

How to write a paper (in applied theory, and maybe in adjacent areas of economics)

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YES summer school

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How to write applied economic theory

The different steps in producing research output

1. Idea generation
2. Formalization
3. Analysis
4. Writing
5. Journal submission and publication

In practice, early steps are often revisited

Idea generation

- ▶ Inspiration 1: The world around us
 - ▶ If you are interested in applied economic theory, observe the world. Read newspapers, internet; watch TV.
- ▶ Inspiration 2: Existing research; especially bad research
 - ▶ Good research answers questions convincingly, bad one does not
 - ▶ The questions in bad research may still be interesting!
 - ▶ Best source for bad research are seminars
- ▶ Danger: “I need to write a model, so I take the model of [Important Economist (2015)] and do some variations”
 - ▶ Need a convincing answer to the question: “Why?”
 - ▶ → this paper can explain something that the original paper could not

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Idea generation – Task

Write down an interesting observation that could support a formal model

- ▶ Why is it interesting/ surprising?
- ▶ What is the interesting effect a model would have to explain?
- ▶ Who are the strategic agents?

Idea generation – Example

- ▶ Presidential primaries in the US:
 - ▶ Sequential structure (i.e., states vote at different times)
 - ▶ Lots of emphasis on “early states” (very different from their delegate share)
 - ▶ Why is that?

Idea generation

- ▶ Are you reinventing the wheel?
- ▶ Two strategies:
 - ▶ Get to know the literature – don't duplicate
 - ▶ Don't care about the literature — follow your ideas, and check ex-post whether this already exists in the literature

Formalization

What is the interesting effect a model would have to explain? ⇒ Guides the composition of a model

- ▶ Should not be too complicated (“realistic”)
 - ▶ The objective is generally not to generate a realistic model of the whole world or even the political system
 - ▶ If it is not necessary to explain the key effect, leave it out of the basic model
 - ▶ Possibly include it in robustness analysis if it is not obvious that it does not matter for your story
- ▶ Should not be too simple
 - ▶ Anything where there is a very short distance between assumptions and results is difficult to sell
- ▶ In general, it is better to start with a simple model, check that it works, and then push for generalizations, rather than to start with the most general model imaginable and then work to see what restrictions yield tractability

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Analysis

- ▶ While possibly difficult, this part is pretty self-explanatory:
Solve the model
- ▶ In practice, sometimes go back to model formalization depending on what works. Easier to start easy (e.g., specific functional form) and then make it more complicated.
- ▶ Writing: Setting up a very general model in the model section and then narrowing it for all (or almost all) of the analysis section is annoying for many referees.
 - ▶ It basically shows that you cannot solve the more general model.
- ▶ ⇒ Define the model that underlies most of your analysis in the model section. If some results hold more broadly, mention it there.

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- ▶ Two approaches to writing:
 - ▶ Show intuition/some math; then state formal proposition, often proved formally in appendix (why appendix? → page limits!)
 - ▶ State the theorem first, then develop the reasoning behind it. This generally works better for pure theory than for applied theory
- ▶ Propositions need to be precise. If it is difficult to understand **what** they say (not why they are true), have an explanation before or after. Do **not** make the statement informal.
- ▶ You generally don't want propositions that display very complicated formulas (i.e., depend on specific parametrizations).

Not: $\forall \theta \geq \frac{89p+11\gamma+343k^2}{\sqrt{p^2+11bp+3(b-11)^2}}$, there exists an equilibrium.

Better: There exists θ^* such that an equilibrium exists for all $\theta \geq \theta^*$. In the appendix, I show a closed form for θ^*

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Introduction

- ▶ Probably hardest to write
 - ▶ Very important: Editor reads this and decides whether your paper is at all sent out to referees, and to whom.
 - ▶ Many write this at the end of the writing process
- ▶ Structure (usually):
 - ▶ Some general motivation. Why is this interesting? (1 page max)
 - ▶ What is the contribution of the present paper? Model/results
 - ▶ Sometimes a simplified example is useful

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Literature review

2 purposes:

- ▶ Inform the reader about existing related work so that the contribution can be judged
 - ▶ For this reason, you always need to explain why you are putting a specific reference in the paper
 - ▶ **Do not summarize** cited papers. Rather, the explanation needs to explain why the cited paper is relevant **for your paper**.
- ▶ Editors (usually) pick referees from the set of authors cited
 - ▶ Who do you (not) want to be a referee?
 - ▶ Prominent positioning/ actual relation to your paper increases probability of being invited as referee, but not too much
 - ▶ Generally be nice about other papers when summarizing them

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- ▶ As referee
 - ▶ Nice people (or those perceived to be nice) receive more citations (and more referee requests)
 - ▶ Consistently negative referees can kill a whole branch of the literature
 - ▶ Don't out yourself as referee when negative
 - ▶ Don't over-interpret signals in referee reports. Some people frame others in their negative reports.

