

Tariffs are just taxes on trade.

Suppose that good X is imported. Let  $p$  denote domestic prices (producer and consumer prices), and let  $p^*$  denote world prices.

$$\frac{p_x}{p_y} = \frac{p_x^* (1 + t)}{p_y^*} \quad \frac{p_x}{p_y} > \frac{p_x^*}{p_y^*}$$

What does equilibrium look like?

**Figure 1**

- (1) The production and consumption points connected by the world price ratio.
- (2) The slope of the production frontier and the indifference curve must equal the domestic price ratio.

What are the effects of a tariff in a “small” economy that faces fixed world prices?

Suppose it's a Heckscher-Ohlin economy.

1. Overall welfare is reduced
2. Production shifts toward the import-competing good.

By the Stolper-Samuelson theorem, this raises the real return to the factor used intensively in the importing sector, and lowers the real return to the factor used intensively in the export sector.

Thus the tariff raises the real income of the scarce factor and lowers the real income of the abundant factor.

Note that an import tariff on X has the same effect as an export tax on Y.

$$\frac{p_x}{p_y(1+t)} = \frac{p_x^*}{p_y^*} \quad \frac{p_x}{p_y} > \frac{p_x^*}{p_y^*}$$

This point is often confused in policy discussions, where we sometimes hear the view that we should restrict imports and promote exports.

In fact, such a combination of policies cancel out!

Note that an import tariff:

Raises the price that domestic producers of X can charge consumers.  
(producers are happy)

Raises the price that domestic consumers must pay for X. (consumers are unhappy)

Therefore, a tariff is equivalent to a combined policy of a  
production subsidy  
plus  
consumption tax

## Figure 2

This is imported insofar as some anti-trade critics see tariffs as only hurting foreigners.

The same critics probably would not like the thought of a production subsidy. But in fact an import tariff is worse than just subsidizing production, since it also taxes consumption.

Suppose again that the country has a comparative advantage in Y and faces fixed world prices.

Well, under the view that exports are a “good thing”, maybe the country should subsidize exports?

Let  $s$  be the subsidy rate, so that exporters of Y receive  $p_y^*(1+s)$ .

$$\frac{p_x}{p_y} = \frac{p_x^*}{p_y^*(1+s)} \quad \frac{p_x}{p_y} < \frac{p_x^*}{p_y^*}$$

The domestic price ratio is flatter than the world price ratio. The domestic production and consumption points must be connected by the world price ratio.

### Figure 3

The subsidy is welfare reducing. It amounts to selling to foreigners below the cost of production.

Exports should not be confused with welfare.

Point of exporting is to allow us to import: buy things that are difficult and costly to produce at home.

## Existing Distortion

Suppose that there is a positive production externality in the X sector. Each firm confers positive benefits on other firms, benefits that the firm cannot charge for.

Then the free trade equilibrium is not optimal, and too little X is produced. Let  $p^*$  denote the (fixed) world price ratio.

$Q_f, C_f$  - free trade production and consumption points

$Q_t, C_t$  - production and consumption with a tariff on X

$Q_s, C_s$  - production and consumption with a production subsidy on X

**Figure 4**

Help out an industry initially, and it will be profitable in the long run.

This is generally wrong. The “social cost” of capital is the same as the private cost in well-functioning markets.

Thus if an investment is privately unprofitable, then it is socially unprofitable as well.

### Possible Exceptions

1. positive production externalities
2. coordination failures
3. capital market imperfections

*But* a production subsidy is generally preferred to an import tariff.

## Monopoly power in trade

If a country is large in the market for a good, changes in its imports or exports will change world prices.

This puts the country as a *whole* (as opposed to individual small firms) in the position of having market power.

This in turn means that the country can improve its welfare by *restricting trade* which moves prices in its favor

Country large	implies
Market power	implies
Trade restrictions	improve its terms of trade

**Figure 1 (refer back)**

**Figure 5**

**Figure 6**

OPEC, marketing boards

1. A trade barrier necessarily reduces national income for a small economy.
2. But some groups generally gain; e.g., owners of factors used intensively in the import-competing sector. This helps explain the politics of protection.
3. An import tariff is equivalent to an export tax, not to an export subsidy.
4. A tariff is equal to a combined policy of a production subsidy and a consumption tax.
5. An export subsidy increases exports, but it is always welfare worsening (in the absence of other distortions).

An export subsidy involves selling to foreigners for less than the cost of production.

6. A tariff may be justified as an additional distortion introduced to counteract an existing distortion. The infant-industry argument may be conceivably be valid in some cases.

But even then, subsidies are preferred to tariffs, and efforts might be better directed at export industries.

7. Monopoly power in trade by big countries is another possible case for trade restrictions: getting many small producers to act like a single monopoly seller or buyer.

But this argument is weakened by the likelihood of retaliation by other countries.

