A (Renewed) Call for Replication Studies

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In 2010, Public Finance Review (PFR) published a “Call for Replication Studies” (Burman, Reed, and Alm, 2010). In January of 2015, this journal will publish a special issue consisting entirely of replications, designed to highlight PFR’s commitment to publishing replication studies. This “Renewed Call for Replication Studies” indicates some slight modifications to PFR’s replication policies.

The Importance of Publishing Outlets for Replication Research

In their recent survey of replications in economics, Duvendack et al. (2014) note that much has changed in the economics discipline since Dewald et al. (1986) published their seminal study on replications at the Journal of Money, Credit and Banking. Of the 333 economics journal listed in Web of Science, over 20 now require their authors to make their data and code available as a condition of publication. This is an important development in the process of scientific replication because it substantially lowers the cost of researchers undertaking replication studies.

However, it is still difficult to find peer-reviewed outlets for replication research. Duvendack et al. (2014) report that only 7 journals explicitly state that they publish replication studies. Their literature review confirms that only a handful of journals have ever published more than one replication study. Without an outlet to publish their research, many academics will find little incentive to doing replication research.

It is in that context that PFR renews its commitment to publishing high-quality, replication research. Accordingly, we also renew our call to the economics discipline to undertake replication studies of important research in public economics.

Types of Replications

Replication studies can be categorized into three groups, and PFR will publish all three types:

- Positive (or validating) replications: These are studies where the replicating author shows the original paper’s findings are robust to substantial extensions over time, explanatory variables, and/or alternative estimation procedures.

- Negative replications (Negative-Type 1): These are studies where the replicating author is unable to reproduce the original paper’s results using the same data, the same specification, and the same econometric software. In these cases, supplementary correspondence with the Editor should
provide evidence that substantial efforts were made by the researcher to work with the original author to reproduce the original results.

- Negative replications (Negative-Type 2): These are studies where the replicating author is able to reproduce the original paper’s results, but he/she finds that the original results are not robust to substantial extensions over time, data sets, explanatory variables, functional forms, software, and/or alternative estimation procedures.

Some journals only publish negative replications. For example, the American Economic Review has published numerous negative replications, but has never published a positive one (Duvendack et al., 2014). This biases the type of replication studies that get published, distorting the overall perception of the reliability of economics research. Accordingly, PFR will publish all three kinds of replication studies.

**Guidelines for Researchers Desiring to Publish Replication Studies in PFR**

1. Replication studies should be standard, full-length manuscripts, although shorter manuscripts will be considered.

2. The original research should have been published in a peer-reviewed economics journal, including but not limited to PFR; widely cited articles in conference volumes or books or even unpublished working papers may also be considered, depending on the importance and visibility of their results. Replication papers should give some evidence of the original article’s influence. Replication studies should be broadly in the area of public economics. Researchers are welcome to ask the Replication Editor in advance for guidance on the potential suitability of a particular study for replication.

3. The researcher conducting the replication experiment must be independent of the original author (s); that is, the researcher should not be a graduate student under the supervision of any of the original authors, or a current or recent coauthor.

4. The replicating researcher must first attempt to exactly reproduce the original findings. If the original results cannot be reproduced, then the replicating researcher should attempt to reconcile any differences by communicating with the original author. PFR may request evidence that the replicating author has attempted to contact the original author when the replicating author is unable to reproduce the original study’s findings.

5. The standard format for a PFR replication study consists of 4 parts: (i) an introduction in which the importance of the original study is evidenced; (ii) a replication of the original study, with the original study’s results and the replicating study’s corresponding estimates placed side-by-side in a table; (iii) robustness checks in which one or more dimensions of the original study are extended or modified (e.g.,
the sample is updated with more recent data, alternative econometric procedures are employed, etc.); and (iv) a conclusion that summarizes which results from the original study have been confirmed/disconfirmed. All replication studies will use the following title template: “A Replication of ‘Title of original paper here’ (Name of journal of original study here, Year of publication of original study here).”

6. Submitted manuscripts will be subject to the standard peer-reviewed referee process. One of the referees will normally be the original author.

7. Submitted manuscripts should be clearly identified in the online submission process as a “Replication Study”.

8. If the submitted paper is accepted, then the replicating researcher will be asked to submit a brief (2000-2500 word) summary of the results. This summary will be published in PFR in the Replications section. The full length version will be available as an attachment at the journal’s online website. In addition, the replicating author will be encouraged to make their data and code available as additional attachments.

9. The author(s) of the original paper will be given the opportunity to respond to the replication. He/she can also choose to submit a brief (2000-2500 word) summary of their response, which will be published in PFR alongside the summary of the replication study.

10. PFR will not publish clarifications of data, programs, or procedures from the original author that could have been supplied to the researcher attempting replication but were not.

“Journals provide inappropriate incentives when they publish clarifying comments by authors who have failed to respond to requests for clarification prior to publication of negative results” (Dewald et al., 1988).

11. PFR will publish multiple replications of the same original article, if done by different replicating authors.

12. PFR will not attempt to adjudicate disputes between the replicating and original authors. The responsibility of the Replication Editor is merely to ensure that the replicating work has been done to a high standard of competence.

Researchers preparing replication studies for submission to PFR may find it helpful to refer to the January 2015 special issue of PFR for examples of studies that follow these guidelines.

Conclusions

We strongly urge academic public finance economists, applied econometricians and statisticians, and graduate students beginning their research careers to undertake replication experiments. If these replication studies are high quality and done according to the guidelines listed above, then the researchers can expect their research to be published in PFR.
Replication is a key component of science. While journals can encourage replication through requiring publishing authors to make their data and code available and allocating journal space to replication studies, the necessary ingredient is the willingness of researchers to undertake replication studies. It is hoped that this renewed call for replication studies will encourage researchers to do so.

If economics is to progress as a science, it needs to develop an empirical foundation of established facts upon which further research can build. Replication is the key to achieving this worthy goal. As emphasized by McCullough and Vinod (2003):

“Research that cannot be replicated is not science, and cannot be trusted either as part of the profession’s accumulated body of knowledge or as a basis for policy.”

References


