Bristol Business School

Module handbook 2007/8

UMEN3N-15-M

RESEARCH METHODS II

School of Economics

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Contents

1. Introduction

Welcome to the Research Methods II module. We hope very much that you find rewarding the programme of study we have constructed for you. The module certainly has, if you allow us to blow our own trumpets, some strong attributes which enhance it and hopefully will augment your study of it. The module is a stand-alone module, or it acts as a development of modules, such as Research Methods I and Econometrics. As a stand-alone module, it has a full and varied programme of study, designed to offer you a complete, useful introduction to the key issues in research methods. The module focuses simultaneously on conceptual and practical goals. On the one hand, your understanding of the philosophy of science will be deepened by the discussion of multiple new perspectives. Like Research Methods I, for economists this is a rather novel feature; but we regard it as one crucial to your understanding of the research process. Once that philosophical understanding has been deepened and broadened, we move onto more practical concerns, such as detailed discussion of specific research methods to which you were introduced in Research Methods I. Once again, this practical segment of the module is crucial because the module functions as a further foundation for your own Master's dissertation. Finally, the module offers you practical skills in quantitative and qualitative data collection and analysis; this includes invaluable practice on statistical computer packages.

This is a Master's level module. As you should now be aware, the level of the material may well be higher than anything you have encountered before. Certainly, the pace of the module will be faster than you are used to. Naturally, this will require considerable work, including, of course, much reading. This reading will be essential for you to be successful on the module. However, as always, we think the work will be rewarded by the enjoyment of a stimulating and essential module.

2. Learning Outcomes

At the end of the module the students should be able to:

- Have advanced knowledge of alternative methodologies in economics (component A, component B)
- Have a knowledge of survey methods (component A, component B)
- Carry out econometric analysis of cross section and panel economic data using the Stata package (component A, component B)
- Undertake an applied research project (component B)

3. Organisation of the Module

3.1. Teaching and Learning Methods

Nominally, the module will be organised around a lecture-seminar model. This means that once a week, we meet and basically I lecture to you. As you will be aware, lectures provide core material and the framework for the module. **Lectures** also create the basis for seminars and for further reading. **Seminars** allow us to explore further the topics introduced in the lecture, clarify points of misunderstanding, and practice written and oral skills. The format of the seminar will vary according to the task at hand. The seminar will be aided by your own **private study**. A good seminar will deal quickly with the basic issues, without regurgitating lecture material, and it will encourage discussion and exploration of the topic. This will only be facilitated by private study on your part. You should read the required reading as listed in this handbook, but also I shall give you supplementary reading. Also, at postgraduate level, it is particularly important to find for yourself books and particularly articles to read.

Keep up to date with postings on Blackboard and http://carecon.org.uk/UWEMasters/RM2/

3.2. Student responsibilities

Lectures
You should be aware that lectures are designed to provide a framework for discussion and analysis. Your responsibility therefore is to attend these lectures on a regular basis. **Failure to do so may seriously affect your ability to keep abreast of the course and hence impact on your final grade.**

Seminars
A seminar is designed to enable students to investigate an issue or theme in greater detail. The onus is on you to keep up to date with the reading on a weekly basis**. Seminars work well if everyone has done some preparatory reading, have thought about interesting questions to ask and come along prepared to discuss the theme in question.** Do not leave it to others to do the work. As you can see the reading lists for seminars are extensive. The purpose is two fold: to give an idea of what is available in our library; and to introduce various opinions expressed by a number of authors. This does not mean that just because a book is not listed here that it may not be relevant to the course. **We would encourage you from the outset to explore the wide variety of material contained in our library, which can be equally useful when preparing for a seminar or writing an essay.** Equally important, you are strongly encouraged to use journal articles, which publish the latest research. Articles are extremely useful because they concentrate on a specific issue or debate. They get to the heart of a debate and therefore provide insight into complex issues. So get into the habit of using the journals for all facets of your work.

Library
A final point concerns the library system. You are expected to use the full potential of the UWE library system. As a multi-campus institution, resources are scattered. Books and periodicals may be housed on only one site. So be prepared, especially when preparing essays, to use the inter-site loan system or (better still) travel to the other sites to obtain relevant material. UWE is well equipped with electronic media. Increasingly it is necessary for libraries to take journals in electronic form, and UWE does this well. Please take advantage of the resources available through the Library catalogue as well as internet-based research aids. Please be familiar with the University's inter-library loan (ILL) system: remember that ILLs always take a number of days to arrive, so you must plan ahead.

3.3. Staff responsibilities

Staff will endeavour to produce useful, interesting and thought provoking lectures, which are well informed by up-to-date secondary literature and, where appropriate, by visual aids. In seminars tutors will help to generate and sustain discussion while at the same time recognising the students' responsibility to stimulate debate. They will also try their best to return work, with detailed feedback, within the agreed timescale of the submission date. Staff will be available to discuss your work on a one-to-one basis at specified times. In addition, they will make time to discuss issues raised by the group in the regular weekly seminar slot.

3.4. Facilities and Resources

To be successful in the module, you will need to use a range of resources. Attend lectures and seminars, of course! However, as I have already indicated, you must take advantage of the Library and the electronic media available to you.

There is a wide reading list for the module. You are not expected to buy all of these books. Many of the books are substitutes, and there are other readily available substitutes for most of them. No single book will serve you for the entire module. Naturally, you will do best if you combine readings. The main books are:-

- Cullenberg, Stephen, Amariglio, Jack and Ruccio, David (2001) *Postmodernism, Economics and Knowledge*, Routledge.
- Downward, Paul (ed) (2003) *Applied Economics and the Critical Realist Critique*, Routledge.
- Henderson, Willie, Dudley-Evans, Tony and Backhouse, Roger (eds) (1993) *Economics and Language*, Routledge.
- Arjo Klamer, Donald N. McCloskey, Robert M. Solow (Eds.) (1988) *The Consequences of economic rhetoric*, Cambridge university press.
- A.N. Oppenheim (1992) *Questionnaire design, interviewing and attitude measurement*, Continuum.
- Byrne, David (1998). *Complexity theory and the social sciences: an introduction*, London: Routledge.

