

# EC312 Cost Benefit Analysis

Seminar Leader: Israel Waichman

Course Times: Tue 09:00-10:30, Thu 09:00-10:30,

Place: TBA

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Office hours: Tue 13:00-14:00, Thu 13:00-14:00 (Please make an appointment via E-mail)

## Course Description

Did you ever ask yourself how economists make practical use of their studies in making real-life decisions? Or more precisely, how is microeconomics related to actual business and government decisions? This course deals with an important application of economic theory to real-life decision making. Cost-benefit Analysis (CBA) is a practical tool used by governments, regulatory bodies and other agencies as an aid to making public policy decisions. It is related to financial analysis or capital budgeting as done by private firms, but is distinct in that the goal is not to maximize profits but, rather, to seek the most beneficial course of action from the larger social perspective.

Cost-benefit analysis is required by law in several countries like U.S.A., U.K., Canada and Australia, before taking decisions on projects related to environmental, health, transportation, etc. For instance, the following questions can be subject to CBA: should a new terminal be built in Heathrow airport? Should smoking be banned in public places?

## Learning Outcomes

- Introduce the idea of using microeconomics to evaluate actual policy decisions
- Study how to conduct a cost benefits analysis
- Study various topics in cost benefits analysis, such as discounting, monetizing and predicting costs, estimating shadow process, etc.
- Develop a critical view perspective on the way cost benefit analyses are conducted in practice (as opposed to the conceptually correct way of conducting a cost benefit analysis)

## Requirements

### Prerequisites

- This is an applied microeconomics course. Students taking this course should have already successfully completed Microeconomics for Economics and Mathematics for Economics.

### Textbooks

We will closely follow the following textbook:

- "Boardman A. E, Greenberg D.H., Vining A. R., & Weimer D. L. "Cost-Benefit Analysis," Pearson Education inc.: New Jersey, USA" (4th edition)"

### Attendance

Attendance at ALL classes is expected. More than two absences (that is absences from two sessions of 90 minutes) in a semester will significantly affect the grade for the course.

### Use of cellphones

cellphones are not allowed during the classes (not even as calculators). Please leave your cellphone in your bag during the classes.

### Calculators

You are expected to bring scientific calculators to all classes. Cellphones are not allowed in the classroom.

## **Assessment**

Assessment will be based on attendance, preparation for classes, regular and active participation, handing in group problems sets, possibly quizzes, as well as a mid-term (60 minutes – at the end of week 10) and a final project (see below).

### Grade breakdown

- Seminar participation (class exercises), handing in problem sets (in pairs), and possible quizzes 30%
- Mid-term exam 30%: date and Time TBA (about the end of week 10 or 11).
- Final Project: A critical presentation (20%) and a 5-pages report (20%) on an actual cost benefit analysis report (in pairs) 40%

### Problem sets

Problem sets (in pairs) are due one week after being given, i.e., if they are given on Thursday they should be submitted before the Thursday class one week afterward. Problem sets will be given throughout the course where appropriate and constitute an integral part of the final grade. Solutions to problem sets can only be submitted on an A4 paper. Make sure that your solutions are organized and clearly written.

### Final project

Students will have to search for a cost benefit analysis report that was conducted for policy evaluation. They would have to present this project in the class and also write a 5–page report. In particular, they should describe the project, show the calculations of costs and benefits and the overall assessment. Finally will have to criticise the analysis based on the conceptually correct analysis that they learned in the course.

### Policy on Late Submission of empirical work

Please note the policy from the Student Handbook on the submission of essays: essays that are up to 24 hours late will be downgraded one full grade (from B+ to C+, for example). Instructors are not obliged to accept essays that are more than 24 hours late. Where an instructor agrees to accept a late essay, it must be submitted within four weeks of the deadline and cannot receive a grade of higher than C.

Thereafter, the student will receive a failing grade for the assignment.

## **Professionalism**

Being a student is your full-time job and with it come a set of responsibilities and expectations, as with any other job. Maintaining a professional attitude towards your course of study is something that also prepares you for later work life. A professional attitude towards your studies is shown by coming to

class on time, being prepared, being courteous to your teachers and fellow students. It is exhibited by writing your essays with care, actively participating in class, not missing classes except for the most dire of circumstances and in general by adapting to the rules of the course without trying to bargain for personal exceptions.

## **Ethics/Academic honesty**

A core value of the academy is truth and the pursuit thereof. Nothing can shake the foundations of this pursuit as much as academic dishonesty as it undermines the trust that is indispensable to it. This is why I will not excuse any instance of academic dishonesty. Plagiarism, cheating during exams, copying homework assignments (or doing individual assignments with a classmate) all constitute violations of academic honesty and of the clause on “academic integrity” that each student has signed in the student handbook. They can lead to failing the course and will be reflected in the student’s record (having a record of academic dishonesty can make obtaining scholarships, achieving a study abroad place or admission to another program difficult if not outright impossible).

## **Schedule and Course structure**

Classes start on Tuesday Jan 28 and run until Thursday Mai 7, with fall break planned for April 6– April 10. Completion week will take place on Mai 11–15.

The following course structure is provisional in order to allow for flexibility. It is the students’ responsibility to keep themselves informed of any changes to the schedule provided here. An up-to-date schedule will be maintained by the course management in our Google classroom system. Lecture slides and problem sets will be posted in Google classroom. Please sign in for the course, password will be given in the first class.

In particular, the structure of the course is as follows:

### **Part I: Introduction to Cost Benefit Analysis (Weeks 1-3)**

In this part, we will study what cost benefit analysis (CBA) is, the purpose of using it, and the basic steps of CBA. We will then introduce the conceptual foundation of CBA, especially the use of CBA as a framework for measuring efficiency. Finally, we will refresh our knowledge of microeconomics.

- Introduction
- Conceptual Foundations of CBA
- Microeconomic Foundations of CBA

### **Part II: Using Microeconomics to Value Benefits and Costs (Weeks 4-7)**

In this main part of the course we will discuss how to use microeconomics to estimate "conceptually correct" measures of benefits and costs. We will value benefits using Willingness-To-Pay measures, and costs using opportunity costs. Moreover, we will study how to measure benefits in efficient and distorted markets and when to include secondary markets in the analysis.

- Valuing Benefits in Primary Markets
- Valuing Costs in Primary Markets

- Valuing Benefits and Costs in Secondary Markets

### **Part III: Further Issues in Cost Benefit Analysis (Weeks 8-12)**

In this part we will study further issues in cost benefits analysis. We will study how to compute the net present value of a project, compounding and discounting over multiple years, and how to compare projects with different time frames. We will then learn to develop option price as the conceptually correct measure of WTP in circumstances in which individuals face uncertainty. We will define existence value (as a benefit category) and discuss the theoretical and empirical problems analysts face in using it. Next we will review the major sources of information for predicting policy impact and valuing them with shadow prices. Finally we will learn about how to value impacts when the goods are not traded in a market and do not have a market price.

- Discounting Benefits and Costs in Future Time Periods
- Option Price and Option Value
- Existence Value
- Predicting and Monetizing Impacts
- Valuing Impacts from Observed Behavior: Indirect Market Methods
- Contingent Pricing Method (Surveys)

### **Part IV: Cost Benefit Analysis in practice (Weeks 13-14)**

The final two weeks of the semester are devoted to the students' presentation of cost benefit analyses that were conducted for various projects.

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