8. The "effective protection" argument is a type of leverage effect on the incomes of specific factor owners, and illustrates why some groups are willing to fight so hard over trade policy.

A quota is a quantity restriction, usually on imports, but it could be on exports. (tariffs could be thought of as price restrictions)

Suppose that a good is available from foreign suppliers at a fixed world price  $p^*$ . Domestic demand is negatively sloped.

In the case of a quota, that generates the same level of imports at the tariff  $t$ , the difference between the domestic demand price  $p$  and the world supply price  $p^*$  times the quota quantity is referred to as quota rent.

**Figure 7**

1. Government prints licenses. Licenses are auctioned off to the highest bidder.

In a competitive environment, this should result in an outcome that is exactly the same as a tariff.

In equilibrium, the amount bid should equal the difference between the domestic demand price and the foreign supply price. Government collects the revenue, just like the tariff.

2. Government gives away the licenses to domestic firms based on some criteria. This results in the quota rents being given away to domestic firms, but at least they stay "in the country".

3. "Voluntary" export restraint. Our government tells the foreign government to limit exports, leaves it up to the foreign government to enforce the system.

In this case, the foreign export price is raised to our domestic price, and the quota rents are transferred to foreigners.

These voluntary exports restraints are common (or were in the 1980s).

The usual explanation is that they are sort of a political compromise.

The US (for example) wants to protect an industry that is in trouble, but a tariff or quota would invite retaliation from the foreign government.

The VER "buys off" the foreign government and foreign industry by transferring to them the quota rents.

4. Red tape. The government gives away licenses, but makes the procedure so difficult that the time and other expenses needed to get a license equals the difference between the domestic demand price and the foreign supply price.

Quota rents are then completely dissipated in wasteful activity. This activity is known as "rent seeking" or "DUPS" - directly unproductive activity.

Welfare analysis:

**Figure 8**

**Figure 9**

**Figure 10**

T tariff

QA auctioned quota

QG quota given to domestic firms

VER voluntary export restraint

RT Red tape

From domestic country's point of view

$$T = QA = QG > VER = RT$$

From foreign country's point of view

$$VER > T = QA = QG = RT$$

From world's point of view

$$T = QA = QG = VER > RT$$

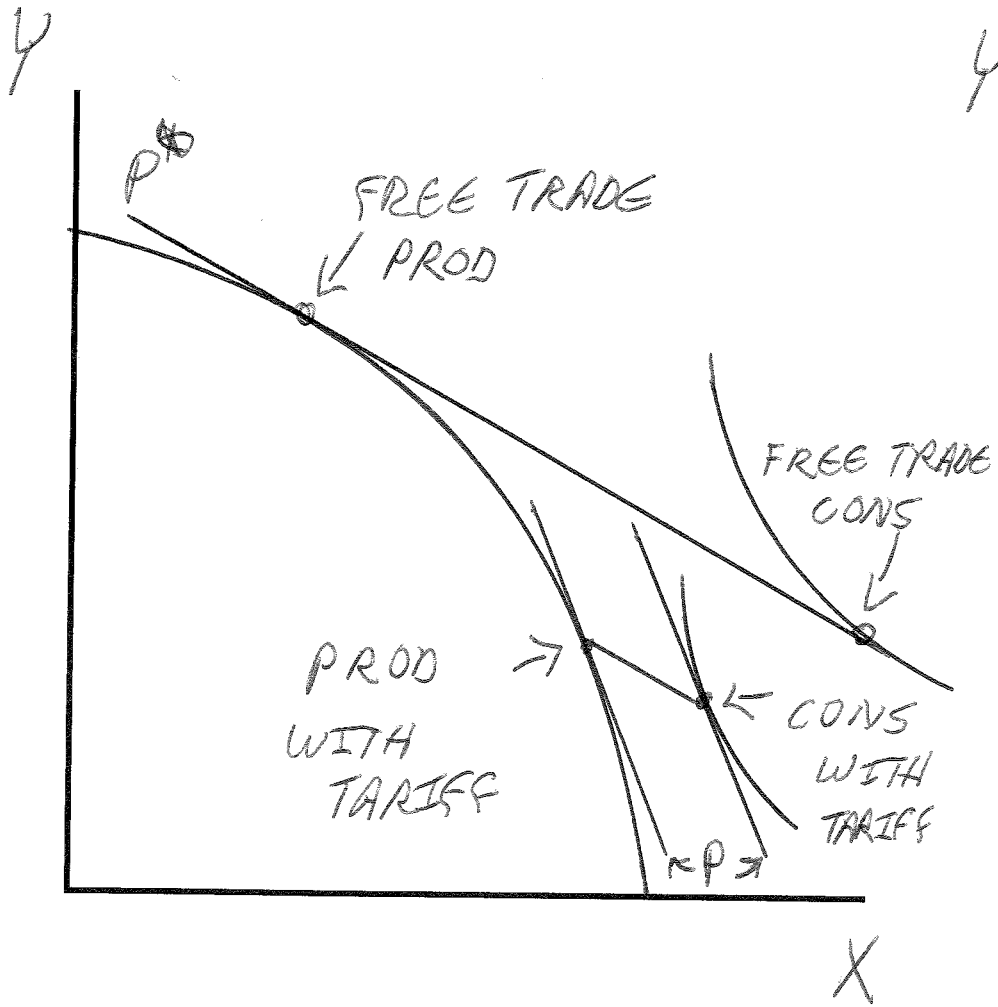
Notes:

1. While QA and QG are in principle the same for total domestic income, the *distribution* differs.

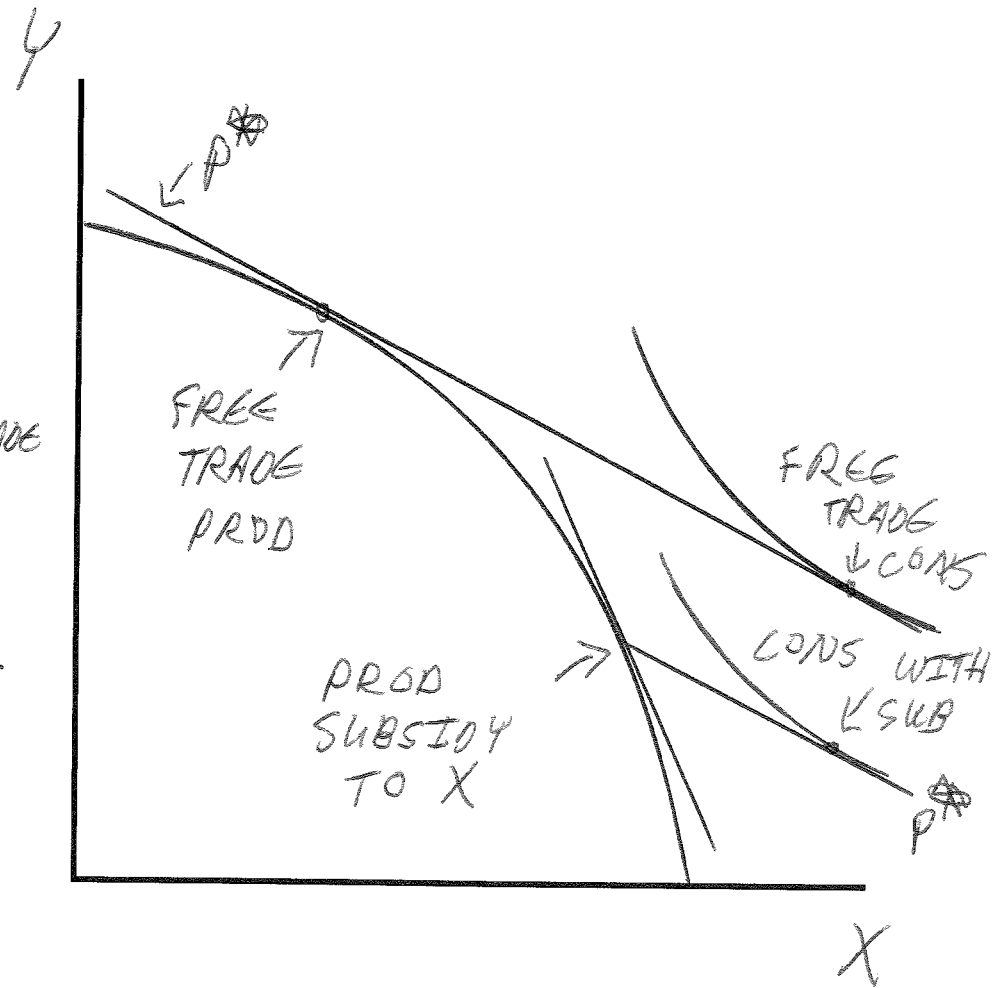
Further QG quotas are sometimes instituted *solely for corrupt purposes*. They are instituted to give profits to the government's friends or buy off its enemies.

2. Another form of import licensing is exchange control. The country's currency is non-convertible, and importers must go to the central bank and make a request to buy foreign exchange.

