

### Problem Sets 3

#### 1. International Trade Theory and Applications

- 1) Production possibility frontier: Suppose CH and US both produce apples and oranges, and labor is the only factor of production. In one day, CH can either produce 40 apples or 60 oranges; US can either produce 60 apples or 40 oranges. Assume away transportation and transaction costs.

	Opportunity cost of producing one apple	Opportunity cost of producing one orange
CH		
US		

- Compute their opportunity costs of production and fill in the table. Draw the production possibility frontiers for CH and for US, respectively.
  - CH prefers average consumption on both goods, so does US. Show these consumption bundles on their production possibilities frontiers.
- 2) Specialization and “fair trade”
- Based on the information in question 1, who has absolute advantage in producing oranges? Who has comparative advantage in producing apples?
  - After negotiation, CH fully engages in producing oranges and US in apples. Given an exchange rate of one apple for one orange, what is the trade equilibrium if CH would like to trade out 20 oranges? Fill in the table below and compute the net gain from trade.

	Autarky Equilibrium		Trade Equilibrium		Gains from Trade	
	Apples	Oranges	Apples	Oranges	Apples	Oranges
CH	20	30				
US	30	20				

- “Unfair trade”: After complete specialization, CH and US agree to trade 40 apples for 30 oranges, would both of them become strictly better off compared with autarky? Explain. Who is the “winner” (gains more than the other) from trade?
- Trade policy intervention: Suppose that US considers its trade with CH as unfair and decides to impose 10% tariff on its imports. How would this affect exchange rate (terms of trade) and trade equilibrium in the model? Suppose further CH will not retaliate. [Extra: 0.2]

2. Consider a 2-2-1 (two countries-two goods-one factor) model in international trade. Countries' productivity is given in the table. Assuming zero transportation and transaction costs. Complete the table and draw the PPF for both countries. Could trade happen between US and CH? Explain. [Extra: 0.5]

Technology	Goods	US	CH
Productivity (units/hour)	Apple	40	30
	Orange	60	20
Production input (hours/unit)	Apple		
	Orange		
Opportunity cost of production	Apple		
	Orange		

Note: The questions (and short videos) below does not count for credit. It is intended for interested students to better examine the gap between theory and reality.

3. Against Free Trade—U.S. China “Trade War”: Search the topic on US-China trade tension started in 2018 and follow its current development. Describe the trade war issue briefly and summarize your findings.

- 1) What are the key disputes and actions taken by the two countries?
- 2) What are the products and industries most affected by the trade war? Which country has the absolute advantage in these products and industries? Which country has comparative advantage?
- 3) What are the government policies and measures against free trade for these products? How would these policies change the equilibrium in classical trade model?
- 4) What are the arguments for the U.S. government to wage a trade war against China?
- 5) If free trade in theory is beneficial to all, why are countries still against free trade? What are the limitations in its assumptions of the classic trade theory (absolute advantage and comparative advantage) when we apply it to advocating free trade?
- 6) Trade can be scary to workers: competition effects and labor market disruption

<https://www.aeaweb.org/research/deaths-despair-trade-liberalization-china>

201701 What would a U.S.-China trade war look like? | CNBC 4:23

<https://www.youtube.com/watch?v=gZFINBUxf6Y>

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