

## Preparing Papers and Theses: A Guide for Economics Students

Former Dean of the Faculty Martha Crunkleton once said of the senior thesis:

"Some Bates Trustees told me recently that they thought the qualities of persistence, independence, and autonomy of judgment are the real qualities of mind that a student develops while writing a senior thesis, and that those are the qualities they look for in future employees. They don't want someone who's going to come to them every five minutes and ask, 'What do I do now?'"

The senior thesis is an opportunity for a student to pursue a topic in great depth, perhaps to learn more about it than anybody else on campus, and be a kind of expert. They have to do that as an independent scholar; they must identify resources, identify the problems they're trying to solve or address, and then do the work. And it's very lonely, it's very intense; it involves the struggles of personal discipline and scheduling. It can also involve a tremendous satisfaction, of seeing what one has been able to do over than year. I think those are central intellectual experiences for your students. ("An Interview with Martha Crunkleton, Dean of the Faculty," *Bates: The Alumni Magazine*, Spring 1992, p. 10)

Repeated surveys of senior economics majors and alums verify the importance of the senior thesis. Virtually everyone felt that the senior thesis was one of the more valuable parts of his or her Bates education. Indeed, many felt the thesis was an exhilarating capstone to their four years here, one that allowed them to meld both theoretical and empirical work into a finished product, a product that was theirs and not the advisor's.

To help you prepare for your senior thesis, all 300-level economics courses require a 12- to 20-page research paper, or some other substantial writing assignment. Not only will you build experience in writing, but one of these economics papers could serve as the beginning of your senior thesis research.

This guide is intended to help you with all aspects of your writing in economics. Good luck!

### Choosing Topics for Term Papers and Thesis

Selecting a topic is the first and perhaps most important step in writing a research paper. *One of the better ways to choose a topic* is to review material you have already studied to discover what unanswered questions you are interested in pursuing. Your professor can help you develop sound topics, ones that are sufficiently narrow so they can be tackled and sufficiently broad so that they are interesting. A list of past economics theses is available from your advisor. You may get ideas of what constitutes a successful thesis by looking at some of them. They can be borrowed by asking your advisor.

For a **thesis**, a good starting point might be found in a term paper or project you have completed in an upper level course. Most theses fall into one of the following categories: empirical research, library research, and an original theoretical presentation.

1) Empirical research focuses on testing one or more specific hypotheses. You may want to pursue a topic you have written about for a 300-level course. There may be many issues, both theoretical and empirical which could be explored more fully. Alternatively, you may be interested in determining whether the empirical results found in one of your 300-level course readings can be supported using more recent data. For example, one article reported that in the 1970s investment was significantly related to changes in sales, but not profits; did this relationship still hold after 1980?

2) Library research involves a review and creative integration of available literature, directed towards a specific question you are trying to answer on the basis of published materials. The focus should be on the present state of knowledge in a particular area, any apparent contradictions in empirical findings, and areas where more work is needed. For this type of thesis, review articles in the *Journal of Economic Literature* and the *Journal of Economic Perspectives* are most useful.

3) An original theoretical presentation is a well-reasoned set of propositions which provides a more accurate description of economic relationships than is available from existing theories. You may find it useful to draw upon courses in other departments for ideas that might make economic theories more useful and timely.

**A note of caution:** Seniors sometimes wish to write on a topic that, although interesting and important, is in an area in which they have not taken any courses (e.g., economics of the arts). Consequently, they must spend a considerable amount of time learning about the field before they can begin to apply analytical skills acquired in economics courses to the question at hand. If you choose to undertake research in an unfamiliar area, preparatory work during the preceding summer or semester is essential.

A **term paper topic** is normally more modest than a thesis topic. Nevertheless, it should have economic substance, a unifying hypothesis and analytical content. It should not just be a ramble through some loosely related ideas and facts.

