

# Research methodology and effective writing

## Lecture I - Writing in economics

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### Suggested reading:

- Dudenhefer, P. (2009). A guide to writing in Economics. EcoTeach Center and Department of Economics, Duke University.
- Neugeboren, R. H., & Jacobson, M. (2005). Writing Economics. Harvard University.
- Johnson, J. B., Reynolds, H. T., & Mycoff, J. D. (2015). Political science research methods. Cq Press.
- Friedman, S., Friedman, D., & Sunder, S. (1994). Experimental methods: A primer for economists. Cambridge University Press.

# Economics and writing

- What does writing have to do with economics?
- Economists, as much or even more than other scholars and analysts, write.
- Economics articles, especially empirical papers, consist mainly of text, not equations or tables. Writing is as much a part of economics as are models and data sets.
- Writing is a highly complex cognitive and scholarly process. It is sophisticated, unpredictable, and time-consuming.
- But although writing a paper can be stressful, it can also be one of the most intellectually exciting, satisfying, and challenging enterprises you will undertake as a student.

# Writing is thinking

- We write to learn what we want to say.
- For many inexperienced writers, writing, they imagine, is something you do only after you figure out what you want to say. Students often see writing as the final activity of a linear process, that happens after you have conducted your research and formulated your ideas.
- But in reality, researching and thinking and writing are all of a piece. Start writing something—anything—before you have finished your research.
- Write even before you know what you want to say. Indeed, it is often only by writing that we work out and discover what we truly want to say and how to say it, or if what we thought were brilliant, lucid arguments are actually only confused and ill-formed ideas.

# Writing takes time

- Writing a paper—a good paper—takes time. By a good paper, I mean a paper that fulfills its potential, meets the expectations established by you, the writer, and, most important, communicates with its intended reader.
- You cannot pull an allnighter and write a good paper, a paper that represents the best that you can do.
- In addition to requiring lots of time, writing a paper involves a recursive process: one step forward, two steps back, and certain steps—drafting, researching, revising, outlining, etc.—are repeated and revisited.
- Start early. That means today.
- Make a list of possible topics. Compile a bibliography of books and articles on your topic. Take notes as you read. Keep track of your sources as you work out your ideas on paper. Do not rely on your memory!
- Formulate a tentative thesis. Write what you know, and what you would like to know, about your topic.
- Understand the need for information. Information comes primarily from two sources: thinking and research. If you don't know what to write, you have not thought enough about your topic or researched it enough—or both.

# Three major parts of any paper - beginning, a middle, and an end

- In the beginning, you want to introduce your topic and indicate the purpose of the essay.
- The middle of your paper should be the longest part; it is where you fulfill the expectations you raised or keep the promises you made in the introduction.
- The middle is where you actually do what your introduction says your paper will do. If your paper states a thesis, the middle should be used to support the thesis, by presenting supporting evidence, usually in ascending order of importance.
- The end, or conclusion, is usually short. Whereas introductions often end with the thesis statement, conclusions often begin with the thesis statement.
- The conclusion is where you want to restate your main point or main purpose. Depending on the assignment, your conclusion can be used to suggest lines of further research, to call readers to action, or to direct attention to larger issues. Conclusions often refer back to the introduction as a way of stressing the main point of the essay.

# Finding a niche and making a contribution

- Most research projects are extensions of or complements to the “literature,” the existing body of published articles (and books) on a particular subject.
- Whether it is “improving” an existing model, using richer data, or asking a slightly different question, most research in economics operates on the margins of an existing body of work.
- As economists become more and more familiar with a body of literature, they begin to understand ways in which the existing studies can be improved or extended. They begin to notice opportunities to “make a contribution” to the literature.

# Conducting literature review

- Many students begin researching a topic in economics by searching Google Scholar or some other general electronic database. There is nothing wrong with that method if one has an understanding of the research on the topic as a whole.
- Who are the leading authorities and what are the leading journals that deal with the subject? What have been the important issues and points of dispute? What important questions remain to be addressed? In what direction is research on the topic going? Do sufficient data and models exist?
- Fortunately, there are resources that will help you answer those questions. There are several economics encyclopedias, for example, whose entries are often reviews of the literature; they outline a topic as an area of economic inquiry and research.
- In addition to defining the topic, the entries often take readers on a tour of the important articles and point out the significant issues as they have evolved over time. They usually end with a substantial bibliography.
- The best online database that deals solely with economics is EconLit, which is the electronic bibliography of the American Economic Association. I would suggest searching it first rather than a more general-interest database such as Google Scholar.