- Baltagi, BH (2005) *Econometric Analysis of Panel Data*, 3rd edition, Wiley.
- Deaton, Angus (1997) *The Analysis of Household Surveys: A Microeconometric approach to Development Policy*, Johns Hopkins University Press.
- Wooldridge, Jeffrey (2002) *Econometric Analysis of Cross Section and Panel Data*, Massachusetts Institute of Technology.
- Pesaran, M Hashem and Schmidt, Peter (eds) (1997) *Handbook of Applied Econometrics, Volume II: Microeconomics*, Blackwell.
- Alan Bryman and Duncan Cramer (2001) Quantitative Data Analysis…", Routledge.
- Stata 9 Manuals

In addition to these books, others might be recommended to you either in the schedule of seminars below, or during the course of the module, in class or on *Blackboard*. In addition to books, as already stated, there are many electronic media which you will find indispensable. Electronic media are particular useful for tracking down crucial articles. Some articles will be listed as reading in the lecture and seminar details below; or, again, you might be instructed to read a specific article in class or on Blackboard.

Clearly, this module will make some use of the Faculty's *Blackboard* system. I shall assume that you know how *Blackboard* works: if you don't, you need to find out. It is quite end-user friendly, so you should not have too many problems with it. Remember that a copy of this module handbook will be there for you to look at if you ever forget where you put your personal copy. You can also download another copy if you ever actually lose yours. Please note that you tutors do not hold stocks of 'spare' module booklets. You can access *Blackboard* either on the intranet (log on to any Faculty machine and use the UWE online icon) or on the internet (log on via http://online.uwe.ac.uk). You will need the username and password provided by the Faculty during induction.

Handouts, exercises, and notices will also be posted periodically to the *Blackboard* system. Please remember to log in to this system every so often and look on the module conference for anything flagged as new.

4. Module Programme

W/C	Class	Title
21-Jan	L1	Introduction to the course. Doing an applied project? Introduction to methodological topics
	S1	Surgery on doing the Applied Project
28-Jan	L2	Methodology 1: Complexity science and economics
	S2	Surgery on doing the Applied Project
4-Feb	L3	Methodology 2: Postmodernism in economics
	S3	Methodology 1: complexity and economics
11-Feb	L4	Methodology 3: Rhetoric and economics
	S4	Methodology 2: postmodernism and economics
18-Feb	L5	Methodology 4: Experimental economics
	S5	Methodology 3: rhetoric approach in economics
25-Feb	L6	Data collection techniques 1: interviews, questionnaires, surveys; sampling; ethnographic research methods; "everyday" sources of social scientific data and analysis; case study method; triangulation of data types and sources
	S6	Methodology 4: Experimental economics
3-Mar	L7	Econometric Analysis for Cross Section Data
	S7	Data collection
7-Apr	L8	Survey design and analysis
	S8	Intro to Stata exercises
10-Mar	L9	Econometric Methods and Surveys:
	S8	Survey design and analysis
14-Apr	L10	Panel data methods I
	S10	Survey analysis exercises
21-Apr	L11	Panel data methods II
	S11	Panel data exercises
28-Apr	L12	Student project presentations
	S12	Student project presentations

5. Lecture Details

Lecture 1: Introduction to the Module; and Methodology. Writing an applied project.
Lecture 2: Methodology 1: Complexity and economics
Lecture 3: Methodology 2: Postmodernism and economics
Lecture 4: Methodology 3: Rhetoric and economics
Lecture 5: Methodology 4: Experimental economics
Lecture 6: Data collection techniques 1: interviews, questionnaires, surveys; sampling; ethnographic research methods; "everyday" sources of social scientific data and analysis; case study method; triangulation of data types and sources
Lecture 7: Econometric Methods for Cross Section Data
Lecture 8: Survey Methods
Lecture 9: Econometric Methods for Surveys selection models; pooled and panel data
Lecture 10: Panel Data Methods I
Lecture 11: Panel Data Methods II
Lecture 12: Student project presentations

6. Seminar Details

This section presents details of the seminars to be undertaken in the module. It provides the learning outcomes for each seminar, the reading to be undertaken and the questions to be dealt with in class. Where the books are those listed above, only the name of the author and the chapters to be read (if applicable) are listed. For new references, the whole reference is listed the first time. For all seminars, these reading lists are not exhaustive: for example, please read other relevant literature. In some seminars, there are long lists of questions. It might not be possible to cover all of these questions in class, so you should use them for revision and study purposes. **For every seminar, additional questions and any accompanying reading (where necessary) will be distributed either in class and/or via Blackboard.**

Seminar 3; w/c 4th February: Methodology 1: Complexity and economics

Learning Outcomes:
By the end of this session, you should be able to:-

- Understand the main tenets of complexity science, including emergence, self-organisation and diversity
- Comprehend the links between complexity science and postmodernism
- Evaluate the main developments in economics derived from complexity
- Compare and contrast the implications of compkexity science for economics with the status quo in economics

Questions:

1. How do the tenets of complexity science as applied in economics contrast with other approaches to philosophy of science you have studied in research methods (e.g. positivist, critical realist)?
2. According to the complexity approach in social science, 'objective' research is impossible. In what sense is the world 'objective' used here? To what extent do you agree with the claim?
3. To what extent does complexity embrace postmodernist ontology?

Reading:
Byrne, David (1998). *Complexity theory and the social sciences: an introduction*, London: Routledge.

