.

Zinovyeva, N and M Bagues (2015), "The role of connections in academic promotions", *American Economic Journal: Applied Economics* 7(2): 264–92.

ABOUT THE AUTHOR

Tommaso Colussi is Assistant Professor of Economics at Università Cattolica in Milan. After receiving his Ph.D. in Economics from Queen Mary University of London in 2014, he worked at IZA as Research Associate. His research interests are in labor economics and political economy. His current research focuses on the determinants of attitudes towards minorities and political extremism. He is also interested in how social connections affect the outcomes of selection processes, such as job search and hiring decisions.

CHAPTER 15

US and them: The geography of academic research[1]

Jishnu Das and Quy-Toan Do[2]
Georgetown University; World Bank

The world has globalised massively, but Bardhan (2003) and many others worry that academic publishing has not. He asserts that researchers working on countries other than the US do not get a fair deal in the top economic journals. While work by Ellison (2000) documents how publishing in economics has changed over time, it is interesting to ask how, at the end of three decades of globalisation, global journals are today and whether publications in economics have become more representative of the world over time.

NEW EVIDENCE

To address these questions, we draw on a database of 76,046 empirical papers published between 1985 and 2004 in the top 202 economics journals (Das et al. 2013). We provide basic facts on the country focus of empirical economics research and the likelihood of publication in top journals for research on the US and on other countries. The newly assembled dataset first highlights just how little empirical research there is on low-income countries. Over the 20-year span considered, there were four papers published on Burundi, nine on Cambodia, and 27 on Mali. This compares to the 36,649 empirical economics papers published on the US over the same time-period (Figure 1).

FIGURE 1 TOTAL PUBLICATIONS PER MILLION CITIZENS

1 This chapter first appeared on VoxEU on 11 February 2014.
2 We thank Benjamin Daniels for assistance with the figure in this chapter.

The strongest determinant of per-capita research output on a given country is its per-capita GDP, which alone accounts for 75% of the variation in (per-capita) publications across countries. This relationship also accounts for the wide disparity in the extent of empirical research on the US and on other countries. Although nearly half of all empirical economics publications over the 20-year period are focused on the US, it is not an 'anomaly'. Rather, the US is 'different' only in that it is both large and rich.

We then extend the analysis in two ways.

- First, we assess the role of data in the production of research by explicitly accounting for country-level measures of data availability and quality.
- Second, we look at the patterns of research output following the release of major household surveys.

On both fronts, we are unable to find a smoking gun.

Although it is certainly possible to find small effects, in general there is little evidence of a substantive increase in publications after new data are released, even in the case of the first systematic survey being made available in that country. At first glance, lack of data does not seem to be the main impediment to the production of research.

Second, we examine whether the relationship between research and GDP has changed over time, and find that it has not. In 1985, every (log point) increase in GDP per-capita led to an additional 17-18 papers per year and by 2005, the relationship had strengthened somewhat to 20-23 papers per year, although the difference is not statistically significant. The results are similar for research initiated in the top five universities; if anything, the income elasticity of research appears to have marginally increased over time in these institutions.

Although not an explicit focus of our paper, we also note that the relationship between research and income in academic institutions is very different than that in the research departments of multilateral institutions like the World Bank and the IMF. In these groups, the research-income elasticity is lower to begin with (even excluding the US from all calculations) and has been falling over time. By 2005, the elasticity was zero with equal work produced on poor and rich countries within the research groups of these institutions.

AMERICAN EXCEPTIONALISM IN TOP JOURNALS

The surprising lack of American exceptionalism in the production of all research no longer holds when we look at the journals in which this research is represented.

- The probability of publication in a top-five economics journal is much larger for papers focused on the US relative to other countries.

The raw numbers are informative.

- *The American Economic Review* has published one paper on India (on average) every two years and one paper on Thailand every 20 years.

Neither are these numbers are particular to this prestigious journal. Considering the 20-year span (1985 to 2004) and the top five economics journals together,[3] the published articles comprised:

- 39 papers on India,
- 65 papers on China,
- 34 papers on all of sub-Saharan Africa, and
- 2,383 papers on the US.

IS IT QUALITY?

Is this seemingly over-representation of US-oriented papers due to higher quality? At first glance, the data suggest such a possibility. For instance, among the top-five ranked economics departments in the world (Harvard, MIT, Stanford, Princeton and University of Chicago), 74% of all papers published have a US focus compared to 47% for all institutions taken together. However, further analysis shows that this cannot be the full story.

In our regression analysis, we take into account authors' affiliations and research field to partially address whether differences in the quality of submission alone account for the predominance of the US in the top five journals. Even with these controls, papers on the US are 1.6 percentage points more likely to be published in the top five journals – a large effect, as only 1.7% of all papers written about countries other than the US are published in these journals. While we recognise that other characteristics not accounted for in the analysis could be driving the US premium, at least the most obvious correlates of quality alone are insufficient to explain the differences observed in the data.

CONCLUSION

Our results provide an empirical basis for a debate on the extent of economics research in different countries. In low-income country contexts where optimal economic policy depends on local institutions, culture and geography, the relevance of US-based findings to policy is potentially limited. Country-specific research is therefore important. The strong relationship between publications and GDP per capita that we document is troubling, since it suggests that even if we agree that country-specific policies are a great idea, the knowledge base that can be drawn on for many poor countries is very thin. Our

3 Here the top five are *The American Economic Review, Econometrica, The Journal of Political Economy, The Quarterly Journal of Economics* and *The Review of Economic Studies*.

findings also speak to the issue of career concerns in the economics profession. Given that the number of top-five journal publications is a significant driver of academic careers, a causal interpretation of the documented correlations would lend credence to Bardhan's (2003) concerns about a possible misallocation of talent across research institutions and a diversion of research incentives away from the study of developing countries.

REFERENCES

Bardhan, P (2003), "Journal Publication in Economics: A View from the Periphery", *Economic Journal* 113(488): 332-7.

Das, J and Q T Do, with K Shaines and S Srinivasan (2013), "US and Them: The Geography of Academic Research", *Journal of Development Economics* 105: 112-130.

Ellison, G (2000), "The Slowdown of the Economics Publishing Process", unpublished paper, MIT.

ABOUT THE AUTHORS

Jishnu Das is a Professor at the McCourt School of Public Policy and the Walsh School of Foreign Service at Georgetown University. Jishnu's work focuses on health and education in low and middle-income countries, with an emphasis on social markets, or common, but complex, conflagrations of public and private education and health providers operating in a small geographical space. Jishnu helped write the *World Development Report on Gender and Development* and in 2015 he was the Flander's Visiting Professor at McGill University. He has received the George Bereday Award from the Comparative and International Education Society, the Stockholm Challenge Award for the best ICT project in the public administration category in 2006 and the Research Academy award from the World Bank in 2017 and 2013 for research on health and education. He is currently working on health inspections (Kenya), Tuberculosis (India) and education programs (Pakistan).

Quy-Toan Do is a Senior Economist in the Poverty Team of the Development Research Group at the World Bank. In his research he has looked at problems related to conflict, crime, and violence, along with the issue of forced displacement . He has also studied – both theoretically and empirically – the implications of globalization on inequality, institutions, and conflict. He holds an MA from Ecole Polytechnique and the University of Toulouse, and a PhD in Economics from the Massachusetts Institute of Technology.

SECTION 5

The race problem in economics

CHAPTER 16

The failure of economics and the marginalisation of research on race

Trevon Logan and Samuel L. Myers, Jr.
Ohio State University; University of Minnesota

THE PROBLEM

During her acceptance speech for the Democratic Party's nomination for Vice President of the United States, US Senator Kamala Harris remarked that one of the pressing problems confronting the country was "structural racism." It has become common for politicians to use the term "systemic racism" or "structural racism" to explain a wide range of social and economic problems in America. Many contemporary observers view the underlying problems of racial disparities in homeownership, wealth, mortgage lending, and access to quality health care, education, training for skilled occupations, and the like as the result of historically determined and institutionalised practices and mechanisms that are embedded in the very core of the economy.

Modern economists – whether they are neoclassical economists, behavioural economists, game theorists, or merely conventional microeconomists or macroeconomists – generally are not trained to address questions of "structural racism" or "systemic racism." For at least a generation, economists have focused on a behavioural model of race where the historical and institutional functionaries that produced unequal distributions of wealth and assets largely were ignored. Indeed, the basic building block of economic analysis is an individual devoid of any racial identity. The structural determinants of current racial inequalities are often ignored, deemed to be outside of contemporary models, or attached ad hoc.

For example, F. Ray Marshall's insightful critique of neoclassical models of discrimination and his exposition of the role of segregated unions in the formation of group norms illustrate the largely ignored problem of *institutionalised discrimination* (Marshall 1974).

Another illustration of ignorance about racism in the economics profession comes from the work of Stanford University economist, Donald Harris. Jamaican-born Harris writes a significant critique of the "ghetto as a colony" model that is used as a metaphor for both adherents to and many critics of the Becker two-country model of racial discrimination (Harris 1972).

Other illustrations of how essential contributions to the analysis of race have been ignored include the pathbreaking papers by William Rodgers and William Spriggs (1996) and by William Darity and Patrick Mason (1998). These papers argue that conventional theories and econometric tests of racially disparate outcomes ignore the endogeneity of race or create tautological relationships between factors like racially biased test scores and racial inequalities in productivity or earnings.

The problem, then, that we address in this chapter is the problem of how and why the economics profession has a serious problem analysing race.

POSSIBLE EXPLANATIONS

Two compelling explanations come to mind as to why there might be a relative absence of coherent theories or empirical tests of structural racism in the economics literature. One relates to the training of economists. Another concerns citation practices and the invisibility of Black economists writing about Black economic issues.

The training of economists

The economics profession in the US, like many other professions, has a racist past. In his detailed account of scientific racism in the economics profession, William Darity (1994) describes the role of Walter Wilcox, early leader of the American Economic Association, who wrote on the widely held sentiment that Black people lacked thrift and were unreliable workers. Other AEA stalwarts published papers confirming the hypothesis that negroes were less productive than whites.

Francis Amasa Walker, the inaugural president of the American Economic Association and president of MIT, was one of the first economists to develop the thesis that Black people would *disappear* because of their inferiority. Others among the founding fathers of the American Economic Association, like Richard T. Ely, regularly espoused the notion of Black inferiority (Leonard 2017).

As Black people began to enter the economics profession, they did not research Black topics. Those who wrote on Black people, such as Sadie Alexander, could not find jobs as economists. Myers reviewed the PhD dissertations of Black students in economics at Harvard and found that none of the six students who earned their doctorates from 1934 to 1955 wrote on race-related topics (Myers 2017). Of the more than 600 Harvard economics dissertations from 1905-1955, only one white author, Herbert Northrup, published a dissertation that dealt with race (in 1943). The fact that race was silenced in the top economics department in the world when it was producing numerous Black economists is telling. These scholars would set the priorities of the profession for a generation.

What is more telling, however, is the exclusion of *fully qualified Black students* from the classrooms of major economics departments in America. For example, William Henry Dean, Phi Beta Kappa and valedictorian of his graduating class at Bowdoin, and the second African American to receive a PhD in Economics from Harvard and a close classmate of Paul Samuelson, received rave reviews for his pioneering research on location theory. Yet he could not get a job at CUNY or any other white university, simply because he was Black. Letters of recommendation written on Dean's behalf by top Harvard professors attested to his having won the most prestigious fellowships Harvard offered and being *the very best student in his cohort* of which Nobel laureate, Paul Samuelson, was a part. Why is it that most current Harvard graduate students and many faculty members at Harvard University have never heard of Dean or the other five Black students to receive their PhD in economics from Harvard before 1955? Part of the answer is that this type of information is buried in the memories of faculty long deceased. Another part of the answer is that we don't value this information. Further, for those in Dean's cohort who did rise to prominence, what would it profit them to make mention of a Black economist judged to be better than they were?