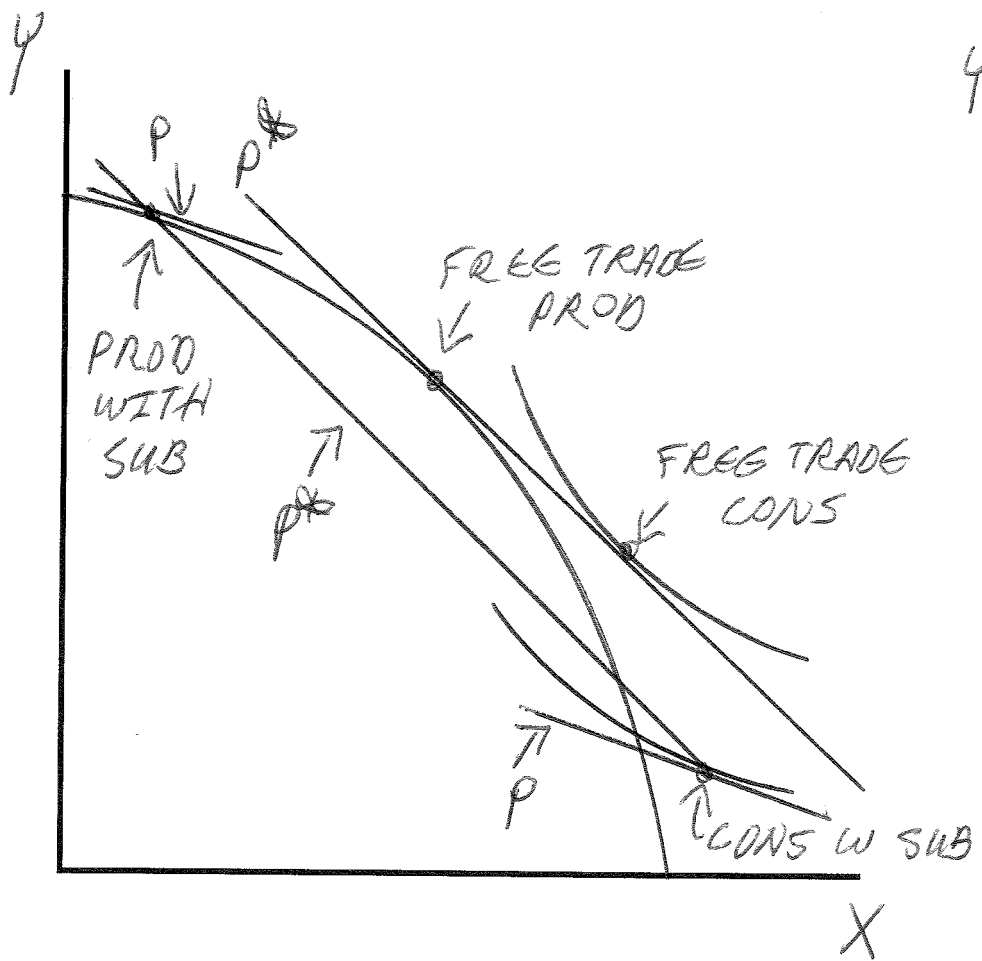
Some types of goods are more "favored" than others (e.g., producer goods over consumer goods), so this is equivalent to some sort of quota system.