## Writing the Thesis Proposal

The thesis proposal is a detailed discussion of the thesis topic. It should be given to your thesis advisor during the first week of the thesis semester. The thesis proposal consists of 4-5 typed pages, *plus* a preliminary timetable and a preliminary bibliography. A good proposal will include the following:

1. A clear, concise statement of the thesis topic, preferably in the form of a hypothesis which you hope to test or a question you hope to answer.
2. A statement of why the topic is worth pursuing.
3. A discussion of what literature deals with the topic.
4. A description of how you plan to test your hypothesis or answer your question. Data sources are important, and you will need to identify the type of data needed to test your thesis.
5. A bibliography that is divided into two parts: works you have consulted, and those that you plan to consult. No doubt, your term paper or thesis will evolve as you go along. The final product may be quite different from your initial thinking on the topic, because research done during the semester will stimulate you to think about new facts, theories and explanations. For this reason, the bibliography you begin with should not be treated as the final one; rather, consider it a starting point for further explorations into the field.
6. The preliminary timetable should list each chapter, its topic, and the date you intend to finish writing it.

Even though you do not have to turn in a long written proposal when doing term papers, it is helpful to go through the same planning process as you do for a thesis.

### **Establishing a Timetable**

Deadlines have a habit of sneaking up on almost everyone. While most people are fairly adept at meeting term paper deadlines, senior theses pose more of a problem because of the magnitude of the task. Theses are due on the last day of classes so a student has only 13 weeks, including vacations, to complete it. Thus, it is important to set a tentative schedule for writing your thesis. A typical thesis might have five chapters: introduction, conclusion, and three substantive chapters (e.g., literature review, theory and hypothesis, empirical analysis). A writing schedule that leaves some margin for delays would be:

end of 1st week - Turn in thesis proposal

end of 4th week - Turn in first substantive chapter

end of 7th week - Turn in second substantive chapter

end of 10th week - Turn in third substantive chapter

11th week - Revise chapters; write introductory and concluding chapters

12th week - Proofread, make corrections, and hand in completed thesis

Different theses may require different schedules. You and your advisor should tailor a schedule to fit the needs of your research. Most thesis advisors require students to meet with them weekly in order to keep track of progress and problems. You can utilize this time to keep your advisor posted on how your thesis is going and to discuss any bottlenecks you are encountering.

If you use a computer for writing your thesis, allow time to print it. There is a long backlog of jobs on the laser printers at the end of each semester.

## Library and On-Line Resources

Once you have narrowed your topic, you should read the excellent "Ladd Lamplighter" guide, *Economics: A Guide to Reference Sources*. This guide, prepared by Laura Juraska (Social Science Reference Librarian) and Sandy Groleau (Government Documents Librarian), is available at the Library. Depending on your topic, you may also wish to consult some of the other library guides, and the handouts for other subjects such as Political Science, etc.

For your literature review you should read widely. One approach is to find the most recent publication on your topic and then look up its references to earlier books and journal articles. A more systematic approach is consulting the various indexes on the economics literature. Many indexes are now available on the Bates computer network, CD-ROM workstations and mainly online at the Library.

[EconLit](#) is a major source for economics articles. It lists everything published, and in addition, gives abstracts for important articles and books. The bulk of the references are to professional publications by economists. (*EconLit* is also available in print form in the quarterly *Journal of Economic Literature*. It includes a few articles in each issue that survey various fields within economics.)

[PAIS International](#) is a selective list of the latest books, periodical articles, government documents, pamphlets, microfiche, and reports of public and private agencies relating to business, economic and social conditions, public policy and administration, and international relations.

The [GPO Index](#) lists government documents that cannot be found in the card catalog or standard indexes. It lists government publications published from 1976 to the present. See the *Monthly Catalog of U.S. Government Publications* for publications prior to 1976.

[Lexis-Nexis](#) is an on-line full-text resource with extensive coverage of national and international news, as well as company information (newsletters, business journals, etc.)

Available on networked PC's throughout the campus. Laura Juraska's one-hour lab on Lexis-Nexis is a must before you try to use this service.

