UNIVERSITY OF CALIFORNIA AT BERKELEY

Department of Economics

International Economics Field Exam 2023

GENERAL INSTRUCTIONS:

This is a 2-hour (120 min) field exam. There are 3 questions in total. You need to answer any 2 of the 3 questions. Question 1 corresponds to course 280A, Question 2 corresponds to course 280C and Question 3 corresponds to course 280D. Each question is worth 30 points for a total of 60 points.

Question 1 for 280A (Faber and Rodriguez-Clare)

Part 1 (Rodriguez-Clare) (15 points)

This is a multi-part question on optimal taxation in open economies. You can provide direct/short answers.

1) Consider a one sector Armington model with trade elasticity $\varepsilon = \sigma - 1$. What is the optimal export tax in the Small Open Economy (SOE)? Compare this export tax with the monopolistic competition markup and explain intuitively why there is this relationship between the optimal export tax and the markup.

2) Imagine we switch from the Armington to the Krugman model (but still within the SOE case), so that now firms are charging the monopolistic competition markup on exports. Given this markup, is it then the case that there is no need for policy to achieve the optimal allocation in the Krugman model? Why or why not? An intuitive explanation is enough here.

3) Imagine that we move from the Armington/SOE one sector model to the multi-sector Armington/SOE model, with trade elasticity ε_k in sector $k = 1, ..., K$. What is the optimal policy in this economy? Explain why it is that the optimal allocation can be achieved with an import tariff if $\varepsilon = \varepsilon_k$, but not if ε_k differs across sectors.

Part 2 (Faber) (15 points)

Answer the following three questions in reference to Atkin, Faber and Gonzalez-Navarro (2018) “Retail Globalization and Household Welfare”:

(i) Describe the welfare measure and its components that the paper uses to quantify the household gains from foreign supermarket entry.

(ii) How do they estimate the “Direct Price Index Effect” of foreign retail entry?

(iii) Discuss two different theoretical channels that could give rise to what the authors refer to as the “pro-competitive price index effect”.

Question 2 for 280C (Obstfeld) (30 points)

Discuss one implication of imperfect asset substitutability for central bank policy in open economies, and explain why you think it is important.

(a) Write down an explicit model, based on utility maximization and risk aversion, in which bonds denominated in different currencies are imperfect substitutes.

(b) What does the model imply about the relation between the uncovered interest differential and currency risk?

(c) Can you think of other factors besides the riskiness of exchange rate fluctuations that might make countries' bonds imperfect substitutes?

(d) Can models with risk-neutral agents yield similar implications about intervention as ones with imperfect substitution due to risk aversion? Explain your answer, with reference to a specific model.

Question 3 for 280 D (Gaubert and Tsivanidis) (30 points)

Part 1 (Gaubert) (15 points)

Consider an economy with N cities indexed by j. Total population is $\bar{L}$. Workers freely choose the city where to live. They derive utility from local amenities a_j and the consumption of a homogeneous freely trade good c_j, taken as the numeraire. Their utility in city j is:

$$u_j = a_j c_j,$$

where $a_j = A_j L_j^{\beta}$. In this expression, A_j exogenous and L_j is the population of city j.

Production in city j is done by a representative price-taking firm, pricing at marginal cost. It uses local labor to produce according to a decreasing returns to scale production function:

$$Y_j = B_j L_j^{1-\alpha},$$

where $\alpha < 1$. Corresponding profits made in city j are π_j. Workers in the country collectively own all firms.

Workers living in city j are paid w_j, receive an additive transfer T_j from the governement (T_j can be negative, in which case workers pay a tax), and receive a share $1/\sum L_j$ of the firms profits.

1. What does β capture in this simple model? Give real life examples.

2. Assume that transfers T_j are given. List the unknowns of the model. How many are there?

3. Write down the corresponding equilibrium conditions of the model. Say in words what the equations are. (No need to solve them!)

4. Now, assume that the governement chooses allocations to maximize welfare. Write down the planner problem. (No need to solve it!)

5. Now assume $\beta = 0$. What set of transfers does the planner optimally choose? Explain, using what we learnt in class.

Part 2 (Tsivanidis) (15 points)

This question develops a model of worker sorting to characterize the process of neighborhood gentrification. There are $i \in \{1, \ldots, N\}$ locations and time is discrete. For simplicity, there are two periods. There are $g \in \{L, H\}$ groups of workers, with $\omega \in [0, \bar{L}_g]$ indexing individual workers with total populations $\bar{L}_g$. At time t, L_{igt} workers live in each location and there are H_i units of housing there (both exogenous to the model). Workers have the following Cobb-Douglas preferences $U_{igt} = u_{igt}^{\rho_g} w_{igt} r_{it}^{\beta-1}$ where u_{igt} are the amenities valued by type-g workers in i at t, w_{igt} are wages, r_{it} are house prices, and $\beta \in (0,1)$ and $\rho_g > 0$. We take the initial distribution of workers $\{L_{igt}\}$ as given, but the distribution of workers at $t+1$ will be endogenous

(a) (3 points) Suppose that utility for a worker ω of type g who lives in i at t and moves to j at $t+1$ is $W_{ijgt+1}(\omega) = \ln U_{igt+1} - \ln \mu_{ij} + \epsilon_{ijgt}(\omega)$, where $\ln \mu_{ij} \geq 0$ is a moving cost and $\epsilon_{ijgt}(\omega)$ is an idiosyncratic preference for worker ω for the move from i to h. Assume that ϵ_{ijgt} is drawn iid from a T1EV distribution with scale parameter θ_g. What is the number of workers of each type living in each location at $t+1$? What is the (distribution of) expected utility across workers in period $t+1$?

(b) (2 points) Assume wages and amenities are exogenous to the model. Given a vector $\{u_{igt+1}, w_{igt+1}, H_i, L_{igt}\}$, what are the endogenous variables of the model? Define an equilibrium and write down the system of equations that characterizes it.

(c) (6 points) You speak to someone in Hyde Park on the South Side of Chicago who is concerned about the recent opening of Whole Foods and other high end retail stores in the area, and want to use this model to characterize what might happen and who may benefit more. Begin by continuing to take wages as exogenous to the model, and now also treat house prices as exogenous (i.e. begin in partial equilibrium). You characterize the change as a change in amenities which is common across both types, i.e. in location j $d \ln u_{jgt+1} = d \ln u_{jt+1} > 0 \ \forall g$. What is the distribution of welfare elasticities in this model? What determines who benefits most? Can you say anything about who moves in? (hint: you can compute the population elasticities for both groups and compare.)

(d) (4 points) You are discussing the changes in the neighborhood with someone else, who believes the new stores have affected both wages house prices. If you are given the distribution of changes in house prices and wages across space, how might you use them to write down the distribution of the change in welfare in this case? Keeping the same assumption that these stores are captured by an exogenous change in amenities, how could you go about computing the full general equilibrium effects (i.e. including impacts on wages)? And can you think of a way to endogenize the increase in amenities and jobs that new retail stores might represent, based on a paper we saw in class (discussion is fine)?