Exercise Set 6.5
International Trade
The Gains from International Trade

• The Ricardian model
• Trade between two countries makes both countries better off
• Result due to specialization
  – Each country produces the good in which it enjoys comparative advantage (lower opportunity cost)
Ricardian model: Example

- Two countries: U.S. and Vietnam
- Two goods: Shrimp and computers
- Production of each good requires only labor
- Constant opportunity cost in each country
  - This gives rise to a linear PPF
## Production and Consumption Under Autarky

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(a) United States</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity of shrimp (tons)</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Quantity of computers</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>(b) Vietnam</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity of shrimp (tons)</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Quantity of computers</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td><strong>(c) World (United States and Vietnam)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity of shrimp (tons)</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>Quantity of computers</td>
<td>1,500</td>
<td>1,500</td>
</tr>
</tbody>
</table>
### Production and Consumption After Specialization and Trade

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(a) United States</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity of shrimp (tons)</td>
<td>0</td>
<td>750</td>
</tr>
<tr>
<td>Quantity of computers</td>
<td>2,000</td>
<td>1,250</td>
</tr>
<tr>
<td><strong>(b) Vietnam</strong></td>
<td></td>
<td></td>
</tr>
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<td>2,000</td>
</tr>
</tbody>
</table>
The Gains from Trade

(a) U.S. Production and Consumption

Quantity of computers

(b) Vietnamese Production and Consumption

Quantity of shrimps (tons)

Trade allows both countries to consume beyond their PPFs. Both countries are better off under trade than in autarky.
Sources of Comparative Advantage

• **International differences in climate**
  – e.g. winter deliveries of Chilean grapes to the U.S.

• **Differences in technology**
  – Countries export on basis of labor productivity
    (Ricardian model)

• **Differences in factor endowments**
  – Countries tend to export goods that are *intensive* in
    the factors they have in abundance
    (Heckscher–Ohlin model)
Supply, Demand, and International Trade

• The **domestic demand curve** shows how the quantity of a good demanded by domestic consumers changes with the price of that good.

• The **domestic supply curve** shows how the quantity of a good supplied by domestic producers changes with the price of that good.

• The **world price** of a good is the price at which that good can be bought or sold abroad.
Consumer and Producer Surplus in Autarky

Price of shrimp

Domestic supply

Domestic demand

Consumer surplus

Producer surplus

Quantity of shrimp

$P_A$

$Q_A$
The Domestic Market with Imports

- Domestic supply
- Domestic demand
- Autarky price
- World price

- Domestic quantity supplied with trade
- Domestic quantity demanded with trade
- Imports

- Quantity of shrimp

Price of shrimp

$P_A$

$P_W$
The Effects of Imports on Surplus

<table>
<thead>
<tr>
<th>Changes in surplus</th>
<th>Gain</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer surplus</td>
<td>$X + Z$</td>
<td></td>
</tr>
<tr>
<td>Producer surplus</td>
<td></td>
<td>$-X$</td>
</tr>
<tr>
<td>Change in total surplus</td>
<td></td>
<td>$+Z$</td>
</tr>
</tbody>
</table>

Diagram:
- Price of shrimp
- Quantity of shrimp
- Domestic supply
- Domestic demand
- Imports

Analysis:
- Changes in surplus
  - Consumer surplus: $X + Z$
  - Producer surplus: $-X$
- Change in total surplus: $+Z$
The Effect of a Tariff

Price of shrimp

Tariff

Price with tariff

P_T

P_W

World price

Imports after tariff

Imports before tariff

Domestic supply

Domestic demand

Quantity of Shrimp
A Tariff Reduces Total Surplus

<table>
<thead>
<tr>
<th>Changes in surplus</th>
<th>Gain</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer surplus</td>
<td></td>
<td>(A+B+C+D)</td>
</tr>
<tr>
<td>Producer surplus</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Government revenue</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Change in total surplus</td>
<td></td>
<td>-(B+D)</td>
</tr>
</tbody>
</table>

Tariff

Price of shrimp

Domestic supply

Domestic demand

Imports after tariff

Imports before tariff

Imports before tariff

Quantity of Shrimp

A
B
C
D

PT
PW

P
T
W

Q
S
Q
ST
Q
D
Q
D

Price of shrimp

Quantity of shrimp

Domestic supply

Domestic demand

Consumer surplus

Producer surplus

Government revenue

Change in total surplus

Gain
Loss

-(A+B+C+D)
A
C
-(B+D)
Video

http://www.screencast.com/t/Y0BwYwZ3XgO