

i Candidate instructions

ECON4921

This is some important information about the exam in ECON4921. Please read this carefully before you start answering the exam.

Date of exam: November 20, 2019

Time for exam: 9:00am-12:00pm

Language: The examination text is given in English. You may submit your response in Norwegian, Swedish, Danish or English.

The problem set: The problem set consists of 3 problems each consisting of several sub-questions. Be aware that the "maximum marks" on each sub-question might vary. The overall maximum marks is 100.

Sketches: You may use sketches on all questions. You are to use the sketching sheets handed to you. You can use more than one sketching sheet per question. See instructions for filling out sketching sheets on your desk. It is very important that you make sure to allocate time to fill in the headings (the code for each problem, candidate number, course code, date etc.) on the sheets that you will use to add to your answer. You will find the code for each problem under the problem text. You will NOT be given extra time to fill out the "general information" on the sketching.

Access: You will not have access to your exam right after submission. The reason is that the sketches with equations and graphs must be scanned in to your exam. You will get access to your exam within 2-3 days.

Resources allowed: No written or printed resources - or calculator - is allowed (except if you have been granted use of a dictionary from the Faculty of Social Sciences).

Grading: The grades given: A-F, with A as the best and E as the weakest passing grade. F is fail.

- 1 Are the following statements true, false, or uncertain? Justify your answer. Your grade on these questions will depend on your justification, not on whether you select true, false, or uncertain.

(a) **Fundamental cause**

According to the main argument of Acemoglu, Johnson, and Robinson (2005)¹ countries stay poor due to commitment problems.

True, false, or uncertain? Justify your answer. You might also answer on sketching paper.

¹Acemoglu, Daron, Simon Johnson, and James A. Robinson. "Institutions as a fundamental cause of long-run growth." *Handbook of economic growth* 1 (2005): 385-472.

Maximum marks: 10

(b) **Democratization**

The coefficient 0.37 in Column (2) of Table II in Aidt and Franck (2015)¹ shows that having one more riot within 10 km of a constituency *causes* an increase of 0.37 percentage points in the share of seats won by a Whig MP. The table can be found in the following link: [link to table](#)

Variable explanations:

Riots within 10 km = the number of Swing riots that happened within a radius of 10 kilometers from the constituency

Whig share 18XX (%) = the percentage of seats won by a Whig MP in the constituency in the 18XX election

Reform support 1830 = the difference between the shares of the MPs from the constituency who supported and opposed the Reform Bill in 1830

True, false, or uncertain? Justify your answer. You might also answer on sketching paper.

¹Aidt, Toke S., and Raphaël Franck. "Democratization under the threat of revolution: Evidence from the Great Reform Act of 1832." *Econometrica* 83.2 (2015): 505-547.

Maximum marks: 10

(c) **The Malthusian model**

The estimate -0.132 with standard error 0.0870 in Column (6) of Table 2 in Mayshar et al (2018)¹ is consistent with the Malthusian model. See table with variable explanations in the following link: [link to table](#).

True, false, or uncertain? Justify your answer. You might also answer on sketching paper.

¹Mayshar, Joram, et al. "The Emergence of Hierarchies and States: Productivity vs. Appropriability.". Working Paper, 2018.

Maximum marks: 10

(d) **Constitutions**

According to the argument of Weingast (1997)¹ written constitutions can never be effective in protecting the rights of citizens.

True, false, or uncertain? Justify your answer. You might also answer on sketching paper.

¹Weingast, Barry R. "The political foundations of democracy and the rule of the law." *American political science review* 91.2 (1997): 245-263.

Maximum marks: 10

- 2 Assume that there are two traders engaging in trade with each other. Each trader can choose whether to be Honest or to Cheat. The game is represented by the following normal-form:

		Trader 2	
		Honest	Cheat
Trader 1	Honest	a, a	c, b
	Cheat	b, c	d, d

where $b > a > d > c$.

(a) **Nash equilibrium**

What is (are) the Nash equilibrium (equilibria) of this game? Explain.

Fill in your answer here and/or on sketching paper

Maximum marks: 5

(b) **A one-shot deviation**

Assume there are n such traders where n is an even number. The traders are randomly matched into pairs to play the game. This is repeated forever. The traders have a discount rate δ . Consider the following strategies:

1. Initially all traders are labelled "honest"
2. A trader plays Honest if at least one of the following is true:
 1. She is matched with an "honest" trader
 2. She herself is labelled as "a cheater".
3. A trader plays Cheat if she is labelled "honest" and is matched with "a cheater"
4. Any trader who does not follow the strategies in 2 and 3 is labelled "a cheater" in the next period
5. Any trader who follows the strategies in 2 and 3 is labelled "honest" in the next period.

When is the following one-shot deviation profitable: Play Cheat when you are labelled "honest" and is matched with another "honest" trader. Explain and show your calculations.

Fill in your answer here and/or on sketching paper

Maximum marks: 15

(c) **The role of b**

Why is it easier to sustain Honest trading when b is low? Explain the intuition behind this result.

Fill in your answer here and/or on sketching paper

Maximum marks: 5

- 3 Consider Table 1 in Sanchez de la Sierra (forthcoming)¹. See the table and the regression specification in the following link: [link to table](#)

¹Sanchez de la Sierra, Raul. "On the Origins of the State: Stationary Bandits and Taxation in Eastern Congo". *Journal of Political Economy* (forthcoming)

(a) **Interpretation of coefficient**

How do we interpret the coefficient 0.07 on Coltan(j) X pc(t) in Column (4)?

Fill in your answer here and/or on sketching paper

Maximum marks: 5

(b) **The role of the Rwandan border**

A researcher claims that we should not interpret this coefficient as causal since coltan is mostly found close to the Rwandan border. Thus the regression is likely to just pick up the fact that the areas close to Rwanda are also having a lot of armed groups. Is she right to worry about this? Explain.

Fill in your answer here and/or on sketching paper

Maximum marks: 10

(c) **Armed groups affecting the coltan price**

Another researcher is concerned that the correlation could be driven by armed groups ("stationary bandits") causing an increase in the price of coltan (by e.g. restricting supply), and not vice versa. Is this a valid critique? Explain.

Fill in your answer here and/or on sketching paper

Maximum marks: 10

(d) **Conflict**

The *point estimates*¹ in Column (1) indicate that an increase in the price of coltan leads to more conflicts (as measured by whether the municipality was attacked), but increases in the price of gold lead to less conflict. How can we use the repeated prisoners' dilemma to explain why these two natural resources might have different effects on conflict?

Fill in your answer here and/or on sketching paper

¹A point estimate is just the value of the estimated coefficient, disregarding the standard error. Thus, ignore the fact that the coefficient on Gold(j) X pg(t) is not statistically significant.

Maximum marks: 10