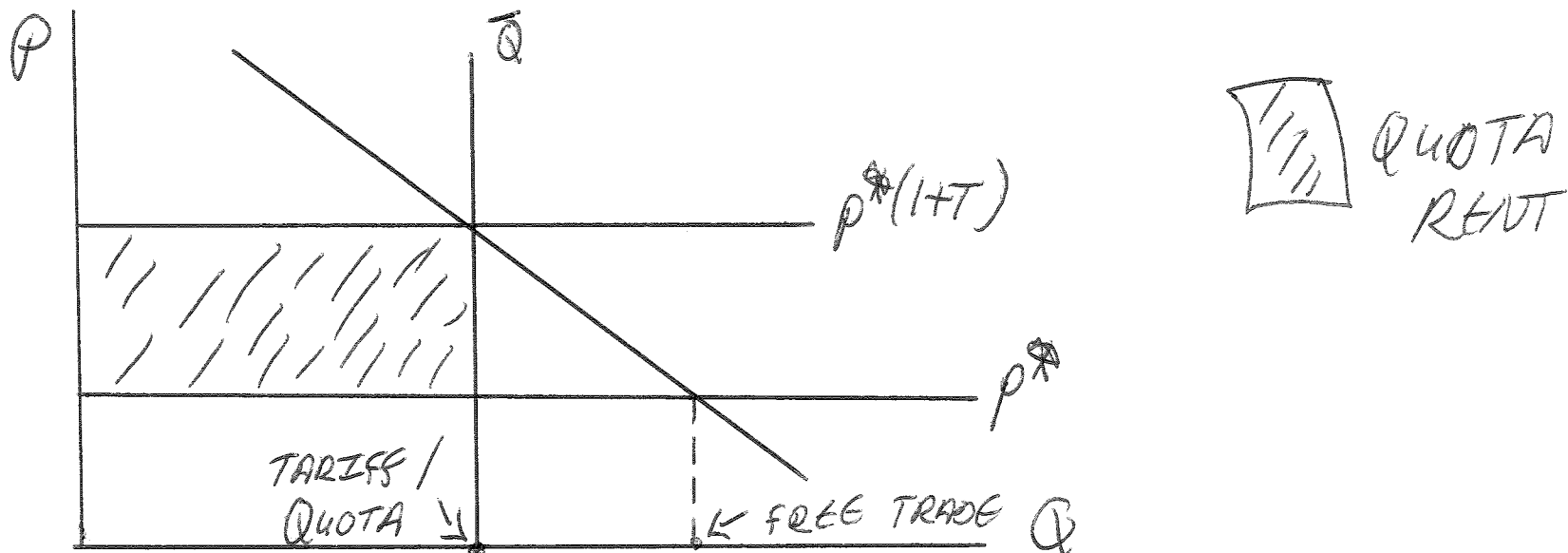


# Lecture 16

## Quotas and Other Barriers

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.

## Methods of Instituting and Enforcing the quota

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 go 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

