

ECON 4418 and 8018

Cost Benefit Analysis

Economic analysis provides a powerful tool for analysing public policy from both a positive (i.e. predictive) and normative (i.e. evaluative) perspective and focuses attention on how policies can be improved. Cost benefit analysis is how economists analyse public policy issues, all policy economics represents cost-benefit analysis in some form or other.

Cost benefit analysis is an analytical framework for evaluating government policies and improving decision making. It is used to systematically compare the social costs and benefits of government policies, with the emphasis on valuing them (to the extent possible) in monetary terms.

Cost benefit analysis draws attention to the likely impacts of policies and helps decision makers to compare the favourable and unfavourable effects of proposed policies in a consistent way and decide whether they should be undertaken.

Cost-benefit analysis can be (and is) used to analyse and strengthen a wide range of government choices, including whether to undertake an infrastructure project, provide a service, pass a regulation, produce a public good, change a social welfare programme or adjust a tax.

This is a graduate course. Graduate and Honours students do the undergraduate course and additional graduate level material – extensions of the undergraduate course topics and additional topics – in an extra lecture a week starting in Week 2.

Mode of Delivery	On campus.
Prerequisites	To enrol in this course you must have completed the equivalent of, or have concurrent enrolment in ECON8025, and either ECON2015/6015 or ECON8013.
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SEMESTER 2
2018

<http://programsandcourses.anu.edu.au/course/ECON4418>

<http://programsandcourses.anu.edu.au/course/ECON8018>

COURSE OVERVIEW

Course Description

After an introduction to the use of cost benefit analysis in public policy and politics, I will set out the foundations of cost benefit analysis: how welfare economics is used to measure the costs and benefits of policy changes. The implications of public choice, the economics of the political process, for the role of cost benefit analysis is also studied.

The next topics are how to analyse the efficiency effects of government interventions, followed by the tools of cost benefit analysis. The final topic applies these tools of policy analysis to examine a number of topical public policy issues in detail.

The graduate section of the course examines more advanced welfare economics and then focuses on accounting for risk and uncertainty in policy analysis, with applications to valuing assets and the social discount rate.

Learning Outcomes

Upon successful completion of the requirements for this course, students will be able to:

- determine when a CBA may be performed in a meaningful way;
- perform the CBA as completely as possible under relevant modelling assumptions or approximations;
- identify the elements that may compromise the validity of the CBA such as limitations in modelling assumptions, limitations in data, and political concerns;
- effectively communicate the results of the CBA to the relevant parties.

Assessment Summary

Assessment for this course will consist of two in-class tests and a final exam.

The in-class tests will be fifty minutes each and will take place in Weeks 5 and 10 during the graduate lecture time (Thursday 12-1). The in-class tests will cover material done in the undergraduate course in the weeks prior to the test and since the last one (e.g. Test 1 covers Weeks 1-4, Test 2 Weeks 5-9). Students will be advised at a later date, in class and on Wattle, of the time of, and material covered in, the in-class tests.

The final exam will be three hours long, plus thirty minutes reading time. It will examine all material in the course.

One in-class test is worth 10 per cent of the final mark, the other 30 per cent (with the test that counts more being chosen to maximize your mark). The final exam is worth 60 per cent of the total mark. There will be no special examinations for the in-class tests. Instead for students who would normally meet the requirements for a special exam (eg medical certificate), the weighting will be moved to the final exam. Students who do not sit an in-class test and do not meet the necessary requirements for a special exam will receive a zero.

Assessment Task	Value	Due Date	Date for Return of Assessment
1. In-class test	10 or 30 per cent	Week 5	<i>During semester break.</i>
2. In-class test	10 or 30 per cent	Week 10	<i>Week 12</i>
3. Final exam	60 per cent	T.B.A.	<i>Date for Return of Assessment</i>

Research-Led Teaching

The lecturer has published a number of papers on cost benefit analysis and others using cost benefit analysis of public policy issues. He has conducted a number of cost benefit studies as a consultant.

Feedback

Staff Feedback

Students can collect their in-class tests after they are marked. Answers to the in-class tests will be posted on wattle and discussed in lectures.

Student Feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.

For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to <http://unistats.anu.edu.au/surveys/selt/students/> and <http://unistats.anu.edu.au/surveys/selt/results/learning/>

Policies

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and implement them. You can find the University's education policies and an explanatory glossary at: <http://policies.anu.edu.au/>

Students are expected to have read the [Academic Misconduct Rules 2014](#) before the commencement of their course.

Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

Required Resources

The textbook for the course is *The Economic Analysis of Public Policy* by William Bellinger 2nd Edition (2016), Routledge. It is available in the co-op bookstore.

Although the textbook forms the core of the course, I will go into deeper in topics than the textbook does. Extra readings will be set from other textbooks and journal articles and copies will be placed on the course Wattle web site.

A detailed outline, reading list and the associated readings for each topic will be placed on the course wattle web site before the start of each topic.

The course handouts and tutorial assignments for the undergraduate section of the course can be found at the Wattle site for ECON2133. Students should check this site at least once a week.

Recommended Resources

There are many excellent textbooks on cost benefit analysis, such as Anthony E. Boardman, David H. Greenberg, Aidan R. Vining, and David L. Weimer. *Cost -Benefit Analysis: Concepts and Practice*, 4th Edition (Pearson series in Economics, 2011).

A more advanced text is Robert Brent. *Applied Cost–Benefit Analysis*, 2nd Edition (2006), Edward Elgar.

Euston Quah and Raymond Toh *Cost Benefit Analysis Cases and Materials* (Routledge, 2012) provide 15 case studies of cost benefit analysis, mainly for Asian projects such as the Three Gorges Dam.

The *Journal of Cost Benefit Analysis* publishes good cost benefit studies.

Additional course costs

No additional course costs

Examination material or equipment

Non-programmable calculators and foreign language dictionaries permitted. The binding details for the final exam will be given in the University's final exam timetable

<http://timetable.anu.edu.au/exams/>

Note there are three undergraduate lectures in Week 1 (Tuesday, Wednesday, Thursday). From Week 2 the Thursday lecture will be the graduate lecture and used for in-class tests. Tutorials start in Week 2.

COURSE SCHEDULE UNDERGRADUATE SECTION

Week	Topic	Bellinger chapter
1	1. INTRODUCTION: COST BENEFIT ANALYSIS AND PUBLIC POLICY 2. FUNDAMENTALS OF COST BENEFIT ANALYSIS: WELFARE ECONOMICS An exchange economy	1. The meaning of policy analysis 2. A review of markets and rational behaviour (revision) 3. Ethics for policy analysts
2	Evaluating outcomes: the social welfare function approach The efficiency criterion	4. Efficiency and imperfect markets
3	3. EFFICIENCY AND MARKETS Measuring willingness to pay: valuing benefits in primary markets Market success	4. Efficiency and imperfect markets
4	Market failure The need for cost benefit analysis 4. EFFICIENCY EFFECTS OF GOVERNMENT INTERVENTIONS Measuring inefficiency: a tax Valuing benefits in secondary markets	5. Efficiency and the role of government
5	The theory of the second best Shadow pricing Non-tax government interventions IN CLASS TEST 1	5. Efficiency and the role of government
6	Internationally traded goods Arrow's impossibility theorem Public choice: the economics of the political process	5. Efficiency and the role of government
	SEMESTER BREAK	
7	5. TOOLS OF COST BENEFIT ANALYSIS Decision rules for cost benefit analysis	6. An introduction to benefit cost analysis
8	Equity in cost benefit analysis: distributional weights or basic needs? Net present value and discounting	7. Net benefits over time and discounting
9	The social discount rate	8. Choosing a discount rate
10	The shadow price of capital 6. PUBLIC POLICY APPLICATIONS Valuing non-marketed goods The value of life IN CLASS TEST 2	10. Life, health and health care
11	Economic impact analysis, multipliers and stimulus Shadow price of labour	11. Economic impact analysis
12	Traffic congestion	12. Urban transportation policy
	EXAMINATION PERIOD	

COURSE SCHEDULE GRADUATE SECTION

Starting in Week 2, one lecture each week will be on the graduate material. The extra lectures cover extensions to the undergraduate course topics and additional topics. The table below gives a rough outline of the course. A detailed outline, reading list and the associated readings for each topic will be placed on the course wattle web site before the start of each topic.

Week	Topic
1	
2	GENERAL EQUILIBRIUM Edgeworth exchange box: competition and price taking behaviour
3	Edgeworth exchange box: two fundamental theorems,
4	General equilibrium with production: Edgeworth factor box, efficiency and utility possibility frontier. ASSET PRICING UNDER CERTAINTY
5	IN CLASS TEST 1
6	ASSET PRICING UNDER CERTAINTY CHOICE UNDER UNCERTAINTY: Expected utility theory
	SEMESTER BREAK
7	Expected utility theory
8	Role of insurance: risk pooling. ASSET PRICING UNDER UNCERTAINTY: cost of risk.
9	Risk spreading, Covariant risk Consumption based asset pricing model
10	IN CLASS TEST 2
11	Consumption based asset pricing model
12	The social discount rate with risk
	EXAMINATION PERIOD

ASSESSMENT REQUIREMENTS

The ANU is using Turnitin to enhance student citation and referencing techniques, and to assess assignment submissions as a component of the University's approach to managing Academic Integrity. For additional information regarding Turnitin please visit the [ANU Online](#) website.