Foster, John (2005). 'From simplistic to complex systems in economics', *Cambridge Journal of Economics*, 29 (6): 873-892.
Foster, John and P.Wild (1999). 'Economic modelling in the presence of evolutionary change', *Cambridge Journal of Economics*, 23: 749-770.
Lewin, Roger (1999). *Complexity: life at the edge of chaos*, New York: Wiley.
Rosser, J. Barkley (1999). 'On the complexities of complex economic systems', *Journal of Economic Perspectives*, 13 (4): 169-192.
Arthur, W. B. (1999) "Complexity and the economy", *Science,* 284(5411): 107–109

Further questions and/or reading might be required. You will be notified of this either in the seminar or by Blackboard.

Seminar 4; w/c 11th February: Methodology 2: Postmodernism in economics

Learning outcomes
By the end of this session, you should be able to:-

- Evaluate the ontological and epistemological tenets of postmodernism
- Understand the main tenets of postmodernism as applied in economics
- Compare and contrast postmodernism with other philosophical perspectives in economics

Questions:

1. According to the positivist, interepretivist and Critical Realist approaches, what are (or should be) a) the goals of science; b) the methods appropriate to economic science; c) the role of prediction in economics; d) the role of i) quantitative and ii) qualitative methods in economics?
2. How does the interpretivist position inform the postmodernist, feminist and rhetoric approaches to methodology?
3. What view would a i) positivist and ii) a Critical Realist take of the postmodernist approach to economic methodology?
4. What is the role of and meaning of truth in the postmodernist perspective on philosophy of science we have studied?
5. What are the goals of science according to postmodernist philosophers?

Reading:
Sarup, M. (1993). *An introductory guide to poststructuralism and postmodernism*, London: Harvester
Docherty, T. (Ed.) (1993). *Postmodernism a reader,* London: Harvester.
Eagleton, T. (1996) *The illusions of postmodernism*, Oxford: Blackwell.
Appignanesi, R. and Garratt, C. (1995). *Postmodernism for Beginners*, London: Icon.
Cullenberg, S., Amariglio, J. and Ruccio, D. (Eds.) (2001). *Postmodernism, economics and knowledge,* London: Routledge.
Ferber, M. and Nelson, J. (1993). *Beyond Economic Man: Feminist Theory and Economics*, Chicago: University of Chicago Press.

Further questions and/or reading might be required. You will be notified of this either in the seminar or by Blackboard.

Seminar 5; w/c 18th February: Methodology 3: Rhetoric and economics

Learning outcomes:
By the end of this session, you should be able to:-

- Evaluate the mein tenets of the rhetoric approach in economics
- Understand the connections between the rhetoric approach and other approaches to economic methodology
- Critically assess the contribution made by the rhetoric approach to economic methodology

Questions:

1. Compare and contrast the papers by McCloskey and Mirowski on the contribution of the rhetoric approach to the study of economics.
2. Critically assess the view that the rhetoric approach is principally designed to bolster neo-classical economics from methodological critiques.
3. Identify two significant practical implications of rhetoric for economic research. Comment on both.
4. What is rhetoric?

Reading:

Klamer, A., McCloskey, D. and Solow, R. (Eds.) (1988). *The Consequences of Economic Rhetoric,* Cambridge: Cambridge University Press.
McCloskey, D. (1983). 'The Rhetoric of Economics', *Journal of Economic Literature*, 21: 434-61.
McCloskey, D. (1994). *Knowledge and persuasion in economics*, Cambridge: Cambridge University Press.
Dow, S.C. (2002). *Economic Methodology: An Inquiry*, Oxford: Oxford University press, ch. 7
Dow, S.C. and Hillard, J. (Eds.) (1995). *Keynes, Knowledge and Uncerrtainty*, Cheltenham: Elgar, Chapters by Klamer, Amariglio and Ruccio
Mäki, U. (1988). 'How to Combine Rhetoric and Realism in the Methodology of Economics', *Economics and Philosophy*, 4: 89-109.
Mirowski, P.

Further questions and/or reading might be required. You will be notified of this either in the seminar or by Blackboard.

Seminar 6; w/c 25th February: Methodology 4: Experimental economics

Learning outcomes:
By the end of this session, you should be able to:-

- Understand the principal uses of experimental methods in economics in terms of data collection, theory development and theory testing functions
- Critically evaluate experimental methods from practical and philosophical perspectives
- Develop a coherent view of the contribution of experimental methods to economics

Questions:

1. Critically evaluate the methods used in any one paper which has made use of experimental methods.
2. How might experimental economics be criticised from positivist, interpretevist, critical realist and postmodernist perspectives?
3. Is experimental economics most useful as an a) data collection technique; b) method of testing hypotheses; c) method of developing theory; or d) an educational tool?

Reading:

Sarakantis, N. (2000). 'Experimental economics under the microscope', *Cambridge Journal of Economics*, 24 (3): 267-281.
Guala, F. (2002). 'On the scope of experiments in economics: comments on Siakantaris', *Cambridge Journal of Economics*, 26: 261-267.
Guala, F. (2005). *The Methodology of Experimental Economics*, Cambridge: Cambridge University Press.
Kocher, M. G. and Sutter, M. (2005). 'The decision maker matters: Individual versus group behaviour in experimental beauty-contest games', *Economic Journal* 115 (500): 200-223.
Drehmann, M., Oechssler, J. and Roider, A. (2005). 'Herding and Contrarian Behaviour in Financial Markets: an Internet Experiment', *American Economic Review*, 95: 1403-1426.

Seminar 7: w/c 3rd March: Data Collection Techniques

Learning Outcomes:
By the end of this session you should be able to:

- Carry out a collection of data by questionnaire
- Analyse the data collected by questionnaire
- Critically evaluate the benefits of questionnaires and other forms of primary data such as interviews
- Understand the role of "everyday" knowledge in informing economists

Questions:

1. Construct a questionnaire which would be used to ascertain student perspectives about the role of the UK in the European union. What are the key theoretical questions which would inform your questionnaire? How would you analyse the data from the questionnaire? Justify the particular types of question and analysis which you have chosen to use.
2. What are the principal benefits of questionnaires, as opposed to interviews, or more traditional quantitative analysis?
3. What is the status of "everyday" knowledge in economics. Why would a positivist be suspicious of such data? What would be the attitude of an interpretivist, a Critical Realist, a postmodernist and a feminist to such data? What is your position on "everyday" data?