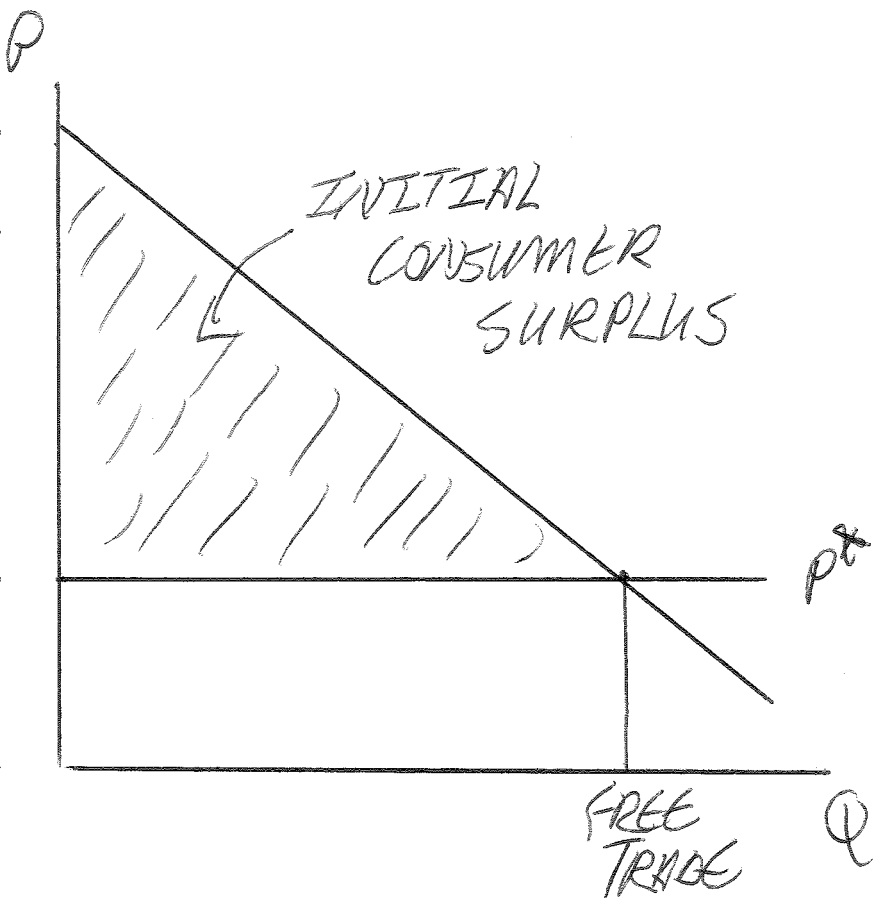
example) wants to protect an industry that is in trouble, but a tariff or quota would invite retaliation from the foreign government. The VER "buys off" the foreign government and foreign industry by giving them the quota rents.

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.

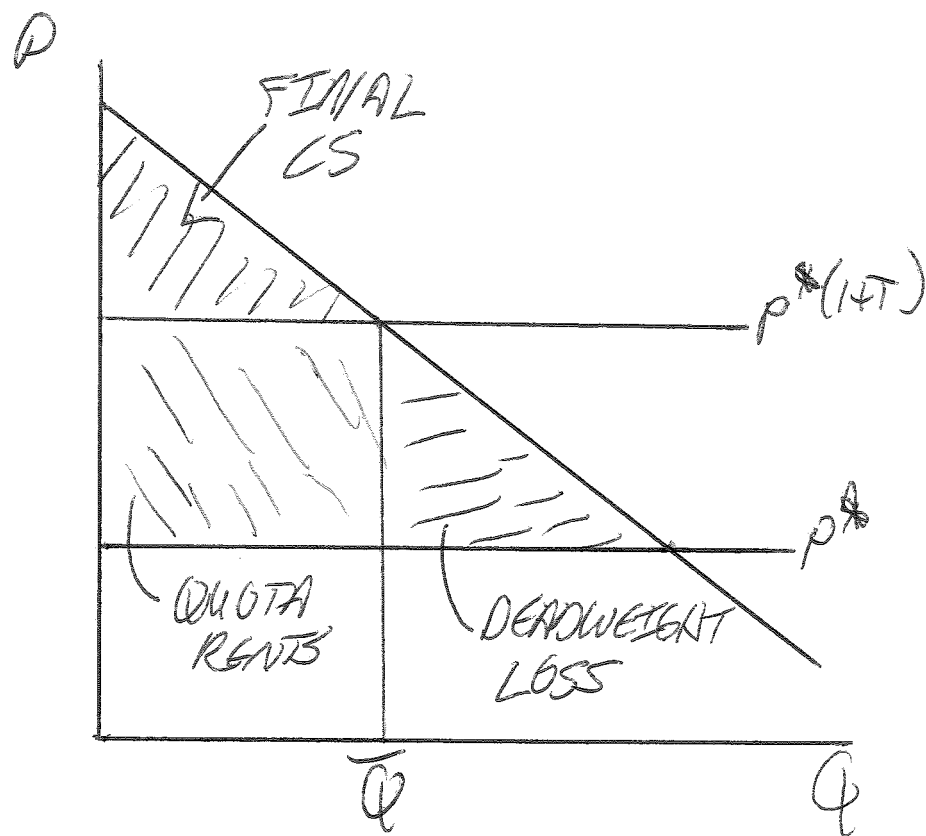
Quota rents are then completely dissipated in wasteful activity. This activity is known as "rent seeking" or "DUPS" - directly unproductive activity.

