

**UNIVERSITY OF OSLO**  
**DEPARTMENT OF ECONOMICS**

Postponed exam: **ECON4620 – Public Economics I**

Date of exam: Wednesday, June 7, 2017

Time for exam: 09:00 a.m. – 12:00 noon

The problem set covers 2 pages

Resources allowed:

- No written or printed resources – or calculator - is allowed (except if you have been granted use of a dictionary from the Faculty of Social Sciences)

The grades given: A-F, with A as the best and E as the weakest passing grade. F is fail.

**Problem 1 (25%)**

- Show in a model as simple as possible how a tax can distort the intertemporal consumption decision of the households.
- Are there taxes that will leave the intertemporal choice undistorted?

**Problem 2 (30%)**

Consider the Mirrlees model of income taxation with two types.

- A key element of this model is a self-selection constraint. Explain why there is such a constraint.

- A key result is  $-\frac{\frac{\partial V^H}{\partial Y^H}}{\frac{\partial V^H}{\partial C^H}} = 1$  and  $-\frac{\frac{\partial V^L}{\partial Y^L}}{\frac{\partial V^L}{\partial C^L}} < 1$  where  $V^i(C_i, Y_i)$  denotes the utility of type  $i \in$

$\{L, H\}$  depending on consumption  $C_i$  and gross income  $Y_i$ . The low-ability type is denoted by  $L$  and the high-ability type is denoted by  $H$ .

Explain this result. (A formal derivation of the result is not required.)

- Discuss how some policy instrument can relax the self-selection constraint.
- What is the gain from relaxing the constraint?

**Problem 3 (15%)**

Sometimes a project may yield benefits that do not have direct market prices. Discuss conceivable ways to assign a value to such benefits in a cost benefit analysis

**Problem 4 (30%)**

- a) Suppose the current corporate tax system allows deduction for interest on debt but not for equity. Explain why such a tax system distorts the financing decision of a corporation.
- b) Suppose the government considers introducing a comprehensive business income tax (CBIT).
  - b1) What is the main feature of such a tax system and what are advantages and disadvantages of the proposal?
  - b2) de Mooij and Devereux (2011) find that the introduction of CBIT is especially beneficial if it is introduced in a single country. Explain this result briefly.