Reading:
Oppenheim, A. (1992) *Questionnaire design, interviewing and attitude measurement*, London: Continuum.
Fink, A. (1995). *How to ask survey questions*, London: Sage.
Hague, P. (1993) *Questionnaire design*, London: Kogan Page.
Foddy, W. (1993) *Constructing questions for interviews and questionnaires theory and practice in social research,* Cambridge: Cambridge University Press.

Further questions and/or reading might be required. You will be notified of this either in the seminar or by Blackboard.

Seminar 8; w/c 10th March: Cross Section Applied Exercise

Learning Outcomes:
By the end of this session you:

- Will have revised the relevant econometrics methods presented in last terms Econometrics course.
- Should have extended your knowledge to include specifically cross sectional econometric issues and methods.
- Should be able to undertake data analysis using Stata

Questions: A computer class will be held to introduce Stata and an introductory exercise undertaken:

Welcome to STATA!
Why learn to use STATA?
• widely used (particularly in Europe) – high return to investment!
• programming is friendlier than packages like Gauss.
• backup and resources (like the STATA Journal) from STATA Corp and other users is excellent

The STATA interface:

You will be working with two main windows/screens. The main one is accessed by simply opening up STATA. The other one is called the do-file editor. Click on the fifth icon from the right on the toolbar (the picture is of an envelope). Maximise the do-file editor. It has all the features of a text editor but is used to run STATA programs. You will have to get used to switching back and forth between these two parts of STATA. In the main STATA window there are four smaller windows - you might have to resize them. The STATA results window should be the biggest.
In the main STATA window there is a pull-down menu and a tool bar. You can work with STATA interactively using the menu and tool bar on the main STATA screen or by typing commands

individually in the STATA command window (the white window at the bottom of the main screen). Most serious research requires the use of "do-files" but the other methods are useful if you just want to quickly check something in your data or draw a graph. The do-files allow you to keep track and repeat your research.

In the do file-editor you type out commands in sequence on separate lines. Then run the program using the "do current file" button (second from the right on the tool bar). You just switch back and forth between the do-file editor window and the main STATA window to view your results.

The advantage of the do file is that if you write the do-file in a particular way you can run it over and over again instantly! If you make a mistake (e.g. STATA is case sensitive - commands are lower case) STATA will not be able to run the entire do-file but will tell you where the problem occurred. In certain circumstances you might decide not to run the complete do-file but instead only up to a particular point. Just highlight the text from the start up until the point you wish to finish at and then hit the "do current file" button (second from the right on the tool bar).

The first exercise will run through the (very) basics of STATA under the assumption you have never used it before. If you have experience of STATA feel free to skip the tutorial or perhaps use the lab time on working on your own research.

Do the following tasks.

1. Open a session in Stata
2. Open the editor window
3. Clear and set the memory to 1 megabite
4. Download the dataset named auto.dta
5. Describe the dataset
6. List all the variables
7. Sort the observations by miles per gallon
8. List make and mpg for the first 5 observations only
9. List make and mpg for the last 5 observations only
10. Get the summary statistics for all the variables in the dataset
11. Get the summary statistics for the variable price
12. Get the summary statistics for the variable price if mpg is less than 21.3
13. Get the complete summary statistics (including various percentile and the median) for mpg
14. Get summary statistics on mpg separately by foreign status
15. Get the distribution for foreign (also try the no label option)
16. Define a label for rep78 (reparation in 1978) THIS IS THE FREQUENCY OF REPAIR RECORD ON A 1-5 SCALE 1=POOR...5=EXCELLENT
17. Then get the distribution of rep78
18. Generate a cross tabulation of repair and foreign status
19. Use a Chi square test to check whether the distribution of repair differs by foreign status
20. Generate a cross tab of repair and foreign status but with the cell frequency
21. Correlate mpg and weight
22. Correlate mpg and weight separately by foreign status and test significance of correlation
23. Generate a correlation matrix fro mpg, weight, price, length and displacement
24. Plot the relation between mpg and weight by foreign status and for the full sample
25. Generate a variable for the square of weight
26. Regress mpg on the quadratic in weight and foreign status. How do you interpret the coefficient on foreign
27. Generate the predicted value for mpg
28. Sort the observations by weight
29. Plot the relationship between mpg and weight, as well as your fitted regression. Do it separately by foreign status

(The command sequences and some further explanation is attached to the online version)

Reading: Stata Manuals and Help

Further questions and/or reading might be required. You will be notified of this either in the seminar or on the course website.

Seminar 9: w/c 7th April: Econometric Methods for Cross Section Data:

Learning Outcomes:
By the end of this session you should have:

- The ability to run cross section econometric analysis of data using Stata
- Should have extended your knowledge of econometrics to include sample selection models.
- Should be able to undertake data analysis using Stata

Reading: Woolridge (2002) Ch 17 and Dunne, P. and A. Hughes (1994) "Age, Size, Growth and Survival: UK Companies in the 1980s", ***Journal of Industrial Economics***, Vol XLII, No 2, June, 1994, pp 115-40.

Questions:
This exercise will provide you another chance to use Stata. In this case you have a cross section of UK companies with information on their size in 1980 and in1985 and you will test whether Gibrat's law, that growth is randomly distributed across companies holds or not. In addition to using OLS and LDV estimation procedures, you will consider the issue of sample selection bias and how to deal with it.

