

# **TIPS FOR EMPIRICAL RESEARCH IN ECONOMICS<sup>1</sup>**

## **RESEARCH PAPER IDEAS**

- For the idea to be worth pursuing, it must possess *novelty* (necessary condition for influential research) and *real-world importance* (sufficient condition for influential research).
- Look for the ideas in the world around you, not in the professional journals. Look at the theoretical literature only after you conducted a thorough search for interesting ideas in the world surrounding you.
- In economics, there are four common dimensions along which to narrow a search for ideas: time period, demographic group, geographic region and event or policy action.
- Jot down your ideas. Formulate testable hypothesis from your ideas. Accurate and scrupulous note-keeping in the pre-writing stage saves a lot of time.
- Maximize a marginal product of your ideas by building on the shoulders of giants in your field without fear to challenge authorities.

## **ORGANIZING THE PAPER<sup>2</sup>**

### **TITLE**

- Choose an informative, concise and interesting title.

### **ABSTRACT**

- Abstract should range between 100 and 150 words.
- The abstract must be concrete.
- Do not mention other literature in the abstract.
- Write the abstract only after the conclusion is written.

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<sup>1</sup> The “tips” presented here are not mine. I borrowed them entirely from N. Gregory Mankiw, John Cochrane, Don Davis, Michael Kremer, Kwan Choi, Hal Varian, Jonathan Shewchuk, Daniel S. Hamermesh, Marc Bellemare and Paul Dudenhefer. I, however, streamlined, organized and unified their advices in accordance with the needs of my own research. I hope these tips can be of some assistance to other economists. Visit webpages and blogs of aforementioned scholars for more information about content presented in this document.

<sup>2</sup> Organize the paper in “newspaper” style. “Newspaper” style assumes you start with the most important part, then fill in background later for the readers who kept going and want more details. Papers should rarely be more than 45 pages long. Twenty to thirty is usually appropriate.

## INTRODUCTION

- The introduction should take no more than 5 double-spaced pages.
- Provide evidence of why the paper is interesting. Most readers make up their mind within 15 minutes of reading a paper.
- The introduction must progress in 4 steps. Step 1 is called *the hook*. Step 2 is called *the question*. Step 3 is called *the antecedents*. Step 4 is called *the value added*.
- *The Hook*: establish a research territory. Motivate your work, introduce a subject and explain its importance. Why should we care about it? Why is it important to human welfare?
- *The Question*: clearly state your research question, and explain how you answer it. In other words, identify a problem, gap or deficiency in the current literature. This is the gap, problem or deficiency that your study will address.
- *The Antecedents*: mini literature review. A review of relevant literature is, essentially, a sales job which sells the value added by the present paper. The literature review, hence, must do the following three things: i) organize and analyse critically a body of research; ii) put your study in the context of other studies; iii) highlight your study's contribution with respect to relevant literature.
- *The Value Added*: state your main findings and contributions. Explain how you filled the gap from the 3rd step, and why your findings and contributions deserve to be published.
- Include a „roadmap“ paragraph at the end of introduction.
- The introductory statements must be consistent with the concluding remarks.
- After the introduction, you should present the theoretical background of your empirical analyses.

## THEORY

- An empirical paper should say something about the theory that led to the empirical work.
- The theory must be the minimum required for the reader to understand the empirical results. *There should be nothing before the main result that a reader does not need to know in order to understand the main result!*
- The less math used, the better.