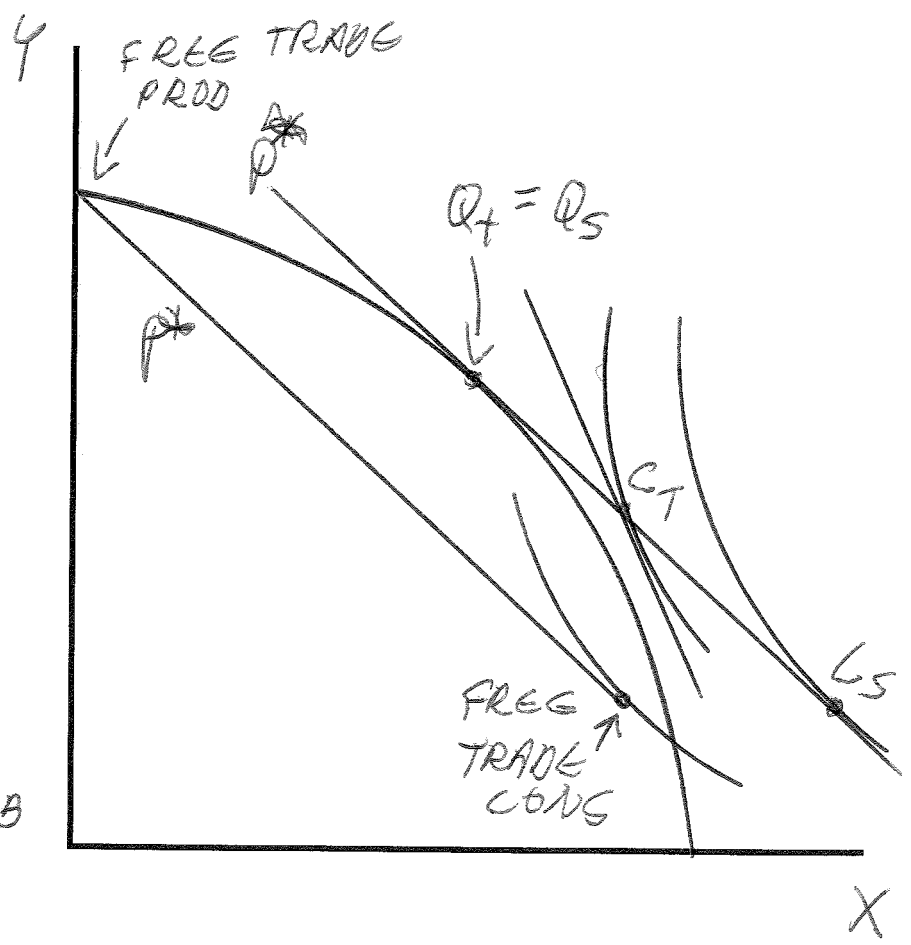
Unotes 10 Figure 1



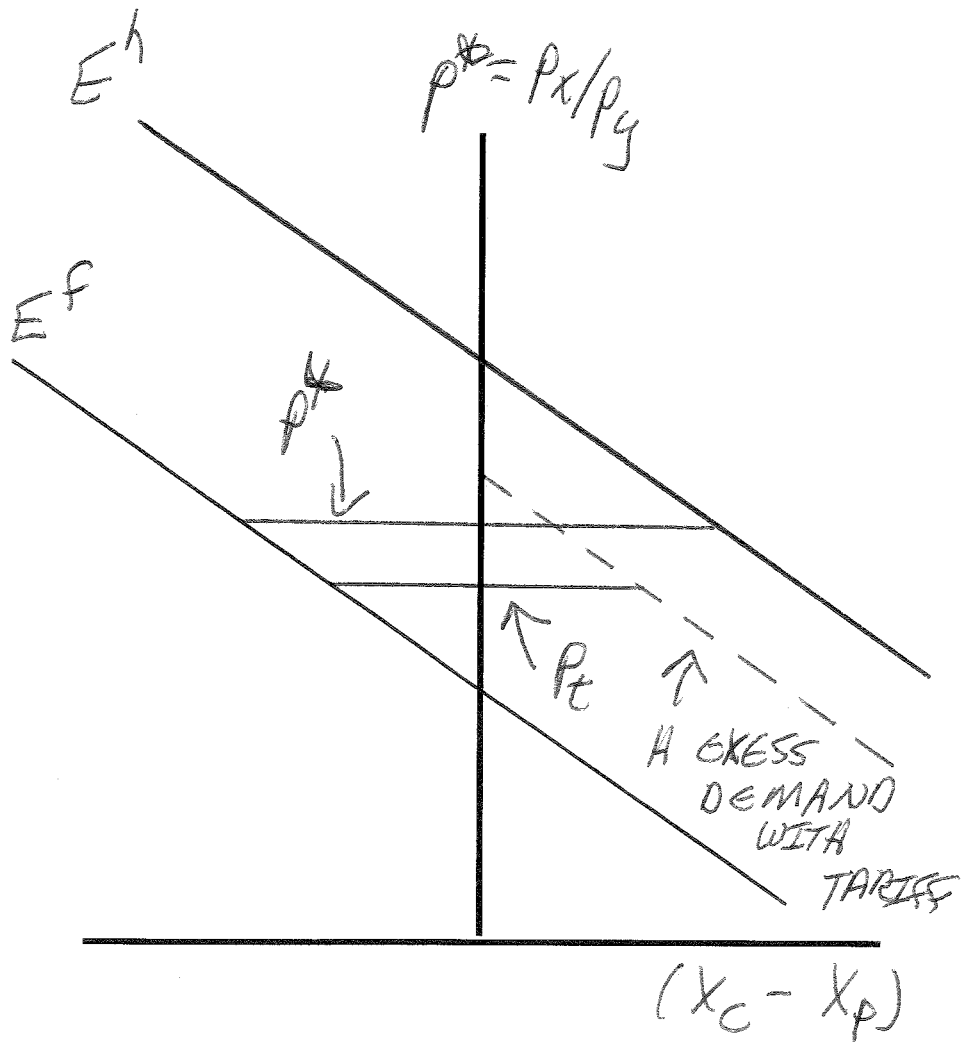
Unotes 10 Figure 2



