

## ECON8481: Problem Set # 2

Due in the next class, 2/15. Late problem sets will be marked down. Write it up neatly.

1. Take the Eaton and Kortum model with just 2 countries. The trade friction is  $d_{12} = d_{21} = d$ . Suppose expenditure patterns are the following: (a) Country 1 spends 75 % on its own goods and 25 % on goods imported from country 2. (b) Country 2 spends 90 % on its own goods and only 10 % on goods imported from country 1.
  - (a) Assume  $\theta = 8$ . Use the data on expenditures to calculate  $d$ . (Hint, try calculating some of the ratios that we use in “Technology, Geography, and Trade.”)
  - (b) How does your estimate of  $d$  change if instead you assume  $\theta = 2$ ? Explain what is going on based on the fact that  $\theta$  governs the heterogeneity in efficiencies.
2. Continuing with our model, assume  $N$  countries with  $d_{ni} = 1$  for each country pair. Labor is the only input in production.
  - (a) Write down the labor market equilibrium condition and solve for equilibrium relative wages.
  - (b) Calculate equilibrium real wages.
  - (c) Under what conditions on technology levels  $T_i$  and labor endowments will the trade equilibrium replicate an integrated world (i.e., a world in which labor is mobile)?
  - (d) Show that this integrated world is identical to one in which there is perfect technology diffusion between countries (i.e., all countries share the same realizations of the  $z(j)$ ), and no trade.