## EMPIRICS

- Describe the data set. Where is it from? How many observations?
- State the strengths and weaknesses of the data source. Note any features of the data that may affect your results. Did you drop any data? What rules did you use in deciding what data to drop? Explain any computations or adjustments you made.
- When writing about numbers from graphs and tables, keep in mind the following guidelines: i) establish the context; ii) report and interpret; iii) use magnitudes that make sense or are easy to comprehend-usually % with two to three significant digits; iv) specify the direction and magnitude of an association.
- Use *graphs* to communicate the patterns in the data. Give the stylized facts in the data that drive your results, not just estimates and p-values. Give a self-contained caption, including a verbal definition of each symbol on the graph. Label the axes.
- When you present information in a *table*, you need to fulfil two expectations. First, introduce the table explicitly. Second, identify the main points made by the data in the table.
- Not all data need to be presented in a table. A good rule is that a table should contain at least 6 cells of information: two columns and three rows or three columns and two rows.
- Make tables self-contained with clearly explained titles and extensive notes. The caption of a regression table should have the regression equation and the name of the variables, especially the left hand variable.
- It is usually better to show standard errors, rather than t-statistics. Also include basic information, like sample size and  $R^2$ , in all tables.
- Avoid vertical lines in tables. Look at a journal to see how tables are laid out.
- Include, if necessary, a table showing the means of the variables and standard deviations.
- Explain your *empirical procedures* in enough detail that someone can replicate your work.
- Explain economic significance of your results, not just their statistical significance.
- Explain clearly where the *identification* comes from. Are variables under consideration *measured* in the appropriate way? Try to include an explanation that would be intelligible to a non-economist.
- Understand whose behaviour you are modelling. Is there a good theoretical motivation for the inclusion of the particular variable? Think of the obvious reverse causality stories.
- If you use instruments, explain why you think they might be valid.

## CONCLUSION

- The conclusion must progress in 4 steps. Step 1 is called *the summary*. Step 2 is called *the policy implications*. Step 3 is called *the limitations*. Step 4 is called *the implications for future research*. Synthesize what you have done in step 1, discuss the policy implications of your paper in step 2, stress the limitations of your paper in step 3, and explain how future research could build on your findings in step 4.
- Read introduction and conclusion side by side. They should be consistent with one another.

## APPENDICES

- Put technical details in appendices. The main text should be free from technical details, and the major ideas should emerge from reading it.

## WRITING THE PAPER

- Prepare a rough outline before writing. Sketch briefly the content of each section. In addition, do not read too much before you begin to write. It can interfere with your own thinking and writing. Your goal is to write and publish a paper, not to read everything.
- Begin the main body of the paper with theoretical background and empirical results. Then create the introduction and conclusion.
- Do not use previews and recalls. They are a sign of poor organization.
- Divide long paragraphs. No paragraph should be longer than half a page. As a general rule, a paragraph should have more than two sentences.
- Define every symbol when it is first introduced. If many symbols are introduced to present your model, it is a good idea to define all symbols together and display them in one paragraph so that the readers would not waste time hunting for them. The main assumptions and the results should also be explained clearly. If there are many assumptions, present them together in one paragraph.
- Writing is thinking. We write to learn what we want to say. Writing is not, hence, the final step in the research process, it is a part of the research process from the very start. One does not learn the details of the argument until writing it in detail.
- Good writing is writing that flows, and the best way to create flow is to end sentences with new information, and to begin sentences with old information. Old information is information that your reader has already encountered in previous sentence.
- Bad writing is writing that does not flow, and it is a consequence of muddled thinking. State theses clearly and precisely, and you may be able to see where the gaps are that need to be filled in.
- First state what you do, then explain it, then compare to alternatives and, finally, compare it to others' procedures.