# The Partial-Equilibrium Concept of Deadweight Loss

Initial consumer surplus



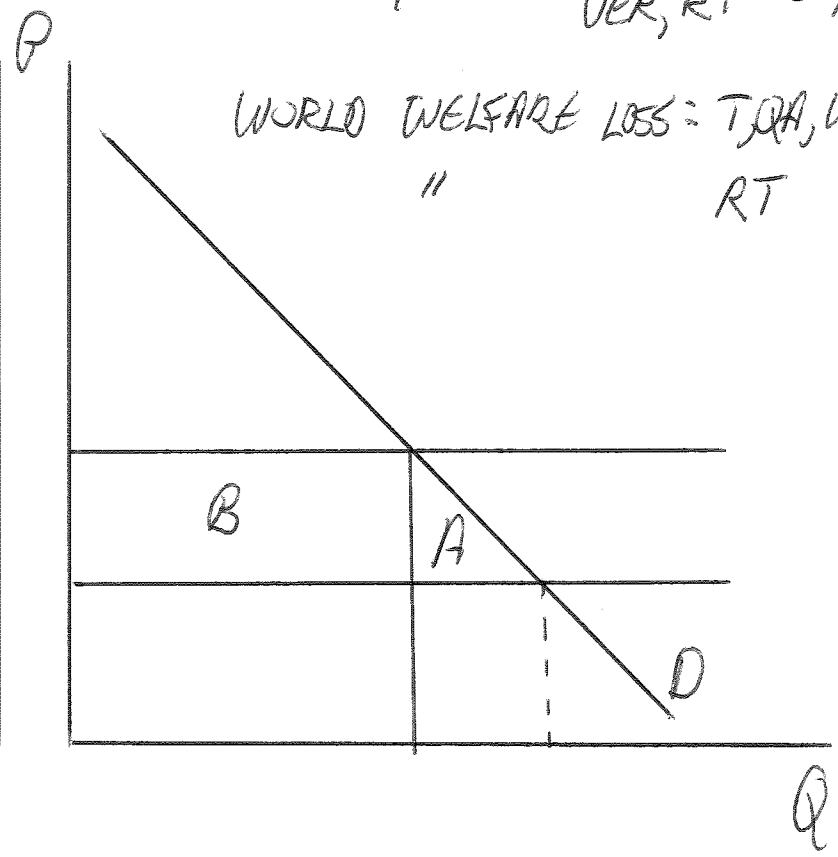
Final consumer surplus



Difference between a tariff or quota auction and a VER or red tape