# Making Economic Arguments

- Economic arguments address an economic topic. They use assumptions, concepts, and theories to explain or understand the phenomenon in question.
- The assumptions, concepts, theories are, the ones found in your college textbooks:
  - the assumption that people respond to incentives,
  - the assumption of rationality
  - the law of supply and demand
  - the problem of scarcity and opportunity costs
  - the marginal principle
  - the notion of spillovers or externalities
  - ...
- Importantly, economic arguments use certain kinds of evidence to support hypotheses. Economists prefer:
  - evidence on what people actually do, rather than on what they say
  - large numbers of observations
  - random samples

# Structure of an empirical paper

- An empirical paper tests a model with data. It is the kind of paper that applied economists, the largest group of subspecialists in the discipline, typically write.
- No matter what your field or topic, there is a fairly standard set of things you want to accomplish in the paper:
  - Abstract: A brief summary of the whole paper
  - Introduction: Pose an interesting question or problem and explain your motivation
  - Literature Review: Survey the literature on your topic
  - Methods/Data/Design: Formulate your hypothesis and describe your data
  - Hypotheses / Theoretical predictions
  - Results: Present and interpret your results with the help of graphs and charts
  - Discussion: Critique your method and/or discuss any policy implications
  - Conclusions: Summarize what you have done; pose questions for further research
  - List of references

# Writing Introduction

- If there is one section of an economics paper that seems to give writers the most trouble, it is the introduction. Every economics paper contains an introduction, a section that brings your reader into your paper.
- A good introduction gives your reader a context, a frame, for ordering and understanding the information you present in the body of your paper.
- Introductions should normally answer the following questions:
  - What is the purpose of the paper? That is, what does the paper “do”?
  - What important economic question does it try to answer, or what issue does it try to shed light on?
  - What contribution does the paper make, and how does it relate to previous work on the topic?

# Writing Introduction

- Move 1: Establish a research territory. Introduce your subject and indicate its importance. Why should we care about it? Why is it important to economics, or to human welfare?
- Move 2: Review the literature. Place your own study in the context of other studies, in a way that will highlight your study's contribution.
- Move 3: Establish a niche. In this move, you identify a gap or problem or deficiency in the current literature. It will be the gap or problem or deficiency that your study will address.
- Move 4: Occupy the niche. In Move 4, you state your study's purpose, what it will "do," what it will contribute. This is in direct response to the gap etc. you identified in Move 3. In this move, you may also state your main findings.
- It is not necessary to make these moves in the order just given. Some articles, for instance, begin with Move 4; think of the many articles that begin, "This paper will . . ."

# Writing Literature review

- So just what is a literature review? First, let me say what it is not. A literature review is not just a description of a series of papers; it is not a mere catalog or annotated bibliography of papers written on a subject. A series of paragraphs, each recapping or summarizing a particular paper or set of papers, in no particular order, does not a literature review make.
- Instead, a literature review has much more shape and purpose than that. A good literature review is an account of previous research that is carefully constructed to tell a particular story. The story is usually this: Here is what previous researchers have done on my subject; here is something unsatisfactory or incomplete or troubling about that research; here is how I am going to redress what is unsatisfactory or incomplete or troubling about that research.
- A literature review is, in a sense, a sales job. What is it selling? The value added by the present paper. Why should the present paper take its place among the existing literature? What does it do that is, in its own small way, different from what other papers have done? Those are the questions that should be answered in a literature review.
- A review should do at least four things. First, it should analyze critically, and organize, a body of research. Second, it should put your own study in the context of other studies. Third, your review should highlight your study's contribution. And fourth, it establishes your scholarly "bona fides" by showing you have done your homework.
- Here are some guidelines to consider when writing your literature review. Begin with comments about the body of research as a whole. This should be your assessment of the literature as a whole. Have there been many studies, or few studies? Do the studies focus on methodological issues, or data issues, or some other issue? Have the studies been mostly empirical, or theoretical, or both? Have they focused on a similar set of questions? Is there a general consensus on the major issues in the literature? What are the landmark studies? Who are the leading authorities?
- Begin paragraphs with a sentence that puts in explicit context what follows. Don't leave it to your reader to infer the point you are making. Explain the merits, and the shortcomings, of the existin studies. Be explicit about this. Do not leave it to your readers to infer this information.