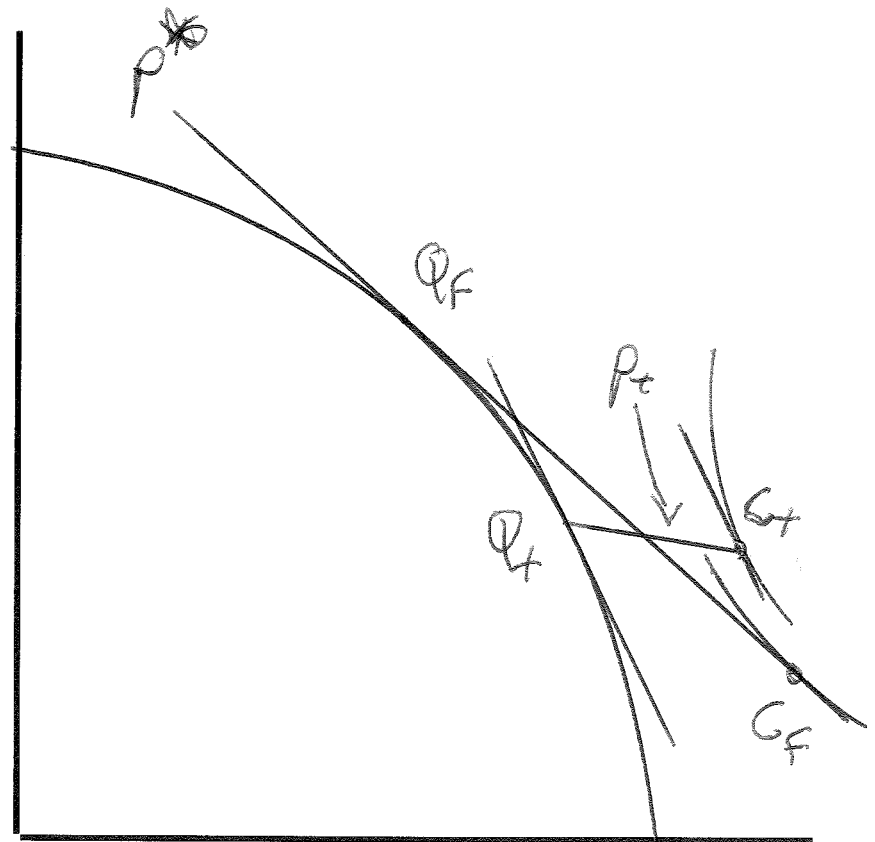
Unotes 10 Figure 3



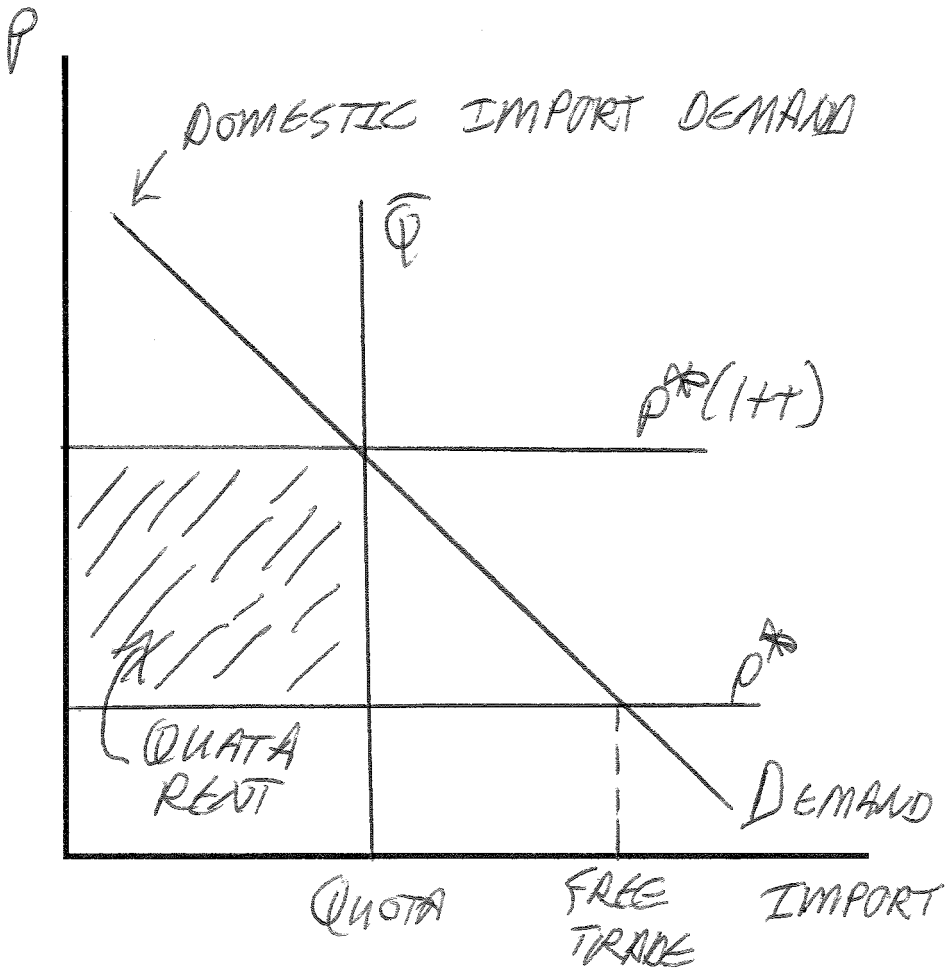
Unotes 10 Figure 4