Instructions:

- Open Stata
- Download relevant data file for exercise, read the data file into Excel, then block and copy
- Open the data editor window in Stats and paste data in
- Type:

```
summarize size ind dy ls85 ls80 lage
corr ls85 ls80 lage dy
reg ls85 ls80
```

- NB don't need to specify constant to run regression
- Note N=1101 because missing values automatically dropped
- Should get

ls85	=	1.3	+	0.95 ls80
		(5.8)		(69.1)
		Rsq = 0.8		N=1011

- Open the log file and give it a name
- Open the do file editor add age to the regression and run
- Check out the regression post estimation menu and look at plots
- Get robust standard errors –add , robust to end of equation
- Estimate survival probability equations by typing

```
probit dy ls80
logit dy ls80
```

- Also try adding lage
- Allow for more complex relation:

```
generate ls80sq=ls80*ls80
generate lagesq=lage*lage
generate lsage=ls80*lage
```

- Run the survival equations with the extra variables.
- An issue you need to consider is the possible bias introduced by only regressing on the companies that survive
- Can run a Heckman 2 step by typing:

```
heckman ls85 ls80 lage, select(dy ls80) twostep
```

- Try this with different specifications
- Trying using the ML method –see Stata Help

- You can now:
    - Save the session
    - Save the do file
    - Save and print the log file

Further questions and/or reading might be required. You will be notified of this either in the seminar or on the course website.

Seminar 10: w/c 14th April: Survey Methods Exercise

Learning Outcomes:
By the end of this session you should have:

- An understanding of issues involved in constructing household surveys in developing country situations
- A knowledge of how a household survey is constructed, stored and analysed statistically.
- Should be able to undertake survey data analysis using Stata

Questions: Undertake the exercises using the instructions and data provided. These exercises provide further experience of using Stata, but this time in the context of a household survey. The data being used is from Statistics South Africa's 2002 General Household Survey.

- Statistical Analysis 1: Much of the info on Stata should be familiar, but it is good practise to follow the instructions. The exercise is here and the datasets needed for the exercise is person.dta ,
- Statistical Analysis 2: The exercise is here and the dataset needed for the exercise is person.dta
- Complex Sample Surveys 3: The exercise is here and the datasets needed for the exercise are house.dta and personworker.dta
- ---

Documentation for the survey data:

- SSA Info
- Questionnaire
- metadata
- Occupational code list
- Industry code list
- Detailed information

Reading: Stata manuals, Deaton (1997) and documentation provided

Further questions and/or reading might be required. You will be notified of this either in the seminar or on the course website.

Seminar 11: w/c 21st April: Panel Data Applied Exercise

Learning Outcomes:

By the end of this session you should have:

- Extended your knowledge of econometrics to include panel data models.
- The ability to run panel data econometric analysis of panel data using Stata

Reading: Woolridge (2002) Ch 10 & 11; Baltagi (2005)

Dunne and Perlo-Freeman ""The Demand for Military Spending in Developing Countries: A Dynamic Panel Analysis". *Defence and Peace Economics,* Vol 14, No. 6, 2003, pp 461-474

Questions: Replicate the results in the article Dunne and Perlo Freeman ""The Demand for Military Spending in Developing Countries: A Dynamic Panel Analysis". *Defence and Peace Economics,* Vol 14, No. 6, 2003, pp 461-474.

- Data is available as an excel file here.
- Article is available as pdf here

Further questions and/or reading might be required. You will be notified of this either in the seminar or on the course website.

Seminar 12: w/c 28th April: Student presentations and revision

- This session provide students with the opportunity to present the work they have done on their projects and to get feedback from staff and other students.
- Advice on how to go about the presentations will be given in the lectures during term

7. Assessment Offences – Cheating, Collusion and Plagiarism

Please read carefully the following definitions of cheating, collusion and plagiarism. These are serious offences and it is very important that you know how to avoid them. The University procedures for dealing with allegations of assessment offences are laid out in the **UWE Student Handbook**, and in the Academic Regulations (E12a).

7.1. Definitions

7.1.1 Cheating (in the widest sense of the word) is the use of unfair means of presenting work for assessment. It is a serious academic offence as it prevents examiners from being able to make a realistic judgement of a student's knowledge, understanding, ability and/or creativity.

7.1.2 Cheating in an examination includes:

a) taking aids (eg notes, books, mobile phones, equipment) into an examination room which are not authorised for use in that examination
b) copying another student's work
c) seeking or obtaining help from another person
d) assisting another student with an examination

7.1.3 Collusion includes:

a) presenting work as one's own which is derived from unauthorised collaboration with others

b) assisting another person by giving substantial help with ideas or with text which are not then acknowledged.

7.1.4 Plagiarism is a form of theft. It includes:

a) the quotation of another person's words without quotation marks
b) the quotation of another person's words or ideas without acknowledgement
c) the use of another person's ideas without acknowledgement
d) the use of another person's facts or experimental results without acknowledgment.

7.1.5 It is also an assessment offence to prevent another student from being able to be examined properly.

7.2. Avoiding Cheating in Examinations

7.2.1 Students can ensure that they do not unwittingly cheat in examinations if they

a) take into an examination only those items which have been authorised. Particular care must be taken with programmable calculators and dictionaries which can only be used if specifically authorised.

b) follow carefully the "Instructions to Candidates" (Examination Regulation 2) and communicate with no-one except an invigilator during an examination.

7.3. Avoiding Collusion

7.3.1 Most collusion is unintentional. Students are often required to work on a topic or activity in groups and then to produce individual work for assessment. They must be careful to follow the instructions regarding the assessment. Some assessments may require the group to produce joint ideas or proposals, whereas others might assign this initiative to the individual. Unless the instructions specifically require a group report, students must produce their own written work without the help of other people.

7.3.2. It is a normal part of the learning process for students to discuss ideas for written work with each other. However, students should be cautious about lending essays, computer files or laboratory reports to other students in order to avoid the danger of the second student producing an essay or laboratory report similar to that of the first student.

7.3.3. Discussion between students can be a good way of learning: however, students should be careful to ensure that they think out and write the detail of their essays/assignments by themselves.

