

Final examination

Scores add up to 100

Your name: _____ SID: _____ Your TA: _____

Answer **8 out of the 10** questions 1 to 10 (4.5 points each, 8 minutes each). Do not answer more than 8 questions.

1. For each of the three models that explain trade based on comparative advantage (Ricardo, Specific-factors, and Heckscher-Ohlin), give the basis of comparative advantage and the trade pattern.

2. Assume that California and Mexico produce tomatoes and nuts with only one factor, labor. Labor requirements in California are 50 man-hours per ton of tomatoes and 150 man-hours per ton of nuts. In Mexico, labor requirements are 60 man-hours per ton of tomatoes and 250 man-hours per ton of nuts. What is the range of relative wages $w_{\text{mex}} / w_{\text{cal}}$ that would make trade between California and Mexico beneficial for both regions?

3. State the factor-price equalization theorem. Make sure to state the underlying assumptions.

4. Describe a trade theory that could explain trade between identical countries. To what type of commodities does it apply? Does the theory imply gains from trade? If no, why not? If yes, what is the source of these gains?

5. In our model of intertemporal trade, what do countries exchange? What differences in their intertemporal PPFs make this exchange mutually beneficial?

6. State the infant industry argument for protection. What are the conditions for success? Why might it eventually fail?

7. Define the "most favored nation" principle of GATT.

8. Suppose that the world price of automobiles is \$10,000 and domestic producers of automobiles use \$5,000 worth of imported inputs and no domestic inputs. What rate of effective protection would be provided to the domestic auto industry by a 25% tariff on imported automobiles and a 50% tariff on inputs?

9. Let's say that Brazil can produce automobiles relatively cheaply, but that they have low fuel efficiency and produce high level of gas exhaustion. The U.S. government, concerned about clean air in the U.S., could impose a tariff on imports of autos from Brazil.

1. What is the nature of the market failure that justifies government intervention? (be concise but precise on why it is a market failure)
2. Explain why imposing a tariff is second-best and what would be the first-best policy.

10. Politicians in the U.S. are worried that immigration is a drain on the public purse. According to the article from *The Economist* of November 1997:

1. Are those fears justified?

2. What immigration policy could reduce costs to the public budget and improve the pool of immigrants from the U.S. point of view?

Answer **2 out of the 3** graphical questions 11 to 13 (4.5 points each, 8mn each). Do not answer more than 2 questions.

11. Use a PPF graph to explain how the increase in the endowment of a specific-factor affects the relative supply curve of a country.

12. Consider a Heckscher-Ohlin economy that produces two goods with labor and capital. Explain with a graph how the increase in the relative price of the capital-intensive good affects the relative factor price w/r (i.e., the wage rate over the rental rate).

13. Assume two countries, a fixed factor land and a variable factor, labor, with diminishing marginal productivity, and a single output good. Show on a graph how labor mobility between the two countries can raise world output. What are the implications for wages and the returns to land in the two countries?

Answer questions 14 and 15 (4.5 points each, 8mn each).

14. Consider two commodities, food and electronic goods. Assume that the two commodities only differ by their demand price elasticity: the two commodities have the same supply curve, the same world price, and at this world price the same level of demand. Demand for food is inelastic and demand for electronic goods is elastic. Draw two graphs, one for the market for food and one for the market for electronic goods. Compare the effect of the same tariff on the change in consumer surplus, efficiency loss, and tariff revenue in the two markets. Use this result to describe the dilemma of using tariffs to raise government revenue.

15. A free trade equilibrium exists in a two-region, two-product world. The United States exports tobacco to the Middle East and imports oil from the Middle East. Show how an increased taste for smoking in the Middle East affects the offer curve(s) and the U.S. terms of trade.

Answer questions 16 and 17 (8 points each, 14mn each).

16 Dumping

16.1. What is the economic definition of dumping? Explain briefly how selling prices are determined on the domestic and the foreign market.

