

Final Exam
(100 points)

- (5 pts) 1. Define the concept called independence of irrelevant alternatives, and also identify its role.
- (10 pts) 2. First, under what circumstances would it be appropriate to compute equivalent surplus? Second, provide a formula for equivalent surplus.
- (15 pts) 3. Provide a clear example of an externality situation that cannot be efficiently remedied by market emergence. Why does the example qualify as an externality? Explain why market emergence would not be efficient in the example case.
- (17 pts) 4. What are the primary ideas observed in the following passage? Identify them separately, explain each fully, and indicate why or why not the idea is correct in your opinion.

"arguments for using either the equivalent variation or the compensating variation over the other are not convincing. If the use of one supports a policy change, then the other must be checked to verify that the policy will not be changed back according to the same criterion after having made the first change."

- (20 pts) 5. Fully discuss (by expanding upon it) this textbook quote and related concepts:

"In a perfect economy (involving perfect markets for capital and investment with no externalities of any type, including intergenerational externalities), the correct discount rate would result from competition."

Begin by laying out the welfare analysis context in which the discount rate is a needed element.

The last question is on the back page.

6. Farms commonly borrow money to pay cropping expenses at the beginning of the season. In a normal year a region's 10 farms each produce food (F) applying the same technology that uses borrowed bank funds (B) and labor (L) according to

$$F_i = 10B_i^{1/3}L_i^{1/3} \quad \text{for } i=1,2,\dots,10.$$

These farms behave competitively in the 3 markets. Food demand is given by $F_D = 888p^{-0.357}$ and is only supplied by the 10 farms (no imported or exported food). r , the price of B is competitively determined by the national market, and this market is normally cleared by $r=1.1$. The price of labor is w , and the supply of labor is national, highly mobile, and elastic at $w=10$.

This is not a normal year. Here are the initial conditions for this year: The technology is unchanged. A global macro problem is causing regional B availability to be constrained below usual purchases by the 10 farms. Furthermore, the national government is prohibiting any rise in r as would normally occur to equilibrate this financial market. Only 150 B are available, and an emergency national policy is restricting r to be no greater than 1.1. So each farm is entitled to buy 15 B at a controlled price of 1.1.

- (6 pts) a. Given this year's abnormal conditions, what will be the equilibrium results of the food and labor markets?

Another market intervention is being considered, and it desires a welfare analysis of its effects (only). The government is considering making an additional 21 B available to each farm at the controlled price of $r=1.1$. [36 B (15+21) is still less than quantity demanded by each farm at $r=1.1$.]

- (27 pts) b. What are the welfare effects of this latter policy on food consumers, farms, and laborers? Provide the appropriate graphs, calculations, and explanations.