7.4. Avoiding Assessment Offences

7.4.1. In order to produce good essays, assignments, etc, it is expected that students will base their ideas on several sources and will quote from them. Plagiarism is often a result of poor academic practice rather than a deliberate attempt to cheat. Good academic standards require that -

a) any phrase or longer text which is taken from another author must be quoted precisely using quotation marks and the bibliographical reference

b) where an author's text is summarised the summary must be in the student's own words. Merely changing the order of words or using synonyms does not form an acceptable summary
c) any facts, tables, diagrams or experimental results taken from another person must be acknowledged and referenced
d) any ideas or conclusions taken from another person must be duly acknowledged and referenced.

8. Assessment

8.1. Regulations

In order to pass this module you need to obtain an overall mark of 50% or above. In addition you need to obtain at least 40% in both assessment components.

If you do not get 50% or more in the **module**, you will be referred in each **component** for which your mark is below 50%.

If you do get 50% or more in the module but one of your components is below 40% you will be referred in that component.

If the minimum mark of 40% is not achieved in both required components of assessment (and the other is passed) at the first assessment opportunity the mark for the referred component will be limited to 50%. This is described as a capped mark. The mark for the other component will not be capped nor will the overall module mark. Where a component of assessment is not passed at the second assessment opportunity and a student makes another attempt at the module, the overall module mark achieved at the second attempt will be capped at 50%.

All students referred in a component will have to do the same referral work.

Further information about assessment may be found in the University's Student Handbook.

8.2. First Assessment Opportunity

The assessment has two components: an Examination Component (Component A) and a Coursework Component (Component B). Component A comprises a 2-hour examination in the assessment period.

- Component B is an applied project. This will be a project in which you apply the material of the module to an issue in economics, banking or finance.

The word limit for this project is 3000 words. You will need to agree a title (and consider the execution of the project) with the module leader and provide a written proposal containing the title and a description of the proposed project on 1 page of A4 by 12th February 2007. **The final hand-in date will be Thursday, 1st of May, 2007, 2pm. Please hand in to BBS Reception.**

8.3 Guidelines

Assessment criteria for component A

The criteria for assessment include: evidence of an understanding of relevant analytical techniques and theories; the ability to apply them effectively; the ability to gather, organise, analyse and present evidence and data in a coherent and concise fashion. Students will be

expected to demonstrate their knowledge of economic concepts, theories and principles at Masters level.

Assessment criteria for Component B

The criteria for assessment include: evidence of an understanding of relevant analytical techniques and theories; the ability to apply them effectively; the ability to gather, organise, analyse and present evidence and data in a coherent and concise fashion, employing a range of appropriate and properly referenced material. Students will be expected to demonstrate their knowledge of economic concepts, principles and theories at Masters level. Particular emphasis will be placed on the effective use of statistical theories and techniques.

General Assessment Criteria:

The following section provides guidance on the criteria employed for assignments which receive a distinction, pass or fail award.

Distinction level (75%): For component 1, work which gains a distinction will demonstrate a standard of writing and critical analysis will be considered excellent. In other modules, excellence will be taken to mean that it could be considered for publication in that field. To be judged of distinction quality in specific assignments or in the overall performance for a module, assessed work will demonstrate all that is required for the PASS band and will also demonstrate a range of the following characteristics, as determined by the relevant subject specialists and programme team. Care must be taken to ensure that this process does not invite subject specialists to ignore or devalue these generic criteria:

a) creativity in developing new approaches and interpretation to existing or new areas of knowledge and/or innovations in practice
b) original critical analysis which reviews the validity of theoretical perspectives and methodologies
c) critical understanding of an appropriate range of research methodologies as well as the ability to explore the limitations of existing research strategies
d) creativity in exploring the limits of current knowledge and contributing to the development of theory, research and practice
e) work supported throughout by appropriate evidence
f) correct use of language, unambiguous expression and clear presentation

Pass (50%): To be judged as a pass in specific assignments or in the overall performance for a module, assessed work will demonstrate the following characteristics as determined by the relevant subject specialists and programme team. Care must be taken to ensure that this process does not invite subject specialists to ignore or devalue these generic criteria:

a) a comprehensive understanding of existing areas of relevant knowledge and practice and an awareness of gaps and weaknesses of such knowledge
b) a standard of objective critical analysis which demonstrates academic rigour using relevant concepts and knowledge
c) a creative attempt to contribute to the ongoing development of theory, research and practice
d) most substantive points are supported by appropriate evidence, with avoidance of unfounded generalisations
e) an ability to structure and organise material in a broadly logical manner with a clear development of ideas
f) clear evidence of thorough reading of core texts
g) largely accurate and complete referencing using an appropriate citation system
h) largely correct use of language, unambiguous expression and clear presentation

Fail: Assessed work which is judged to fail will demonstrate a significant number of the following characteristics, as determined by the subject specialists and programme team. Care must be taken to ensure that this process does not invite subject specialists to ignore or devalue these generic criteria:

a) insufficient critical analysis of the topic
b) limited critical review of existing areas of knowledge and/or practice
c) disorganised structure with incorrect or inappropriate sequencing of content/ materials
d) failure to develop a clear line of argument
e) inadequate use of supportive evidence
f) disproportionate reliance on unsupported generalisations
g) evidence of insufficient appropriate reading and reflection
h) inaccurate referencing
i) poor use of an appropriate citation system
j) inappropriate or poorly executed research methodologies
k) unclear presentation

8.4 Second Assessment Opportunity (Referral)

The regulations for passing this module are expressed in section 8.1 above. All students referred in a component will have to do the same referral work. *Further information regarding assessment may be found in the University's Student Handbook.* The deadline date for the submission of referral work will be posted on the Faculty notice board when it is known.

The referral exam, component A (50%) will be in the same format as the exam in the first assessment period, with a similar balance and style of questions.