Few major economics departments in America offer a course on the history of economic thought, and virtually none of the existing courses on the history of thought covers the lives and intellectual contributions of Black economists. Just as the intellectual foundations of the profession are viewed as marginal subjects in the profession, so too are the works of prominent Black members of the profession ignored. Marcus Alexis, the first Black student to receive a PhD in Economics from the University of Minnesota, in writing on the economics of racism offers a brutal criticism of the Becker Model of discrimination (Alexis 1973). Since there is no course on the intellectual contributions of Black economists, virtually nobody knows about him.

Phyllis Wallace was the first Black woman to receive a PhD in Economics from Yale. She went on to become a faculty member at MIT, producing a pioneering treatise on the intersection of race and gender in labour relations (Wallace 1974, 1976, Wallace et al. 1982). But few people outside of a small group of Black economists have ever heard of her. The reason is that it is not part of the training of economists to learn about the careers and lives of African American economists and their contributions to science.

The marginalisation of research by Black economists and research on race: citations

Aside from the fact that economists are not trained to study race or racism and know little about the history of Black people in the profession, there is the problem of citations.

In an empirical analysis of the content of race articles in economics journals, the authors found that papers that conclude that there is no market discrimination are more likely to be published in top-ranked journals than papers that conclude that there is racial discrimination (Mason et al. 2005). Even more, papers showing racial discrimination in top journals are more likely to be written by non-Black authors.

Findings like these are a part of a largely ignored literature on the citation practices that have adverse impacts on African American economists. Gregory Price, a former chair of the economics department of Morehouse College, argues that Black economists are not regularly cited by other economists either because they are not producing research that is worth mentioning or more likely that "economists have Beckerian-type tastes for discrimination against citing the research of Black economists, and avoid citing the work of Black economists as it engenders psychic disutility" (Price 2008).

Using an updated list of the 397 Black PhDs in Economics, mainly in academia (Price and Sharpe 2020), we obtain the H-Index[1] for the 300 Black economists in the US for whom we can find matches in SCOPUS. The average H-Index for the 300 Black economists is 5.08. The top 25 Black economists in the US had an average H-Index of 16.03, while the top 10% of Black economists had H-Indices ranging from 12 to 25, with a mean of 15.5.

Harvard, with two faculty among the top 10% of Black economists in the US, had a mean for non-Black full professors of 29.3. The mean for the two top-ranked Black economists at Harvard was 20. Yale, with three faculty among the top 10% of Black economists in the US, had a mean for non-Black full professors of 21.7. The mean for the Yale Black economists among the top 10% of Black economists in the USA was 17.0.

There is a danger of uncritical use of citation metrics such as the H-Index. If white scholars only cite the works of their friends or others in their networks, and if Black scholars are not in those networks, then there will be a disparate impact on the evaluation of the quality of Black scholars' works. Citations also have another perverse impact. Newly minted scholars from around the world without access to the vast libraries of non-digitised books and journals or publications that are not open access will cite what others cite, creating a vicious cycle of under citation of Black authors' works. Nevertheless, Black economists, even those at top institutions, are systematically less cited than their white peers.

SUMMARY AND CONCLUSIONS: MOVING FORWARD

Research on racial and ethnic economic inequality is more complicated than conventional economic analysis. It requires substantial decoding and translation of messages that are embedded in narratives as well as in institutions. Good economic historians acknowledge and embrace the stories and narratives that confront the models we specify and estimate. Knowledge of the history and culture of African Americans is essential for correctly interpreting analytical results on race.

1 The H-index (J.E. Hirsch in 2005) is "an estimate of the importance, significance, and broad impact of a scientist's cumulative research contributions." It has the following interpretation: the maximum number of papers with at least h citations each. Thus, an H-Index of five means that the author has at most five papers with five citations each.

On 5 June 2020, the AEA Executive Committee issued an unprecedented statement and wrote that they were "…deeply saddened by the killings of Black men and women by police officers ….[and] acknowledge the pain of our colleagues and students—and especially our Black colleagues and students—who must once again bear witness to evidence that violent racism has not yet been eradicated from our society."[2]

The Executive Committee rendered this acknowledgment of the problem of general societal racism without necessarily accepting responsibility for racism within the economics profession itself. While the AEA encouraged its membership to read the work of economists on racism, it could not point to its own publications but rather directed members to the *Review of Black Political Economy*, which, for many decades, was not even indexed in the *Journal of Economic Literature*, the primary reference tool for the profession.

In a profession that has been hostile to work on racism and Black economists in general, how can economists make a generative change? In a rush to update syllabi and transform their courses to acknowledge the roles of race, racism, and racial inequality in the US economy, one of us tweeted:

> …. do NOT attempt to teach about race, racism, or racial inequality. Just don't. Even if you've published papers on it. Respect this as a body of knowledge and refer students to appropriate academic units. We owe our students the truth. And the truth is econ is not a discipline that has created an abundance of high-quality race scholarship. The high-quality work that exists has been marginalized in the field. If you're going to say anything, say that. And admit you haven't read it. This is not a moment for hubris where you note the few papers you found interesting. This is an academic field that very few economists are literate in. Be honest with your students (and yourself) and admit race is an area where our discipline has failed. Miserably.[3]

The problem of race in the economics profession runs deep. As AFL-CIO Chief Economist and Howard University Economics Professor William Spriggs wrote in his open letter to the profession:

> Modern economics has a deep and painful set of roots that too few economists acknowledge. The founding leadership of the American Economic Association deeply and fervently provided "scientific" succor to the American eugenics movement. Their concept of race and human interaction was based on the "racial" superiority of white, Anglo-Saxon Protestants. ….The overwhelming majority of explorations of racial disparities in economic outcomes remains deeply tied

2 See https://www.aeaweb.org/news/member-announcements-june-5-2020.
3 See https://twitter.com/trevondlogan/status/1274699346563534849?lang=en

> to that view of race as an exogenous variable. And in the hands of far too many economists, it remains with the assumption that African Americans are inferior until proven otherwise.[4]

It is not merely a matter of the profession being blind to some nuances of race, but that the profession is, arguably, theoretically unable to handle race and is hostile to knowledge created about race and racism that does not conform to the profession's preferred market-oriented solutions. Nowhere is this more prominent than in economics publishing itself. For more than a generation, the *Journal of Political Economy* – one of the top economics journals in the world – has peddled a brand of economics that has been harmful to Black people. The few published articles on race have made the case that (i) discrimination cannot exist in the long run in competitive markets; (ii) Black-white earnings gaps are not due to discrimination but to differences in abilities and skills of Black people; (iii) police racial profiling is generally efficient; (iv) affirmative action and diversity do not help the groups they are intended to help and could well hurt them; and (v) there is no racial difference in police use of force.

Articles in the *Journal of Political Economy* uniformly adhere to a narrow line of inquiry related to racial disparities – but nearly all top economics journals are guilty of similar behaviour. To remedy this problem of marginalisation of race in the economics profession, four things must happen. First, the profession needs to acknowledge and understand its racist roots. Second, there must be serious accounting for why the research contributions of African American scholars are not cited and therefore often remain at the margins of the profession. Third, the profession must require that those wishing to explore topics of race and racism seek credentials from credible academic units elsewhere in order to understand the history, culture and contributions of African Americans. And, finally, we must return to the practice of requiring all PhD students in economics to demonstrate competency in economic history and the history of economic thought where these subfields rightfully are transformed to incorporate the contributions of African American scholars and researchers.

REFERENCES

Alexis, M (1973), "A theory of labor market discrimination with interdependent utilities", *The American Economic Review* 63(2): 296-302.

Darity, W (1994), "Many Roads to Extinction Early AEA Economists and the Black Disappearance Hypothesis", *History of Economics Review* 21(1): 47-64.

Darity, W A and P L Mason (1998), "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender", *The Journal of Economic Perspectives* 12(2): 63-90.

4 See https://www.minneapolisfed.org/~/media/assets/people/william-spriggs/spriggs-letter_0609_b.pdf?la=en.

Harris, D J (1972), "The Black Ghetto as 'Internal Colony': A Theoretical Critique and Alternative Formulation", *The Review of Black Political Economy* 2(4): 3-33.

Leonard, T C (2017), *Illiberal Reformers*, Princeton University Press.

Marshall, R (1974), "The Economics of Racial Discrimination: A Survey", *Journal of Economic Literature* 12(3): 849-871.

Mason, P L, S L Myers and W A Darity (2005), "Is there racism in economic research?", *European Journal of Political Economy* 21(3): 755-761.

Myers, S L (2017), "The Production of Black Ph.D.'s in Economics at Harvard University, 1905–1955", *The Review of Black Political Economy* 44(1-2): 167-201.

Price, G N (2008), "NEA Presidential Address: Black Economists of the World you Cite!!", *The Review of Black Political Economy* 35(1): 1-12.

Price, G N and R V Sharpe (2020), "Is the Economics Knowledge Production Function Constrained by Race in the USA?", *Journal of the Knowledge Economy* 11(2): 614-629.

Rodgers, W M and W E Spriggs (1996), "What does the AFQT really measure: Race, wages, schooling and the AFQT score", *The Review of Black Political Economy* 24(4): 13-46.

Wallace, P A (1974), *Pathways to Work: Unemployment Among Black Teenage Females*, Lexington Books.

Wallace, P A (1976), *Equal Employment Opportunity and the AT&T Case*, MIT Press.

Wallace, P A, L Datcher and J Malveaux (1982), *Black Women in the Labor Force*, MIT Press.

ABOUT THE AUTHORS

Trevon Logan is a Professor of Economics at The Ohio State University and a research associate at the National Bureau of Economic Research. Dr. Logan is an internationally recognized scholar in economic demography, economic history and applied microeconomics. His award-winning research has been featured in the *Wall Street Journal*, *Washington Post*, the *Economist*, NBC, Bloomberg, CNN, and other major media outlets.

Samuel L. Myers, Jr., is the Roy Wilkins Professor of Human Relations and Social Justice at the University of Minnesota's Humphrey School of Publics Affairs. He received his Ph.D. in economics from MIT and has published over 100 peer-reviewed journal articles, reports, comments, books, manuscripts, technical reports, book reviews, and book chapters on various aspects of racial and ethnic economic inequality and the empirical basis for constructing remedies to disparities in market and non-market contexts.

CHAPTER 17

The dearth of Black economics faculty: Is racial bias the culprit?

Gregory N. Price and Rhonda Vonshay Sharpe
University of New Orleans; Women's Institute for Science, Equity and Race

The systematic exclusion of Black faculty from US universities in the South has been attributed to Jim Crow (Yosso et al. 2004) – the system of laws in the American South that enforced racial segregation until the Civil Rights of 1964 – but when the exclusion of Black faculty is nationwide, a plausible explanation is historically persistent and deep-seated institutional racism. In the economics profession, elitism is the dog whistle for the practice of institutional racism. Price (2009) has shown that an increase in the number of doctorates conferred to Black economists does not correspond to an increase in the number of Black faculty. Hence, instead of being a function of the supply, elite or otherwise, the lack of Black economics faculty is consistent with a racially biased demand for Black economists. Price notes that economics seems to have an invisible 'colour line' – being Black is a barrier to employment on economics faculty.

The findings of Price (2009) should not be viewed as ignoring that the overall number of Black people on US economic faulty has increased over time. But given the number of doctorates earned, one would expect the increase in the number of Black economics faculty to be more significant. Instead, what we find is the exclusion of Black economists occurs across all Carnegie classifications of institutions of higher education. This is particularly troubling because the passage of the Civil Rights Act of 1964 was expected to open up opportunities for Black people that had been restricted by Jim Crow. However, some 56 years after the passage of the Civil Rights Act, in Southern cities with Black populations higher than the national average, a Black economist has never been hired on the economics faculty at the University of Maryland-Baltimore County, University of North Carolina-Charlotte, University of North Carolina-Greensboro, Louisiana State, or Virginia Commonwealth University, all of which are public universities. This racial exlcusion is not unique to public colleges/universites as some elite liberal arts colleges also appear to have a discriminatory distaste for hiring Black economic faculty. As far as we can determine, Amherst College, Bates College, Bowdoin College, Bryn Mawr College, Carleton College, Grinnell College, Oberlin College, Macalester College, Smith College, Vassar College, and Washington and Lee College have also never hired a Black economist since the passage of the Civil Right Act of 1964.

