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# Public Expenditure Analysis

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THE HEINZ SCHOOL

Spring, 2000

Professor Robert P. Strauss

December 21, 1999

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90-774 Public Expenditure Analysis  
M-W-F 2:00-3:20 PM 1004 Hamburg Hall  
Spring, 2000  
Professor Robert P. Strauss  
Office Hours: 12:30-1:30  
M-W-F A120B Hamburg Hall

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This is a companion course to Public Finance, 90-736, and is designed to deal with the expenditure side of the public sector budget in a series of modules. It has been conceptualized as a blending of private finance and public expenditure principles.

The course is divided into 4 modules. In Module 1, the course develops the essential techniques of private sector evaluation principles. In Module 2, special problems which arise in the evaluation of public sector projects are discussed; a variety of evaluation techniques and applications especially suited to public sector projects are then examined. In Module 3, actual cost-benefit studies in the policy areas of education, environment, health, criminal justice, and recreation are examined. In Module 4, evaluation at a high level of aggregation is dealt with through the use of generational accounting models. These models are examples of *aggregate* long and short-term public evaluation problem areas typically dealt with by national governments.

The course presumes that the student has had courses in microeconomics and economic statistics, owns a calculator capable of doing  $x^{a/b}$  or  $x^{1.361}$ , and is familiar with the use of spreadsheet packages on a personal computer. Also, it is assumed that each student has had or is taking a course in public finance, and is or will be familiar with the material in the Musgrave and Musgrave text, *Public Finance in Theory and Practice*, the basic principles of public finance which justify government intervention in the market place and underly public expenditure policy.

There are two texts for the course:

1. Private sector evaluation principles are found in Ross, Westerfield, and Jaffe (RWJ) *Corporate Finance, Third Edition*. (Homewood, Illinois: Irwin Publishing, 1996). Required reading are denoted as CF below. The relevant chapters have been specially printed and will sell for about \$35 in the CMU bookstore. A copy of the student problem sets for the chapters have been placed on reserve in the Heinz Reading Room under this course.
2. Public Sector principles of evaluation are contained in *Cost-Benefit Analysis: Concepts and Practice*, by A.E. Boardman, D.H. Greenberg, A.R. Vining, and D.L. Weimer, which is in the CMU Bookstore. Chapters from the text (denoted **CBA** below) are required reading.
3. Applications of Public Expenditure Analysis in particular areas are contained in Boardman; copies of the 6 case studies will be distributed in class and/or placed on reserve involving a wide range of public policy issues.

In addition, it is strongly recommend that you subscribe to *The Wall Street Journal* in order to keep abreast of fiscal events. A subscription form will be circulated in class January 17 and 19 and will be mailed January 21.

The course is lecture-discussion. Evaluation will be based on performance in 5 problem sets, a group project and presentation due at the end of the course, a 1.5 hour midterm exam ( DATE), a e hour final exam (tentatively DATE), and classroom performance.

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<sup>1</sup> For example, the Casio fx-300H is a nice little, affordable calculator; it lists for about \$13.00 at discount stores.

The weights are:

- Problem sets 20% (4% for each problem set)
- Group Cost-Benefit Project 15%
- Midterm exam 30% (10 essay questions, or 3.0% per question)
- Final exam 30% (about 15 essay questions or 2% per question)
- Class participation 5% (answers about session readings and material)

I am available after class Monday and Wednesday from 12:00-1:30 and by appointment. You may wish to communicate with me via electronic mail ([RS9F@andrew.cmu.edu](mailto:RS9F@andrew.cmu.edu)) as I am usually logged in from somewhere. My faculty assistant is Stephanie Hayes ([SP2@andrew.cmu.edu](mailto:SP2@andrew.cmu.edu)).

Finally a few notes about *decorum*: the class begins at 2:00 PM Eastern Standard Time, and students are expected to be in the classroom, ready for class on or before that time. The room will be closed upon the beginning of class. Portable or cellular telephones, beepers, televisions, radios, and radio headsets are not permitted for use in the classroom. Students are not permitted to eat food in class (coffee and sodas only). Any student who leaves the class after it has begun will not be permitted to return.<sup>2</sup>

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<sup>2</sup> If you need to use the potty, do so ahead of time. Planning has its own rewards.