16.2. What are the conditions required to make dumping possible?

16.3. What is the WTO definition of dumping?

16.4. If a country is found by a WTO dispute panel to have been dumping, what action can the international agency take?

17. The cost of a food security policy

Nigeria is a small rice-importing country. Suppose that Nigeria wants to give rice farmers a higher price than the world price, yet wants to make the price paid by consumers less than the world price to keep down the cost of living.

17.1. Describe a policy or set of policies that could do this.

17.2. Show on a graph its (their) effects on production, consumption and imports, and the welfare effects (on producers, consumers, government budget, and overall welfare).

Answer questions 18 and 19 (15 points each, 27mn each)

18. The efficiency and welfare effects of an export subsidy for the U.S. grain sector.

The United States demand and supply for grain are:

$$D = 150 - 0.6 p$$

$$S = -40 + 0.5 p$$

where D and S are in millions of tons and p in \$ per ton. The world price of grain is $p^* = \$200$ per ton.

18.1. In a free trade situation, what would the U.S. production, consumption, and trade in grain be?

18.2. The farm lobby, arguing that the world price is artificially low because of a European subsidy, is asking for a 20% export subsidy for its grain. Assume that the U.S. is a “small country” in the world grain market.

Represent the welfare effect of this policy on a graph.

Calculate what would be:

- the domestic price of grain in the U.S.
- the effect of this policy on production, consumption and exports of grain.
- the welfare effect on consumers, producers, the cost to the government of the subsidy, and the overall welfare effect for the U.S.
- the efficiency losses in production and consumption. Why are they asymmetrical?

18.3. The U.S. is instead a large country in the grain market?

Consider now the international market. The net import demand curve for the rest of the world is:

$$MD = 50 - 0.1 p^*$$

18.3.1. Represent the world market for grain on a graph. For this, you need to express the net exports from the U.S. using the demand and supply equations given above.

(At the previously given free trade price of $p^* = \$200$, the international market is in equilibrium. You do not have to check this.)

18.3.2. Assume now that the U.S. provides a 20% export subsidy. Find the equilibrium world price that ensures that world net import demand is equal to the U.S. net exports. What is the level of trade at this price?

18.3.3. Label very carefully your graphs. Indicate the areas that represent the welfare effects of the U.S. export subsidy on each of the following groups:

- U.S. grain producers:
- U.S. consumers:
- U.S. government budget:
- The U.S.
- The foreign countries
- The World

19. Trade diversion by the creation of a free-trade area.

In 1996 Chile joined Mercosur, a customs union that included Argentina, Brazil, Paraguay and Uruguay. We analyze the welfare effect of joining Mercosur for two specific commodities, meat and automobiles.

19.1. What is a customs union and how does it differ from a free-trade area like NAFTA?

19.2. Prior to 1996, Chile was importing meat from the United States. The U.S. price of meat was \$2,000/ton and Chile was imposing a tariff of 30%. Imports were 40,000 tons. When Chile joined Mercosur, it could import meat from Argentina, free of import tariffs, at \$2,100/ton. Imports increased to 50,000 tons.

19.2.1. Represent on a graph the welfare effect for Chile of joining Mercosur.

19.2.2. Compute this welfare effect. Does Chile gain or lose in joining Mercosur? Why?

19.2.3. By how much would imports have to increase in order for Chile to benefit from joining Mercosur?

19.3. Consider now automobiles. Prior to 1996, with a 10% tariff from the Chilean government, Chile imported 125,000 automobiles from the U.S. at an international price of \$10,000 each (and therefore a higher domestic price). In joining Mercosur, Chile can either: (1) import automobiles from Brazil at \$12,000 each; or (2) import from the U.S. at \$10,000 *plus* the common external tariff of 24% that it is required to apply as a Mercosur member. What is the impact of joining Mercosur on the consumer price of automobiles in Chile? Does Chile gain or lose, and why?