EC 380: International Economic Issues
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Practice Problems: Final Exam
Fall 2022

Setup

The solutions for the following questions are available on Canvas under 'practice-sol.pdf'. The details surrounding reaching each of these answers can be discussed during email/office hour correspondence.

Tariff Theory

Q1. Suppose we are in an autarky scenario and considering the market for an imported good at Home. Use the following demand and supply functions for solving the various equilibrium scenarios.

$$\text{Demand: } P = 315 - \frac{3}{7}Q_d$$
$$\text{Supply: } P = 50 + \frac{1}{3}Q_s$$

1) Consider the autarky scenario first. Sketch the supply and demand curves, with the appropriate labeling for the equilibrium point, surplus regions.

2) Report the coordinates of the equilibrium point, which represent the price and quantity the market operates at.

3) Calculate the consumer and producer surplus values under autarky. What is total welfare for the economy?

Suppose Home opens up to free-trade, and becomes exposed to a world price, $P_w = 120$.

4) Re-sketch the market with the new price line and corresponding equilibria points for quantity demanded and supplied. Calculate the equilibrium values for quantities, imports and surplus values. Highlight the change in welfare, relative to autarky.

Consider a case in which the government intervenes, setting a tariff rate of $t = 28$.

5) Sketch the updated demand & supply schedule. Upon appropriate labeling the diagram, highlight which region that represents government revenue.

6) Calculate the equilibria for quantity supplied, quantity demanded, imports and surpluses (consumer, producer, government). Find the change in welfare, relative to free-trade.

7) What are the respective efficiency loss and deadweight loss amounts associated with this form of government intervention?

Q2. Suppose we are in an autarky scenario and considering the market for an imported good at Home. Use the following demand and supply functions for solving the various equilibrium scenarios.

$$\text{Demand: } P = 275 - \frac{1}{2}Q_d$$
$$\text{Supply: } P = 30 + \frac{5}{8}Q_s$$

1) Consider the autarky scenario first. Sketch the supply and demand curves, with the appropriate labeling for the equilibrium point, surplus regions.

2) Report the coordinates of the equilibrium point, which represent the price and quantity the market operates at.

3) Calculate the consumer and producer surplus values under autarky. What is total welfare for the economy?

Suppose Home opens up to free-trade, and becomes exposed to a world price, $P_w = 85$.

4) Re-sketch the market with the new price line and corresponding equilibria points for quantity demanded and supplied. Calculate the equilibrium values for quantities, imports and surplus values. Highlight the change in welfare, relative to autarky.

Consider a case in which the government intervenes, setting a tariff rate of $t = 25$.

5) Sketch the updated demand & supply schedule. Upon appropriate labeling the diagram, highlight which region that represents government revenue.

6) Calculate the equilibria for quantity supplied, quantity demanded, imports and surpluses (consumer, producer, government). Find the change in welfare, relative to free-trade.

7) What are the respective efficiency loss and deadweight loss amounts associated with this form of government intervention?

Q3. Suppose we are in an autarky scenario and considering the market for an imported good at Home. Use the following demand and supply functions for solving the various equilibrium scenarios.

$$\text{Demand:} \quad P = 550 - 2Q_d$$

$$\text{Supply:} \quad P = 100 + 2.5Q_s$$

1) Consider the autarky scenario first. Sketch the supply and demand curves, with the appropriate labeling for the equilibrium point, surplus regions.

2) Report the coordinates of the equilibrium point, which represent the price and quantity the market operates at.

3) Calculate the consumer and producer surplus values under autarky. What is total welfare for the economy?

Suppose Home opens up to free-trade, and becomes exposed to a world price, $P_w = 190$.

4) Re-sketch the market with the new price line and corresponding equilibria points for quantity demanded and supplied. Calculate the equilibrium values for quantities, imports and surplus values. Highlight the change in welfare, relative to autarky.

Consider a case in which the government intervenes, setting a tariff rate of $t = 45$.

5) Sketch the updated demand & supply schedule. Upon appropriate labeling the diagram, highlight which region that represents government revenue.

6) Calculate the equilibria for quantity supplied, quantity demanded, imports and surpluses (consumer, producer, government). Find the change in welfare, relative to free-trade.

7) What are the respective efficiency loss and deadweight loss amounts associated with this form of government intervention?

Q4. Suppose we are in an autarky scenario and considering the market for an imported good at Home. Use the following demand and supply functions for solving the various equilibrium scenarios.

$$\text{Demand: } P = 150 - \frac{8}{9}Q_d$$
$$\text{Supply: } P = 5 + \frac{7}{9}Q_s$$

1) Consider the autarky scenario first. Sketch the supply and demand curves, with the appropriate labeling for the equilibrium point, surplus regions.

2) Report the coordinates of the equilibrium point, which represent the price and quantity the market operates at.

3) Calculate the consumer and producer surplus values under autarky. What is total welfare for the economy?

Suppose Home opens up to free-trade, and becomes exposed to a world price, $P_w = 35$.

4) Re-sketch the market with the new price line and corresponding equilibria points for quantity demanded and supplied. Calculate the equilibrium values for quantities, imports and surplus values. Highlight the change in welfare, relative to autarky.

Consider a case in which the government intervenes, setting a tariff rate of $t = 15$.

5) Sketch the updated demand & supply schedule. Upon appropriate labeling the diagram, highlight which region that represents government revenue.

6) Calculate the equilibria for quantity supplied, quantity demanded, imports and surpluses (consumer, producer, government). Find the change in welfare, relative to free-trade.

