ECON 494 Seminar in Applied International Economics

Spring 2019

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- Section 004 — Environment
- Mon/Wed 11:00am-12:30pm, Iona 533 (selected dates, see below)
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1 Objectives

This course is the capstone in your Bachelor of International Economics program. In it, you will design and carry out an original research project, bringing together the knowledge you have acquired in your theory, field, and econometrics courses. You will formulate an original research question, devise a strategy to answer it, find data, analyze your data using appropriate quantitative methods, present your findings to your classmates, and write a scholarly paper. At the end of the term, you will have learned about your research topic in depth. Equally important, you will have learnt how to make a solid economic argument and to communicate your findings to your peers.

This course involves a lot of work. You will need to stay on top of it throughout the term to succeed. To help you stay on track, this course has developed "milestones" as a sequence of assignments that will build your research paper step by step. As you progress through the course, you will enjoy the experience of discovering new ideas, techniques, and insights. The instructor will be available to you at every stage to help you find your direction, give you feedback on your work and explore new ideas.

2 Organization

We will only meet as a regular class (Iona 533) on the following dates:

- January 2/7/9 — Introductory lectures
- February 25/27 — Student presentation on data (5 minutes each)
- March 25/27 and April 1/3 — Student presentation on thesis (10 minutes each)

Otherwise, you are expected to meet individually with the instructor throughout the term to discuss the progress of your project and receive feedback. For the most part, you are expected to use your time, throughout the term, to conduct your research independently. This course is different from most other courses you have taken so far in that you will have a high level of one-on-one interaction with the instructor. You will get detailed feedback on every assignment but, more crucially, you will have the chance to discuss your progress (and upcoming assignments) in one-on-one meetings.

You can request a meeting with your instructor at any time during the term. Meetings will generally take place (in the Instructor's office) during the times the course would normally meet for class. To book additional meeting slots, please contact your instructor by e-mail.

3 Assignments

All your assignments should be submitted as single PDF files via Canvas. Assignments handed in up to 24 hours late will be marked down by 50%, and assignments handed in more than 24 hours past the deadline will receive a grade of zero. The final paper must also be submitted electronically and as a single PDF file. Please paste your graphs, tables and regression results into the same file.

4 Communication

Your instructor will communicate with you via Canvas; please check it regularly.

5 Required materials

Statistical software (either STATA or R) is required for this course. You should should choose the software with which you can complete the empirical work required for the course. The instructor will not be able to assist with software-related questions.

STATA is found on computers in the VSE computer labs. It is also available for purchase at a special student rate and we recommend that you do this. You need Stata/IC (Intercooled, 6-month license); Small Stata will likely not work for this course. R is available for free online.

6 Requirements and deliverables

The main deliverable for the course is the research paper, which is worth half of your final grade. The following list summarizes all nine deliverables for the course, the due dates, and the marks. Detailed descriptions of each deliverable follow below.

1. Meet with instructor by January 18 to discuss research question (2%)
2. Research proposal: Due January 21 (3%)
3. Literature review: Due February 4 (7%)
4. Data summary: Due February 25 (8%)
5. In-class presentation on data: February 25/27 (7%)
6. Estimation strategy: Due March 4 (3%)
7. Preliminary estimation results: Due March 18 (5%)
8. In-class presentation on thesis: March 25/27 and April 1/3 (15%)
9. Final thesis: Due April 26 (50%)

NOTE: The authoritative source for due dates is the course website on Canvas.

6.1 Instructor meeting

You must meet with the instructor to discuss your research proposal. For this meeting, you want to have two ideas for a possible research question: for each, you need to have identified a data set that you will use in your empirical analysis. We will discuss these ideas and jointly decide on which one you will pursue during this course.

6.2 Research proposal

This assignment is expected to be one to two pages long. A research proposal should be framed concisely and contain the following sections:

1. State the question: What is the effect of X on Y?
2. Describe the motinvation for this question: Why is the question interesting? Who cares about the answer? Who will benefit from the answer? A few sentences will be sufficient.
3. Reference at least one relevant paper, and ideally two or three. Who has explored this question before? Has someone found an answer, or are there perhaps competing answers? A relevant work is an article published in a scholarly journal, an academic working paper or a scholarly book.
4. Describe the empirical measures that will be involved in answering the research question (the X and Y). What is the relevant time period, frequency of the data, and geographic scope?