TABLE 1 FACULTY RANK BY RACE, ETHNICITY, AND GENDER, 2001 AND 2017

Faculty Rank 2001	Women		Men		Total
	Minority	Subtotal	Minority	Subtotal	
Rank and Tenured/On tenure track	45 0.4%	1,148 10.4%	399 3.6%	9,849 89.6%	10,997 88.8%
Rank and Not on tenure track	4 0.6%	155 24.9%	5 0.8%	468 75.1%	623 5.0%
Rank/Tenure NA or RANK NA/Tenured	5 1.5%	43 12.0%	16 4.4%	314 88.0%	357 2.9%
Rank N/A and Not on tenure track/	8 2.1%	42 10.1%	10 2.4%	369 89.9%	411 3.3%
Total	63 0.5%	1,388 11.2%	430 3.5%	11,000 88.8%	12,388 100%

Faculty Rank 2017	Women		Men		Total
	Black	Subtotal	Black	Subtotal	
Professor	15 0.2%	951 13.8%	126 1.8%	5,935 86.2%	6,886 44.9%
Associate Professor	69 1.7%	1,194 29.2%	145 3.5%	2,897 70.8%	4,091 26.7%
Assistant Professor	34 0.9%	1,323 36.1%	77 2.1%	2,337 63.9%	3,660 23.9%
Instructor	0.0%	72 36.7%	1 0.6%	125 63.3%	197 1.3%
Lecturer	2 0.4%	278 55.4%	11 2.1%	223 44.6%	501 3.3%
Total	120 0.8%	3,818 24.9%	359 2.3%	11,517 75.1%	15,335 100%

Source: Generated using Scientists and Engineers Statistical Data System, Survey of Doctoral Recipients, 2017

Historically, the conversation about the diversity of the economics pipeline has focused on doctorate faculty. Price and Sharpe (2020) provide two reasons for a focus on PhD-granting programmes in economics. First, the lack of Black economists on the faculty of these departments can be viewed as a violation of Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the grounds of race, colour, or national origin for any programme or activity receiving federal financial assistance.[1] Second, PhD-granting programmes receive the lion's share of federal support for basic research, which allows them to provides resources to enhance research productivity – "the hallmark for the marketability of a scholar" (Price and Sharpe 2020). But often overlooked is the access to 'invisible colleges' and networks provided by PhD-granting programmes that can be utilised to promote a scholar's research, which is essential for tenure. Whether the focus should be on doctorate-granting departments is debatable. More recently, Sharpe (2018) has argued that the emphasis on diversifying the economics pipeline should focus on the departments that award the bachelor's degree.

Whether diversity efforts are focused on at the undergraduate or graduate level, the consequences of the 'colour line' were revealed in the 2019 American Economic Association (AEA) Climate Survey, which found that 43 % of Black men and 53% of Black women reported experiencing discrimination based on their race. It is unclear whether the lack of Blacks in the economics profession has intensified the hostile environment for Black economists at all stages of the profession, but there is evidence that suggests the discrimination felt by Black women has led to a decrease in the number of Black women pursuing an economics degree at the undergraduate level (Sharpe 2018, 2020).

There are several reasons to be concerned about the diversity of the economics profession. First, a diverse profession may provide multiple perspectives to craft a solutions that emphasise the wellbeing of those marginalised in society. Second, a diverse profession will increase the agency of marginalised economists. Third, the increased agency will empower marginalised economists to question the process and mainstream theories that analyse and prescribe solutions to issues affecting these groups.

For over 50 years, the profession has had initiatives to increase diversity. It is difficult to find an economics department that does not have a woman or non-Black faculty member, but quite common to find one without a Black economist; indeed, the typical PhD-granting economics department has zero blacks on faculty (Price 2009; see Table 1 and Table A1 in the Appendix). While the recent efforts of the AEA are to be applauded, a definition of diversity and a penalty system for institutions that do not broaden participation is still missing. A definition of diversity is critical to prioritise the allocation of resources for initiatives or best practices that foster an inclusive profession, particularly with respect to hiring Black economists, and, more importantly, to hold the profession accountable. If the goal is inclusive diversity, the profession must create an accountability system that

1 See Pub. L. 88-352, title VI, 601 78 Stat. 252.

includes penalties for failure to broaden opportunities. One remedy would be to adopt a rule similar that in the National Football League, where teams are required to interview Black people for head coaching jobs (Price and Sharpe 2020). Economics departments should do the same.

We are led to conclude, regretfully, that the exclusion of Black economists from the economics faculties of many public colleges/universities and elite liberal arts colleges implicates race as a factor. The current and historical dearth of Black economists on economics faculties independent of their supply militates against it being a 'pipeline' problem, often characterised as there are being no, or not enough, Black economists to hire. That economic faculties in 2020 are as racially exclusionary and stratified as they were in the early 1960s (Price 2019) only buttresses our sobering, and perhaps cynical and pessimistic conclusion.

REFERENCES

Price, G N (2009), "The Problem of the 21st Centrury: Economics Faculty and the Color Line", *Journal of Socio-Economics* 38(2): 331-343.

Price, G N and R V Sharpe (2020), "Is the Economics Knowledge Production Function Constrained by Race in the USA?", *Journal of the Knowledge Economy* 11: 614–629.

Sharpe, R V (2018), "We've to Build the Pipeline. What's the Problem? What's Next? The Remix", *Review of Black Political Economy* 45(3): 191-215.

Sharpe, R V (2020), "Black women economists: At the intersection of race and gender", in S Lundberg (ed.), *Women in Economics*, CEPR Press.

Yosso, T, L Parker, D G Solorzano and M Lynn (2004), "From Jim Crow to Affirmative Action and Back Again: A Critical Race Discussion of Racialized Rationales and Access to Higher Education", *Review of Research in Education* 28: 1-25.

ABOUT THE AUTHORS

Gregory Price is Professor of Economics at the University of New Orleans. An applied theorist and econometrician, his research interests include inequality, stratification, entrepreneurship, and African economic development.

Rhonda Vonshay Sharpe is the founder and president of the Women's Institute for Science, Equity, and Race (WISER) and co-editor of *The Review of Black Political Economy*.

APPENDIX

TABLE A1 GROSS CHANGE IN NUMBER OF BLACK ECONOMISTS ON ECONOMICS FACULTIES OF 127 PHD-GRANTING INSTITUTIONS, 2009 - 2015

College/University	Black economists on faculty, 2009	Black economists on faculty, 2015	Gross change, 2009 - 2015
American University	0	0	0
Arizona State University	0	0	0
Auburn University	0	0	0
Boston College	0	0	0
Boston University	0	0	0
Brandeis University	0	0	0
Brown University	1	1	0
California Institute of Technology	0	0	0
Carnegie Mellon University	0	0	0
City University of New York	0	0	0
Claremont Graduate University	0	0	0
Clark University	0	0	0
Clemson University	0	0	0
Colorado School of Mines	0	0	0
Colorado State University	0	0	0
Columbia University	0	0	0
Cornell University	0	0	0
Duke University	0	1	1
Emory University	0	0	0
Florida International University	0	0	0
Florida State University	1	1	0
Fordham University	0	0	0
George Mason University	1	1	0
George Washington University	0	0	0
Georgetown University	1	0	-1
Georgia State University	1	2	1

College/University	Black economists on faculty, 2009	Black economists on faculty, 2015	Gross change, 2009 - 2015
Georgia Institute of Technology	3	2	-1
Harvard University	1	1	0
Howard University	6	7	1
Indiana University	0	0	0
Iowa State University	0	0	0
Johns Hopkins University	0	0	0
Kansas State University	0	0	0
Louisiana State University	0	0	0
Michigan State University	1	1	0
Mississippi State University	0	0	0
Massachusetts Institute of Technology	0	0	0
New Mexico State University	0	0	0
New School University	0	0	0
New York University	2	1	-1
North Carolina State University	1	1	0
Northeastern University	1	1	0
Northwestern University	0	0	0
Ohio State University	1	1	0
Oklahoma State University	0	0	0
Pennsylvania State University	0	0	0
Princeton University	1	1	0
Purdue University	0	0	0
Rensselaer Polytechnic Institute	0	0	0
Rice University	0	0	0
Rutgers University	0	0	0
Southern Illinois University - Carbondale	0	0	0

College/University	Black economists on faculty, 2009	Black economists on faculty, 2015	Gross change, 2009 - 2015
Southern Methodist University	0	0	0
Stanford University	1	1	0
SUNY – Albany	0	0	0
SUNY – Binghamton	0	0	0
SUNY – Buffalo	0	0	0
SUNY - Stony Brook	0	0	0
Syracuse University	1	1	0
Temple University	0	0	0
Texas A&M University	0	0	0
Texas Tech University	0	0	0
Tulane University	0	0	0
UCLA	0	0	0
University of Alabama	1	0	-1
University of Arizona	0	0	0
University of Arkansas	0	0	0
University of California - Berkeley	0	0	0
University of California - Davis	0	0	0
University of California - Irvine	0	0	0
University of California - Riverside	0	0	0
University of California - San Diego	0	0	0
University of California - Santa Cruz	0	0	0
University of Chicago	0	0	0
University of Cincinnati	0	0	0
University of Colorado	0	0	0

College/University	Black economists on faculty, 2009	Black economists on faculty, 2015	Gross change, 2009 - 2015
University of Connecticut	0	0	0
University of Delaware	0	0	0
University of Florida	0	0	0
University of Georgia	0	0	0
University of Hawaii - Manoa	0	0	0
University of Houston	0	0	0
University of Illinois	0	0	0
University of Illinois - Chicago	0	1	1
University of Iowa	0	0	0
University of Kansas	1	1	0
University of Kentucky	0	0	0
University of Maryland	1	0	-1
University of Massachusetts	3	4	1
University of Memphis	1	1	0
University of Miami	0	0	0
University of Michigan	2	3	1
University of Minnesota	0	0	0
University of Mississippi	0	0	0
University of Missouri	0	0	0
University of Missouri - Kansas City	1	1	0
University of Nebraska	0	0	0
University of New Hampshire	0	0	0
University of New Mexico	0	0	0
University of North Carolina	2	1	-1
University of North Carolina - Greensboro	0	0	0
University of Notre Dame	0	0	0
University of Oklahoma	0	1	1

College/University	Black economists on faculty, 2009	Black economists on faculty, 2015	Gross change, 2009 - 2015
University of Oregon	0	0	0
University of Pittsburgh	0	0	0
University of Rochester	0	0	0
University of South Carolina	0	0	0
University of South Florida	1	1	0
University of Southern California	0	0	0
University of Tennessee	0	0	0
University of Texas	0	0	0
University of Texas - Dallas	2	2	0
University of Utah	0	0	0
University of Virginia	0	1	1
University of Washington	0	0	0
University of Wisconsin	1	0	-1
University of Wisconsin - Milwaukee	1	1	0
University of Wyoming	0	0	0
University of Pennsylvania	0	0	0
Vanderbilt University	0	0	0
Virginia Polytechnic Institute	1	1	0
Washington State University	1	0	-1
Washington University	0	0	0
Wayne State University	0	0	0
West Virginia University	0	0	0
Western Michigan University	1	1	0
Yale University	3	3	0
Total	**47**	**47**	**0**
Median	**0**	**0**	**0**

Source: Table 1 in Price and Sharp (2020).

SECTION 6

Economic research in the time of COVID-19

CHAPTER 18

Who is doing new research in the time of COVID-19? Not the female economists[1]

Noriko Amano-Patiño, Elisa Faraglia, Chryssi Giannitsarou, Zeina Hasna
University of Cambridge

While countries around the world are experiencing dramatic declines in economic activity as a result of the global COVID-19 pandemic, academic economists seem to have accelerated their production of research papers. Undoubtedly, the COVID-19 shock has provided economists with an unprecedented opportunity to study the different economic and social implications of drastic policy measures that were unthinkable only a few months ago. But who are the economists exploiting this opportunity? Our analysis suggests it is neither women nor midcareer economists.

