Write your identification number on each paper and cover sheet (the number stated in the upper right hand corner on your exam cover).

Use one cover sheet per question. Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked. No aids are allowed.

The exam consists of 4 questions. The first two questions are worth 20 points each. Question 3 is worth 40 points, and question 4 is worth 20 points, for 100 points in total. For the grade E 45 points are required, for D 50 points, C 60 points, B 75 points and A 90 points.

Your results will be made available on your “My Studies” account (www.mitt.su.se) 15 working days after the exam, at the latest.

Good luck!
Short essay

About a page (max 2) should be used to answer each question. Worth 20 points each.

1. Discuss the research design and the key empirical findings of Banerjee, et al.'s (2010) study on improving immunization coverage.

2. The predictions of a model with perfect credit markets (i.e. with consumption smoothing over time through credit markets) are identical to the predictions of a model with complete risk-pooling (i.e. with risk-pooling within communities) under certain conditions. Specifically, both models predict (a) that changes in individual income have only small effects on changes in individual consumption and (b) that in both cases changes in individual consumption track changes in average (in the community) consumption. Explain why this is the case.
Problems

Question 3 is worth 40 points. Question 4 is worth 20 points.

3. Consider a model with a landlord and a tenant. Output can take two values: \( y_h = 1 \) with probability \( e \) and \( y_l = 0 \) with probability \( 1 - e \), where \( e \) is the tenant’s effort. The monetary cost of exerting effort is \( c(e) = e^2 \). Further assume that the tenant has wealth \( w = 1 \), but that only a share \( 1 - \theta \) of that wealth can be used as collateral; i.e. we can think of \( (1 - \theta)w = (1 - \theta) \) has the tenant’s effective wealth.

(a) Solve for the optimal linear sharecropping contract \( y_r \), where \( \alpha \) is the share of output the tenant can claim and \( r \) is the fixed rental payment, and show how the optimal contract and effort depends on \( \theta \). Assume the tenant’s outside option is 0. Interpret your findings (note: there are three scenarios, depending on the value of \( \theta \), you need to consider here).

4. Consider a Solow growth model where income (GDP) is given by

\[
Y = BK^\alpha L^{1-\alpha-\beta}T^\beta
\]

where \( K \) is capital, \( L \) is labor, \( B \) is a Hick-neutral productivity term, \( \alpha + \beta < 1 \) and \( T \), which is normalized to 1 \( (T = 1) \), is the fixed amount of land. Capital is accumulated according to the standard accumulation equation \( \dot{K} = sY - \delta K \), labor grows at a rate \( n \), and \( B \) is growing at a rate \( g \).

(a) Determine the long-run growth in this model.
(b) Interpret your findings.