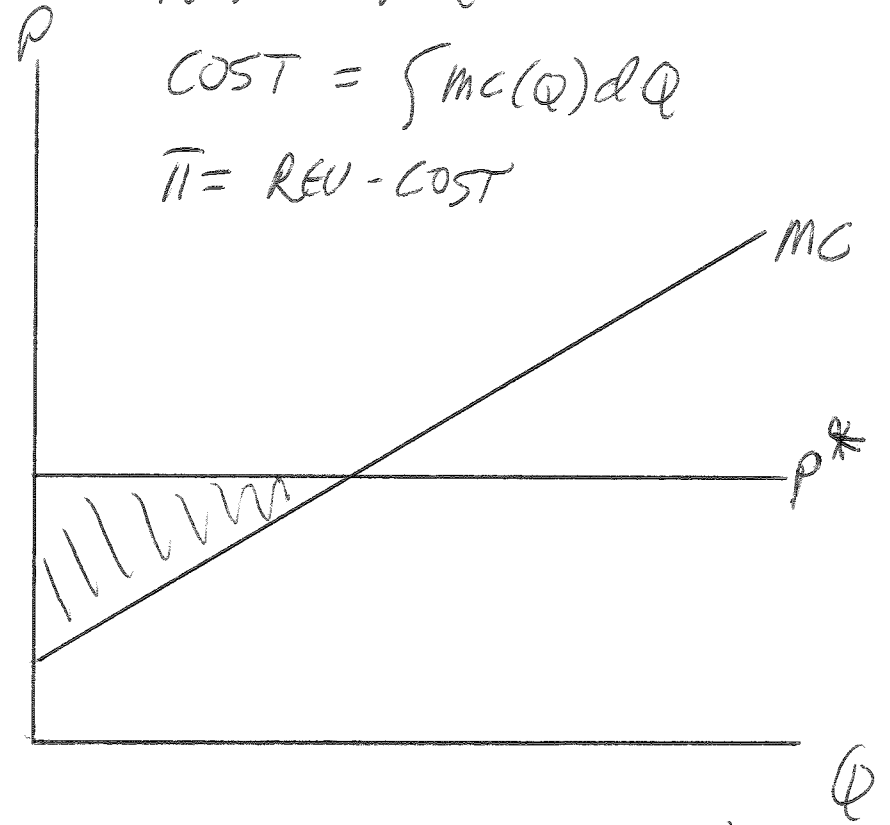
WELFARE LOSS: T, QA = A  
 " VER, RT = A+B

WORLD WELFARE LOSS: T, QA, VER = A  
 " RT = A+B



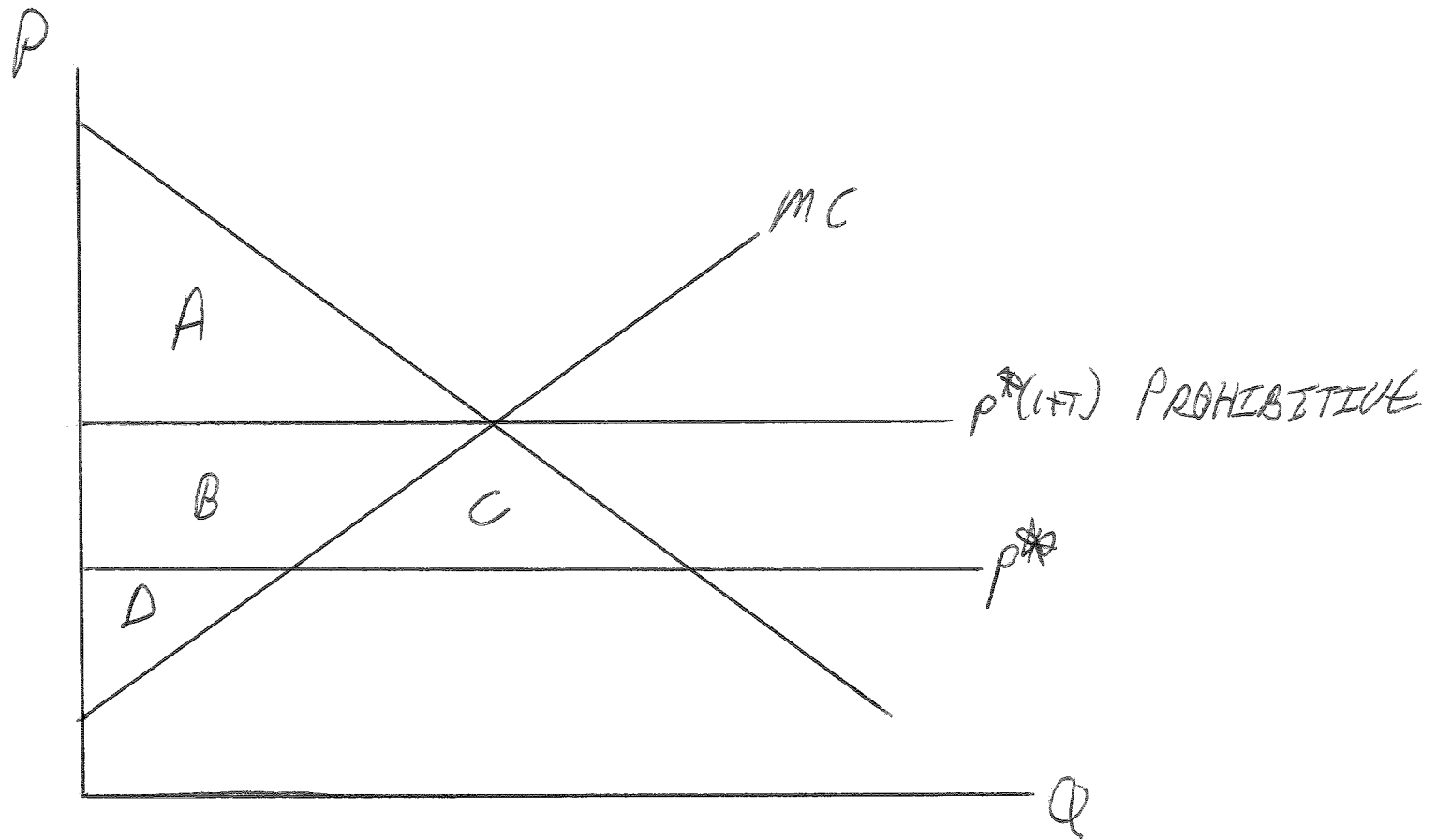
Concept of "producer surplus"