The research proposal will be graded on three criteria: (a) the completeness along the lines of the five components mentioned above; (b) the scientific merit of your research questions (how novel? how difficult? how relevant?); and (c) the internal consistency and presentation of your proposal.

6.3 Literature review

This assignment is expected to be approximately six pages long and no less than four pages. The best way of ensuring the relevance of your research is to solidly ground it in the existing literature. To do that, you first need to find the literature related to your research topic. Once you have the relevant literature in your hands, you should read the papers carefully. The point of reading a paper is not to trace every single step in the paper, but to understand the essence of the paper and the main steps taken to answer the research question. Focus on the theoretical foundation, the identification strategy, the empirical specification, and the results. It is often helpful to take notes and summarize the key points for future reference, and describe how this work relates to your research question. Also, write down the bibliographic citation, ideally in the Chicago Author-Date format; see the sample references on the American Economic Association web site. Google Scholar or another citation manager are useful here.

Once you have read the relevant literature, evaluate it critically. A literature review is not a collection of summaries but an opportunity to relate your sources to your research question. Where will you follow a similar approach and where will you deviate? How is your data set different or better? Where does your empirical strategy differ from those in your source? This is the right place to think critically about the existing literature, explain what has been answered already, what hasn't, and where there are controversies in the literature. Demonstrating that your research question has already received attention in the past strengthens your case that your research will be relevant.

Write your literature review with an eye into transforming it into a section in your final paper. The more you think about how it will link into the rest of the paper at this stage, the less work you will have to do later on. In your final research paper, you will also compare your own approach against the existing literature and emphasize the novelty of your own approach. At that stage it will be useful to identify the "value added" of your own work. How does your work improve upon the existing literature?

In this assignment, you are expected to review *at least 10* research papers. The grading practice will follow the same criteria as for the research proposal. However, additional criteria will be: (d) the comprehensiveness of your literature review, and (e) the quality of your evaluation of the prior literature.

6.4 Data summary

Preparing a data set is often a very time-consuming task. You need to get started early, as there are often setbacks and complications when you try to retrieve, adjust, and merge data from different sources. Matching, merging, and transforming data sets is tedious but necessary.

This assignment is expected to be at least five pages long, including tables and figures. The main elements of this report are:

1. Data sources and scope: Describe the providers of the data, the geographic scope and time horizon of the data, their frequency (annual, monthly, daily, etc.) and any further dimensions (e.g., industry, product). Also comment on the reliability of the sources and other noteworthy facts about the data. Note that obtaining access to confidential datasets is often very time consuming and that there are no guarantees.
2. Data selection: Explain your choice of scope. Why do you use a particular time horizon or geographic horizon for your dataset? Often the answer is simply "limited data availability". However, you should not simply truncate data sets to make your work easier. You should always strive for the appropriate data set. Longer is not always better when there is reason to think that economic relationships change over time. Be mindful of business cycle effects: picking years around a peak or trough in a business cycle can shade your results, and time periods such as the Great Recession 2007-09 may have exceptional volatility in some time series. Justify the choices you make. Also keep in mind whether availability of your data was driven by a selection process. If data is not just "missing at random", you may need to control explicitly for the selection process.
3. Data limitations: Think about what your "ideal" data set would look like if you could simply will such data into existence. Where do you rely on "proxies" – variables that approximate something else that is unobservable or difficult to measure directly?
4. Data transformations: descriptions of any steps you have taken to merge multple data sources, and difficulties encountered along that line such as missing data, partial overlaps or concordance issues; variable transformations (e.g., logarithms, interactions); data selection.
5. Data preview: Once you have your data assembled, familiarize yourself with it by looking at summary statistics. Visualizing your data is often helpful. Use histograms to understand the statistical distribution of you dependent and independent variables. This step is often helpful to justify transformations of variables. Look at simple correlations statistics to see how variables are related. This can help spot multicollinearity among your independent variables, or help identify the usefulness of instrumental variable. Visualization of your data is a good exercise. Sometimes you may uncover outliers or other quirks in your data set. Our brains are very good at uncovering patterns in data, and visualization makes that task a lot easier.

6.5 Data presentation

We will meet in IONA 533 for a series of student presentations on the dates given above. The schedule for the presentations will be circulated the week before. Attendance is mandatory for all students. Each presentation will be five minutes long. You should rehearse your presentation and make sure that you stick to your time limit. You will prepare a presentation with five slides comprising the below information on your research project.

