# Doing and writing research papers
## What do to, what to avoid

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## Selecting your topic

- Write about something that you are interested in. Research can be frustrating, so writing about a topic just because other people discuss it will get you to become discouraged when stumbling blocks occur (research takes time, topics go in and out of fashion fast).
    - o Of course you often will have to write about something of relevance to your management and institutions (that is your task after all), but within this constraint find the angle that most motivates you.
- One paper – one topic. Avoid covering too much ground. Readers will see mostly the first point you make, and the others less so, which does not do justice to the additional interesting points you make.
- With a new data set, you can write one background and stylized fact paper. Then write more advanced papers going deeper on specific questions, referring to the first paper for background.
- Pick topics with clear policy relevance, even if it is only for a few countries, or only you own.

## Selecting your technical approach

- Select techniques that are needed for the particular question you ask. For instance, if there is a clear concern about reverse causality, instrumental variables make sense.
    - o Ask yourselves: do I really need this complex method, or can I make my point in an easier way?
    - o Avoid using complex methods just because they are there and you can handle them.
- Select the degree of complexity of your model or empirics to be high enough to address the challenges in the analysis, but not higher than that. Keep things as simple as possible.
- Start with the simplest techniques and then build up.

- For example, if you have a hypothesis that two variables are positively correlated in a cross section of countries, start with simple scatter plots. Then move on to simple linear models estimated using OLS, and only then start thinking of non-linear models, or instrumental variables, or other techniques harder to interpret.
- For theoretical work, think about the mechanism you are after. Start with the simplest model that will make the point you want to make. Then add on other features, frictions etc. that make the model more realistic.

## Selecting your data

- Get to know your dataset: what is the coverage, what are the variables in there, do the patterns make sense (for instance, are there big breaks)? Simply drawing charts with the main indicators is a very useful step to get a sense of your data.
- Do the data need extensive cleaning up? If so, the earlier you are aware of it the better.
- Are the data rich enough to allow you to use some econometric methods that can be data demanding? If not, stick to simpler methods.
- Keep some flexibility with your question, as research entails a back and forth between the question and the data available. For example, you might realize *after* settling on a question and technique that the data is unsuitable to that question and/or technique. You will then need to recalibrate your original question so that the data can say something about it (more on this below).

## When things go wrong (…and they will)

- The various points discussed below can be thought of as risk management techniques. They are actually quite general and have broad similarities to approaches you would use in any sort of project management.
- If the data are not as broad and detailed as you first thought, focus on a simpler variant of your question.
  - It is OK to answer a simple variant, and then explain what could be done when more complete data are available.
- Research is a trial and error process. In a published paper, you see what worked for the authors, and you don't see the many other methods they tried that ended up in the recycle

basket In this context, an interesting exercise is to search online for the various working paper versions of a recent published paper that you like, and follow the historic evolution. You will often find substantive differences between the first working paper and the final published version.

- o Don't expect things to work right away. Budget enough time to allow for some failed attempts.
- o Don't get discouraged. Having some unsuccessful attempts is normal, and that's how you get the right approach eventually.
- If the model proves too complex to solve, try a simpler version.
  - o Start with as simple a model as you can. It may look to be too trivial a model, but once you get a solid understanding of the story in a simple model you can make it more complex more easily.
- If the empirical analysis does not give you the results you expected, don't try to force the result to be what you want. It is well known (e.g., Brodeur et al. *American Economic Journal: Applied Economics*, 2016) that researchers display systematic bias towards reporting statistically significant results. Thus, keep in mind that "what you see" is not necessarily "what they got".
  - o "No result" is itself a result: it shows that a mechanism you thought was there actually isn't.
  - o Be receptive to the results: maybe the mechanism works in a very different way that you expected, and so you learned something. If we knew all the answers before doing the analysis, it would not be called research.
- Ask for advice. Many other researchers encountered similar issues and can share their experience. If you work under the supervision of a senior researcher or faculty, use them for guidance (that is what they are here for).
  - o More experienced colleagues and supervisors can be very helpful. Pointing that you are stuck and asking for guidance is not a sign of failure, but instead of being a serious ambitious researcher.

## Writing

- Be clear. There is no point in having found an interesting result if you cannot communicate it. Communicate your main point as early as possible, do not leave it to the conclusion.
- Abstract: show the question is interesting, and what your key results are.
  - The abstract should answer the "why should I care and bother reading the paper?" question.
- Introduction: 1 paragraph to motivate, then present your approach in the 2nd paragraph (for instance: "In this paper I use a new dataset to consider how policy interest rates are transmitted to mortgage rate"). Present a focused list of your key results (no need for details), and how you add to the major papers in the literature (be focused, the literature section can go in more details).
- Literature review: show what people have already done and how you add to the knowledge. This is where you can discuss many other papers. If there are papers close to you or on which you build, you have to clearly demonstrate what value you are adding to those specific papers. This might be especially important for you to convince people who know the field well that your paper adds value, and does not just restate what other have already found.
- Method and data: present the regressions you run, and explain what values or signs of coefficients we expect based on theory. Present the variables you use and where you get them from. If you use a novel database, explain how it is built.
- Results: present the tables of results, starting with the main one. When presenting tables with many regression, "hold the reader by the hand" by taking the time to explain what each of them does, and what the coefficients of interest are and what they show.
  - Bear in mind that while you have been working on the topic for many weeks / months, and thus know it well, the reader has not. Do not assume that the reader will easily understand, or will take the trouble to understand
- Conclusion: have a clear bottom line of your results. Keep it short. If necessary, add a section before the conclusion called "Discussion" where you might present caveats, or other details about how your results are different in very particular ways with existing literature. This is somewhat different from the literature review, because when the reader

is at the literature review she is not yet familiar with the details of your analysis and results.

- Tables and figures should be understandable without having to go to the text. Use clear names of variables (such as "GDP growth" instead of "ygr_t"), and clear titles. Use footnotes if you need to provide additional information.

- Appendices are there to put secondary information, so the main text focuses on the core message.

- Write in short focused sentences. Use positive and confident wording, e.g., avoid wording such as "I try to estimate" as this sounds like you are not sure about your results.

## **Presenting**

- Presenting your results is crucial (a company that produces a great product but has no advertising won't make much money).
  - Many people won't have time to read the paper, so they need to get your message simply by listening to you.
- People remember figures and economic stories, not equations.
  - Focus on your message, people trust you for having done the technical steps right.
  - Answer the "why should I care?" question in you first slide.
- Who is your audience?
  - If presenting to busy people who are not specialists, with little time at your disposal (i.e. a board meeting), tell the story. Avoid jargon.
  - If presenting to other economists, with more time (i.e. a seminar), you can go in more technical details, once you have presented the story.