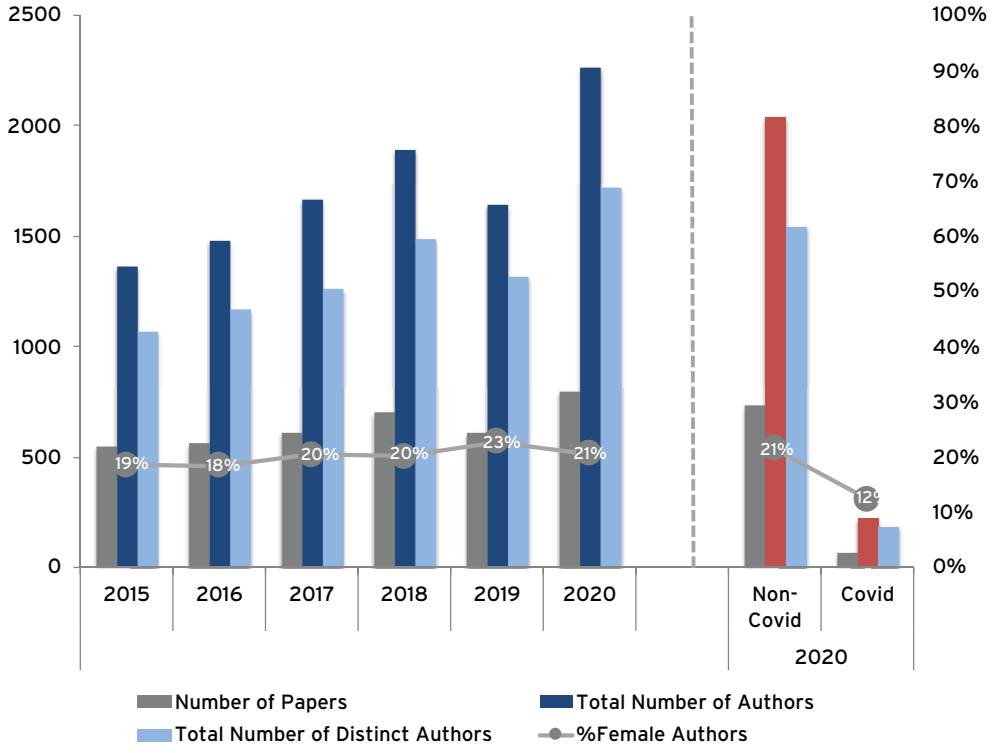
It is widely recognised that a confluence of factors has created an unfavourable environment for women in the labour market. In an early contribution, Alon et al. (2020) find that lockdown measures are expected to disproportionately reduce women's labour productivity in the short run. Adams-Prassl et al. (2020) find evidence that since lockdown measures started, women in the US, the UK, and Germany are spending more time on active childcare and home schooling than men. In the time of COVID-19, economists in research positions are an interesting group to study, because they face very low risk of employment loss due to the pandemic, and are expected to continue to conduct research, teach, and carry out their administrative duties from home. Female economists with young children in lockdown may be struggling more than men. In a recent article published in Nature, Alessandra Minello offers a humorous but vivid commentary on the life of the female academic during lockdown.

THE IMPACT OF COVID-19 MEASURES ON WOMEN'S RESEARCH PRODUCTIVITY

It is common practice in economics to disseminate research in the form of working papers that have the structure of fully developed peer-reviewed papers. We explore the patterns of working paper publications using data from prominent repositories of such output. Our preliminary analysis (Amano-Patiño et al. 2020) suggests that the productivity of female and, more generally, mid-career research economists has been disproportionately affected by the lockdown measures. It is mostly senior male economists who are currently exploiting the myriad research questions arising from the COVID-19 shock.

We draw these results by collecting titles of papers or research columns, as well as author names, from four separate sources. The first two are the NBER Working Papers series and the CEPR Discussion Paper series. For each, we cover the first four months of the year for the last six years (i.e. January to April, 2015 to 2020).[2] Next, we use a novel dataset of all submissions to the newly established *Covid Economics: Vetted and Real Time Papers*, kindly provided by CEPR, up to and including Issue 9. Last, we extract author seniority information from VoxEU columns in the first four months of the last two years (2019 and 2020).[3]

FIGURE 1 NBER AND CEPR WORKING PAPER SERIES



Source: NBER, CEPR, and authors' calculations.

The first four months of 2020 saw 798 distinct working papers, of which a very large number appeared in March and April 2020. In contrast, the four-month average for 2015-2019 was 606 papers, highlighting a substantial increase in research activity in recent months. At the same time, the proportion of female authors in the four-month window remained comparable to the last five-year average, at approximately 20%.[4]

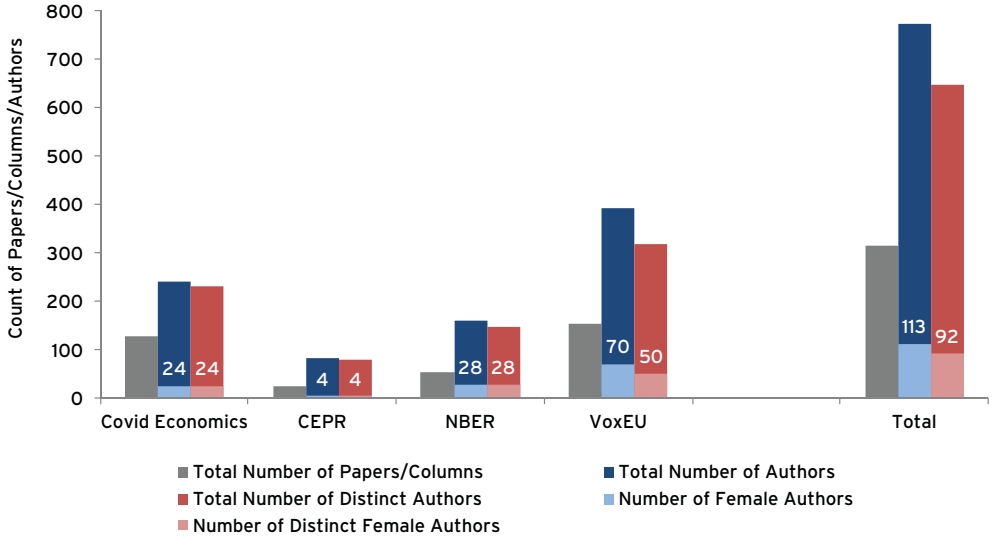
2 We focus on the same four months of each year to avoid seasonal research activity effects.
3 We included VoxEU columns published up to and including 27 April 2020.
4 For this we used two different metrics: (i) the total number of distinct authors, where each author is counted only once in the whole data set; and (ii) the total number of all authors, where each author is counted as many times as the number of distinct papers they have contributed to. The percentages for both metrics are very similar.

However, while the relative number of female authors in non-pandemic related research has remained stable with respect to recent years, women constitute only 12% of the total number of authors working on COVID-19. These facts, summarised in Figure 1, suggest that while female researchers have managed to continue working on ongoing research and keep up with the recent growth of research activity, they have been less willing or less able to contribute to the budding literature on the economics of pandemics.

WHO IS WORKING ON RESEARCH RELATED TO THE COVID-19 PANDEMIC?

To explore these ideas further, we next focus only on current research activity related to COVID-19. In Figure 2, we show the number of female authors broken down by data source (NBER, CEPR, Covid Economics, and VoxEU). The evidence is stark: as a fraction of all authors, women constitute 17.4% for NBER Working Papers, 4.8% for CEPR Discussion Papers, 10% for papers that were submitted to Covid Economics (with only 6.8% for papers that have been accepted and published as of 26 April 2020), and 17.8% in VoxEU columns. Combining all datasets and removing work that appears in more than one outlet, the proportion of female authors working on research related to the pandemic is 14.6%.[5] All these numbers are considerably lower than the average of about 20% female authors found in normal times in the CEPR and NBER working papers series.

FIGURE 2 BREAKDOWN OF COVID RESEARCH ACTIVITY BY SOURCE AND GENDER



Note: Numbers in white are numbers of female authors.

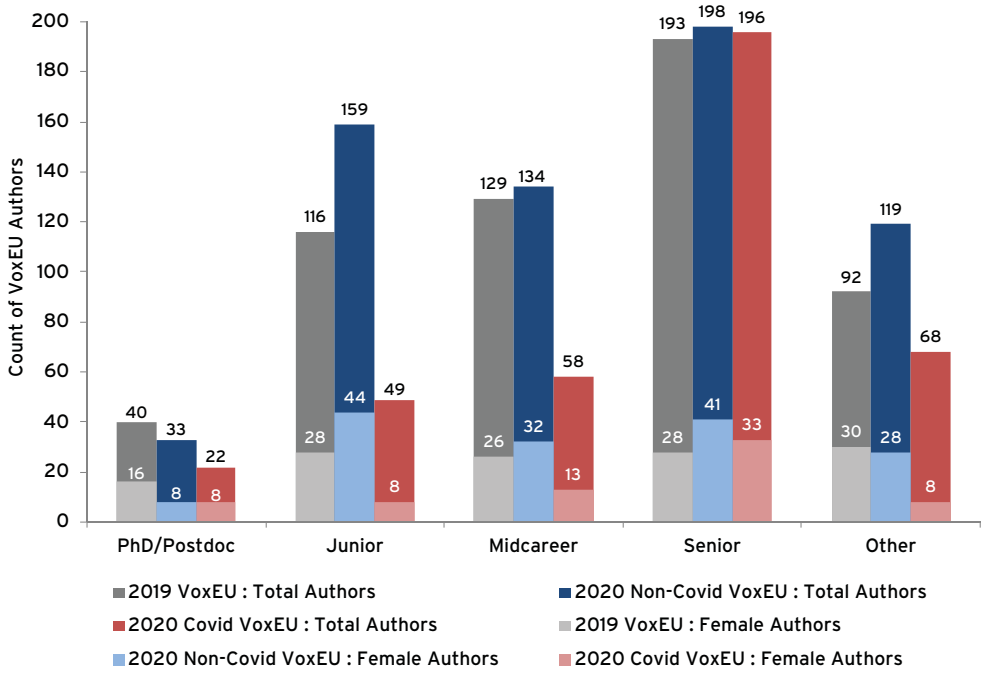
Source: *Covid Economics: Vetted and Real Time Papers*, CEPR, NBER, VoxEU, and authors' calculations.

5 The large difference in the share of women between the NBER and CEPR working paper series may be due to the fact CEPR also publishes the *Covid Economics: Vetted and Real Time Papers*. This online publication aims to collect formal investigations of the crisis based on theory and empirical evidence. Submitted papers go through a quick peer review by the editorial board and can be accepted or rejected rather than go through the usual lengthy revision process of journal publications. Authors do not have to be affiliated to CEPR. The series is an instrument to quickly disseminate ongoing and preliminary work on the pandemic.

We also do a more nuanced decomposition of the authors that have contributed to COVID-19 related research. Looking at seniority, we see that it is primarily senior economists who are contributing to this new area. Meanwhile, mid-career and junior economists record the biggest gap between non-COVID and COVID research, and additionally the gender differences are particularly stark at the mid-career level. Mid-career female economists have not yet started working on this new research area: only 12 midcareer female authors have contributed to COVID-19 related research so far, out of a total of 647 distinct authors in our dataset of papers (NBER, CEPR, and Covid Economics).[6]

For comparison, Figure 3 shows seniority breakdowns for contributors to VoxEU columns in the first four months of 2019, as well as contributors to columns unrelated to the pandemic for the first four months of 2020. These numbers highlight even more the absence of junior, mid-career, and female researchers from COVID-19 discussions.

FIGURE 3 VOXEU AUTHORS BY SENIORITY AND GENDER



Note: Numbers in white are numbers of female authors.

Source: VoxEU columns and authors' calculations.

6 Our definition of midcareer is academics that are associated professors, senior lecturers, or readers and standard metrics of seniority for other institutions.

WHY ARE FEMALE ECONOMISTS NOT WORKING ON COVID-19 RESEARCH?