1. Key research question: What is the effect of X on Y? Include a very brief motivation.
2. Data source: Very brief description of where the data comes from. Who collected it? Which country? Which time frame?
3. Key variables: definition of key variables of interest.
4. Summary statistics tables and figures
5. Proposed estimation strategy

During each presentation, there will be time for each student to receive feedback from both the instructor and fellow students. The main point of the presentation is to obtain some feedback before heading into the core analysis of the data.

You will need to upload your presentation to Canvas the day before the presentation at the latest. All presentations will be loaded on the desktop in the seminar room; you will not be able to use your own laptop computer because it takes too much time to switch from one to the next.

6.6 Estimation strategy

This assignment is expected to be approximately at least two pages long. This is a conceptual stage where you connect your theoretical hypothesis to the data. How can you determine the effect of X on Y? The report must include three key components:

1. Estimation Equation: Clearly identify the variables that you include, and how. What other covariates (regressors) do you need to control for? Do you need to worry about omitted variable bias or reverse causality?
2. Identification Strategy: A crucial element of the estimation framework is the identification strategy. Often we are interested in a particular policy change, and there is a distinct "before" and "after", and we can find some groups that were subject to the policy and another group that wasn't. Then we can apply a "difference-in-difference" approach. Another important identification strategy is a "natural experiment" where a clearly exogenous event divides our data set into distinct groups. Sometimes we need to rely on an instrumental variable, i.e., a variable that induces changes in a particular independent variable (regressor) but does not induce changes in the dependent variable. Identification is about uncovering the mechanism of causality. This is, conceptually, often the most difficult part of your research paper.
3. Estimation Method: Ultimately, you need to choose a tool for estimating your estimation equation, and that choice is driven by assumptions about the statistical properties of your error term. Ordinary least squares is often not sufficient to answer your research question. If you only have a few units of observation, difference-in-differences may be appropriate. With many units over time, a fixed effects panel approach could be applicable. And when you deal with endogeneity, instrumental variables (IV) can come into play. Keep in mind that often there is no single best approach, but that there are trade-offs. For example, difference-in-differences in intuitively appealing but requires you to defend the parallel trends assumption, fixed effects approaches have stringent data requirements, and IV must satisfy the exclusion restriction. Choose appropriate tools: when your dependent variable is binary use logit or probit, and when your dependent variable is a count variable, use Poisson or negative- binomial regression.

Your report will be evaluated on two broad criteria: a) completeness along the points mentioned above; b) the appropriateness and rigour of your estimation framework including identification.

6.7 Preliminary estimation results

This assignment is expected to be at least three pages long. This assignment aims to ensure that you are on track to deliver your research paper on time by demonstrating that your empirical work is progressing. Essentially, this is a preview of the "Results" section of your research paper and should contain the output from your first estimation. This report should clearly state the empirical implementation you have chosen to pursue, the estimating equation, and the results (typically in table form).

It is not sufficient to simply cut-and-paste output from STATA/R. You should follow conventional rules to: (a) identify variables by name, not mnemonic; (b) report estimation results along with standard errors or z-scores; (c) rescale variables appropriately so that they are easy to comprehend; (d) specify (groups of) fixed or random effects; (e) specify number of observations and any selection of observations; (f) report goodness-of-fit statistics or model-selection statistics where applicable; and (g) add table notes to identify the dependent variable, estimation method (e.g., OLS, IV, GMM, NLS, FE-panel, RE-panel, and so on), and any other relevant information.

Importantly, do not simply describe the statistical significance of your results, but describe the economic significance. While identifying X-causes-Y is important, it is even more important to identify how-much-is-X-causing-Y. This document should contain about two pages of text and include at least one page with your results table.

6.8 Thesis presentation

During the last two weeks of class, during the scheduled class times, we will meet in IONA 533 for a series of student presentations. The schedule for the presentations will be circulated the week before. Attendance is mandatory for all students.

Each presentation will be ten minutes long. You should rehearse your presentation and make sure that you stick to your time limit. You will prepare a power point presentation with ten slides comprising the below information on your research project. At a minimum, your presentation should:

1. Clearly state your research question and explain its relevance.
2. Describe what prior literature has found and how your approach is novel and provides "value added" compared to the prior literature.
3. Describe your hypothesis, methodology and data.
4. Present your results and conclusions.

You will need to email your presentation to your instructor the day before the presentation at the latest. All presentations will be loaded on the desktop in the seminar room; you will not be able to use your own laptop computer because it takes too much time to switch from one to the next.