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Discussion/Conclusion

- ▶ The classical conclusion is the most useless section of any paper. But you probably cannot just leave it out
- ▶ There is some use to a discussion of what the model results mean for the real world/ what relaxing certain assumptions would do to the model
- ▶ If you must write a conclusion:
 - ▶ Very short summary of what you have done and why it's interesting (1-2 paragraphs)
 - ▶ "Future research"?

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Title and abstract

- ▶ Abstract is sometimes sent to potential referees with the invitation
- ▶ After publication, this part decides how easy it is for other researchers to find your paper when searching
- ▶ A good title is more valuable than commonly believed; worth spending some time

Help, I'm not a native English speaker

- ▶ Few people in economics are.
- ▶ The problem is usually “not being a clear writer” (in any language), not “not being a native English speaker”
- ▶ Short sentences are your friend.
- ▶ As long as you get the structure right, ChatGPT can help you improve your writing, paragraph by paragraph (but you need to remain in control!)

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Journal selection

- ▶ The payoff from publishing depends very much on where you publish; in particular true at the beginning of your career.
- ▶ In almost all jobs, your objective is to maximize journal quality, subject to constraint regarding the minimum number of publications.
- ▶ Lower-ranked institutions have about the same quantity constraint, but are more forgiving with respect to quality.
- ▶ Search committees and tenure letter writers usually cannot read more than a small number of papers, so your best bet is to make your best papers as strong as possible.

How to select your starting journal

- ▶ Don't necessarily start every paper "at the top"
 - ▶ Assume that referee 2 writes a (probably negative) report on your paper at a top journal, sees the other (probably negative) reports there, and now gets your paper from a top field journal. There may be a (possibly small) negative bias, relative to receiving the same paper for the first time.
 - ▶ Tenure letter writers may get a bad impression, especially when you completely overestimate the quality of your contribution.
- ▶ This said, start at the highest-ranked journal where your paper should have a non-trivial chance. Talk to advisor or senior colleagues.

The journal response

There are 4 theoretically possible outcomes after the first submission:

- ▶ Rejection (by far most likely)
- ▶ Reject-and-resubmit (?)
- ▶ Revise-and-resubmit (great)
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Rejection

- ▶ By far most likely outcome

It was an outrage/ a stupid referee! Does it help to appeal?

- ▶ Most likely not, but there are exceptions
 - ▶ Pure judgment rejections ("This paper is just not great enough for this great journal") cannot be successfully appealed, even if they are based on complete nonsense arguments
 - ▶ You do have some chance if a referee claims that a proposition is false (and maybe even says that it is otherwise interesting) and you can show that his claim is wrong.

Rejection

How should you deal with rejection?

- ▶ After reading, put it away for a day. Do not immediately act (e.g., send to another journal)
- ▶ Then: Read again
 - ▶ Are there any valid substantive points?
 - ▶ Correct mistakes. Even do something where it's not strictly required because the statement in the text is not wrong, but was misunderstood.
Authors who don't make any changes are very unpopular with repeat referees.
 - ▶ Are there any marketing changes that can be made?
 - ▶ Do you know who was the unfavorable referee? What can you do to avoid him in future submissions?

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- ▶ “Interesting question, but we dislike the current model / want something much more general / and don’t know whether you can do it”
- ▶ Increasingly frequent at top journals that want to game their stats
- ▶ Can range from impossible to do-able
- ▶ Don’t put this on your CV

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“Revise-and-resubmit”

- ▶ The best possible outcome; rejoice!
- ▶ It's like getting a penalty in soccer – a very good chance to score, but the ball is not yet in!
- ▶ Read letter and reports very carefully. If you are lucky, the editor tells you exactly what they want, or even which points of the referees to ignore.
Much more often, the editor tells you to make the referees happy
- ▶ Doing everything the referees want is often impossible. Also, sometimes one of the referees wanted to reject your paper
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