The Course Syllabus is below:

| Lecture | Date       | Topic                                   | Problems     | Required Reading |
|---------|------------|---|--------------|------------------|
|         | Jan 17 (M) | Statement, Overview                     |              |                  |
| 1       | Jan 19 (W) | Overview of CBA                         | 1 Out        | CBA 1            |
| 2       | Jan 24 (M) | The Value of Time and Money             | 1 Due, 2 Out | CF 2-3           |
| 3       | Jan 26 (W) | Net Present Value 1                     |              | CF 4             |
|         | Jan 28 (F) | Review of NPV                           |              |                  |
| 4       | Jan 31(M)  | Net Present Value 2                     |              | CF 4             |
| 5       | Feb 2 (W)  | Valuing Debt and Equity                 | 2 Due, 3 Out | CF 5             |
|         | Feb 4 (F)  | Review of NPV & Debt/Equity             |              |                  |
| 6       | Feb 7 (M)  | Alternative Investment Rules            |              | CF 6             |
| 7       | Feb 9 (W)  | NPV \ Capital Budgeting                 | 3 Due, 4 Out | CF 7,8           |
|         | Feb 11 (F) | Review of Alt Inv Rules & Cap Budgeting |              |                  |
| 8       | Feb 14 (M) | Long-Term Debt, Sinking Funds           |              | CF 14,20         |
| 9       | Feb 16 (W) | Cash Management                         |              | CF 26            |
|         | Feb 18 (F) | Review of Debt & Sinking Funds          |              |                  |
| 10      | Feb 21 (M) | Lease Vs. Buy                           |              | CF 23            |
| 11      | Feb 23 (W) | CBA for Public Decision-Making          | 4 Due, 5 Out | CBA 2            |
|         |            | Review of Lease vs. Buy                 |              |                  |
| 12      | Feb 28 (M) | CBA with Known S and D Curves: I        |              | CBA 3            |
| 13      | Mar 1 (W)  | CBA with Known S and D Curves: II       | 5 Due        | CBA 3            |
|         | Mar 3 (F)  | <b>REVIEW</b>                           |              |                  |
|         | Mar 6 (M)  | <b>MIDTERM EXAM</b>                     |              |                  |
| 14      | Mar 8 (W)  | Risk and Uncertainty                    |              | CBA 7,5          |
| 15      | Mar 13 (M) | Uncertainty and Social Discount rate    |              | CBA 7,5;         |
| 16      | Mar 15 (W) | Existence Value                         |              | CBA 8            |
| 17      | Mar 20 (M) | CBA with Primary Data                   |              | CBA 10,11        |

| Lecture | Date       | Topic  | Problems | Required Reading  |
|---------|------------|--|----------|-------------------|
| 18      | Mar 22 (W) | Slack and Shadow Prices                                |          | <b>CBA 12</b>     |
|         | Mar 27 (M) | <b>NO CLASS-</b><br>Spring Break                       |          |                   |
|         | Mar 29 (W) | <b>NO CLASS-</b><br>Spring Break                       |          |                   |
| 19      | Apr 3 (M)  | CE and Distribution                                    |          | <b>CBA 13,14</b>  |
| 20      | Apr 5 (W)  | Micro CBA:<br>Education                                |          | Cohn 3,4,5        |
| 21      | Apr 10(M)  | Micro CBA:<br>Sports Stadiums                          |          | Knoll 2, Baade 3  |
| 22      | Apr 12 (W) | Micro CBA:<br>Prisons                                  |          | Levitt            |
|         | Apr 14 (F) | Group<br>Presentation I                                |          |                   |
| 23      | Apr 17 (M) | Micro CBA:<br>(1) Regulation                           |          | Hahn 1,2          |
| 24      | Apr 19 (W) | Micro CBA:<br>(2) Elderly<br>Driving,<br>(3)Pesticides |          | Williams, Gray    |
|         | Apr 21 (F) | Group<br>Presentation II                               |          |                   |
| 25      | Apr 24 (M) | Micro CBA:<br>(4) Asbestos                             |          | Augustyniak       |
| 26      | Apr 26 (W) | Micro CBA:<br>(5) Lead,<br>(6) Superfund               |          | Nichols, Hamilton |
|         | Apr 28 (F) | Group<br>Presentation III                              |          |                   |
| 27      | May 1 (F)  | Macro CBA:<br>Generational<br>Analysis 1               |          | Kotliakoff 5-7    |
| 28      | May 3 (W)  | Macro CBA:<br>Generational<br>Analysis 2               |          | Kotliakoff 5-7    |
|         | May 7 (F)  | <b>REVIEW</b>  |          |                   |
|         | May 8 (M)  | <b>FINAL EXAM</b><br><b>9:30-11:30 AM</b>              |          |                   |
|         | May 12 (F) | <b>PARTY !</b>   |          |                   |