

DEPARTMENT OF ECONOMETRICS AND BUSINESS STATISTICS**ETC4420/ETC5420/BEX4420 MICROECONOMETRICS****ASSIGNMENT**

- This assignment is worth 20% of your final assessment for the subject.
- A data file '*PHI.dta*' and a copy of the questionnaire of the survey from which the data are collected ('*NHS0405Questionnaire.pdf*') are attached.
- The dataset is not to be used for any purposes other than this assignment, and delete the datafile from your computer at the end of this semester.
- The assignment is due on **11pm, Sunday May 27** via Moodle.

Research Background and Objective

Despite universal public healthcare coverage Medicare, private health insurance (PHI) covers almost half of the Australian population. Private health cover enhances patients' choice over providers and their access to timely elective care. It helps finance the development of private hospital facilities, thereby providing an alternative to public hospital care. PHI also includes ancillary (or extras) covers that provide benefits for ancillary services such as physiotherapy, dental and optical treatment. Broadly speaking, health funds offer three types of PHI that individuals can choose from – hospital only, ancillary only, or a combined cover of hospital and ancillary care.

With the universal public cover of Medicare, a persistent issue facing the Australian healthcare system arises from the unmet demand for public hospital care and the long waiting time for elective surgeries. Frequent media coverage of public hospital crisis has also made the issue political at every government election. Australian policy makers have long recognised the important role of PHI, and a number of policy interventions have been implemented to encourage PHI membership in order to alleviate pressure on the public health care system. In order to design and implement policies that encourage the uptake of PHI, it is important to understand the factors that relate to individuals' decisions to purchase PHI and the types of PHI they purchase.

With the divide of the Australian population into those who have PHI and those who do not, there is also a concern for inequality in access to healthcare services among Australians. Long waiting time for elective surgeries in public hospitals for those uninsured is a constant concern. Access to dental care is another main concern for inequality, as dental cost is covered by ancillary PHI but not by the Medicare.

Your Assignment

In this assignment, you are asked to conduct an analysis to address some of the policy concerns described above using a sample of individuals from the 2004/05 Australian National Health Survey (NHS). In particular, you are asked to address the following two broad research objectives.

- 1) To examine the factors affecting Australian individuals' decision on PHI purchase.
- 2) To study the impacts of PHI status on individuals dental service uses.

This is an 'open assignment' in the sense that you can conduct any analyses you wish to address the two research questions using the dataset given. You can use any models we have discussed in the lectures and any STATA commands for execution of the models.

The file '*PHI.dta*' contains data for a representative sample of the Australian population with 25,000 individuals. The dataset contains some information on the respondents' standard socioeconomic and demographic characteristics, PHI status, health conditions, health service uses, and lifestyle behaviours. The definition of all variables should be reasonably clear from the data labels and the value label view of the data in the data file. A copy of the actual questionnaire ('*NHS0405Questionnaire.pdf*') is also included for your reference, although not all variables in the survey are given in the dataset. You are also free to look at other open online sources to gain information on the survey, the Australian healthcare system and payment arrangement, the policy background, and so on to inform your research. You could even find any external data sources to augment with the data given if you feel energetic and motivated. Make sure you give reference to any information sources used.

You must use your own subsample of the NHS for your analysis. In order to obtain your sample, you will need to open the original file, set your random seed to your 8 digit student ID number, and generate a sub-sample of 22,000 individuals. The command for this is as follows:

```
set seed ID#  
sample 22000, count
```

Notes on Specific Tasks and Requirements

This is an assignment where you have an opportunity to use all the skills you have learnt so far to address some research questions using given data. Pay attention to all the issues we discussed in the class in conducting real world research using micro datasets. These include for example data cleaning, the appropriate models to use, any potential endogeneity and sample selection, and issues with instrumental variables. Of course you may not be able to deal with all the issues in your research, or to be able to compute all the results you wish to present, but you can discuss caveats at the end for issues you have not addressed or any potential extensions to your research. Of course you do not need to use all the variables in the data file; they are there for you to choose to use for your analyses.

Marking Guide

Your assignment will be marked as an integral piece of research report, considering both content and presentation. Roughly speaking, 50% and 40% of the marks will be allocated to research objectives 1) and 2) respectively, and 10% to presentation.

Requirement in Presentation

- Present your work in the form of a brief research report/paper. You can structure your report in any way you like, but your report should be a self-contained piece of work, including ideally a brief introduction/motivation, clearly outlined objectives, specification of models used, data description and definition of variables used, result presentation and discussion, and conclusion/summary discussion. Organise your results in tables and graphs with clear labels as in academic papers. Refer to the tables/graphs in the text of your discussion. Include your .do file as an appendix at the back of your written report/paper (the pdf file).
- Submit an electronic copy of your written assignment in pdf format, as well as the STATA .do files and .log files for your analysis via Moodle **by 11pm, Sunday May 27.**