Final Exam

TRADE POLICIES

1-4 The United States, a large country, eliminates its quotas on imports of textiles.

1. The price of textiles in the United States
   a) rises
   b) falls
   c) remains the same
   d) a) or c)
   e) b) or c)

2. Who benefits in United States due to eliminating the quota?
   a) textiles producers
   b) textiles consumers
   c) government revenue
   d) a) and b)
   e) a), b) and c)

3. Who is hurt in the United States due to eliminating the quota?
   a) textiles producers
   b) textiles consumers
   c) government revenue
   d) a) and c)
   e) b) and c)

4. The price of textiles in the rest of the world
   a) rises
   b) falls
   c) remains the same
   d) a) or c)
   e) b) or c)
5-8. The United States, a large country, removes its tariffs on imports of steel.

5. The price of steel in the United States
   a) rises
   b) falls
   c) remains the same
   d) a) or c)
   e) b) or c)

6. Who in the United States benefits from removing the tariff?
   a) steel producers
   b) steel consumers
   c) government revenue
   d) a) and c)
   e) b) and c)

7. Who in the United States is hurt by removing the tariff?
   a) steel producers
   b) steel consumers
   c) government revenue
   d) a) and c)
   e) b) and c)

8. The price of steel in the rest of the world
   a) rises
   b) falls
   c) remains the same
   d) a) or c)
   e) b) or c)
FACTOR MOBILITY

9-12. The United States and Italy produce pasta using labor and land. Initially, Italy has more workers per acre than the United States. Suppose the United States begins to allow immigrants to enter from Italy (while land remains fixed in each country).

9. The wage in the United States will
   a) rise
   b) fall
   c) remain unchanged
   d) a) or c)
   e) b) or c)

10. The wage in Italy will
   a) rise
   b) fall
   c) remain unchanged
   d) a) or c)
   e) b) or c)

11. Land owners in the United States will be made
    a) better off
    b) worse off
    c) no better, no worse
    d) a) or c)
    e) b) or c)

12. Land owners in Italy will be made
    a) better off
    b) worse off
    c) no better, no worse
    d) a) or c)
    e) b) or c)
FOREIGN DIRECT INVESTMENT

13-16 Honda (a Japanese company) is deciding how to serve the automobile market in the United States.

13. The unique design of Honda’s cars would best be described as a
   a) ownership advantage
   b) location advantage
   c) internalization advantage
   d) a) and c)
   e) b) and c)

14. The existence of an ownership advantage is important for establishing that there is a reason why
   a) Honda needs to serve the US market
   b) production needs to take place in the United States
   c) transactions need to take place within one firm
   d) licensees will not behave opportunistically
   e) none of the above

15. The costs of transporting cars from Japan to the United States would best be described as a
   a) ownership advantage
   b) location advantage
   c) internalization advantage
   d) a) and c)
   e) b) and c)

16. The existence of an location advantage is important for establishing that there is a reason why
   a) Honda needs to serve the US market
   b) production needs to take place in the United States
   c) transactions need to take place within one firm
   d) licensees will not behave opportunistically
   e) none of the above
TRADE POLICY PROBLEMS

In the United States (US), inverse demand for clothing is \( P = 40 - Q_D \), while inverse supply of clothing is \( P = 20 + Q_S \). In the rest of the world (ROW), inverse demand for clothing is \( P^* = 30 - Q_D^* \), while inverse supply of clothing is \( P^* = 10 + Q_S^* \).

1. Derive the US autarky price and quantity. Derive the US import demand (including slope-intercept form).

2. Derive the ROW autarky price and quantity. Derive the ROW export supply (including slope-intercept form).

3. Derive the free trade price and US imports under free trade. Derive US quantity demanded and quantity supplied under free trade.

4. Derive the US tariff-ridden import demand for a tariff \( T = 4 \) (including slope-intercept form). Derive the ROW price, the US price, and US imports with the tariff.

5. Derive US quantity demanded and quantity supplied with the tariff. Derive the change in consumer surplus, producer surplus, and government revenue in the United States due to the tariff.

6. Derive the US consumption distortion and production distortion. Derive the US efficiency loss and terms of trade gain. Derive the change in welfare in the United States due to the tariff. Is the United States better or worse off with the tariff?
Final Exam Solutions

1b The price of textiles in the United States falls.
2b Textiles consumers in the United States benefit.
3a Textiles producers in the United States are hurt.
4a The price of textiles in the rest if the world rises.

5b The price of steel in the United States falls.
6b Steel consumers in the United States benefit.
7d Steel producers and government revenue in the United States are hurt.
8a The price of steel in the rest of the world rises.

9b The wage in the United States will fall.
10a The wage in Italy will rise.
11a Land owners in the United States will be made better off.
12b Land owners in Italy will be made worse off.