Junior and mid-career female economists are more likely to be heavily involved in both professional and administrative (i.e. non-research related) duties, while also possible caring for young children during the pandemic lockdowns. Additional explanations can be found in the inherent differences between the research approaches of female and male academics. Female academics are more risk averse and may be less willing to start new projects with such a short notice, especially if the topic is inter-disciplinary.[7] All the above may preclude them from investing in new high-cost research as opposed to finishing off work in progress, for which most of the fixed cost was incurred before the pandemic.

Also, female academics tend to produce fewer papers than men. Hegel (2020) argues that female economists face a trade-off between quality and quantity due to higher standards demanded of female authors. This makes them spend more time on reviewing and polishing older research than on generating new ideas, in line with the current experience of research on the economics of COVID-19. A recent volume published by VoxEU (Lundberg 2020) offers a summary and explanations of known factors that contribute to the productivity gap between female and male economists.

CONCLUSION

The COVID-19 crisis has spurred a fast-growing new field in economic research. Female economists have not been as quick in reacting to the new research challenge as their male counterparts, and this seems to be due to a combination of unfortunate coincidences.

We believe that the adverse effects of lockdowns on the division of labour at home have been detrimental to the research activity of all parent mid-career economists, and especially women. In addition, women are more averse to risk and more cautious about how they approach research. Therefore, it seems that whenever they can set aside time to work on their research, that time is largely devoted to completing well-developed work within their comfort zone.

Going forward, we will continue to update and analyse these datasets along the lines presented herein with the aim of looking at longer time periods, consolidating more information about authors' seniority levels and comparing research activity across the economics subfields.

7 There is a wide range of experimental and survey evidence that supports the view that women are less willing to take risks than men and are more averse to ambiguity (e.g. Eckel and Grossman 2008).

REFERENCES

Adams-Prassl, A, T Boneva, M Golin and C Rauh (2020), "Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys", *Journal of Public Economics* 189.

Alon, T, M Doepke, J Olmstead-Rumsey, M Tertilt (2020), "The Impact of Covid-19 on Gender Inequality", *CEPR Covid Economics* 4.

Amano-Patiño, N, E Faraglia, C Giannitsarou and Z Hasna (2020) "The Unequal Effects of COVID-19 on Economists Research Productivity", Cambridge Working Papers in Economics CWPE2038.

Eckel, C and P Grossman (2008), "Men, Women and Risk Aversion: Experimental Evidence", Chapter 113 in *Handbook of Experimental Economics Results*, Vol. 1.

Lundberg, S (ed.) (2020), *Women in Economics*, a VoxEU.org eBook, CEPR Press.

Hegel, E (2020), "Publishing while Female. Are women Held to Higher Standards? Evidence from Peer Review", mimeo, University of Liverpool and in S Lundberg (ed.), *Women in Economics*, a VoxEU.org eBook, CEPR Press.

Minello, A (2020), "The Pandemic and the Female Academic", *Nature*, 17 April, doi: 10.1038/d41586-020-01135-9.

ABOUT THE AUTHORS

Noriko Amano-Patiño is a Lecturer at the University of Cambridge. Her research primarily focuses on understanding the sources and implications of different dimensions of inequality across genders and racial groups. Prior to joining the faculty of Economics at Cambridge, she obtained her Ph.D. at Yale University in 2018.

Elisa Faraglia is a Lecturer at the Faculty of Economics of the University of Cambridge, and a Research Affiliate of CEPR. Her research focuses on optimal fiscal policy, debt management, asset pricing and numerical methods. She was the Euro Area Business Cycle Network (EABCN) coordinator from 2008 to 2019.

Chryssi Giannitsarou is a Reader in Macroeconomics and Finance at the Faculty of Economics of the University of Cambridge, and a Research Fellow of CEPR.

Zeina Hasna is a PhD candidate at the Faculty of Economics at University of Cambridge. Her main research interests are in macroeconomics and environment economics. Prior to the PhD, Zeina obtained an MPhil in Economic Research at University of Cambridge and a dual undergraduate degree in Economics and Applied Mathematics at the American University of Beirut. She worked previously as an Economic Analyst at the Macroeconomics, Trade and Investment Unit at the World Bank.

CHAPTER 19

Covid and economics publishing[1]

John Cochrane
Hoover Institution, Stanford University

The Covid-19 pandemic is dramatically illustrating one area in which the epidemiologists are beating the economists about 100-1: publishing. Scientific publications are reviewed and posted in days, contributing in real time to the policy debate.

Economists are *writing* papers in a similar flurry. They are writing really good, thoughtful, well done papers that are useful to the policy debate (see the CEPR[2] and NBER[3] websites, for example, or SSRN[4]).

But when will these papers be peer reviewed? Where will they be published?

Not every new paper is right, and the review and comment process improves economic papers a lot.

Economics publishing is stuck in a leisurely 19th century process. It typically takes several years from completing a project to its online publication, and often another year to print. And 'completing' already includes pre-submission vetting through conferences, correspondence, seminars and working papers. I often wait a year to hear the first review of my papers; even the best journals try for six weeks. Several rounds of revisions are almost universal. It is typical to be rejected, shop the paper to several journals who reject it (after six months to a year) and hear the same comments from different referees until you find an editor who likes the paper. (Almost all of my papers have been rejected at least once; my record is seven times.)

As a result, academic journals long ago ceased to be avenues for communication. They are archives, and certifiers for tenure committees that don't trust themselves to read papers. Individual websites and working paper series such as CEPR, NBER and SSRN have taken over the communication function. But not every paper is right, and that means little of our communication takes place after any peer review.

This state of affairs has a supply effect. I cheer my colleagues writing these papers. But where in heaven's name are they going to publish the papers? When, a year from now, the first reviews come back, will the editors still find the papers interesting and relevant?

1 This chapter first appeared on VoxEU in May 2020.
2 www.cepr.org/content/covid-19
3 www.nber.org/
4 www.ssrn.com/

How will you fill in the increasingly mandatory section on 'why this is important' and 'policy implications' a year or two from now? The referees will demand a literature review. How will you cover the hundreds of papers sure to come out in the next few months? (Economics does not demand review only up to the date the working paper is first posted.)

For example, the last post on my blog[5] could well become a paper. It needs a lot of work – refining the model, exploring economic costs and benefits, modeling externalities and heterogeneity, comparing it with data, and so forth. But should I put in that work, at least a month off from doing everything else, and then a further two to three months of revisions, submissions, resubmissions, and so forth for a period of years? No thank you.

My model, like most of these papers, is not a deep methodological improvement. It is a 'where are we now?' paper, and a quantified attempt to peer through the mist of the next few months. 'Where are we now?' papers are useful! They are 99% of academic research really. If there was a chance of publishing it the way scientists do, I might well do so. But submit it in July and still be waiting in May 2021 to hear a first review? Face a good bet that the editor thinks this is interesting economic history, but not a methodological or factual development of enduring interest? No thanks.

This is not news. There is a lot of soul-searching going on in our journals about how to become more relevant. Economics articles are quantitative essays more than scientific reports, so they often need a bit more digestion. Peer review itself is imperfect – there is lots of nitpicking but often basic mistakes go unnoticed. (I've long been a fan of open reviewing to broaden the base of input on papers. Often a conference discussant or other reader will know a lot about a paper, but the journal editor and selected referees don't know about it. Universally, editors ask for new referees thus wasting the efforts of the often dozens of people who have reviewed the paper before. The idea of open refereeing does not seem to be catching on.) Economists believe in markets, but not for papers. Why do we not figure out a market for submissions so that papers can get better matched to journals to start with, rather than one by one embark on a six-month process and move from rejection to rejection. Why not simultaneous submissions?

But I hope the model of the scientists inspires our journal editors to action.

Update 1: Three hours after posting, I find the market has worked. CEPR is launching a real-time journal on *Covid Economics*.[6]

Academic incentives remain, though. The online journals seem to have largely failed. Will hiring, tenure and salary review committees, deans and provosts, view these as publications or as op-eds and blogs?

5 https://johnhcochrane.blogspot.com/2020/05/an-sir-model-with-behavior.html
6 https://cepr.org/content/covid-economics-vetted-and-real-time-papers-0; see coverage by Tim Taylor here.

Even in economics, barriers slowness and inefficiency that we tolerate in normal times[7] is unconscionable in a crisis.

Update 2: Thanks to a comment on my blog, the first published paper on Covid-19 is now available.[8] Maybe I will be wrong. That would be great. Can journals increase speed and not decrease quality? Yes, but how? In WWII the P-51 was produced in 102 days. But a lot of terrible planes and other projects got built too.

Update 3: A thoughtful twitter stream from Greg Kaplan,[9] JPE editor, suggests how to handle Covid-19 papers.

ABOUT THE AUTHOR

John H. Cochrane is a Senior Fellow of the Hoover Institution at Stanford University. He also writes the Grumpy Economist blog. His webpage is www.johnhcochrane.com.

7 https://johnhcochrane.blogspot.com/2020/05/markets-work-even-in-crisis.html
8 https://www.mitpressjournals.org/doi/abs/10.1162/rest_a_00931?journalCode=rest
9 https://twitter.com/GregWKaplan/status/1258430569362403330

CHAPTER 20

Covid Economics: A new kind of publication

Charles Wyplosz[1]
The Graduate Institute, Geneva, and Editor of *Covid Economics*

HOW IT HAPPENED

At the end of March 2020, CEPR issued a call for papers for *Covid Economics, Vetted and Real-Time Papers*. Within a couple of days, submissions started to pour in. As of 26 June, 485 submissions have been received, 219 papers have been accepted, and 32 issues have been posted online, freely accessible.

The immediate reason for launching this new form of collecting articles was an outpouring of submissions to VoxEU, CEPR's portal for short, policy-relevant contributions. From early March, it became clear that economists around the world, like everyone else, were mesmerised by the pandemic and trying to make sense of the unfolding events. A cartoon at the time showed a man saying: "All my economist friends used to be climate change experts, now they all are epidemic experts". Within two weeks, CEPR published two eBooks. Opinion pieces, informed by standard economic principles, were soon followed by elaborate original research, both theoretical and empirical. It was clear that many economists, coming from all areas of the discipline, were working hard. Hence the idea of bringing together their work in a freely accessible website.[2]

The inspiration came from physics and the medical sciences, where there exists an old tradition of pre-prints – working papers that are lightly refereed and posted very fast. Likewise, *Covid Economics* vets submissions on an accept/reject basis. About 30 researchers from all subfields were invited to join the Editorial Board with the explicit requirement that they review submissions within 48 hours.[3] The Editorial Board includes established researchers who can credibly decide 'up' or 'down' in a short period.[4]

1 I am grateful for real-time comments and suggestions from Giancarlo Corsetti, Barry Eichengreen, Antonio Fatas, Francesco Giavazzi, Warwick McKibbin, Ugo Panizza, Richard Portes, Tessa Ogden, Barbara Petrongolo and Beatrice Weder di Mauro. I am indebted to the members of the Editorial Board of *Covid Economics*, whose dedication and clear-mindedness have made this experiment not just possible but also highly successful.
2 The idea was conceived by CEPR President Beatrice Weder di Mauro and VoxEU Editor-in-Chief Richard Baldwin.
3 As the number of submissions rose to more than six per day on average, and twice as many on some days, the Editorial Board was enlarged to its current size of 51 members.
4 It may be noted that, as a result, Covid Economics' 'vetting' implies high quality judgement, even in comparison with established journals that occasionally rely on fairly junior referees.

The accepted papers are then collected in 'issues' with a frequency and size endogenous to the flow of accepted papers. Table 1 indicates the time lags between submission, decision and posting.