REV =  $P \cdot Q$   
 COST =  $\int MC(Q) dQ$   
 $\bar{\pi} = REV - COST$



MEANING IN GENERAL  
 & EQUILIBRIUM?  
 3

Just consider the simple case of a prohibitive tariff. In addition to deadweight loss, there is a redistribution between consumers and producers



FT : CS = A+B+C  
 PS = D

$\bar{Q}$  : CS = A  
 PS = D+B  
 DWL = C

APPLICATION TO CORRUPTION

## Welfare rankings

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

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

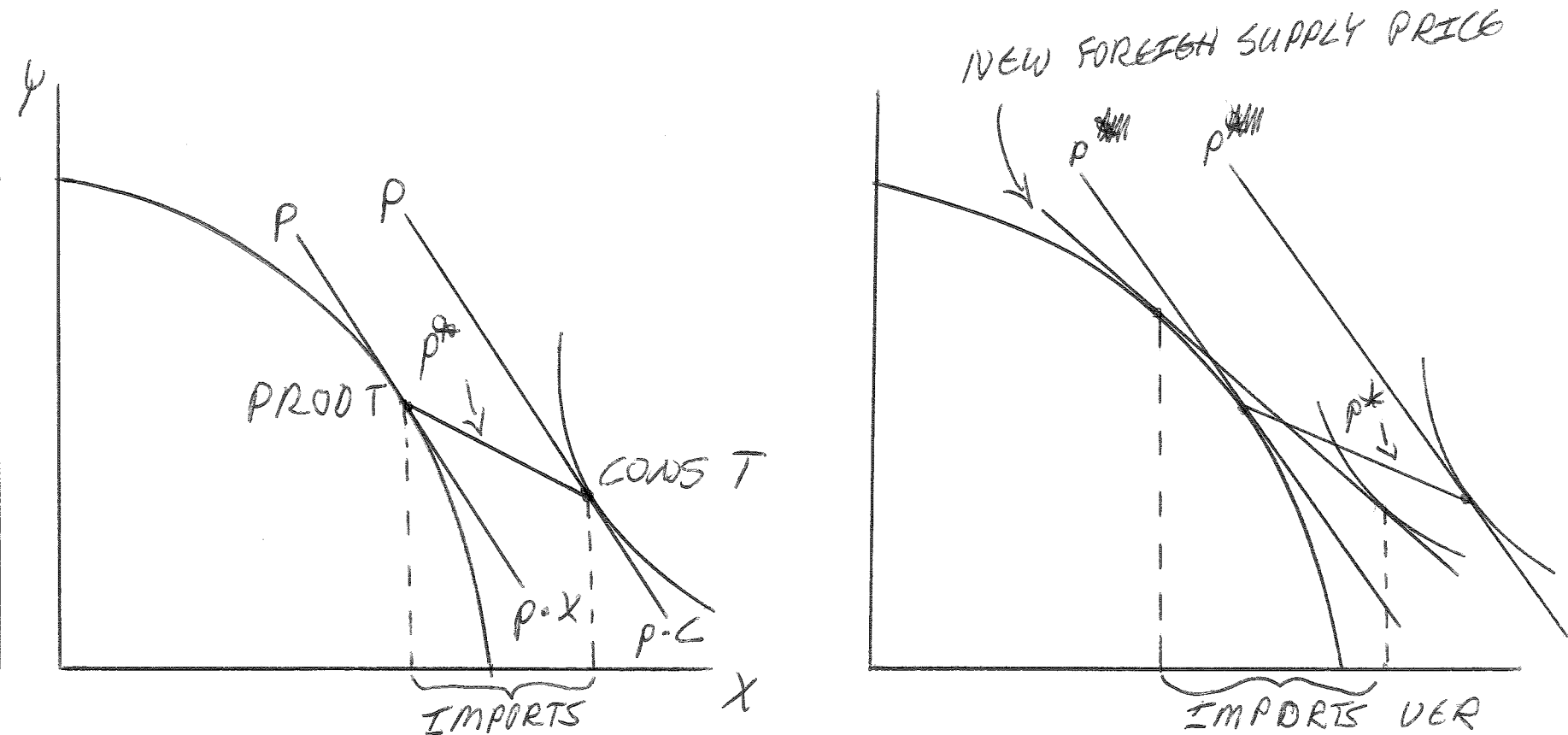
## Notes:

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.



## General Equilibrium comparison of a tariff and a VER

The difference between the value of production and the value of consumption at domestic prices is tariff revenue

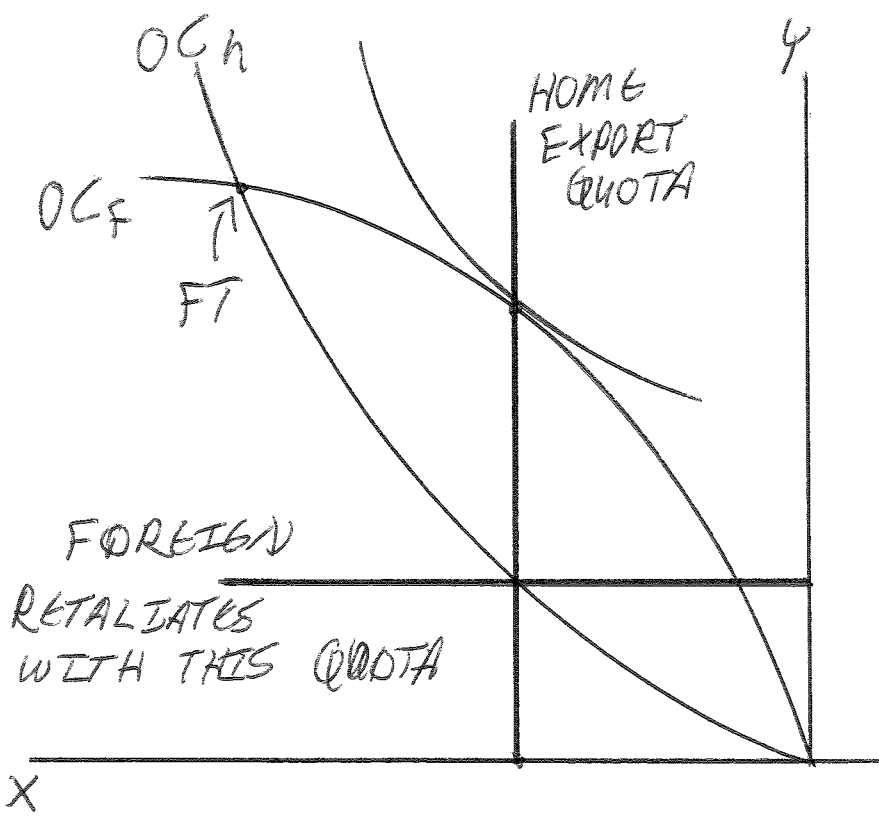


Suppose that we tell the foreigner to raise its price to us until imports are reduced to the same level as with the tariff.

