

Quiz #3  
EE312 Macroeconomic Theory  
Section 046402

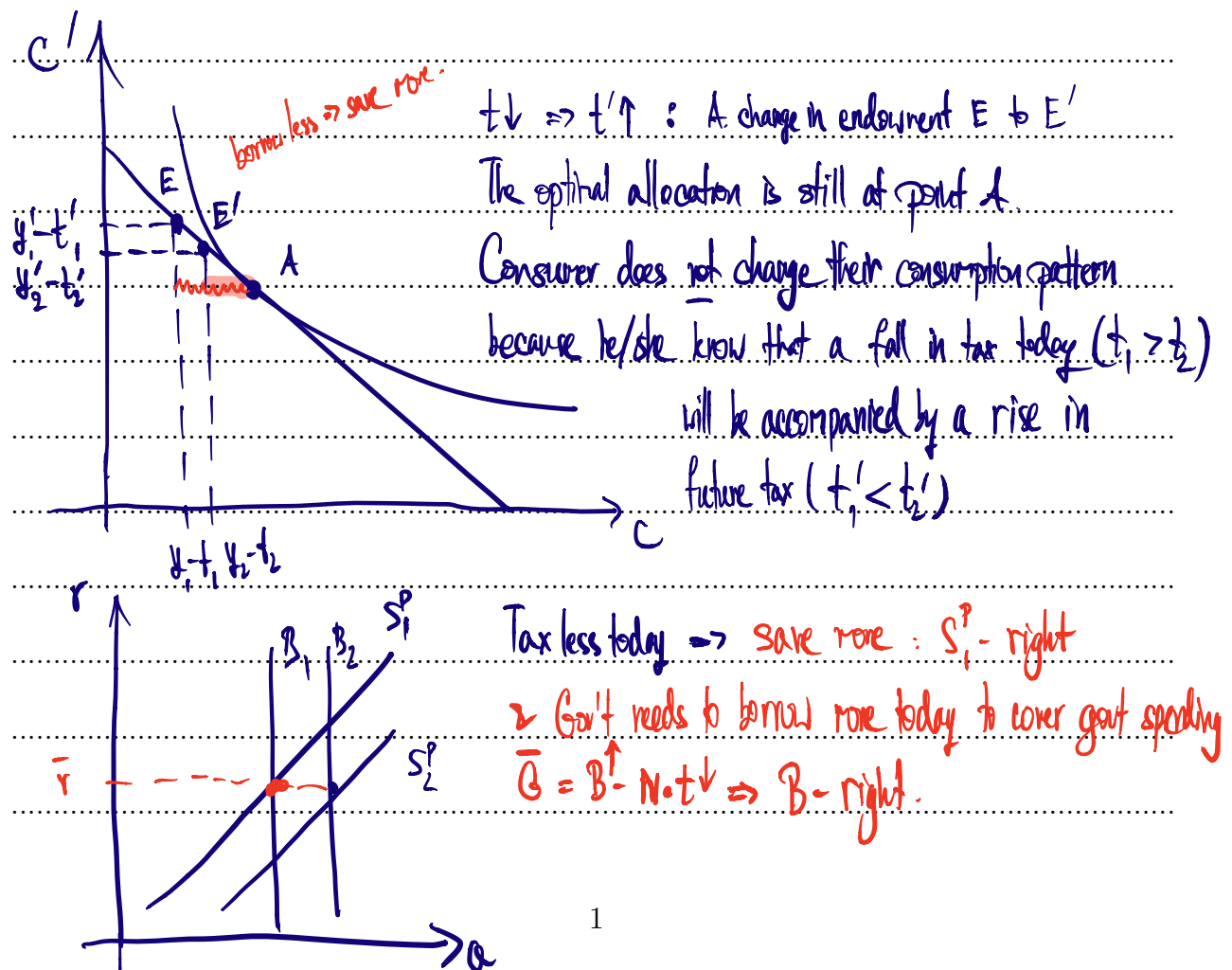
Instructor: Panit Wattanakoon  
Semester 1, 2020

Nov 6, 2020

**Instructions**

1. Use the tools we study in chapter 8 to analyze and answer the questions
2. Write out your ID at the upper right of the first page

**Question 1 (100 points)** Explain Ricardian equivalence theorem verbally (30 pts), graphically (30 pts) and mathematically (30 pts). Clearly label everything on the diagram(s). Also state assumption(s) needed for such theorem to hold (10 pts).



$$\begin{array}{c}
 \text{no change} \quad \leftarrow \quad \text{given constant} \quad \text{no change} \\
 \left( \begin{array}{l}
 c + \frac{c'}{1+r} = y + \frac{y'}{1+r} + \frac{1}{N} \left( G + \frac{G'}{1+r} \right) \\
 \downarrow \quad \uparrow \quad \uparrow \quad \uparrow \\
 t + \frac{t'}{1+r} = \frac{1}{N} \left( G + \frac{G'}{1+r} \right)
 \end{array} \right.
 \end{array}$$

If tax less today by 1 unit, need to tax more tomorrow by  $1+r$  unit so that the stream of government spendings in both periods are not affected.

- Assumptions:
1. tax every one equally.
  2. lump-sum tax.
  3. perfect credit market.
  - 4.
  - ⋮