Re-assessment for the coursework, component B (50%): Resubmit an applied project according to the instructions given in section 8.2 above.

9. Doing An Applied Project

In doing your applied project you will be expected to:

- Select a question of interest and relevance to you
- Review very briefly the literature on that topic
- Discuss the methodology you are employing
- Collect data (usually secondary) relevant to the issue
- Prepare the data for analysis
- Analyse the data using some technique
- Reach some conclusions

These notes provide some advice on how to undertake a piece of applied work using the skills learnt in the Econometrics and Research Methods courses. This can be complemented by Appendix A in Intriligator, Bodkin and Hsiao (1996).

1. Starting

By the end of the first semester courses you should be able to run regressions and interpret the results. The applied exercises you undertook were designed to provide you with the required skills.

You should give some thought to the topic you would like to do before the beginning of the second semester. Once the course starts you will be asked to provide a brief proposal, describing the topic, the general form of the model and the data to be used. Surgeries to provide advice and guidance will be given in the second and third weeks and you will be assigned a member of staff to provide supervision. You will be required to make a short presentation of your work in week seven.

2. Topic

You can choose any topic. Useful sources are:
-an interesting dataset
-your job if you are a part time student
-your optional subject if you are full time
-published articles
-members of staff
-overseas students might choose topics using data from their own country.

Do not put a lot of effort into the theory until you have the data and avoid choosing a topic that is too ambitious. Also, do not worry about whether the results you get are good or bad, you will be assessed on how well you analyse a problem, not on your final result.

An important way of developing your project is to replicate a published paper. Applying the researcher's model to the same data, updating the analysis, and then maybe attempting to improve upon the model. Alternatively, you could use the data for a different country, industry or time period. It is often very difficult to get exactly the same results as those published. See Dewald et al (1986).

Read empirical economics papers and try to copy their style. Have a look through some recent journals.
-American Economic Review
-Economic Journal
-National Institute Review
-International Review of Applied Economics
-Applied Economics
are good places to look for empirical papers. Appendix A in Intriligator, Bodkin and Hsiao (1996) gives more. If you want to find a paper or book on a particular topic look in the Journal of Economic Literature, which classifies them by subject.

Do not agonise for too long over choosing a topic and once you have chosen a topic and collected the data do not be tempted to change.

The topics should involve explaining at least one variable by some others. Some examples might be standard economic relationships:
-explaining a countries imports by the level of demand, GDP; domestic process; import prices; tariffs; exchange rates.
-explaining consumption by income, inflation and wealth.
-explaining money demand by income and interest rates.
Or non-economic relationships:
-explaining attendance at football matches by ticket process, the quality of the teams, hooliganism, and the weather.
-explaining carbon dioxide concentrations by industrial production and sea temperature
-explaining crime rates by unemployment and economic factors.

3.Data

Finding the appropriate data can be the most difficult part of the project. You should check that the data is available before deciding on a topic and make sure you are clear what the data is. You can use time series data, cross section data (observations at one moment in time over countries, regions, families, etc...), or panel data which combines time series and cross section.

Make sure there are enough observations and variables. The sample size can be important in determining the techniques you can use and the precision of our results. Aim to have at least 30 observations for annual or cross section data; more for quarterly or monthly data. Unless you have experience of large data sets, or can get help in handling them, do not go much above 100 observations.

Make sure you know the exact definition of your data and what they are measuring. Terms like income and prices are not acceptable as they give little information. The sort of questions you should consider are:
Are the data current or constant price?
What is the base year?
What is the coverage (Net or Gross, Domestic UK or GB)?
Are they seasonally adjusted?
Have the definitions changed over the sample period?
If it is constructed data, how was this done?
Is the data based on a sample?
You may have to do a lot of work to make the data useable or comparable. If so provide information on this work, possibly in the form of a data appendix, so that you can be given credit.
You may have to adjust the data in various ways to deal with missing observations, to splice series on different bases, or to convert them into a different currency. Published data are not infallible, so always be on the look out for possible mistakes.

You should know something about the relevant history and institutions, such as important events, like strikes, wars, or changes of government.

Once you have loaded the data onto the computer, you should conduct a descriptive analysis. Print the data out and check carefully for typing errors. Plot the data and note the distinctive features such as trends, temporal dependencies, seasonality, unusual observation, etc. Calculate the means variances of your variables and their correlations.

Repeat this process after you transform the data in any way:
-growth rates or ratios (the savings rate, the velocity of circulation, the share of profits) are often more informative because they are not dominated by trends.
-logarithmic transformations are often used in economic models as the coefficients can then be interpreted as elasticities; the change in the logarithm is approximately equal to the growth rate; variances are more likely to be constant; and many interesting economic hypotheses can be expressed as linear restrictions in logarithmic models.

The introduction to the article by Hendry on house prices in Hendry and Wallis (1984) is a good model for this descriptive analysis. As part of the data description for time series you should check the order of integration of the variables and whether they are co-integrated.

Where there are a number of possible measures for a series use all of them and try to decide which is best. You can report this in the project. e.g. Do wages respond more to the consumer price index or the retail price index? Do not decide a priori, test and find out.

Keep detailed notes on the sources of data and anything you do to them. Its easy to forget at a later stage. You might end up with some adjustments you made and forgot about dominating your results.

Keep at least two backed up copies of your data on separate discs, stored separately. There are many ways of loosing or corrupting disks and it can be a lot of work typing the data in again.

Sources

For UK data:
-Economic Trends Annual Supplement: is the best single source
-The Blue Book (National Income and Expenditure)
-The Annual Abstract of Statistics
-Financial Statistics
-Employment Gazette
-Family Expenditure Survey
-Census of Production
-Key Data a CSO publication provides a good introduction to what data is available and will give the relevant specialist publication.

For international data:

-World Development Report: published by the World Bank
-OECD Main Economic Indicators
-International Financial Statistics: Published by IMF

For the US:
Economic Report of the President: has an appendix giving the main economic aggregates.