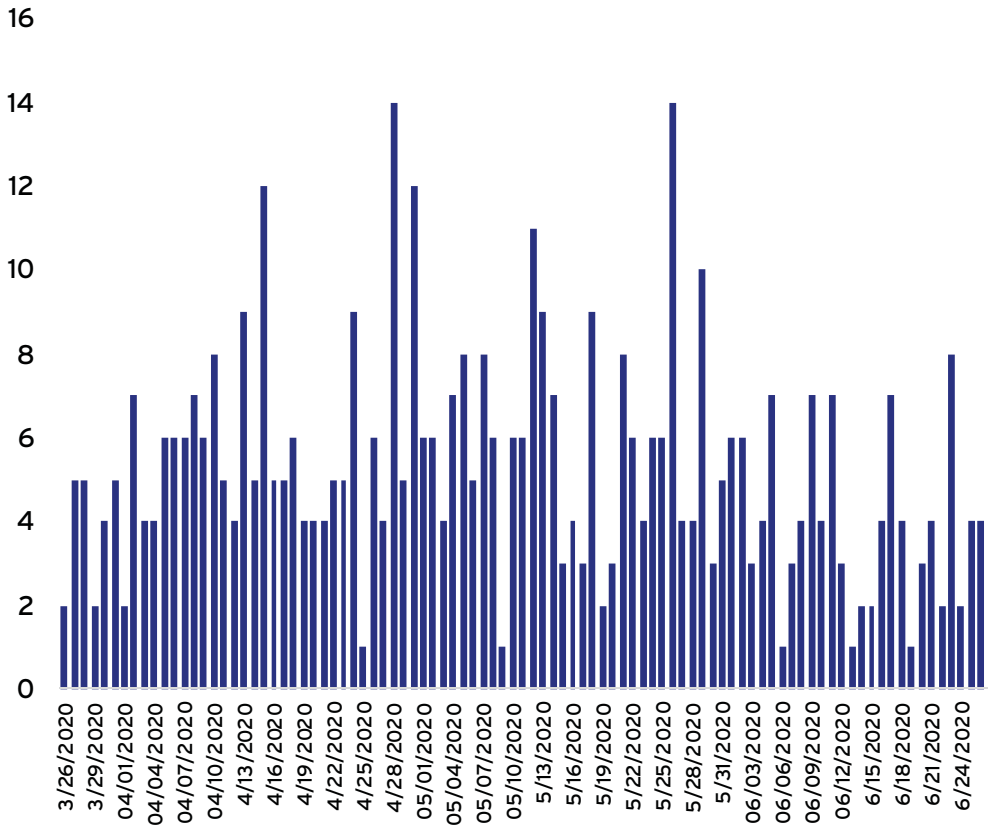
Table 1 Time lags (in days)

	Average	Standard deviation
Submission and publication decision	0.94	3.64
Submission and posting on the web	4.39	2.45

Note: Yes, the distribution is truncated and this is not taken into account.

Issue size and frequency were soon boosted to three issues per week with eight papers in each. Once lockdowns came to an end, the number of submissions started to decline, as shown in Figure 1. Like everyone else, economists have started to think about something other than Covid.

FIGURE 1 DAILY SUBMISSIONS, 26 MARCH TO 26 JUNE 2020



Note: includes weekend days.

Submissions have been received by authors based in 47 countries. Table 2, which lists the top 20 countries, reveals a few observations. First, there were only two submissions from China (both rejected) and fewer from France than could be expected. One can only speculate as to why China-based scholars are not active. Second, most of the authors (86%) work in academia, with most of the rest at central banks. Third, only 17% of the authors so far are female, a point already made by Amano-Patiño and co-authors in this eBook. Several papers featured in *Covid Economics* report that women with children find it difficult to work from home, an observation that may well apply to researchers during the lockdown period.5 Fourth, a large number of excellent papers are submitted by junior researchers and some from developing countries. As intended, through *Covid Economics*, CEPR is serving the whole profession.

TABLE 2 HOME BASE OF AUTHORS

Country	Submissions	Country	Submissions
United States	120	Belgium	9
United Kingdom	82	Japan	8
Italy	32	Turkey	7
Germany	27	Australia	6
France	19	Sweden	6
International	19	The Netherlands	6
India	16	Austria	4
Switzerland	15	Bangladesh	4
Canada	12	Hong Kong	4
Denmark	12	Brazil	3

Note: Data for period 26 March to 26 June. Many papers have multiple authors. International refers to authors from international institutions (IMF, World Bank, etc.).

Fifth, while a number of leading economists have spearheaded the research efforts on the pandemic, many have chosen to issue their work in existing working paper series (NBER, CEPR, their own institutions or research centres) rather than through *Covid Economics*, even though they have sometimes been invited to do so and we never ask for exclusivity.

5 Women members of the Editorial Board of *Covid Economics* account for about one-third of the total.

A NEW CONCEPT IN ECONOMICS

As other contributions in this eBook indicate, the publication time lag in most professional reviews is frustratingly long. A good case can be made that academic research requires care and serious refereeing, and that the 'revise and resubmit' process greatly improves quality. Yet, when stunning events occur requiring rapid policy reactions, this process becomes wholly ill-suited. It can be argued that even in normal times, the long lags are too long.

One solution has been the widespread circulation on the web of discussion papers issued by well-known networks such as CEPR and NBER, as well as international institutions and central banks. However, in the case of most of these series, only fellows or insiders can publish and they may only be available behind a paywall. In addition, there is a big difference between publishing a CEPR or NBER working paper and one in a departmental series. NBER and CEPR are closed shops for a very small group of researchers. This means that there already is a quality filter at the fellow level, applied at the time of appointment. Furthermore, NBER, CEPR and some institutions also vet the discussion papers.

A key innovation of *Covid Economics* is that it has opened up CEPR for quality publishing beyond its own network while ensuring a high standard of quality. In doing so, *Covid Economics* has inherited some of the reputational capital of the CEPR network. Very few departments or institutions could have done this. CEPR is covering all the related costs, truthful to its not-for-profit mandate (which is possible in part because it is selling its normal working papers).

As they explicitly own the copyright, authors may also issue their works in other working paper series, and many do so. (Some also submit their papers to medical pre-print series.) From CEPR's standpoint, *Covid Economics* is very explicitly a public service effort – to provide researchers with real-time information by collecting quality contributions.

It was probably inevitable that an alternative approach would emerge one day. The Covid crisis provided the first impetus. The creation of *Covid Economics* may be seen as a challenge to the long-established tradition of journals as well as the dominance of working paper series. This is not the intention. From the start, it was decided that its contents would be akin to discussion papers, in the expectation that many featured papers would later appear in improved versions in the regular journals. Indeed, the vetting process of *Covid Economics* implies that the papers are accepted as submitted. In some cases, the reviewer would point out weaknesses (argumentation, wording, language quality) that can be promptly taken care of. Some reviews are more extensive, in which case the authors are told that it can help them to improve their papers for future submissions elsewhere. In extremely rare cases (fewer than 1%), the authors are asked to remedy non-fatal weaknesses, provided this can be done in a few days.

In order to facilitate future journal publication, we contacted a large number of the top journals to ask them whether they would accept submissions of papers previously featured in *Covid Economics*. The reaction has been overwhelming: all of the contacted journals have agreed (some of them have indicated that they would require significantly improved versions) and a few others volunteered. The list of the corresponding 29 journals is indicated in every issue.

During these exchanges with the journals' editors, a question has come up: What is a journal and why is *Covid Economics* not a journal? Journal characteristics may include its typesetting. The first two issues were indeed uniformly typeset, but this was abandoned when we realised that the flow of submissions was such that it was becoming impossible to continue and still be 'real time' as intended. Another question is whether the authors themselves consider it as a journal and mention it in their CVs. Of course, this is not something that we can control but, as result of these discussions, the acceptance mail now makes it clear that we consider the contributions as a working paper.[6] CEPR's position has always been that a journal is characterised by its extensive refereeing process, while *Covid Economics* actively bans 'revise and resubmit'.

EDITING

Editing *Covid Economics* is a very special undertaking, quite unlike editing a standard journal. The volume of submissions is one aspect, as is the reviewing process which calls for 'real-time' decision making.

On an average day, including during weekends, I have been receiving about six submissions and six review reports, with a wide variation as Figure 1 makes clear. The endogenous and real-time nature of the operation implies reacting on the same day. Obviously, I cannot read in detail each and every paper, but I have to do so carefully enough to determine whether to send it for review or reject it at once, and whom to send it to.

Submitted papers may revisit issues already treated or rely on methodologies previously used. Over time this has happened more and more, and the reviewers may not be aware of all relevant publications while, gradually, I have lost the ability to precisely remember each and every paper. This requires sifting through the list of accepted papers, looking at some again and passing the information to the reviewer.

The reviewers are asked to make decisions, but I need to check that these decisions are coherent from one reviewer to the next. The reviews are meant to be short, and some are, and they must be decisive. Over time, increasingly often, the reviewers state that they are 'sitting on the fence'. This requires clarifying with the reviewer his/her view and

6 The exact statement is: "Please note that CEPR treats papers in *Covid Economics* as it does with its Discussion Papers: authors retain the copyright and can submit the paper to journals that accept submissions of papers previously featured in *Covid Economics*. A non-exhaustive list of such journals appears in the prelims of each issue of the publication from issue 16 onwards. If your paper subsequently appears in a journal, this can be mentioned retroactively if you let us know."

agreeing on a decision, without taking too much of their time given the tight deadlines under which they are required to operate. Then, of course, comes the occasional reaction of the authors of rejected papers, which I usually do not have the time, nor inclination, to respond to.

A 'NEW' FIELD

Like everyone else, economists have suddenly seen their lives deeply disturbed by Covid-19 and have been mesmerised by the idea that governments could close down large swathes of economic activity. From all corners of the profession, many dropped what they were doing and started to use their tools to try and understand ongoing events and to explore the policy responses.

Prior to Covid-19, the field of pandemic economics was quite small. There was some research on the economics of epidemics, with a dedicated journal (*Epidemics and Economics*), but epidemics was mainly a field within the medical and biological sciences. The sudden interest of economists in pandemics has boosted research, creating an almost new field, largely ignoring previous work. Progress has been swift, both from a theoretical and an empirical angle. It is impossible to describe all these advances. This section merely attempts to present the main themes and results.

During the first few weeks, a significant share of submissions started from the standard epidemiological (SIR) model designed to evaluate the speed at which contagion spreads and kills. While epidemiologists have enriched their models over decades by tracking down contagion with more granularity, there was a big hole: lockdowns and other health measures have massive economic implications, some of which in turn affect the epidemic. Papers started to add an economic block to SIR models or to embed the SIR model into economic models. Some have also exposed some limits of the SIR models, for instance by showing the powerful effects of 'superspreaders'.

From there, the natural next step was to look at a possible trade-off between health measures and their economic impact, dubbed 'health versus wealth'. Various approaches were used to evaluate this trade-off, looking at policy optimality and evaluating the policies in place. Progressively, attention moved to the evaluation of the health and economic impacts of various policies, from lockdowns, to face masks, to testing and tracing, and to working at home.

These feedback loops between contagion and economic conditions represent a major step in understanding the spread of Covid-19 in the presence of health policy decisions. Most studies find that policy measures are each useful to contain the virus spread, largely as complements to each other. Given the economic costs of lockdowns, many papers seek to describe what the optimal mix would be. To that effect, some use the value of statistical life concept, but others studiously avoid its use as they look at ways of minimising the economic costs for a given level of contagion or casualties. Many papers use various

large databases that provide real-time measures of people's mobility, which is found to decline quickly either as governments decide measures or as people become concerned by contagion.

It soon emerged that lockdowns, while effective, may not be cost-efficient when they are all-encompassing. It is likely that it would be better to target special segments of the population – those most at risk (older people and those with specific pre-existing conditions) and those who have tested positive and their contacts – or to impose the measures in particular geographic areas rather than in entire countries.

Working from home has become a lively topic of its own. Starting from earlier contributions, research has quickly moved on to determining who can work at home, which depends on jobs, education levels, geographical location, use of public transport and gender. It has naturally led to the documentation of the deleterious effect of the epidemic and health policies on inequality.

A virus, it might seem, affects all people equally, but a large number of papers have shown that Covid-19 has sharply deepened pre-existing inequalities, for many reasons. Within countries, social distancing has been a sort of luxury for poorer hand-to-mouth workers. Lockdowns have exacerbated differences in housing amenities and transport, not to mention access to health facilities and mental health effects. Across countries, the less-developed ones face daunting challenges given their large informal sectors, limited health provision, meagre social programmes, restricted ability to borrow publicly and privately, and more.

