

Please complete the following questions in the space provided.

Each question has equal value.

Please be concise, but do write in complete sentences.

Question 1

In thinking about economic growth among poor countries, adopting the perspective of the Harrod-Domar model, how can you increase the rate a country's rate of growth?

$G = s/\theta$ , so you can raise the rate of savings or lower the capital-output ratio

Essentially improve your technology so less capital is needed for each unit of output or save more.

In thinking about economic growth, adopting the perspective of the Solow model, how can you increase a country's long-run (steady-state) rate of economic growth?

You can't. In the Solow model steady-state growth is 0.

Accelerate the rate of technological progress.

If technology is constantly improving, you are always "converging" toward a higher and higher steady-state so always growing.

Half-marks: Raising savings, lower the population growth, or lower depreciation.

These three raise the steady-state level of output per capita, although not the steady-state growth rate.

Question 2

Suppose you are attempting to choose a measure of living standards for use in determining which households are most in need of assistance. Consider the following possible measures of living standards:

- A. Real income per capita within household over last two weeks
- B. Real income per capita within household over last 12 months
- C. Real consumption expenditure per capita over the last month
- D. Per capita caloric consumption over the last month
- E. Indicators of whether a household has a dirt floor, uses water from an improved source, and sends children to school
- F. Individual measures of height (for age), weight (for age), recent illness.

For each program below, select the best living standard measure [A B C D E F]. Briefly justify.

Answer:  
A / D  
/ F

A program that provides students with a short-term nutritional boost.

Best living standard measure: A-F

**A:** A short-term booster program is trying to address immediate needs. These are best measured by A.

**Alternative choice D:** while it does not measure resources in the most recent period it does cover a month and food specifically which is a plus.

**Alternative choice F:** Captures nutrition, but long-term not short-term

Answer:  
F / D  
/ B

A program provides households with food rations for a year.

Best living standard measure: A-F

**F:** Height and weight are very good stock measures of health and inputs for children, and weight a plausible health stock measure for adults: they measure the cumulative effect of resources available.

**Alternative choice D:** Although shorter horizon than F, calories directly measure food intake.

**Alternative choice B:** Food rations for a year are trying to address a persistent problem, so we want our needs measure also to capture resources available over the year. For this B is the second-best choice.

Answer:  
E / F/  
B/C

A program that provides savings accounts to those unable to save.

Best living standard measure: A-F

**E:** Households often save through durable and investment goods, such as household stock (in this case floor and water source), so this isn't a bad measure of savings capacity or wealth.

**Alternative choices F or B or C:** B is the best measure of overall purchasing power over the year, and so gives some sense of who might benefit from being able to save. You might argue consumption measures are better, so C is preferred even though it is only over a month. C is more comprehensive than D, so is preferred. Finally F might reflect savings through the ability to invest in health.

Answer:  
B / F /  
D

A program that provides crop insurance with the aim of addressing nutritional deficiencies.

Best living standard measure: A-F

The horizon for crop insurance is at least a year, perhaps multi-year, so that is the horizon – not the short run.

**F:** This is the best measure of overall nutrition. Of course you miss what happens over the year.

**Alternative choice B:** The next best would be to measure income over the year; while it misses calories it has the advantage of giving an overall picture of the year

**Alternative choice D:** Does directly measure consumption, but over a short horizon. D is better than C because if you are at a one month horizon then caloric consumption directly provides nutrition information, which C only provides indirectly.

Answer:  
B/ E/C

A program that provides income support for the poor.

Best living standard measure: A-F

**B:** The best measure of income poverty is annual per capita income.

**Alternative choice E:** These are good proxies of wealth, and often used to measure long-run poverty.

**Alternative choice C:** Not as good a measure if income is the concern and over a shorter horizon, but consumption is quite informative.

Answer:  
A/C

A program that provides emergency relief income for the poor.

Best living standard measure: A-F

**A:** Since the program is targeting immediate need, this is the best measure of that.

**Alternative choice C:** Not quite as short term, but quite recent and captures consumption which can be more informative than income.

Answer:  
E

A conditional cash transfer program that provides food to the poor if their children attend school.

Best living standard measure: A-F

**E:** This is the only plausible choice as it measures who goes to school.

### Question 3

Suppose an NGO is providing crop insurance in an agricultural village in Southern India. The crop being insured is rice, the main subsistence crop. The insurance pays out based on crop losses reported by the farmer and verified by the insurance company.

Consider the following scenarios. In each scenario is the situation being described adverse selection, moral hazard, possibly both, or not necessarily either? Explain briefly.

A farmer who purchases crop insurance does not try to use tanker water to rescue his crop after a drought, even though his neighbors successfully use this strategy.

Answer:  
#2

Choose one:  [1: Adverse selection] [2: moral hazard] [3 possibly both] [4 not necessarily either]

**Moral hazard:** The farm fails to undertake an **action** that could lessen the loss.

Answer:  
#1

An inexperienced farmer decides to take crop insurance in his first year of cultivating rice.

Choose one:  [1: Adverse selection] [2: moral hazard] [3 possibly both] [4 not necessarily either]

**Adverse selection:** Key fact here is “inexperienced farmer”. Those opting into insurance may be more risky (unobserved type).

Answer:  
#4

After a bad season, the crop insurance scheme loses a lot of money and the NGO is forced to cancel it.

Choose one:  [1: Adverse selection] [2: moral hazard] [3 possibly both] [4 not necessarily either]

**Not necessarily either:** While it is true that adverse selection and moral hazard can exacerbate losses, it is also possible that a bad weather outcome leads to losses for an insurance scheme in a given year even if these problems aren't observed.

Answer:  
#: 1/4

After a few seasons the crop insurance scheme, the NGO is charging the highest price it can sustain, but only ten percent of villagers are using the insurance and it is running at a loss.

Choose one:  [1: Adverse selection] [2: moral hazard] [3 possibly both] [4 not necessarily either]

**Adverse selection:** The high price attracts the riskiest clients, leading to losses.

**Or not necessarily either:** Insurance in the village context is costly; even without adverse selection a high price could lead to low take and losses

Answer:  
#3

After a relatively good rainfall year many insured farmers report significant crop losses, and the NGO verifies that these crops in fact failed.

Choose one:  [1: Adverse selection] [2: moral hazard] [3 possibly both] [4 not necessarily either]

**Possibly both moral hazard or adverse selection:** Since weather was good the two possibilities are lack of effort or “bad” (e.g., inexperienced) farmers.

Answer:  
#1

The NGO sells the insurance above the actuarially fair price, and a number of farmers buy it. Which of the following, if any, do you expect to be a problem?

Choose one:  [1: Adverse selection] [2: moral hazard] [3 possibly both] [4 not necessarily either]

**Adverse selection:** When the price is above average loss, typically only the “risky” types will be willing to buy insurance.

Question 4

You advise a microfinance institution and you have computed the elasticity of loan demand with respect to interest rates at -1.75. The head of the MFI is contemplating advice from outside donors to raise interest rates in order to achieve breakeven profitability, which currently it is far from achieving. He has in mind raising interest rates from 3% to 4% per month.

Will raising interest rates raise or lower revenues? Will it definitely raise or lower profits?

**Since the elasticity is greater than 1, raising prices will lower revenue, since demand more than proportionately decreases as you raise prices.**

**At the same time, you can't say for certain whether lowering revenues lower profits. It depends on the cost structure of loans. If by raising prices, he keep the most profitable borrowers, and displace the most costly (e.g., low volume, low balance), you could raise profits. If instead most costs are fixed, then you won't lower costs by much and you would lower profits.**