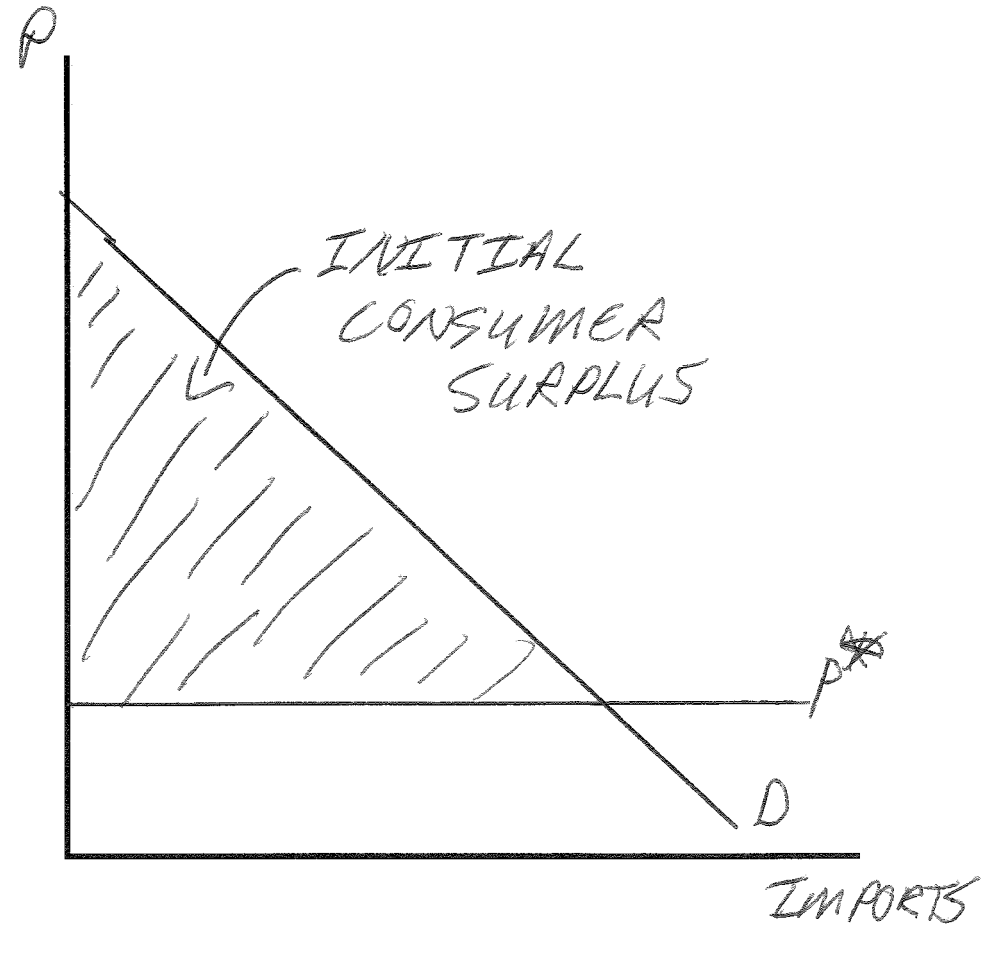
Unotes 10 Figure 5



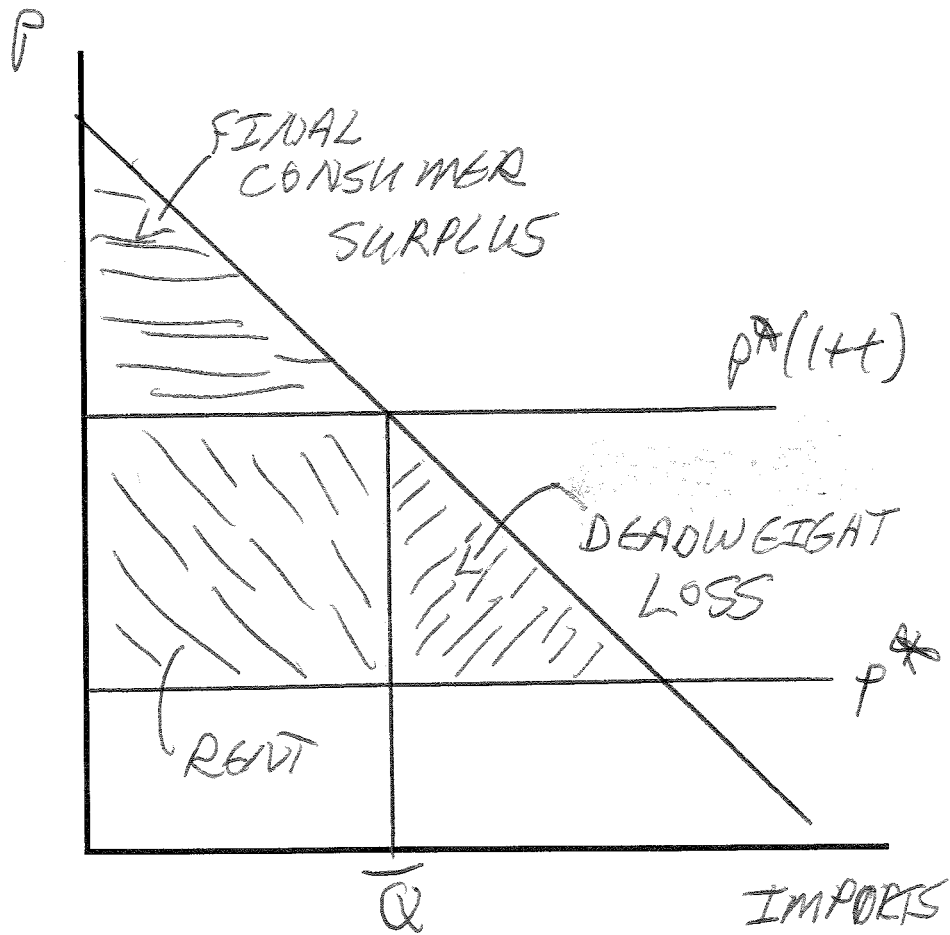
Unotes 10 Figure 6