# Describing Data

- Description of data, models, methods and result is where you should actually start when writing a paper. We do the empirical work first and then write a narrative around selected tables and figures.
- We gradually expand the paper outwards in both directions towards the introduction and conclusion. Those two sections are written last: it's impossible to write them until the author knows what is inside the paper.
- We will discuss analysis more in the upcoming lectures. For now, it is important that you keep in mind that in any case you have to:
  - Identify the data source.
  - Describe the data source.
  - State the strengths and weaknesses of the data source.
  - Explain any computations or adjustments you made.
  - Describe your model/method verbally and also using equations. Describe variables too.

# Describing Model/Method

- Economic analysis largely concerns the construction and testing of models. Models are abstract, simplified representations of an economy, of a function (such as a utility function), of a decisionmaking process, and so on; they are expressed in a combination of words and mathematics.
- If the paper presents a simple regression, the model might simply be the regression equation.
- The description should begin verbally. You should also indicate the source of the model. Did you construct it yourself, or, as is more common, was it borrowed or adapted from someone else?
- You should define your variables and lay out all the assumptions you make in your model, as well as explain the intuition behind those assumptions. In your models, the notation should either (a) follow the standard notation in the literature or (b) be very self-explanatory.
- In writing about your model, you present your assumptions about the economic agents you will consider and lay out the decisions and information they have available to them. On what basis do they make decisions? When are those decisions made—all at once, or in a series of steps or moments? What is the optimal way of acting based on the circumstances you have constructed?
- Models often contain constants or “parameters” whose values need to be estimated. How will you estimate the parameters? What technique will you use?

# Reporting and interpreting results

- The results section of an empirical paper is usually the longest. In an empirical economics paper, you test a model with data; in the results section, you report the outcome of that test. How Many Results Should I Report? Less is usually more. A common mistake made by virtually all novice researchers (including graduate students) is to include every parameter estimate from every regression specification that was run. However, the reader will get either lost or bored. A good general rule is to focus on the following:
- What are the answers to your research questions? What is the relationship between your dependent variable and the several independent variables you have chosen to examine? Does the model “fit” the observed data?
- In most cases, when you report the results of your analysis, you are at the same time referring the reader to a table in which the results are presented. When you present information in a table, there are at least two expectations that you need to fulfill. The first is that you explicitly introduce the table.
- The second expectation is that you should, in your narrative, identify the main points made by the data in the table, the points that most closely correspond to your research question. The table cannot, and should not be expected to, “speak for itself.” Rather, you should explicitly tell your readers the important realities that the data show.
- You may also wish to point out any counterintuitive results or results that are especially large or small. Please note, however, that you are not expected to comment on or restate every piece of information that a table contains; but you are expected to point out to your readers the “meaning” or your interpretation of the data in it. What do you most want your reader to take away from the table?
- When writing up your empirical results focus only on what is important and be as clear as possible. You may feel that you are repeating yourself and that the reader may be offended at how closely you are leading him or her through your tables and graphs but, to paraphrase John Kenneth Galbraith, both smart and dumb readers will appreciate your pointing things out directly and clearly. The dumb readers need the help, and the smart ones will take silent pleasure in the knowledge that they didn’t need your assistance!

# Writing Discussion

- Many of the topics that interest economists have real world policy implications. Your own research may present strong findings about the effects of existing or proposed policies.
- While this is fine, you should not conclude that “this should be done” or “this should not be done.” You should avoid making value judgments and rely instead on economic facts and analyses.
- Even when you have reached your own conclusions about which policy is desirable, your reader should be able to consider the facts and make the policy decision for himself or herself.
- In the discussion of your result, you should also point out the limitations of your research, say the relatively small number of observations you have or the simplicity of the functional form you have tested. In an undergraduate term paper such limitations are expected.
- In general, it is better to show your instructor that you understand the limits of your method than make broad claims you do not support. You can also suggest questions or alternative approaches for further research.