Financial data:
Datastream: provides various financial and company accounts information and is available in the library. It also has some coverage of international macroeconomic and financial data. Similar but more limited data sources are available in the Hendon library.

There are also a number of publications which present data, such as:
-Maddison (1982) which gives long runs of historical data for the main capitalist countries.
-Berndt (1991) provides data on a floppy disc.

NB CSO, OECD and Eurostat data are available on disk if required. It is still a good idea to study the publications to make sure the data is what you think it is and to check on any idiosyncrasies

4. Analysis

Conduct your research with the final written project in mind. Make sure you can answer all the questions posed in the next section. Write fairly detailed notes of what you are doing and what your results are as you go along. It is very easy to forget what you did and be left with a vast pile of incomprehensible printout.

Try and organise your investigations around a few central questions. This will allow you to structure your specification search. The implicit methodology in these notes is broadly the Hendry/Spanos approach. This is not the only way to structure the analysis but it does provide a convenient framework.

5. Writing Up

Leave plenty of time for writing up, this tends to be the weakest link. In exercises like this students who can do all the rest, often fail to describe what they have done and what it all means. It should read like a good empirical paper in an economics journal, not a piece of autobiography. Read some more empirical papers and copy their style.

You are expected to type the project before submitting it, though equations can be handwritten. **Do not submit computer print outs**. You should process and digest the relevant information from them and report it in the project. Do not just transcribe the results of running dozens of regressions. Try to structure the interpretation of the results; pose questions and explain how the regressions provide answers to them. As you write up you are bound to think of something else you need to do. So start writing up early, don't leave it till the last minute.

Write about all the things the reader does not know and will need to know to understand what you have done. Do not copy large chunks of econometrics/statistics textbooks. The reader will know most of that, just give a reference.

Attempt the impossible: try to make it lively and interesting.

Introduction: Don't jump in at the middle. Introduce the subject, give some background information and refer to any relevant literature. Then explain the questions you are going to try to answer, or the problems you are going to solve and why they are interesting. Say how your project differs from other work.

Theory: Set out the economic theory and use it to specify a model. Wallis (1979) and Berndt (1991) are good on the process of moving from economic theory to econometric models. Discuss the economic interpretations of the parameters (elasticities, marginal propensities, long and short run effects, etc). Set out any a priori expectations about signs and magnitudes of the parameters. Set out

any hypotheses to be tested: constant returns to scale; homogeneity; unit elasticities. Note any identities linking the data. Discuss any identification problems.

It is often useful to think of economic theory as specifying: a long run equilibrium relationship; an adjustment process; an expectations formation process. Discuss each of these separately. Think about the time series structure of the data. You will get into trouble if you try to explain a stationary variable just by a single, highly trended, variable. Check that orders of integration match.

Remember that some theories imply that variables should follow random walks, so the basic theoretical model is that the change in the variable is a 'white noise' error, unpredictable from earlier information.

Data: Discuss the sources of the data, the exact definitions of the variables, the sample used for estimation, the correspondence of the data to the relevant theoretical concepts, the possible measurement errors etc. Describe the main features of the series, with graphs if necessary, and point out any peculiarities or outliers. Ask whether the series are stationary in levels or first differences.

Credit is given for data collection but you need to give information about it. If you have done a lot of work developing a new or unusual data set make sure you describe what you have done.

Statistical Model: Use the theoretical and the probabilistic structure of the data to choose a statistical model; linear regression model; dynamic linear regression; multivariate regression; vector autoregression; simultaneous equations model; etc. Discuss your choice of statistical model in terms of the assumptions it involves. You need to convince the reader that you have made an appropriate choice. It pays to start by trying both a simple model using just levels of the main variables (which you may want to treat as a cointegrating regression) and a fairly general model with lots of lags and variables.

Estimation and Mispecification Testing: Estimate the statistical parameters of interest and test the validity of the assumptions underlying the statistical model (no serial correlation, linear functional form, homoscedasticity, normality, constant parameters, etc). If any of the assumptions are rejected you should respecify the model and try again. With luck you should get a "well defined statistical model" that passes all the mispecification tests. Report the results briefly. How you lay out and present the results is very important. Try to copy articles in the literature.

Specification Testing and Interpretation: When you have a "well defined statistical model", then you can proceed to reparameterise/restrict the statistical model in order to construct an empirical econometric model. This involves testing economic hypotheses (eg homogeneity in prices, constant returns to scale), calculating the economic parameters of interest (eg long run solutions, elasticities), and interpreting the adjustment process (eg error correction, common factors).

Finally, evaluate your chosen empirical econometric model in the light of the original theoretical model, the estimated theoretical parameters of interest, and how your results compare with other published estimates. If you were unable to find a well defined statistical model go through this stage anyway, but point out that your results may be less reliable because of the possible mispecifications.

Conclusions: Explain the significance of the results and how they relate to the original questions or problems posed in the introduction. What is their relevance for practical questions of policy, forecasting, business? Are they consistent with theory and with institutional and historical information you might have? Is the model statistical adequate in representing the data.

References: Provide a list of works cited at the end, with references in the text of the form Berndt (1991).

References:

- Berndt ER (1991) "The Practice of Econometrics", Addison-Wesley.
- Dewald WG , Thursby JG and RG Anderson (1986) Replication in Empirical Economics, American Economic Review, September, p587-603.

- Hendry DF and Wallis KF (eds) (1984) Econometrics and Quantitative Economics, Basil Blackwell.
- Intriligator, Bodkin and Hsiao (1996) “Econometric Models, Techniques and Applications”
- Maddison A (1982) Phases of Capitalist Development, Oxford.
- Wallis KF (1979) Topics in Applied Econometrics, Basil Blackwell.

10. Previous exam papers

Previous exam papers will be made available through the Library’s digital collections.