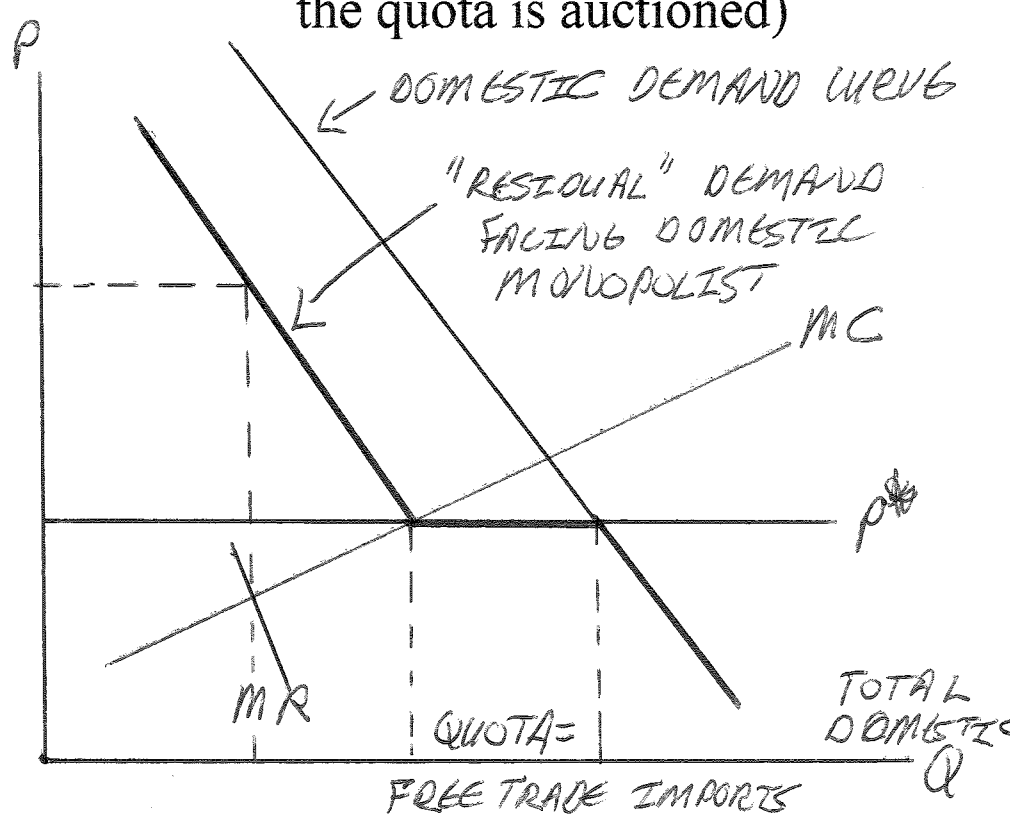
## Non-equivalence of tariffs and quotas

1. distributional effects within countries and between countries
2. retaliation, Nash equilibria in tariffs versus quotas
3. there is foreign monopolist supplying the import good
4. there is a domestic monopoly producer of the import-competing good.
5. the economy is growing
6. fluctuations, “shocks”
7. retaliation, Nash eq in tariffs versus quotas

### Retaliation



### Monopoly (assume that the quota is auctioned)



Foreign monopoly supplier of the import good. The foreigner should just raise its export price to the market clearing domestic price. The auction will yield no revenue and the auction quota is equivalent to a VER, not to a tariff.

Domestic monopolist competing with perfectly elastic supply. Consider a quota imposed at the free trade level of imports.