# Writing Conclusion

- Just as introductions are often written after the body of the paper has been developed, so are conclusions. Your conclusion should function in tandem with your introduction. Indeed, conclusions are, in a way, upside-down versions of introductions: whereas in introductions you usually build up to your thesis statement, in conclusions you usually begin with it.
- Conclusions recap what has already been said in the paper. You may use your conclusion to restate your research question or purpose and to restate your principal findings. You may discuss the policy implications of your results. You may identify ways in which your present project can be extended or improved.
- The conclusion is your chance to sum up your argument in a clear and concise manner, and in a way that does not simply repeat, word for word, what has been already said. It is also the place to suggest other lines of inquiry or broader implications of the topic and findings that you didn't have the space to explore.
- The conclusion helps answer the question, "So what?" That is, why should readers care? Why should they find your subject important?
- I would suggest reading your introduction and your conclusion side by side. They should be consistent with one another: the thesis or question or conclusion you state in your introduction should be the one you state in your conclusion.
- But the conclusion should be more than just a mirror of the introduction. Consider that whereas the introduction speaks to the contents of the paper that are actually to come, the conclusion should speak more to issues slightly beyond the paper. In other words, while looking back at the paper just presented, the conclusion should also look ahead.

# Writing Abstract

- Most economics articles contain abstracts, a paragraph-long condensation of the main elements and features of a given paper.
- Abstracts are by definition brief—usually 150 words or less.
- The content of an abstract can vary, but they often state what the paper does, the data and methodology used, and the principal findings.
- What you choose to put in your abstract should depend on the contribution of your paper. If you had only 150 words to say something about it, what would you say?
- What you choose to include in an abstract depends on your interpretation of the paper's important or interesting features and its contribution or what distinguishes it from other papers.

# Citations and references

- Citing the sources you use when you write a paper in economics is a matter of honesty, credibility, and courtesy. When you indicate to your reader that a fact or theory derives from a source, you are being honest by giving credit where it is due, i.e., not falsely claiming to have originated the fact or theory yourself.
- You are gaining credibility by showing your readers that you've done your research. And you are behaving courteously by letting your readers know where they can find the same information, in case they want to do further reading on the topic.
- When deriving a theory or fact from a source, cite the source in the text of your paper. Your in-text citation will contain the name of the author(s) and the year of publication. The way this information is formatted depends on (1) whether you wish to draw attention to the source and (2) whether you have referred to the author(s) previously in your paper.
- If you wish to acknowledge the source of an idea explicitly, cite the name of the author(s) in the body of your sentence and place the publication date in parentheses. The first time you cite the name of the author(s), provide both first and last names.
- When readers want to know more about a source – what its title is, where it was published, when it appeared – they will look at your list of references at the end of your paper. The bibliographical information there makes it possible for readers themselves to track down the source.

# Tips and tricks

# Choosing a topic

- Choose a topic that interests you but from which you can still learn much. Not too broad, not too difficult. It should also have some interest for the average reader.
- When you have a topic, start brainstorming. Write down all the possible answers to your question. Write down all the information, opinions, and questions you have about your topic.
- Brainstorming will help you see:
  - what you already know
  - what you think you know
  - what else you need to find out about your topic
- Writing things down also ensures that you will not forget your great ideas later.

# Keeping track of your sources

- Your first encounter with your sources should be carefully recorded: you should document your findings and give proper credit to the sources you use. Take down the complete bibliographic record (authors, title, journal, year, pages, etc.). Software (e.g., Mendeley) can be very helpful.
- Keep a file of notes on each article you read. This should include the main points of the article and any important results. Make sure to clearly set off direct quotations by using quotation marks. Avoid paraphrasing, because it will be difficult to separate the original wording from your own later on. You can add your own comments afterwards, but it is important to keep an accurate record of your first encounter with the source.
- Taking good notes will accomplish several things. First, you will have all your references at hand when you are writing the paper, so you won't have to go searching for a quote or chart when you're in your dorm room and the article you need is in the library. Second, you will leave a clear record for your readers to follow, so that they can go to the originals for more information or to see the facts for themselves.
- Finally, you will leave signposts for yourself so that you can know where you have been and separate your own ideas and results from those you found in your sources.
- This will help you avoid plagiarizing, which can happen inadvertently as your own ideas blur into what you have "learned" from others. The unacknowledged use of another writer's words or ideas is plagiarism, whether intended or not. Poor note taking and sloppy documentation mechanics can lead to plagiarism, but such mistakes are easy to correct and avoid.