- Stay focused. Remember the take-away points you want the reader to remember. If some material is irrelevant to these points, it should probably be cut.
- Strive for precision. Does each sentence say something, and does it mean what it says?
- Keep sentences short. Short words are better than long words. Monosyllabic words are the best.
- Positive statements are more persuasive than normative statements.
- Use the normal sentence structure: subject-verb-object.
- The grammatical subject must be short, and should tell the reader who or what the sentence is about.
- Use active instead of passive voice.
- Express key actions as verbs, i.e., do not use nominalizations (noun forms of words that can also be verbs).
- Present tense is usually the best. Keep the tense consistent.
- Use adverbs and adjectives sparingly.
- Avoid jargon.
- Never make up your own acronyms.
- Don't use famous quotations.
- Don't overuse italics.
- Search for „that“ in the paper to get rid of these.
- Clothe the naked „this“. „This“ should always have something following it.
- Avoid unnecessary words. For instance, in most cases, change “*in order to*” to “*to*”, “*whether or not*” to “*whether*”, “*is equal to*” to “*equals*”.
- Avoid “*of course*”, “*clearly*”, “*very*” and “*obviously*”.
- “*Long run*” (without a hyphen) is a noun. “*Long-run*” (with a hyphen) is an adjective. Same with “*short (-) run*”. “*Saving*” (without a terminal s) is a flow. “*Savings*” (with a terminal s) is a stock.
- „I“ is fine. Do not use the royal „we“ on a solely authored paper. If it seems like too much „I“, you can often avoid the article altogether.

- „Where“ refers to a place, „in which“ refers to a model.
- After finishing your paper, review the following parts of your paper separately step by step: title page, figures, equations, tables, text, footnotes and references.

## **YOUR PAPER AT THE CONFERENCE**

- **KISS: Keep It Short and Simple.**
- *Introduction*: don't have one. Get down to business immediately. One to two slides are a maximum for introduction.
- Use the *onion talk model*. The onion talk model starts with the main message and adds depth in successive layers around it, always returning to the main message between layers. The talk does not get screwed up near the end when the speaker is running out of time, because by then, the most important things have been said already and the speaker has no reason to hurry.
- A talk of 30 minutes or more needs to be broken into sections, with a title slide or an outline slide demarcating each new section. The goal of the title slides is to alert your audience to transitions and changes of subject, and to tell it in advance what all the individual slides in the section will add up to.
- Your slides are not there to remind you what to say. Slides should only contain equations, graphs and tables.
- Do not use small font. Maximize slide space by using wide margins.
- *Conclusion*: one slide for the conclusion. Summarize what you have accomplished and why the audience should care. Stop when you have made your point, and *give the audience something to take home*. The profession needs a simple take-away idea from your paper that is memorable.
- Always end your talk by saying thank you. Never run overtime.
- Keep a sheet of paper handy. Listen to the questions all the way to the end, jot them down and then, after counting to three, answer them loud and clear.

## **YOUR PAPER IN THE MEDIA**

- The main reasons for being willing to appear in the media, and for making an effort to become an effective speaker through the various media, should be the desire to convey a point of view on economic issues, to disseminate one's own relevant economic research, and, most generally, to educate the public. The media provide a forum for the continuing education of the public. But it is a forum you should enter repeatedly only if you have something to say and only if you can say it well. Much more than in classroom teaching, delivery matters.

- A good time to publicize research is when it is sufficiently final for sending it off to a journal for refereeing.
- Before you begin to deal with the substance of a question, ask yourself whether you are the best person to answer it. There is no shame in telling a reporter that you are not the person to interview on a particular subject. In addition, you should consider whether anyone aside from your relatives and friends might care about your findings.
- You should have something special to say that gives an insight to the readers, listeners, or viewers that they would not have obtained from someone less familiar with the issue. On a more arcane issue, you should simplify while still stressing the uniqueness of the problem.
- Within limits set by the reporter, you should make some effort to guide the interview. After deciphering the question, try to lead the discussion to make your own point of view clear.
- You should speak loud, clear and with calm voice in a language that your high-school graduate nephew can understand. Jargon words are prohibited, including such common terms in the economics lexicon as "marginal", "elasticity", and "externality". In many cases, trying to explain your results to a university public relations officer or a journalist, just like talking to an undergraduate class, is a good way to check how well you understand your own work at a basic level. If nothing else, this can allow you to catch some simple mistakes in logic or, more often, can help you to realize the extent to which your ideas accord with commonly held views of the issue. A good way to approach the topic is to have a one- or two-sentence summary of your research in mind before you begin talking with journalists.