Other indexes include: [Expanded Academic Index](#) (access through Library's on-line catalog; covers both scholarly and general interest periodicals for the last five years); and [Population Index](#) (good for topics in economic demography). Indexes for other social sciences such as sociology and political science may be helpful if your topic is interdisciplinary. Consult the reference librarians for more information on these.

In addition to using the indexes, you may be able to identify a few journals that are especially relevant to your topic. Browsing through recent issues may be an efficient way to locate useful articles.

Interlibrary loan enables you to obtain books and articles not in the Bates collection. An interlibrary loan takes time; do not leave your requests until the last minute and then expect to read the item in the next day. Books obtained on interlibrary loan are free and photocopies are 10 cents per page.

In your research you should avoid relying on sources like encyclopedias, popular magazines (like *Newsweek* or *Time*) and most newspaper articles, except when these sources contain original material or facts not available from other sources.

The Internet, and especially the World Wide Web, are rapidly expanding sources for researchers. Bill Goffe's [Resources on the Internet for Economists](#) is a good place to start looking. It has many links to other sites.

## Empirical Work

The Economics faculty expects that papers in economics (except for purely theoretical ones) will be supported by data. This may range from the appropriate presentation of tables and graphs to the use of regression analysis or other multivariate statistical techniques. Generally, you will use some data to introduce the reader to the subject. (For example, a paper on the use of monetary aggregates may start by showing differences in the time series for M1, M2 etc.) In addition, you will use data to dissect the relationships among the variables you are considering in your papers. You should refer back to your statistics, and econometrics courses for information on the specific techniques of data analyses that are appropriate in different circumstances.

You need to document data sources fully and describe the exact definitions of your data. For example, if you use data on interest rates, state what type of interest rate(s) you have employed (90-day Treasury bill rate, prime rate, federal funds rate, 20-year corporate bond rate, etc.) and the specific source.

A major statistical source for the United States is the Census Bureau's annual *Statistical Abstract*. In addition to its hundreds of tables, it gives detailed references for further investigation in the publications of individual government agencies. For international data, major sources include the publications of the United Nations, the World Bank, the International Monetary Fund, the OECD, and the International Labor Organization.

Many data sets are available at Bates on CD-ROM or online, and are appropriate for use in senior theses, and advanced term papers. Various faculty members have data sets such as: the National Longitudinal Survey, the Panel Study of Income Dynamics, Maine Hospital Discharge Statistics, National Child Care Survey, and China's Ministry of Labor Statistics. Recent corporate data from Moodys are now available online. The Library has government data sets like the 1990 Census 1/1000 sample. The formats of the data sets are sometimes complex, so allow plenty of time to get them online before you start your analysis.

It is also possible to acquire data sets from other sources. Bates belongs to the Inter-University Consortium for Political and Social Research (ICPSR), whose archives contain hundreds of data sets that can be specially ordered. The Library has several books that list commercially available data sets (for example, the *Gale Directory of Databases*). Some data sets are available free of charge on the Internet. If you find you need to order data, talk to your professor early in the semester, so that you can obtain the data and use it in time for your term paper or thesis.

## Writing the Research Paper

Good writing is as important as good research. If you cannot write well, the contribution of your research may be lost to everyone except yourself. Several of the books listed at the end of this guide will help you improve your writing. In addition, the [Writing Workshop](#) is a good source of advice and constructive evaluation. Once you have the substantive information for your paper, the four critical elements of writing are organization, style, documentation, and revision.

**Organization.** A research paper includes the following components: first, an introduction which states the purpose of the research; last, a conclusion describing what has been determined; in between, several different types of material such as background facts, literature review, analysis, policy recommendations, projections, and other relevant material. In a thesis, the components are separated into chapters; in a term paper, they are divided into sections. The use of headings and subheadings within chapters or sections makes it easier for the reader to follow the presentation.