Students may choose not to submit assessment items through Turnitin. In this instance you will be required to submit, alongside the assessment item itself, copies of all references included in the assessment item.

Assessment Tasks

Participation

To learn the material, it is necessary, but not sufficient, to attend lectures regularly and do the assigned readings.

Students do best if they attend lectures and tutorials, take careful notes and learn to draw the diagrams, not by flipping over copies of the lecture slides.

A tutorial problem set will be posted each week for the following week. It is expected that students prepare in advance and come ready to answer questions. A crucial component of the course is the ability to analyze a situation using microeconomic tools. Learning-by-doing is the best way to achieve this ability which is fostered by doing the tutorial problems before attending the tutorial. Doing the tutorial problems each week is a key part of the learning process. You can only learn the economic way of thinking by applying your economics to analyse problems. The final exam questions will be tutorial style problems. You will only learn problem solving skills (necessary to pass the exams) through practice, NOT by simply copying down the answers given in tutorials.

The lectures and tutorials will be recorded and the powerpoint slides placed on Wattle.

Asking questions in tutorial is encouraged. Of course I will be available to answer questions about course content immediately after lectures and during my office hours.

Workload

Students taking this course are expected to commit at least 10 hours a week to completing the work, including:

- 2-3 hours a week: lectures
- 1 hour a week: tutorial
- 7 hours a week: reading, research, writing and tutorial preparation

Assessment Task 1: In-class test

Details of task:

A 50-minute test, with three short answer questions, which will be worth 10% or 30% of your mark. It will be held in class in week 5 in the graduate lecture time (Thursday 12-1).

Assessment Task 2: In-class test

Details of task:

A 50-minute test, with three short answer questions, which will be worth 10% or 30% of your mark. It will be held in class in week 10 in the graduate lecture time (Thursday 12-1).

The topics examined in each of the in-class tests will be announced in class and on wattle before the examination. They will examine topics from the undergraduate course.

Assessment Task 3: Final examination

Details of task:

The final exam will be 3 hours plus 30 minutes reading time and will examine the whole course. It will be a mixture of short answer questions and longer problems, with some choice between the longer problems.

Returning assignments

Students can collect their in-class tests from the Departmental Office after the answers are posted on wattle and discussed in lectures.

Scaling

Your final mark for the course will be based on the **raw** marks allocated for each of your assessment items. However, your final mark may not be the same number as produced by that formula, as marks may be **scaled**. Any scaling applied will preserve the rank order of raw marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed the scaled mark of that student), and may be either up or down.

Privacy Notice

The ANU has made a number of third party, online, databases available for students to use. Use of each online database is conditional on student end users first agreeing to the database licensor's terms of service and/or privacy policy. Students should read these carefully.

In some cases student end users will be required to register an account with the database licensor and submit personal information, including their: first name; last name; ANU email address; and other information.

In cases where student end users are asked to submit 'content' to a database, such as an assignment or short answers, the database licensor may only use the student's 'content' in accordance with the terms of service – including any (copyright) licence the student grants to the database licensor.

Any personal information or content a student submits may be stored by the licensor, potentially offshore, and will be used to process the database service in accordance with the licensors terms of service and/or privacy policy.

If any student chooses not to agree to the database licensor's terms of service or privacy policy, the student will not be able to access and use the database. In these circumstances students should contact their lecturer to enquire about alternative arrangements that are available.

SUPPORT FOR STUDENTS

The University offers a number of support services for students. Information on these is available online from <http://students.anu.edu.au/studentlife/>

Other Information

Building Access Hours for both CBE and HW ARNDT are:

TEACHING PERIOD = Mon – Fri 07.45 to 21.15 and SAT, SUN and Public Holidays is not accessible by students.

NON TEACHING PERIOD = Mon – Fri 08.00 to 18.00 and SAT, SUN and Public Holidays is not accessible by students.

RSE has a Frequently Asked Questions page where you can find relevant policies and information on a broad range of topics, the onus is on the student to familiarise themselves with this page and the information available.

<https://www.rse.anu.edu.au/students/students/frequently-asked-questions/>