Big data have allowed researchers to analyse the effects of lockdowns on people's mobility. They have started to use highly granular information on individuals' movements to examine the mobility response to lockdown orders, changing shopping habits, consumption patterns, price formation, as well as the reactions of asset markets to news. They have related these observations to people's occupations, incomes, location and even political preferences, revealing rising inequalities. There is also some evidence that lockdown orders may add little to spontaneous isolation when people become aware of the contagion spread. Surprisingly, perhaps, big data have been available for emerging countries, not just developed countries, which has made it possible to engage in comparative analysis.

An important issue concerns how the characteristics of societies affect their ability to deal with the pandemic. The amount of social capital is found to a play an important role, as do political preferences, religiosity, culture and existing trust and norms. A few papers also tackle the question of whether democracies are more or less effective than dictatorial regimes. At this stage there is no consensus, in part because of data limitations.

Many papers have looked in some detail at the economic impact of the pandemic and, in some cases, attempt to make predictions using a wide array of techniques. Real-time measures of consumption from large databases have quickly shown the depth of the contraction, although not all sectors or sale channels have been affected in the same way;

some have been large beneficiaries. Policy evaluations have documented the role of cash transfers, unemployment benefits, bailouts of firms, and so on in mitigating the adverse economic effects of lockdowns.

Financial markets are also fertile ground for analysis since the movements have been large and real-time data are easily available. As was likely, the stock and bond markets have responded to daily news, especially about casualties, and to policy measures, with some evidence that central bank interventions have been effective in preventing a financial crisis. A couple of papers even indicate that the stocks of firms with strong environment and social governance (ESG) have fared better than the others. Other papers have studied early events of illiquidity and examined policy responses as well as the impact of existing regulations.

Some papers explore how individual people react, using survey data, laboratory experiments or even data on calls to emergency helplines. They show that mental health is seriously disturbed, often with stronger effects on women.

Contrary to what could be expected, economic historians have made relatively few contributions. For time immemorial, global pandemics have repeatedly brought havoc and major changes. Economic historians have painstakingly recovered data to analyse these events long before Covid-19, but only a limited number have submitted articles that could inform us on the lessons to be learned from previous pandemics.

The agenda is still expanding. The removal of lockdowns is proving to be hectic, leading to new measures. The long-run impact of Covid-19 remains to be analysed. The organisation of healthcare, work and family life have been challenged and could be different from what we have known once the danger of contagion has gone.

IMPACT ON MEDIA AND POLICYMAKERS

Many researchers shifted their attention to the pandemic because they sensed an urgency to properly understand an historical event. The creation of *Covid Economics* was related to the same perception that new knowledge had to be promptly developed and communicated to policymakers, who faced sharp choices.

Assessing how academic research shapes policymaking is always very difficult. Except in very rare cases, results trickle down slowly via a variety of channels. For many weeks, policymakers and the media have focused almost exclusively on Covid-19. A huge amount of information has circulated and been used to shape policy decisions. Early on, most of the relevant information was provided by epidemiologists and virologists, who understandably argued in favour of lockdowns since "it isn't the virus that circulates but people", to quote Swiss virologist Didier Pittet (*Le Temps*, 19 March 2020). It did not take long, however, to realise that the economic (and social) costs of lockdowns are vertiginous.

There may be a trade-off between health and wealth, and economists are uniquely trained to detect and deal with trade-offs. They are also well versed in distinguishing the long from the short term.

As noted above, much of early research in *Covid Economics* was dedicated to the theoretical analysis of potential trade-offs; as data were collected, research shifted to empirical evaluations. The media soon picked up on this theme. Over the weeks, further results from featured papers reached the media as well: the adverse effects of lockdowns on income and gender equity, more subtle approaches to social distancing, the role of politics in shaping policies and individual behaviour, analyses from big data on individual mobility, consumption or compliance with distancing policies, and more. Somehow, research was listened to.

CEPR has deployed all its resources to disseminate the wealth of results featured in *Covid Economics*. Each new issue is circulated to the Centre's mailing lists and regular summaries of selected contributions are published to create awareness of their results. A new website dedicated to Covid-19 has been created and is used to facilitate access to the issues.

Overwhelmed by the task of managing a flow of submissions and publishing three issues per week, and sharply focused on research, *Covid Economics* did not have the human resources to promote papers with the media and policymakers. CEPR's popular policy portal, VoxEU.org, routinely invites selected authors to write up widely readable presentations of papers featured in *Covid Economics*. At the height of the crisis – if the height is indeed a thing of the past – VoxEU published a record number of columns daily and its readership has risen by about 250%. In the second quarter of 2020, VoxEU had over 3.5 million page views (up 163% on the same period last year). In parallel, CEPR has published several eBooks,[7] organised webinars and posted video interviews of economists, drawing heavily on papers featured in *Covid Economics*. Clearly, no economic journal can mobilise such an array of outreach tools. In effect, *Covid Economics* has become the centre point of CEPR activities since the end of March, even though the efforts are hampered by the sheer volume of papers coming through.

THE FUTURE OF *COVID ECONOMICS*

As previously noted, the launch of *Covid Economics* was motivated by the perceived urgent need to develop relevant economic research at a historical juncture. Little thought was devoted to the duration of this undertaking; it would endogenously respond to supply while ensuring that there is demand. Figure 1 shows that the number of submissions reached a high plateau in April and May but even towards the end of June remains quite

7 In fact, two ebooks, edited by Richard Baldwin and Beatrice Weder di Mauro, were the first economic publications on the pandemic (*Economics in the Time of Covid* on 11 March and *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes* on 18 March).

elevated. The content of papers has gradually shifted as the new field is becoming more diverse and, predictably, more detailed. It is also following events, including the lifting of lockdowns and policy measures. The current conventional view is that the epidemic will last until a vaccine is found and administered universally, which could take another year or more. It is likely that the research effort will remain vigorous as long as the epidemic lasts. The end of the epidemic will also provide new data that will need to be analysed in real time.

Beyond that, it is probable that interest will wane. Yet, many researchers will have developed a specialisation and the prospect of other catastrophic epidemics could linger. Hopefully, however, urgency will come to an end. Does this imply that the need for real-time and freely accessible dissemination of research will also come to an end?

As already mentioned, the experience with *Covid Economics* has brought to the surface well-known complaints about the long lags between submission and publication. Standard publications may speed up the evaluation process (many have already done so for articles dealing with the pandemic). Indeed, one lesson from the Covid Economics experiment is that it is possible to ask referees to respond quickly. Of course, the 48-hour requirement is extreme, directly tied to the emergency of the situation, but short lags are possible without compromising the quality of the process.

Thus, beyond its contribution to a faster understanding of the pandemic, the *Covid Economics* experiment should help the profession think about how research is published. It has innovated in several dimensions:

- A new process, vetting, which can usefully complement traditional refereeing for quick dissemination of results. It ensures quality thanks to an Editorial Board composed of established researchers.

- A new format, somewhere between a standard publication and working papers. This is achieved by collecting papers in issues, without typesetting. It is cheaper than journals and costlier than working papers.

- New forms of dissemination: the link with VoxEU provides visibility beyond academic researchers, summaries of issues through CEPR, live presentations at the CEPR–Graduate Institute webinar.

- A new channel for publication, more inclusive than working papers and more attractive to younger researchers.

- From the point of view of the sponsor (CEPR) and the editor, *Covid Economics* is a public good, not a business model.

ABOUT THE AUTHOR

Charles Wyplosz is Emeritus Professor of International Economics at the Graduate Institute, Geneva, where he was Director of the International Centre for Money and Banking Studies. Previously, he has served as Associate Dean for Research and Development at INSEAD and Director of the PhD programme in Economics at the Ecole des Hautes Etudes en Science Sociales in Paris. He is a CEPR Research Fellow and has served as Policy Director and Director of the International Macroeconomics Programme at CEPR. He is also Editor of *Covid Economics* and Co-Chair of the Board of *Economic Policy*.

CHAPTER 21

Suggestions for further reading

Ugo Panizza
The Graduate Institute, Geneva and CEPR

The objective of this chapter is to present a short review of topics which were not covered in the eBook, focusing on a number of papers which complement some of the chapters of the eBook. Because of space considerations this review is far from comprehensive, but it is intended to be a starting point for readers interested in exploring these topics further.

The review starts with a discussion of economic imperialism (Lazear 2000). It then complements Section 3 of the eBook by reviewing a series of papers that focus on the efficiency of the refereeing process and on delays in publishing, and concludes by summarising a group of articles that complement the chapter by Colussi on the importance of networks in economic publishing.

THE SUPERIORITY OF ECONOMICS

According to Fourcade et al. (2015), economics dominates the pecking order among the social sciences. Economists tend to believe that economics is the most scientific of the social sciences, that economics attracts the best students, and that these characteristics are justly compensated by higher salaries and better career prospects.[1]

This view is summarised in Lazear's (2000) classic article on economic imperialism, which starts with the following paragraph:

> By almost any market test, economics is the premier social science. The field attracts the most students, enjoys the attention of policy-makers and journalists, and gains notice, both positive and negative, from other scientists. In large part, the success of economics derives from its rigor and relevance as well as from its generality. The economic toolbox can be used to address a large variety of problems drawn from a wide range of topics. (p. 99)

Lazear attributes the success of economics to the facts that the discipline has a rigorous language and to its focus on rationality, equilibrium, and efficiency. Lazear also recognises that rigorous simplifying assumptions tend to constrain the analysis of economists, but he does not see this narrowness as a flaw in modern economic research but as a comparative advantage of economists over other social scientists.

1 See also Freeman (1999).

According to Lazear, there are two signs that economics has been a successful imperialist. First, economists now study phenomena (such as discrimination, family formation, social interaction, politics, and religion) which used to be outside the realm of our discipline. Second, economists have induced other social scientists to incorporate the methods of economics in the study of law, sociology, and international relations.

Lazear concludes with a positive assessment of economic imperialism:

> The most successful economic imperialists have used the theory to shed light on questions that lie far outside those considered traditional. The fact that there have been so many successful efforts in so many different directions attests to the power of economics. (p. 142)

However, recent analyses suggest that not all is well and that there is a dark side to economic imperialism. Problems include insularity, a hierarchical structure, and hardness bias.

While Lazear advocates a division of labour between economist and other social scientists, many economists who colonise other social sciences do not seem to be particularly interested in engaging with the natives. In a 2006 survey, 57% of economists stated that they disagreed with the proposition that "[i]n general, interdisciplinary knowledge is better than knowledge obtained in a single discipline", while 73% of sociologists, 60% of political scientists and 79% of psychologists agreed with this proposition (Fourcade et al. 2015: Table 2).

Lack of interest in interdisciplinary knowledge is reflected in citation patterns. Fourcade et al. (2015) quote Jacobs (2013), who found that in 1997 within-field citation rates in economics were 81%, while they were approximately 50% for sociology and anthropology and 60% for political sciences. They also provide anecdotal evidence that sociologists and political scientists quote economists much more than what economists quote sociologists and political scientists.

Angrist et al. (2020) conduct a systematic analysis using data from a large sample of journals over the period 1970-2015. While they confirm that economics is more insular than political sciences and sociology, they also show that the insularity of economics has decreased over time and that economics is no more insular than anthropology or psychology (there is an asymmetry, however, with more citations from anthropology to economics than the other way around).[2]

2 In their Figure 2, Angrist et al. (2020) show that in 2015 economics captured close to 15% of total citations in political sciences journals, about 9% of citations in sociology, and approximately 1% of citations in anthropology and psychology. At the same time, about 2.5% of citations in economic journals were directed to political science research (up from less than 0.5% in 1970), and just above 1% to psychology and sociology articles. Citations of work in anthropology remained close to zero.

Because of this insularity, economists have been accused of entering new fields without fully absorbing existing work outside of economics and of either rediscovering old findings or, worse, producing flawed research (see, for instance, the chapter by Logan and Myers in this eBook).