13a Honda’s unique design is an ownership advantage.
14a Ownership advantage ensures that Honda is special: Honda needs to serve the US market.
15b Transportation costs create a location advantage.
16b Location advantage ensures that the United States is special: production needs to take place in the United States.
PROBLEMS

1. US autarky price and quantity
   \[ 40 - Q^A = 20 + Q^A \rightarrow 2Q^A = 20 \rightarrow Q^A = 10 \]
   \[ P^A = 40 - Q^A = 40 - 10 = 30 \]
   US import demand
   \[ P = 40 - Q_D \rightarrow Q_D = 40 - P \]
   \[ P = 20 + Q_S \rightarrow Q_S = -20 + P \]
   \[ M = D - S = Q_D - Q_S = 40 - P - (-20 + P) \]
   \[ M = 60 - 2P \rightarrow P = 30 - \frac{1}{2}Q_M \]
   Graph of the US import demand

2. ROW autarky price and quantity
   \[ 30 - Q^{A^*} = 10 + Q^{A^*} \rightarrow 2Q^{A^*} = 20 \rightarrow Q^{A^*} = 10 \]
   \[ P^{A^*} = 30 - Q^{A^*} = 30 - 10 = 20 \]
   ROW export supply
   \[ P^* = 10 + Q_S^* \rightarrow Q_S^* = -10 + P^* \]
   \[ P^* = 30 - Q_D^* \rightarrow Q_D^* = 30 - P^* \]
   \[ X^* = S^* - D^* = Q_S^* - Q_D^* = -10 + P^* - (30 - P^*) \]
   \[ X^* = -40 + 2P^* \rightarrow P^* = 20 + \frac{1}{2}Q_X^* \]
   Graph of the ROW export supply
3. Free trade price

\[ M = X^\ast \to 60 - 2P = -40 + 2P^\ast \to 100 = 4P \to P = P^\ast = 25 \]

US quantity of imports
\[ M = 60 - 2P = 60 - 2(25) = 60 - 50 = 10 \]

US quantity demanded and quantity supplied
\[ P = 40 - Q_D \to 25 = 40 - Q_D \to D \equiv Q_D = 40 - 25 = 15 \]
\[ P = 20 + Q_S \to 25 = 20 + Q_S \to S \equiv Q_S = 25 - 20 = 5 \]

4. US tariff-ridden import demand

\[ M_T = 60 - 2P_T = 60 - 2(P_T^\ast + 4) = 60 - 2P_T^\ast - 8 \]
\[ M_T = 52 - 2P_T^\ast \to P_T^\ast = 26 - \frac{1}{2}Q_{M_T} \]

Graph of the tariff-ridden US import demand

ROW tariff-ridden price

\[ M_T = X^\ast \to 52 - 2P_T^\ast = -40 + 2P_T^\ast \to 92 = 4P_T^\ast \to P_T^\ast = 23 \]

US tariff-ridden price

\[ P_T = P_T^\ast + T = 23 + 4 = 27 \]

Tariff-ridden US quantity of imports

\[ M_T = 52 - 2P_T^\ast = 52 - 2(23) = 52 - 46 = 6 \]
5. US tariff-ridden quantity demanded and quantity supplied

\[ P_T = 40 - Q_D^T = 27 = 40 - Q_D^T - D_T = Q_D^T = 40 - 27 = 13 \]

\[ P_T = 20 + Q_S^T = 27 = 20 + Q_S^T - S_T = Q_S^T = 27 - 20 = 7 \]

US producer surplus increases by the area \( a \)

\[ \Delta PS = (P_T - P) \left( \frac{S + S_T}{2} \right) = (27 - 25) \left( \frac{5 + 7}{2} \right) = 2(6) = 12 \]

US consumer surplus decreases by the area \( a+b+c+d \)

\[ \Delta CS = -(P_T - P) \left( \frac{D + D_T}{2} \right) = -(27 - 25) \left( \frac{15 + 13}{2} \right) = -2(14) = -28 \]

US government revenue increases by the area \( c+e \)

\[ \Delta GR = TM_T = 4(6) = 24 \]

6. US consumption distortion is the area \( d \)

\[ d = \Delta P \left( \frac{\Delta D}{2} \right) = 2 \left( \frac{15 - 13}{2} \right) = 2 \left( \frac{2}{2} \right) = 2 \]

US production distortion is the area \( b \)

\[ b = \Delta P \left( \frac{\Delta S}{2} \right) = 2 \left( \frac{7 - 5}{2} \right) = 2 \left( \frac{2}{2} \right) = 2 \]

US efficiency loss is \( b+d = 2 + 2 = 4 \).

US terms of trade gain is area \( e \)

\[ e = (P - P_T^*) M_T = (25 - 23)(6) = (2)(6) = 12 \]

The US welfare gain is \( e-(b+d) = 12 - 4 = 8 \) or

\[ \Delta W = \Delta CS + \Delta PS + \Delta GR = -28 + 12 + 24 = 8 \]

The United States is better off due to its tariff.
U.S. Market

U.S. Quantity

U.S. Price

27
25
23

5 7 13 15

S

D

a  b  c  d