# Purpose

- Informative purpose.
  - In this type of academic writing, the purpose is to explain possible answers to your question, giving the readers new information about your topic. You do not push your viewpoint on the readers, but rather try to enlarge the readers' view.
- Analytical purpose.
  - In such academic writing, the purpose is to explain and evaluate possible answers to your question, choosing the best answer(s) based on your own criteria.
- Persuasive purpose.
  - Here the purpose is to get your readers to adopt your answer to the question. So you will choose one answer to your question, support your answer using reason and evidence, and try to change the readers' point of view about the topic.

# The hook

- You can't write a good introduction until you know what the body of the paper says. Consider writing the introductory section(s) after you have completed the rest of the paper, rather than before.
- Be sure to include a hook at the beginning of the introduction.
- You should draw the reader in and make them want to read the rest of the paper.
- Do not overuse facts without rendering an opinion or any analysis.
- Do not repeat similar ideas. Your audience will notice that you are not saying anything new or fresh.
- Do not refer to a dictionary while defining terms. Avoid beginning a paper with a dictionary definition such as the following: 'Webster's Dictionary defines "joy" as —great pleasure or happiness.' This approach to an introduction is cliché.

# Achieving clarity

- The goal of your paper is not to turn a clever phrase, hold the reader in suspense, or create multi-layered nuance, but rather to achieve clarity.
- Good economics papers just don't "happen" without time spent on preparation; you cannot hide a lack of research, planning and revising behind carefully constructed prose.
- Start presenting the facts motivating the question. Next explain the existing theories behind this relationship. Then clearly and simply state your question. Next cite more of the related literature. Finally propose how they seek to answer this question.
- Clear writing is easy to read but hard to write. It rarely occurs without considerable effort and a willingness to revise and rework. Here are some additional tips to achieving clarity.
  - Use the Active Voice
  - Put Statements in Positive Form
  - Omit Needless Words
  - Generally Stick to One Tense
  - Edit yourself, remove what is not needed, and keep revising until you get down to a simple, efficient way of communicating.
- Do not worry about these while you are drafting a paper. When you are drafting, the aim is to get words and ideas down, period, without worrying about being correct or elegant or accurate. Treat these principles as tools to use when you or your readers think a sentence or passage could be improved. If there is a passage that you or your readers have trouble with, then just maybe one or more of the principles can help you out.

# Easy to read

- Make your paper easy to skim. Your readers are mostly busy and impatient. It is quite unlikely that the reader will ever read the whole article from start to finish. Instead they skim.
- Say explicitly what are you trying to achieve. This essay will (first) examine... outline... address... demonstrate... argue... focus on... ...and will then/attempt to ascertain... establish... clarify... show... judge... prove...
- The following are important aspects of all body paragraphs:
  - A clear topic sentence
  - Specific evidence or supporting detail
  - Transitions between sentences and paragraphs
  - Examples
  - Unity and cohesion
  - A concluding sentence that ties the evidence or details back to the main point and brings the paragraph to a close
- Ask someone who is not of your specialization to proofread identify whether your paper is easy to understand for all.

# Clear writing

- Keep your complete grammatical subjects short - readers like to get past the subject to the verb as quickly as possible. Therefore, as much as possible, structure your sentences so that they have complete grammatical subjects that are short.
- Express key actions as verbs - that may sound obvious, but we often do not express key actions as verbs. Rather, we often “hide” key actions in abstract nouns or, as they are also called, nominalizations—noun forms of words that can also be verbs.
- Begin sentences with “old” information. Clear writing is writing that flows, and the best way to create flow is to begin sentences with old information. Old information is information— names, words, phrases, and their equivalents—that your reader has already encountered or can reasonably anticipate; it is information that refers back to something already stated.
- End sentences with new information. Just as it is wise to begin sentences with old information, it is wise to end them with new information. New information is just that: information that your reader has not encountered yet or could not anticipate. Generally speaking, new information is the most important in a sentence; it thus should receive the most emphasis, and the place of most emphasis in a sentence is at the end.
- Make the subjects of your sentences the person, place, or thing that the sentence is about.
  - 1. Gary Becker was awarded the Nobel Prize for economics in 1992.
  - 2. The 1992 Nobel Prize for economics was awarded to Gary Becker.
  - 3. The year 1992 saw Gary Becker win the Nobel Prize for economics.
- If I were writing a biographical note on Gary Becker, sentence 1 would be best. If I were writing a story about the Nobel Prizes awarded in 1992, sentence 2 would be best. And if I were reviewing the events of the year 1992, I’d pick sentence 3.