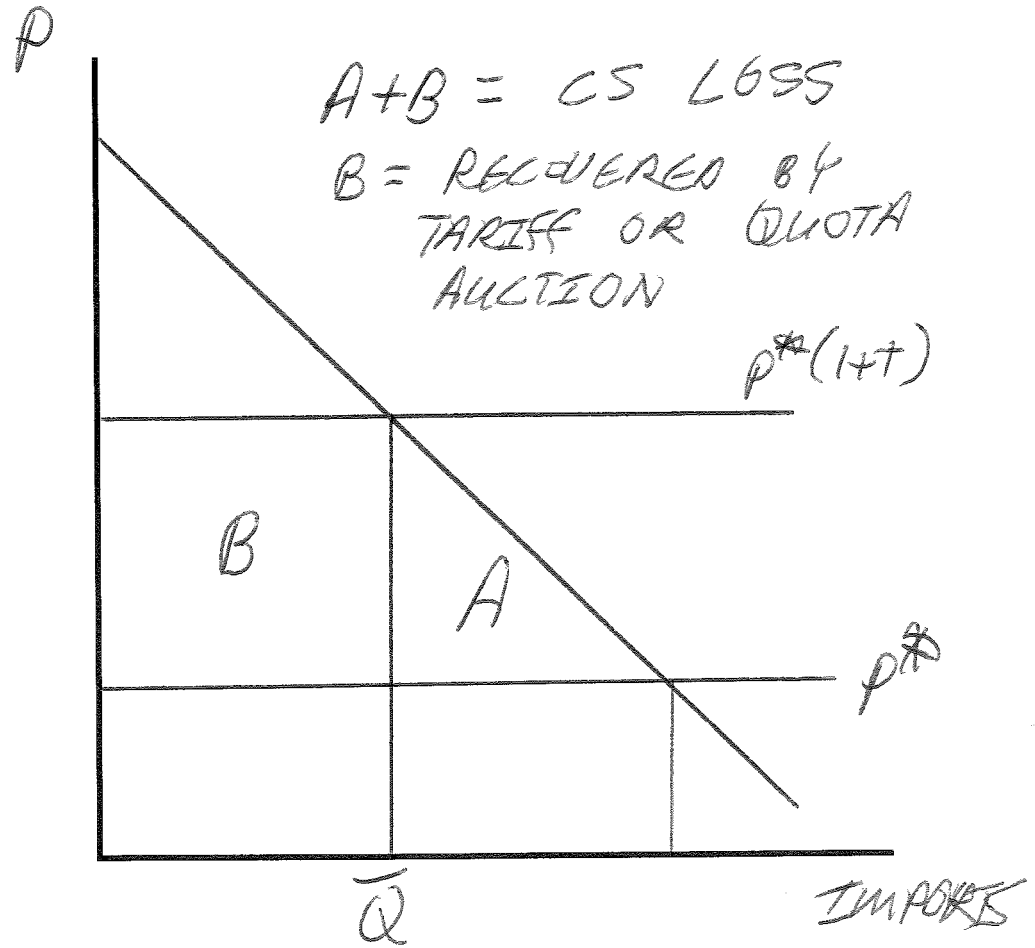
Unotes 10 Figure 7



Unotes 10 Figure 8



Unotes 10 Figure 9



Unotes 10 Figure 10