**Style.** Strive for a clear well-organized presentation of your facts, theories, and analysis. The mainstay of economic writing is the simple declarative sentence. Avoid complex constructions, hard-to-follow run-on sentences, and the royal "we" (unless you are royalty or plural).

**Documentation.** Documentation is essential in research papers since you want to distinguish for the reader other people's contributions from your own.

Direct quotes must be enclosed within quotation marks and properly attributed to the author. (Longer quotes may be set off in an indented paragraph instead of in quotation marks.) All paraphrasing must be identified and properly attributed to the original author, e.g., "Feldstein (1981, p. 101) argues that..."; or, "the following paragraph draws heavily on the analysis of Madden (1977, pp. 75-83)." Failure to do so is plagiarism and must be taken to the Student Conduct Committee.

Specify data sources as precisely as possible so that the reader can probe further into your topic if she/he desires. In particular, if you include a table or graph from another source in your paper, state the source (including page number).

Implicit in this discussion of documentation is the principle that you should always state the source of any prior writing you are using for your research paper. This applies even to your own work. For example, if your thesis expands on research done for a term paper, you should reference your earlier work appropriately so that the specific contribution of the thesis is clear. Occasionally students will want to prepare a single paper for two purposes, e.g. a joint term paper for two courses, or a joint thesis for a double major. Before beginning, you must consult with both instructors, so that the concept of the paper is clear to all, and the separate contribution for each instructor is clearly defined.

**Documentation -- Format.** Most Economics faculty strongly prefer the *author-date-page* method of documenting sources. This method is described in detail on page 16 of the Bates College *Statement on Plagiarism and A Guide to Source Acknowledgments*. The following are examples of appropriate citation of references within your text:

Several writers have measured the costs of market power (Scherer, 1970, pp. 400-411).

Scherer (1970, pp. 400-411) reviews studies of the costs of market power.

Page numbers are required for all exact quotes, and citations of statistics. Page numbers are highly desirable in all other citations. When you use this citation method, the full bibliographic information on each source must appear in your bibliography. If Scherer published more than one reference in the same year, list them as "Scherer (1970a)" and "Scherer (1970b)," both in your text and in the bibliography.

The use of the author-date-page method simplifies reference in the text. Footnotes are used for substantive comments only and not for reference. They may be typed either at the bottom of each page or as endnotes on a separate page following the entire text.

With the author-date-page method of citation, the bibliography should list the year of publication immediately after the author's name for each item.

The bibliography should include only materials that you have read, with one exception. For example, when you write: "Tobin (1982, p. 32) shows that the evidence of Smith (1978) cannot be believed because of flawed data collection methods," you need to include the full reference to Smith's article in your bibliography as follows:

Smith, J. P. 1978. "A New Approach to Economics." *Economica*, 49(4), pp. 302-312. Cited in Tobin (1982, p. 32).

The last phrase distinguishes Tobin from the works you have read personally.

Here are some examples of the bibliography format you should use with the author-date-page citation method. (Examples for books appear at the end of this guide)

Journal article: Baumol, William J. and Edward N. Wolff. 1981. Subsidies to New Energy Sources: Do They Add to Energy Stocks? *Journal of Political Economy*, 89(5), pp. 841-864.

Article in edited volume: Cagan, Phillip. 1956. The Monetary Dynamics of Hyperinflation. In Friedman, Milton (ed.), 1956. *Studies in the Quantity Theory of Money*. Chicago, University of Chicago Press, pp. 25-120.

Government publication: U.S. Bureau of the Census. 1978. *Statistical Abstract of the United States: 1978*. (99th Edition). Washington, D.C., U.S. Government Printing Office.

**Mechanics.** All papers and theses should be typed double-spaced on 8 1/2" x 11" paper with 1" margins on all sides. Special paper is not required.

The first page of a research paper or thesis is the title page, and presents the title, date, your name, the course for which the paper is written, and the instructor's name.

A thesis also includes a table of contents showing chapter numbers, titles and the page on which each begins; it also lists appendices, bibliography, etc.