# Designing Tables

- Tables are excellent for presenting a large amount of data in a concise, easy-to-read form. A well-designed table can communicate in brief what may otherwise take several paragraphs if presented textually, and can do so more clearly.
- The main parts of a table are the following.
  - Table number. Every table should have a number, and the tables should be numbered consecutively throughout a document.
  - Title. The title should be brief but descriptive. It should not be a complete sentence, but a collection of words that indicate the subject of the table.
  - Column heads. Every column of information should have a column head, a word or phrase that identifies the information.
  - Stub. The stub is the very left-most column in a table.
  - Footnotes.
  - A source note that identifies either the source of the data used in the table or, if the table was reproduced without change from a published work, the published work (it is possible that both things need to be identified).
- Rules. Rules are the lines that visually separate the table into parts. In general, only horizontal rules should be used. Vertical rules may in some cases be necessary, but current publishing norms require that they be avoided whenever possible.
- Not all data need to be presented in a table. Sometimes there is simply not enough information to justify a table. A good rule is that a table should contain at the very least two columns and at least six cells of information: two columns and three rows, or three columns and two rows. (Please note: the left-most column, called the “stub,” does not count as a column for this purpose.)
- The notes to your table should be extensive enough so that the reader does not have to look back at the text to understand what is being presented. Don't worry about repeating yourself in the text and the notes – this will often be necessary so the reader can understand your table without looking back at the text. You should present enough information in total so that a researcher could replicate your results. For very detailed projects, this may require a data appendix.

# Writing about Numbers

- Economics writing also involves numbers.
- Establish the context. It does no good to report that one million teenagers dropped out of high school in 2006. How does that number compare with numbers in other years? How does it compare to the total population of high school students? What other contexts might be needed to fully understand the number?
- Report and interpret. When you write about your findings, you should do more than just report numbers. You should also interpret the numbers. What do they mean with respect to your thesis or research question?
- Use magnitudes that make sense or are easy to comprehend. The U.S. national debt is over twelve trillion dollars. In most contexts, that number is too large for anyone to comprehend. But by putting it in per-capita terms—almost forty thousand dollars a person—the number may be better understood.
- Specify the direction and magnitude of an association. Suppose you find that education is associated with voting. Yes, but in what direction? Are people more likely to vote as their education goes up? Or the opposite? Make sure you specify the direction of any association you report. Similarly, specify the magnitude of the association. By how much does the likelihood of voting increase (or decrease) as education increases by a certain amount?
- To sum up the advice about writing about numbers, keep in mind that numbers cannot speak for themselves. A statement such as “The average American earned \$38,500 in 2007” does not mean much at all on its own. Numbers must be put in context and interpreted and expressed in the proper units and magnitudes.

# Examples

- Make sure to support your statements with examples.
- Examples are important in your academic writing for proving your statements or providing better understanding to the reader.
- You can provide statistics, quotations or narratives as examples.
- If you use examples from published sources or a corpus, make sure you provide a clear reference to the source that will be discussed further.
- Beware of generalizations.
- Generalizations can create inaccuracies. Use of the words “always”, “all”, “every”, “everyone”, “many”, “never”, “nobody”, “none” can create inaccurate statements, and even factual errors. When you make a general statement, make sure it’s true in EVERY case.

# Four questions to answer in the abstract

- Abstract is a summary of a body of information; it expresses the main claim and argument of a paper.
- Questions that an abstract answers:
  - Why did you do this study or project?
  - What did you do and how?
  - What did you find?
  - What do your findings mean?