7) What are the respective efficiency loss and deadweight loss amounts associated with this form of government intervention?

Consider the following breakdowns of domestic value-added and imported input contributions to final output of local firms in an economy. Complete the entries above and express the effective rate of protection in each case.

Q5. Consider a final good tariff of 12 percent and an input good tariff of 37 percent.

Variable	No Tariff	+ Tariff on Final Good	+ Tariff on Input Good
Price of Domestic Final Good	2870		
Value of Imported Inputs	870		
Domestic Value-Added	2000		
Effective Rate of Protection, %	0		

Q6. Consider a final good tariff of 17 percent and an input good tariff of 20 percent.

Variable	No Tariff	+ Tariff on Final Good	+ Tariff on Input Good
Price of Domestic Final Good	1910		
Value of Imported Inputs	430		
Domestic Value-Added	1480		
Effective Rate of Protection, %	0		

Q7.Consider a final good tariff of 10 percent and an input good tariff of 5 percent.

Variable	No Tariff	+ Tariff on Final Good	+ Tariff on Input Good
Price of Domestic Final Good	4830		
Value of Imported Inputs	2415		
Domestic Value-Added	2415		
Effective Rate of Protection, %	0		

Balance of Payments

Q8. Consider the following balance of payments for a given country.

ID	Description	Billions, USD
1.	Current Account Balance	-550
2.	Capital Account Balance	100
3.	Financial Account	-
3a.	Net acq of financial assets, excl financial der (increase/outflow (+))	870
3b.	Net inc of liabilities, excl financial der (increase/inflow (+))	1200
3c.	Net change in financial derivatives	-80
4.	Statistical Discrepancy	
5.	Memoranda	
5a.	Balance on current and capital accounts	
5b.	Balance on financial account	

1) In theory, what should the difference between items (5a.) and (5b.) be?

2) Report the associated value of item (5a). Show your workings.

3) Report the associated value of item (5b). Show your workings.

4) What is the measure of statistical discrepancy measured as in this case (4.)?

5) Would this country be considered a case of CA surplus or CA deficit?

Q9. Consider the following balance of payments for a given country.

ID	Description	Billions, USD
1.	Current Account Balance	-1830
2.	Capital Account Balance	290
3.	Financial Account	-
3a.	Net acq of financial assets, excl financial der (increase/outflow (+))	7000
3b.	Net inc of liabilities, excl financial der (increase/inflow (+))	-6300
3c.	Net change in financial derivatives	-14780
4.	Statistical Discrepancy	
5.	Memoranda	
5a.	Balance on current and capital accounts	
5b.	Balance on financial account	

1) In theory, what should the difference between items (5a.) and (5b.) be?

2) Report the associated value of item (5a). Show your workings.

3) Report the associated value of item (5b). Show your workings.

4) What is the measure of statistical discrepancy measured as in this case (4.)?

5) Would this country be considered a case of CA surplus or CA deficit?

Exchange Rates

Q10. Consider the following demand and the supply curves of foreign currency, where ExR represents the local currency to foreign currency (e.g. USD-GBP) exchange rate. FC represents the units of foreign currency reserves held in the "local" economy.

$$D : \text{ExR} = 57 - 0.061\text{FC} \quad , \quad S : \text{ExR} = 2 + 0.012\text{FC}$$

1) What is the market clearing rate of exchange and the associated level of foreign currency reserves?

2) Consider a case in which the market anticipates a new technology being released abroad, which causes demand for foreign currency reserves to rise by 2 units, such that the new demand curve can be represented by $D^{'} = D + 2$. What are the new exchange rate and currency reserve values?

3) How would you describe the change in both currencies? Which has depreciated and which has appreciated?

4) What is the percentage change in currency reserves?

Q11. Consider the following demand and the supply curves of foreign currency, where ExR represents the local currency to foreign currency (e.g. USD-GBP) exchange rate. FC represents the units of foreign currency reserves held in the "local" economy.

$$D : \text{ExR} = 180 - 0.290\text{FC} \quad , \quad S : \text{ExR} = 50 + 0.251\text{FC}$$

1) What is the market clearing rate of exchange and the associated level of foreign currency reserves?

2) Consider a case in which a large cache of foreign currency is discovered following an audit of local steel factories, causing foreign currency reserves in increase in supply by 40 units. This increase in supply is represented on the new supply curve by $S' = S - 40$.[1] What are the new exchange rate and currency reserve values?

3) How would you describe the change in both currencies? Which has depreciated and which has appreciated?

4) What is the percentage change in currency reserves?

[1]Shifting the supply curve to the right is equivalent to reducing each point on the line down by a constant amount of units.

Q12. Consider the following demand and the supply curves of foreign currency, where ExR represents the local currency to foreign currency (e.g. USD-GBP) exchange rate. FC represents the units of foreign currency reserves held in the "local" economy.

$$D : \text{ExR} = 1080 - 45\text{FC} \quad , \quad S : \text{ExR} = 200 + 22\text{FC}$$

1) What is the market clearing rate of exchange and the associated level of foreign currency reserves?

2) Consider a case in which the domestic and foreign interest rates, $i\&i^*$, both rise such that foreign currency demand sees a 10 level-shift increase and supply experiences a level shift of 80 units. The new curves are defined as $D' = D + 10$, $S' = S - 80$. What are the new exchange rate and currency reserve values?

3) How would you describe the change in both currencies? Which has depreciated and which has appreciated?

4) What is the percentage change in currency reserves?