

Exam HECON4210. Spring 2024.

Exercise 1: Health and inequality (33%)

a) A good answer should include the following:

- (1) Health as consumption good - health enters directly into the utility function.
- (2) Health as an investment good - a form of human capital. A good answer should include a discussion of how health enters into the production of productive time.

b) A good answer should include the following:

- In the Grossman model, higher educational attainment makes individuals more effective producers of health. The marginal efficiency of health investments (MEC) curve shifts outward.
- As a result, the Grossman model predicts that higher educational attainment will increase equilibrium health levels.
- Thus, the correlation is consistent with the Grossman model.
- However, a correlation between health and educational attainment in observational data does not necessarily imply a causal relationship. For this reason, we should be careful in concluding that the correlation gives definitive evidence that the Grossman model is valid.

c) A good answer should include the following:

- In the Grossman model, greater wealth is associated with better equilibrium health levels as the budget constraint is shifted outwards.
- Thus, the estimated effect is consistent with the Grossman model.
- Because this is an RCT, the estimated effect can be interpreted as a positive causal effect of income.

Exercise 2: Moral hazard (34%)

a) A good answer should include the following:

- The social loss is the excess healthcare cost that are incurred when patients increase their healthcare utilization in response to insurance coverage lowering the consumer

price of healthcare.

- (i) The social loss is increasing in the size of the price distortion.
- (ii) The social loss is increasing in the elasticity of demand for healthcare. (Completely inelastic - no social loss.)

b) A good answer should include the following:

- Explain Pauly (1974)'s result that if demand for healthcare is not perfectly inelastic, the optimal copayment is strictly positive, as full insurance results in inefficiently high premiums (in this case: inefficiently high taxes).
- Explain the tradeoff between efficiency and insurance.

c) A good answer should include the following:

- Copayments could differ by procedure/treatment: The optimal insurance level should be higher (lower copayments) when demand is inelastic.
- Copayments could be capped at some ceiling.
- Gatekeeping (e.g. through primary care providers acting as gatekeepers to costly specialist services) provides an alternative way of limiting the social loss from moral hazard.

Exercise 3: Health insurance – Rothschild-Stiglitz (33%)

a) A good answer should include the following:

- No, the low risk will have less than full insurance. Explain why.

b) A good answer should include the following:

- With symmetric information, each type can be slotted into the contract that is designed for them. The robust types will now have access to actuarially fair and full insurance. The frail types will remain in the same contract (was already actuarially fair and full).

c) A good answer should include the following:

- When the share of robust individuals is too high, it may be possible to offer a rebel pooling contract that makes non-negative profits, violating the Rothschild-Stiglitz equilibrium conditions and causing the separating equilibrium to break down.