LMU DEVELOPMENT ECONOMICS SAMPLE EXAM

You have 90 minutes to finish the exam. You can earn up to 100 points in this exam (this exam represents 100% of your grade). Be brief, but make sure to provide justification for all your answers. Failing to do so results in 0 points. Please, mark clearly all your answers (3a, 4c...) and write as clearly as possible. Good luck!

Note: Any form of cheating will automatically result in 0 points and the ethics committee will be informed to take an appropriate action.

(1) (6 points) **Growth 1.** Think of one reason why a country with a lower ratio of capital to labor might grow faster than a country with higher ratio, and one reason why it might grow slower. Refer to models we discussed and list all important assumptions for either case.

(2) (14 points) **Growth 2.** The Harrod-Domar model has the following simple per-capita production function $y = Ak$. Assume that there is some level of income (let's say poverty line y_p) which people need to consume in order to survive. We define discretionary income as $y_d = y - y_p$ if the income is above the poverty line and equal to zero if it is below. We also assume that individuals save a constant share of their discretionary income σ. In other words $sy = \sigma y_d$ (i.e., there is no saving if income y is below y_p). Assume that the rate of depreciation of capital is δ and that there is no population growth.
   (a) (4 points) What is the functional relationship between growth and physical capital in this model? Show graphically where y is on the vertical axis and k is on the horizontal axis. Describe the graph briefly.
   (b) (3 points) How do we call the situation when the income is below y_p?
   (c) (4 points) What would happen if the technology A improved (i.e. if A increased)? Draw another graph and describe.
   (d) (3 points) What is the policy implication of this model? Elaborate briefly and refer to an actual policy introduced globally based on similar arguments.

(3) (20 points) **Mistrust and slave trade.** The paper by Nunn and Wantchekon (2011) discusses the role of slave trade on mistrust in African countries where slave trade was most intensive.
   (a) (4 points) Why are we as economists interested in measuring trust? In other words, what role does trust have in economic outcomes and decisions? Why can lack of trust and trustworthiness lead to underdevelopment? Explain and provide some evidence from the literature (no need to cite the respective papers, rather describe the evidence and provide the citation if you know).
   (b) (4 points) Nunn and Wantchekon (2011) measure the causal effect of slave trade on trust and not vice versa. Why could the causality go in the other direction? Explain briefly.
   (c) (6 points) In order to convince the readers that the causality goes in the predicted direction, the authors look for another variable: the distance from the main North and South American slave markets.
      (i) Why does the distance from slave markets matter in answering the question the paper asks?
      (ii) What method of causal inference did they most likely use? (Just the name of the method)

(iii) Draft a simple econometric model (i.e. do not add any extra left-hand side variables apart from the main ones) and describe all variables and steps you need to take to obtain the desired estimates.
(iv) What assumptions do you need to make regarding the validity of the model you specified above so that the inference is correct.

(d) (6 points) Imagine an ideal setting that would help you estimate a true causal estimation (a "golden standard"). Describe the method you would use and describe how would you set up the study practically to establish a link between slave trade, trust, and economic performance (be specific about the design, assumptions, etc.). Argue why such method is not feasible in the real world.

(4) (16 points) **Social norms and female genital mutilation.** We discussed the paper by Efferson et al. (2015) in class. The paper examined the role of social norms in FGM.
(a) (4 points) What would be the predictions of the FGM prevalence in respective communities should the social norms hypothesis were true? Draw a graph and explain using a simple normal form game representation (define the conditions the payoffs need to satisfy so that the game represents the situation we are interested in).
(b) (4 points) Based on the social norms hypothesis, propose a policy that would help mitigate the problem of FGM in high FGM rate communities.
(c) (4 points) The paper speaks against the social norms hypothesis. How? Explain in words and possibly draw an accompanying graph proving your point. Further, make an argument for why a community (village) level FGM prevalence is a good unit of measurement, rather than an ethnic group or a wealth level in the case of this paper.
(d) (4 points) How would the policy recommendation proposed in (b) change with the knowledge of the results of the paper?

(5) (20 points) **Effects of war.** The paper by Miguel and Roland (2011) we replicated in the tutorial discussed the effect of the Vietnam (American) War on economic outcomes in Vietnam on district and provincial levels several decades later.
(a) (4 points) Why are we interested in the link between bombing intensity and economic outcomes? Link to the theories we discussed in class.
(b) (4 points) Why a simple correlation between bombing intensity earlier and current day economic performance does not give us a causal effect going from bombing to economic outcomes? Be specific.
(c) (6 points) Think of an alternative method of causal inference to using instrumental variables (method the authors used) if you had all the data you wanted. First, describe the method. Second, describe the sources and types of data you would need (also, be specific about whether this would be a time-series, panel, or a cross-section and specify the time range).
(d) (3 points) The authors used only a part of the variables on ammunition available in their dataset (about half of all ordnance used). Why could this potentially be problematic for the definition of the bombing intensity proxy used? How would you test if it is a problem indeed?
(e) (3 points) Further, the authors only gained access to data on ordnance used by the US Air Force and US Navy, not the other units of the army. Why could this be problematic for our story? And what assumption do we have to make on the relationship between bombing intensity of Air Force and the Navy, and the remaining units of the army so that the estimation is valid?

(6) (10 points) **Inequality and poverty measures.**
(a) (3 points) Imagine that you measure inequality in several districts within a country and you want the measure to be comparable across the districts. Would the inequality index you choose necessarily have to satisfy the relative income principle? Why (not)? Explain and provide assumptions underlying your answer.

(b) (3 points) Imagine an index of inequality that satisfies population, relative income, and the Dalton-Pigou principles. Would inequality (increase/decrease/not change/you cannot say) in case you take 100% of the income from the richest person and give it to the person who has previously earned 0? Explain.

(c) (4 points) Explain the main difference between the Mean absolute deviation (MAD) measure of income inequality and the Gini coefficient using the principles we defined (you can use the formulas or you can describe the indices in your own words). What principles are satisfied for which measure and why (not)?

(7) (10 points) **Short essay (0.5 page)** Discuss why some of the assumptions we made in our discussion of growth models need not apply to the case of many developing countries. Be specific about the assumptions you want to discuss (at least two of them) and provide empirical evidence from the economics literature we discussed that speaks against the validity of these assumptions. You do not need to give exact citations of papers (but its a plus, of course).