A thesis may have a preface; a term paper does not. The preface may summarize the contribution of the thesis and contain any necessary acknowledgements. It follows the title page and precedes the table of contents.

Tables, graphs and charts (unless very short) should be put on separate pages, and inserted in the paper at the appropriate place. For drafts and term papers, tables may be handwritten clearly on columnar paper. For theses, tables must be typed. Put the source underneath each table or figure.

Theses should be placed in a binder. Term papers need not have a binder. In the absence of a binder, a staple (and not a paper clip) can be used to keep the paper together.

You need to proofread your research paper thoroughly before turning it in. Take special care in proofreading tables and equations. For thoroughness ask a friend to check while you read out the numbers.

**Revision.** The final key to successful writing is revision. Once you have completed a first draft, set it aside for a while; then reread it with a critical eye, and rewrite to improve it.

## Miscellaneous Hints

Most papers are now prepared using a word-processor and there are always disasters facing someone each semester because a disk got destroyed or files got accidentally erased. **Make backup copies often!** Printouts (hardcopies) of drafts are often reassuring. When turning in a draft of one chapter of a thesis it is helpful to attach the full bibliography and an outline giving the titles and current status of the other chapters.

Instructors usually will return your term paper at the end of the semester. Theses, however, are retained by the Department. Make a second copy if you want to keep one for your own use.

Maintain a separate file on diskette of your bibliography. It can be easily updated as you find new sources and discard old ones. If you are reluctant to use modern technology, buy some 3" x 5" index cards to use for your bibliography. Every time you consult a new source, put the bibliographic information on a separate index card. When you are ready to prepare the bibliography, all you have to do is sort the cards alphabetically, and then type up the information.

Before submitting your paper make sure to check for some common mistakes. In particular, check all spelling, especially proper names and technical terms. Check all direct quotes to make sure they are correct both as to wording and spelling. Check all footnotes to guarantee they are numbered consecutively, and that all are included.

## Further References

Several books can help you in writing a research paper. Make sure you read the Bates College *Statement on Academic Honesty and A Guide to Source Acknowledgments*.

**For specific information on economics papers and research, consult the following books:**

Andreano, Ralph L., Evan Ira Farber, Sabron Reynolds. 1967. *The Student Economist's Handbook*. Cambridge, Schenkman. Bates Library call#: Z 7164 .E2 A63

McCloskey, Donald N. 1987. *The Writing of Economics*. New York, Macmillan Publishing Co. Bates Library call#: PE 1479 .E35 M33 1987

Officer, Lawrence H., Daniel H. Saks, Judith A. Saks. 1980. *So You Have to Write an Economics Term Paper*. East Lansing, Michigan, Graduate School of Business Administration Division of Research. The Writing Workshop has a reference copy of this book.

**For general help on writing, including organization and style, consult the following books:**

Strunk, William Jr., and E. B. White. 1979. *The Elements of Style*. New York, Macmillan. (available in bookstore) Bates Library call#: PE 1408 .S772 1979

Turabian, Kate L. 1987. *A Manual for Writers of Term Papers, Theses, and Dissertations*. 5th edition. Chicago, University of Chicago Press. Call#: LB 2369 .T8 1987

There are three additional books that will both entertain and tell you a lot about how economists think and write. These books are not directed towards that actual writing of a research paper, but they will certainly provide you with a helpful perspective on the whole process.

McCloskey, Donald N. 1985. *The Rhetoric of Economics*. Madison, University of Wisconsin Press. Bates Library call#: HB 71 .M38 1985

McCloskey, Donald N. 1990. *If You're So Smart: The Narrative of Economic Expertise*. Chicago, University of Chicago Press. Bates Library call#: HB 199 .M385 1990

McCloskey, Donald N. 1994. *Rhetoric and Persuasion in Economics*. New York: Cambridge University Press. Bates Library call#: HB 71 .M378 1994