Economics is also more hierarchical than other disciplines. There is a well-defined ranking of journals, with the 'Top Five' dominating all other publications (see the chapter by Heckman and Moktan in this eBook), and a strong concentration of economists from top departments in the leadership of its most important professional association.[3]

Gibson (2018) studies the micro-geography of academic research and finds that the concentration of Top Five journals citations in the top three zip codes is much higher in economics than in other fields. In economics, the top three zip codes capture 20% of citations (when NBER affiliations are included in the data, this share increases to 30%) while in sociology, psychology, marketing, philosophy, and chemistry the top three zip codes capture between 7% and 12% of total citations.

There is also a gender and minority issue. While women accounted for less than a third of economics doctorates awarded by US universities in 2014, more than half of the doctorates in other social sciences, humanities and STEM disciplines are awarded to women (Bayer and Rouse 2016: Figure 1; for a discussion of women in economics, see Lundberg 2020). The same applies to underrepresented minorities (defined as those who those who self-identify as Hispanic or Latino, American Indian or Alaska Native, or Black or African American), who received just 7% of economics doctorates awarded in 2014, about half the share of minorities that received doctorates in other social sciences (Bayer and Rouse 2016: Figure 1). Li and Koedel (2017) show that the same situation appears when one focuses on representation on the faculty of American universities.

Akerlof (2020) suggests that the rigor at the basis of economic imperialism can lead to "sins of omissions". He describes this problem by pointing out that possible research topics can be characterised along two dimensions: (i) hardness (i.e. the possibility of formulating the topic in precise mathematical terms or testing with a sound econometric approach), and (ii) importance. When there is a trade-off between these two dimensions, incentives in the profession lead to a hardness bias which leads to important 'soft' topics being ignored.[4] These are the profession's sins of omission.

3 In 2012, 72% of non-appointed members on the council of the American Economic Association (AEA) were from top-five economic departments. The share of top-five economic department members on councils of the American Sociological Association (ASA) and American Political Sciences Association (APSA) were 12% and 20%, respectively. At the same time, the share of council members from departments ranked 50-100 and from unranked institutions was negligible in the AEA but above 30% in APSA and above 50% in ASA (Fourcade et al. 2015: Figure 2).

4 Note the parallel with Holmstrom and Milgrom's (1991) result that when agents face multiple tasks and there are trade-offs between achieving different objectives, agents will have an incentive to put excessive effort into the task with a clearly measurable outcome.

According to Akerlof, this hardness bias is driven by three main factors: (i) the desire to be at the top of the social sciences pecking order by being the most scientific of the social sciences (one of the elements that has led to economic imperialism); (ii) limited space in top economics journals, which leads to decisions that favour characteristics which are easier to assess; and (iii) selection in the profession, which favours those with strong quantitative skills.

Akerlof suggests that the profession's hardness bias leads to over-specialisation, inhibits the production of new ideas, and is the source of the curse of the Top Five discussed by Heckman and Moktan in this eBook. He concludes by calling for a report on publication and promotion in economics similar to the 1910 Flexener Report, which had an important effect on medical education. In his view, this report should discuss: (i) the role of editors and referees with the objective of reducing publication lags and "returning ownership of the papers to the authors", and (ii) the use of publication metrics for promotion and the "overdependence on publication in US journals and even on US data" (on this subject, see the chapter by Das and Do in this eBook).

THE NEVER-ENDING PUBLICATION PROCESS

Section 3 of this eBook focuses on publication lags. In what follows, I review some additional research that focuses on the value of the refereeing process and the consequences of the slowing down of the publishing process.

Most economists have heard horror stories of papers that have been circulating for more than ten years before getting published. But publication lags in a single journal (i.e. without considering the need to sequentially submit to multiple journals after the paper has been rejected in a given journal) have also become longer. Ellison (2002) studies nine economic journals and shows that the average length of time between submission and final acceptance increased from six months in 1970 to 17 months in 1999. Hadavand et al. (2019) look at five economic journals in 2018 and find that the median time from submission to publication was 27 months and that the 90th percentile of the distribution was over 48 months. According to Ellison (2020), about one-quarter of the slowdown is due to the fact that journals take longer to provide a first answer and three-quarters of it is due to multiple rounds of revisions, with more demanding requests from referees.

Hadavand et al. (2019) estimate that each year, economists worldwide spend 1.5 million hours refereeing papers. Using a (very) conservative estimate of the cost of referee time ($35 per hour), they estimate that the direct annual cost of refereeing amounts to $50 million. To this amount one should add the time of editors and clerical staff and the time required to revise the paper after each round of referring. Given that economics is only a small part of academic publishing, Hadavand et al. suggest that the global cost associated with refereeing scholarly work in all disciplines is well above $1 billion.

The question is whether this large investment in refereeing adds value to the publication process. Hadavand et al. address this question by using the two-track process introduced by *Economic Inquiry* in 2007. Under this process, authors could choose between a fast track, in which the article is either accepted or rejected, and the traditional track in which the paper could be subject to multiple rounds of revisions.

By comparing papers submitted to the two tracks, Hadavand et al. find that there is no evidence that papers that went through multiple rounds of refereeing have a greater scholarly impact (as measured by citations).

Another consequence of the slow refereeing process is that several well-known authors may decide to opt out of the process. Ellison (2011) compares 1990-93 with 2000-2003 and documents that this is the case, especially with respect to top field journals (less so for Top Five publications).[5] He suggests that this change is likely to be driven by the fact that the internet has improved the ability of high-profile authors to disseminate their research without going through the lengthy journal submission process. Ellison's findings are consistent with Cochrane's suggestion that academic publications are no longer a useful part of communication among researchers and that journal publication has become an archival, branding and sorting mechanism. Cochrane suggests that the publication process in economics could benefit from experimenting with open refereeing and from allowing for simultaneous submissions to multiple journals.[6]

THE VALUE OF CONNECTIONS

One standard topic of conversation among economists is the possibility that editors favour connected authors at the expenses of unconnected researchers. The chapter by Colussi in Section 4 of this eBook shows that there are important benefits of author-editor connections. When examining whether these connections improve or harm the quality of published papers, his findings suggest that a certain type of connection (i.e. when the author is a former PhD student of the editor) improves paper quality, but that this is not the case for articles authored by other types of connected scholars. He concludes that his findings may imply "that the positive effects generated by reduced communication costs and cooperation are offset by a dilution in quality due to nepotism".

These findings are in contrast with those of Brodgaard et al. (2014), who use publication data on more than 50,000 articles in 30 economics and finance journals over the period 2005-2008, as well as data on editor rotations, to evaluate the effects of connections. Their findings corroborate Colussi's findings that connections are important for publishing. The estimates of Boogaard et al. suggest that the editor's colleague publish 100% more

5 Publication shares by top department authors in the ***Journal of Political Economy*** and ***Quarterly Journal of Economics*** increased in the period under observation (by 13% and 40%, respectively), publication shares by top department authors in ***Econometrica*** remained constant, and publication shares in the ***American Economic Review*** and ***Review of Economic Studies*** decreased by 16% and 11%, respectively.

6 See https://johnhcochrane.blogspot.com/2017/09/a-paper-and-publishing.html (accessed on 28 June 2020).

papers in the editor's journal compared to years when they do not have a colleague editing the journal. However, while Colussi suggests that the type of connections studied by Boogaard et al. (i.e. being a colleague of the editor) have no impact on post-publication citations and could possibly be driven by nepotism, Boogaard et al. find that even this type of connection improves selection decisions and that the informational benefits of connections dominate the potential rent-seeking behaviour of editors.

Card and DellaVigna (2020) do not focus on connections but look at how referees and editors assess submissions of prolific authors in four leading economic journals (the *Journal of the European Economic Association*, the *Quarterly Journal of Economics*, the *Review of Economic Studies*, and the *Review of Economics and Statistics*). They find that, conditional on referees' recommendations, papers by prominent authors obtain more citations than papers by less prolific authors.[7]

The authors suggest that there are two possible explanations for this finding: either referees set a higher bar for prolific authors, or prolific authors are over-cited (conditional on quality). To disentangle these two explanations, they conduct a survey in which economists are asked to evaluate papers by well-established and by relatively unknown authors. As the results of this survey do not suggest that more prolific authors are over-cited, Card and DellaVigna conclude that their results are likely to indicate that "referees and editors are effectively easing entry into the discipline for younger and less established authors".

REFERENCES

Akerlof, G A (2020), "Sins of Omission and the Practice of Economics", *Journal of Economic Literature* 58(2): 405-18.

Angrist, J, P Azoulay, G Ellison, R Hill, and S F Lu (2020), "Inside Job or Deep Impact? Extramural Citations and the Influence of Economic Scholarship", *Journal of Economic Literature* 58(1): 3-52.

Bayer, A, and C E Rouse (2016), "Diversity in the Economics Profession: A New Attack on an Old Problem", *Journal of Economic Perspectives* 30(4): 221-42.

Brodgaard, J, J Engelberg, and C Parson (2014), "Network and Productivity: Causal Evidence from Editor Rotations", *Journal of Financial Economics* 111: 251-270.

Card, D and S DellaVigna (2020), "What do Editors Maximize? Evidence from Four Economics Journals", Review of Economics and Statistics 102: 195-217.

Ellison, G (2002), "The Slowdown of Economic Publishing Process", *The Journal of Political Economy* 110(5): 947-93.

7 The same applies for desk-rection decisions, with desk-rejected papers by prolific authors having higher average citations than non-desk-rejected papers by less prominent authors.

Ellison, G (2011), "Is Peer Review in Decline?", *Economic Inquiry* 49(3): 635-657.

Fourcade, M, E Ollion, and Y Algan (2015) "The Superiority of Economists", *Journal of Economic Perspectives* 29(1): 89–114.

Freeman, R B (1999), "It's Better Being an Economist (But Don't Tell Anyone)", *Journal of Economic Perspectives* 13(3): 139–45.

Gibson, J (2018), "The Micro-Geography of Academic Research: How Distinctive is Economics?", Working Papers in Economics 18/03, University of Waikato.

Hadavand, A, D Hamermesh, and W Wilson (2019), "Is Scholarly Refereeing Productive (at the margin)?", IZA Discussion Paper 12866.

Holmstrom, B and P Milgrom (1991), "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design", *Journal of Law, Economics, and Organization* 7: 24- 52.

Jacobs, J (2013), *In Defense of Disciplines: Interdisciplinarity and Specialization in Research Universities*, University of Chicago Press.

Lazear, E P (2000), "Economic Imperialism", *The Quarterly Journal of Economics* 115(1): 99-146.

Li, D and C Koedel (2017), "Representation and Salary Gaps by Race-Ethnicity and Gender at Selective Public Universities", *Educational Researcher* 46(7): 343–354

Lundberg, S (2020), *Women in Economics*, a VoxEU.org ebook, CEPR Press.

CEPR PRESS

In a biographical essay published before receiving the Nobel Prize, Angus Deaton wrote that compared with many other professions, economics is remarkably open to talent, and free of nepotism and patronage. This perception of openness is now being questioned by many who are pointing out that economics tends to be hierarchical, clubby and characterised by gender and racial biases.

The publication process in economics also appears to be inefficient as it is characterised by long publication lags. Moreover, several of the contributions in this eBook suggest that the profession gives excessive weight to a very small number of journals, and that this large weight is not fully justified by citation patterns. As one of the contributors points out, "economists believe in markets, but not for papers".

The eBook takes stock of these issues with a series of short essays focusing on how economists publish their research and measure academic success. It includes sections on measuring success and citation patterns, publication lags, social ties and nepotism, the race problem in economics, and how the Covid-19 pandemic has impacted economic research.

The contributions suggest that, while there is much to be proud of about the state of the economics profession, there is still work to be done to make economics more open and inclusive and the publication process fairer and more efficient. Promoting stronger competition among journals could help in dealing with many, though not all, of the issues highlighted in the eBook.

ISBN: 978-1-912179-37-4

33 Great Sutton Street | LONDON EC1V ODX | UK
TEL: +44 (0)20 7183 8801 | FAX: +44 (0)20 7183 8820
EMAIL: CEPR@CEPR.ORG
WWW.CEPR.ORG