

QM2 Econometric Project

As part of the course requirements you have to undertake an econometric evaluation of an economic issue using data that you have gathered either from the host of data sets now available on the web, or that you have assembled yourself from data published in journals or in official sources.

The project is worth **20% of the total** marks for this course

The data set must contain **a minimum of 3** variables, (one dependent variable and **at least 2** right hand side variables to be added to a constant term). You should concentrate on estimating a **multiple** (rather than simple) regression model.

You should have a **minimum of 50 observations** in your regressions. Anything less will be penalised heavily.

The model should be a **causal one**, (ie the right hand side variables should explain the dependent variable, not the other way round). This also means, for example, that you should **not** estimate identities like a national accounts model of the form $Y=C+I+G+(X-M)$. This is an accounting identity and so the coefficients shouldn't be anything other than one, barring measurement error).

The econometric results should include a thorough statistical evaluation using the full range of (**relevant**) diagnostic tests highlighted during the course. Do not use tests just for the sake of it. There are no marks to be gained by doing countless irrelevant tests. Only use tests that are relevant to the type of data and economic relationship you are trying to estimate. (For the purposes of the project assume that a sample of 50 or more observations is enough to make any asymptotic tests valid).

This project should be completed and handed in (via **Turnitin**) by **Midday Wednesday 29th January 2014**

In order for the project to be marked at all, you **must** provide a disk containing i) the data you have used ii) the **Stata** output log containing your regression output (any output – including graphs - generated using any other package will be penalised) and iii) a copy of the project on disc along with a hard copy of the project.

You should aim for a **maximum of 2,500** words or around 8 pages of text, 2 to 3 tables of results and 2 or 3 figures (not including the log file)

Please provide a word count on your cover page.

Project Objectives

The idea is to choose an economic issue which you find interesting, outline a theory and a set of testable hypotheses that follow on from that. Then test the theory empirically using the tools you have learned during this term's course. The dissertation should read something like a typical article that you would

find in a (non-technical) academic journal like the **Journal of Economic Perspectives** or the **May Papers & Proceedings** volumes of the **American Economic Review**, (the collection of back issues are in the library).

Choosing a Topic

The most important thing is to choose a project that is feasible, that can be finished within one month from start to finish and still allow you time to work on your other subjects. This means confining your topic to a simple issue. Also it is a good idea to choose a topic that you are interested in, rather than one you felt you ought to do. The more you are interested the easier the project will be. **Do not** write the theoretical part of your project until you know you have data that can be used to test your hypotheses.

One good way to find a topic to study is to read the economic pages of the broadsheet newspapers and/or academic articles summarised in overview journals like the

Journal of Economic Perspectives

or

Journal of Economic Literature

both of which are in the library. In addition there are specialist journals, (and therefore more technical), such as the

American Economic Review, Economic Journal, Quarterly Journal of Economics, Journal of Labor Economics, Journal of Industrial Economics, Journal of Development Economics, Journal of Finance

which should all be good sources of current issues concerning academic economists

Data

There are now a variety of data sources on the internet.

Many UK macroeconomic statistics, (inflation, unemployment, gdp etc), can be downloaded from the Office for National Statistics website

<http://www.ons.gov.uk/ons/index.html>

The bized site also contains access to official UK data alongside company account data and some international data.

<http://www.bized.co.uk/learn/economics/index.htm>

You can find stock market data at the Stock Exchange's web site

<http://www.londonstockexchange.com/>

or from yahoo

<http://uk.finance.yahoo.com/q/hp?s=%5EFTSE>

A very good source of international data both cross section and time series is given at the Resources for Economists website

http://rfe.org/showCat.php?cat_id=2

and also the Statlib website

<http://lib.stat.cmu.edu>

and also the university of Michigan

<http://www.lib.umich.edu/govdocs/stforeig.html>

The World Bank also has data

<http://worldbank.org>

and there are lots of data and ideas at

<http://www.economagic.com/> and <http://pwt.econ.upenn.edu>

The library also has a useful link to some sites

For those of you interested in working with cross section data. I have put 2 different UK cross section data sets on the course web site

GHS_project.dta – which has information on wages, health, smoking, drinking, education and other socio-demographic characteristics of individuals taken from the General Household Survey

(you can find a codebook giving details of the variables at

<http://www.esds.ac.uk/findingData/snDescription.asp?sn=5804>

Food_project.dta - which has information on household spending on various consumer items taken from the Expenditure & Food Survey

(you can find a codebook giving details of the variables at

<http://www.esds.ac.uk/findingData/snDescription.asp?sn=5375>

You will of course have to choose which variables to model and give economic reasons for your choice.

These are just guides to help you. You may, of course, find your own data.

Analysis

Ideally your project should look and be structured like an article you can find in any of the economic journals listed above. You are strongly advised to read some articles to get a feel for how they are presented.

(there is an example article on the course moodle page)

So your project should include the following sections:

Theoretical Framework

Set out the economic theory underlying your project and use it to specify a model and the resulting hypotheses to be tested. Set out your prior expectations of the likely signs and magnitudes of the coefficients. Discuss any econometric problems you expect to encounter.

Data

Discuss the sources for your data. Give the exact definition of variables (in a Table in an appendix) and sample period, Describe the main features of the data using a table of sample means and their standard errors. Graph the trends in the dependent and, perhaps, the independent variables. Comment on the main trends/features.

Econometric Method

Outline the econometric techniques used to estimate your model, (eg. ordinary least squares with corrections for heteroskedasticity/autocorrelation). You need to convince the reader that you have made the right choice of estimation technique. Evaluate the model using the set of (relevant) diagnostic tests covered in the lectures. (Eg, Box-Cox, Ramsey Reset, Forecasting). Do **NOT** report the results of the tests one after another like a shopping list. Report the tests for each model at the bottom of a column of estimates. (Again read a journal article for hints on presentation).

Results

Outline your results in **tabular** form, (check with a journal if you are unsure as to how to present your results). The Stata command "outreg" will help considerably with you inputting the results in tabular form. State whether your hypotheses are accepted or rejected. Comment on the results and on any diagnostic tests you have used.

Conclusion

Give an overview of your hypotheses and main results

References

Always list the data sources and articles that you may have read at the end of the discussion. Tables and Figures should come after the references.