Department of Economics

Course name:	**Development Economics**
Course code:	**EC7310**

Examiner:	**Jakob Svensson**
Number of credits:	**7,5 credits**
Date of exam:	**Monday 24th October 2016**
Examination time:	**3 hours [09:00-12:00]**

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. Question 1 is worth 35 points. Question 2 is worth 25 points and questions 3 and 4 are worth 20 points each, for a total of 100 points. For 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**)** on 11th November at the latest.

Good luck!

Multiple choice: True or false

State if the following statements are true or false or provide the requested condition (sub-question a). You do not need to provide any additional information (even if you may need to "solve" the different "problems" yourself). *Each correct sub-question is worth 5 points. Each incorrect sub-question is scored −5 points. A blank answer is scored 0 points.* The maximum total score on question 1 is 35 points. The minimum total score is 0 points (even if # incorrect answers > # correct answers).

1. Please state if the following statements are "true" or "false" provide the requested number (sub-question a).

   (a) Consider a Solow growth model

   $$Y = K^\alpha \left(AL\right)^{1-\alpha-\beta} T^\beta$$

   where K is capital, L is labor, A is the level of the labor augmenting technology, and T is the fixed amount of land. Assume $T = 1$, and that L grows at a rate $n > 0$ and A grows at a rate $g > 0$. State the condition for a positive steady-state growth rate of income per capita.

   (b) In Banerjee, Gertler, Ghatak's (2002) tenancy reform paper, the authors show in their model that the threat of eviction can be used to induce higher effort. They also show that the threat of eviction primarily affects the relatively wealthy farmers.

   (c) A consequence of the debt overhang problem (in a credit model with moral hazard and credit rationing) is higher default rates.

   (d) Banerjee, Duflo, Glennerster, and Kothari, in their 2010 paper on immunisation coverage in India, find a significant difference between the two interventions groups in the probability of receiving at least one injection.

   (e) In their review paper on improving school education outcomes in developing countries, large based on evidence from RCTs, Glewwe and Muralidharan (2015) argue that constructing new schools, in areas where access to scholling is limited, increases learning but that there seems to be little impact (on student learning) of providing textbooks or flip charts to exisiting schools.

(f) In accounting for differences in steady-state outcomes between poor and rich countries, Jones and Vollrath show that differences in total factor productivity account for more than the total effect due to differences associated with differences in investment in physical capital and investment in human capital.

(g) The most recent global poverty estimates (Ferreira, et al, 2015) suggest that the first Millennium Development Goal of halving the share of the world population that live in extreme poverty between 1990 and 2015 was reached well ahead of time.

Short essay

You should not use more than 2 pages to answer the question. Worth 25 points.

2. Discuss the main question(s), the empirical strategy, and the main findings in de Mel, McKenzie, and Woodruff's (2008) returns to capital paper.

Problems

Worth between 20 points each.

3. Consider the following agricultural contracting model. A landlord owns a plot of land that he wants to rent to a tenant. The tenant's outside option (what he would earn if not being a farmer) is 0. 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 with cost $c(e) = \frac{1}{2}ce^2$, with $c > 1$. Both the landlord and the tenant are risk-neutral.

   (a) Solve for the linear sharecropping contract $\alpha Y - R$, where α is the tenant's share of output and and R is the fixed rent paid by the tenant to the landlord; i.e. solve for α and R. Interpret your results

   (b) Assume now that the tenant only derives income from being a tenant; i.e. he cannot pay the tenant more than what he earns (αY). Derive the optimal contract when this limited-liability-constraint (LLC) is taken into account. Determine the tenants equilibrium rents?

4. Consider a Solow model with no population growth or technological progress. Income is $Y = K^\alpha L^{1-\alpha}$, where L is the work force and K is the capital stock. Capital depreciates at a rate δ and the savings rate is given by s.

   (a) What is the steady-state income per capita, consumption per capita, and growth rate in GDP per capita?

   (b) Assume the country is in a steady-state. A donor provides a one-time capital injection (aid) which doubles the capital stock. What are the effects of this aid provided by the donor on the receipient's GDP growth rate, income per capita, and consumption per capita in the short and long run?