Practice your presentation and carefully time yourself. Make sure that you get to your conclusions. In this requirement, expositional clarity and organizational ability will carry a great weight in your mark.

6.9 Research paper

Your final research paper should be approximately 25 pages including all tables and figures. Significant components of your research paper are already contained in your previous assignments, and thus your research paper will incorporate and fine-tune most of that work. Your research paper is the main vehicle for communicating your results. Before you sit down to write it, however, it is important that your research results are very clear in your mind, and this is why by this point you already handed in many pages of assignments, performed numerous regressions, and consulted extensively with your instructor.Your goal now is to translate those results into a clear and readable essay. There is no single template for your outline that fits all topics, and some adjustment will be needed in each case. A rough guideline that would fit most papers is:

1. Introduction: Present your research question, explain the motivation – why it is interesting – and hint at your results without getting into too many details. Note that this should be very easy to do after working on it in the research question assignments and in the research proposal.
2. Literature review: This mostly incorporates your previous assignment, but you will need to make minor adjustments in light of what you have found in your empirical work. Perhaps you realize that you may need to cite additional work, or adjust your critique of the prior literature.
3. Empirical strategy: This sections explains how you plan to answer your research question. What theoretical basis do you rely on? What kind of data do you need to use to answer the question? What quantitative techniques will you use on them? How will you identify causal effects, and how will you interpret your results?
4. Data summary: This section incorporates significant parts of your previous assignment, but you may need to trim it appropriately and focus on what is essential. Visualizing key aspects of your dependent variable, and identifying important empirical regularities, are crucial for the reader to understand your data and your research question.
5. Empirical results: This section significantly expands on the previous assignment in which you reported your preliminary research results. Here, you will present all results of your quantitative tests and estimations and interpret them. Be concise and clear: ensure that the reader understands what your results mean and, most importantly, what they do not mean. Discuss the limitations in your estimation techniques and how they could affect the interpretation of your results.

6. Conclusions: Wrap up your discussions by briefly recalling your research question and then concisely presenting the answer that you find in your work. Mention any broader limitations of your approach and discuss possible avenues for future research.

To make your point well, your paper needs to be well written, which means it needs to be logically organized, grammatically correct and intellectually appealing. While we will work on the organization and intellectual appeal throughout the course together, you will be solely responsible for the quality of your writing. If you have difficulties writing, attend a writing workshop. You can find information on available resources on the web site https://learningcommons.ubc.ca/improve-your-writing/.

7 Collaboration and Conflict Resolution

While the work in this course is individual, there is ample scope for collaboration among students. Some of your research ideas will overlap and explore different but related concepts. In some cases you may be able to share data, or assist each other with empirical implementations.

You are strongly encouraged to work together, assist each other, compare your work, and exchange ideas. While most of you will pursue rather different topics, some of you may wish to pursue similar research questions. In this case, we will need to ensure differentiation by insisting on differences in scope, identification strategy, or methodology. If this is insufficient to resolve a conflict among students vying for the same topic, the instructor has the right to resolve this conflict by assigning a proximate topic.

8 Plagiarism

This course enforces UBC's policy on plagiarism. Plagiarism is intellectual theft and occurs where an individual submits or presents the oral or written work of another person as his or her own. Scholarship quite properly rests upon examining and referring to the thoughts and writings of others. However, when another person's words (i.e. phrases, sentences, or paragraphs), ideas, or entire works are used, the author must be acknowledged in the text, in footnotes, in endnotes, or in another accepted form of academic citation. Where direct quotations are made, they must be clearly delineated (for example, within quotation marks or separately indented).

Failure to provide proper attribution is plagiarism because it represents someone else's work as one's own. Plagiarism should not occur in submitted drafts or final works. A student who seeks assistance from a tutor or other scholastic aids must ensure that the work submitted is the student's own. Students are responsible for ensuring that any work submitted does not constitute plagiarism. Students who are in any doubt as to what constitutes plagiarism should consult their instructor before handing in any assignments.

You are required to familiarize yourself with the UBC Policy on plagiarism. Plagiarism is serious academic misconduct and is sanctioned accordingly.

Plagiarism will trigger different actions depending on the stage at which it is uncovered. Plagiarism in any of the four intermediate assignments will result in a zero grade for this assignment, and a 10-point deduction from the final grade. Plagiarism in the final paper will be met with a grade of zero in the course and referral to the university administration for academic misconduct, which may result in disciplinary measures such as a suspension from the university.