

Taxes and Subsidies

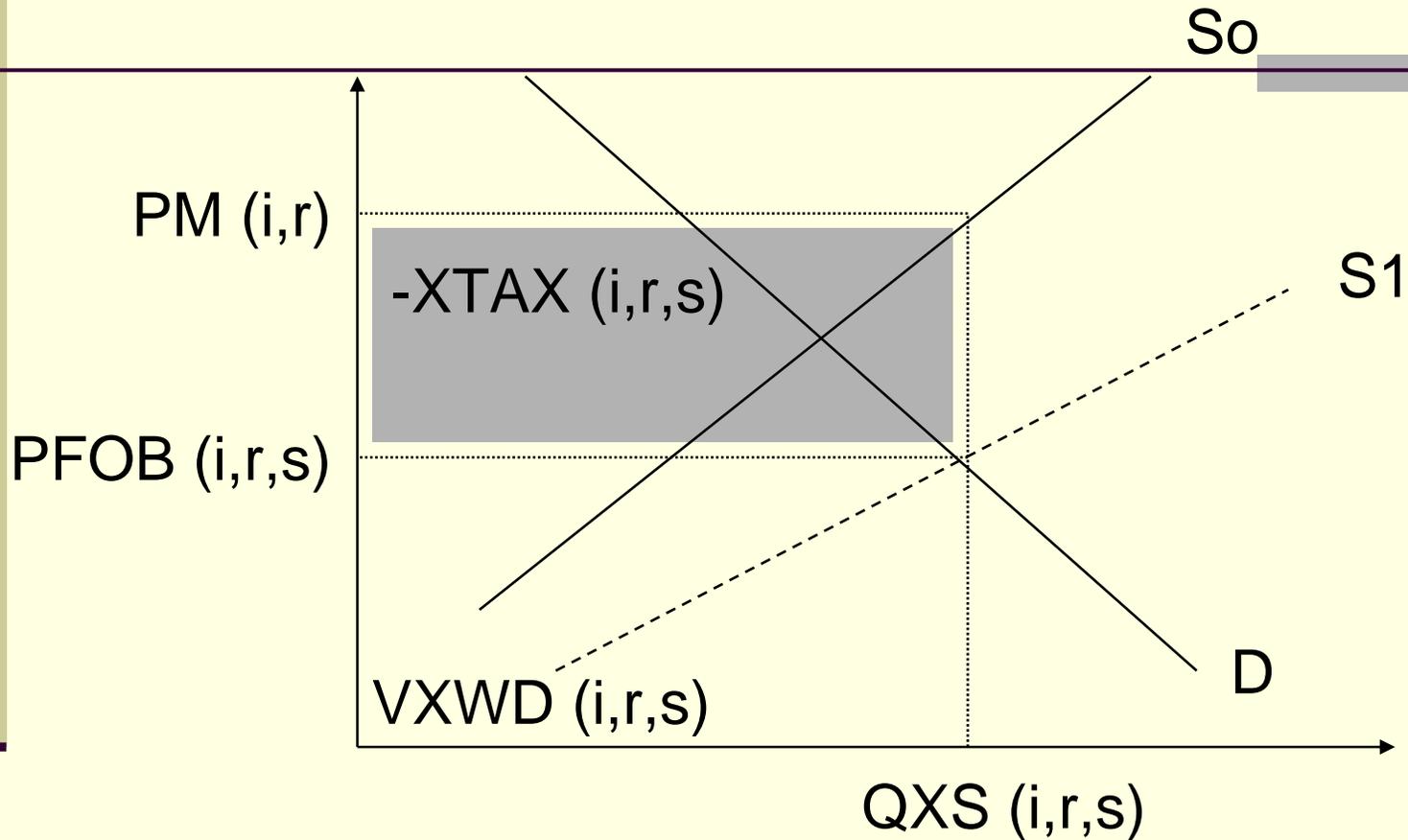
Taxes and subsidies in international trade

- Export subsidies
- Import tariffs
- Implies a wedge between domestic market prices and world (*fob* or *cif*) prices of the exports or imports

Export subsidies

- We know these are incurred in agriculture
- EU is the major subsidiser of agricultural exports
- Click on **View|Base Data|Core Data**
- **VXMD (line 25)** is the value of exports at domestic (market) prices
- EU exports of 'Food' to the 'ROW' = \$64,209.6
- **VXWD (line 3):**
 - EU food exports to the ROW = \$53,415.4
- So the subsidy is the difference = \$10,794.2
- **View|Base Data|GTAP View**
 - And double click on **line 7**
 - Food, All REG, All REG, xtax
- You should find the above number.
- Note a subsidy is written as a **negative** number

Effect of an Export Subsidy

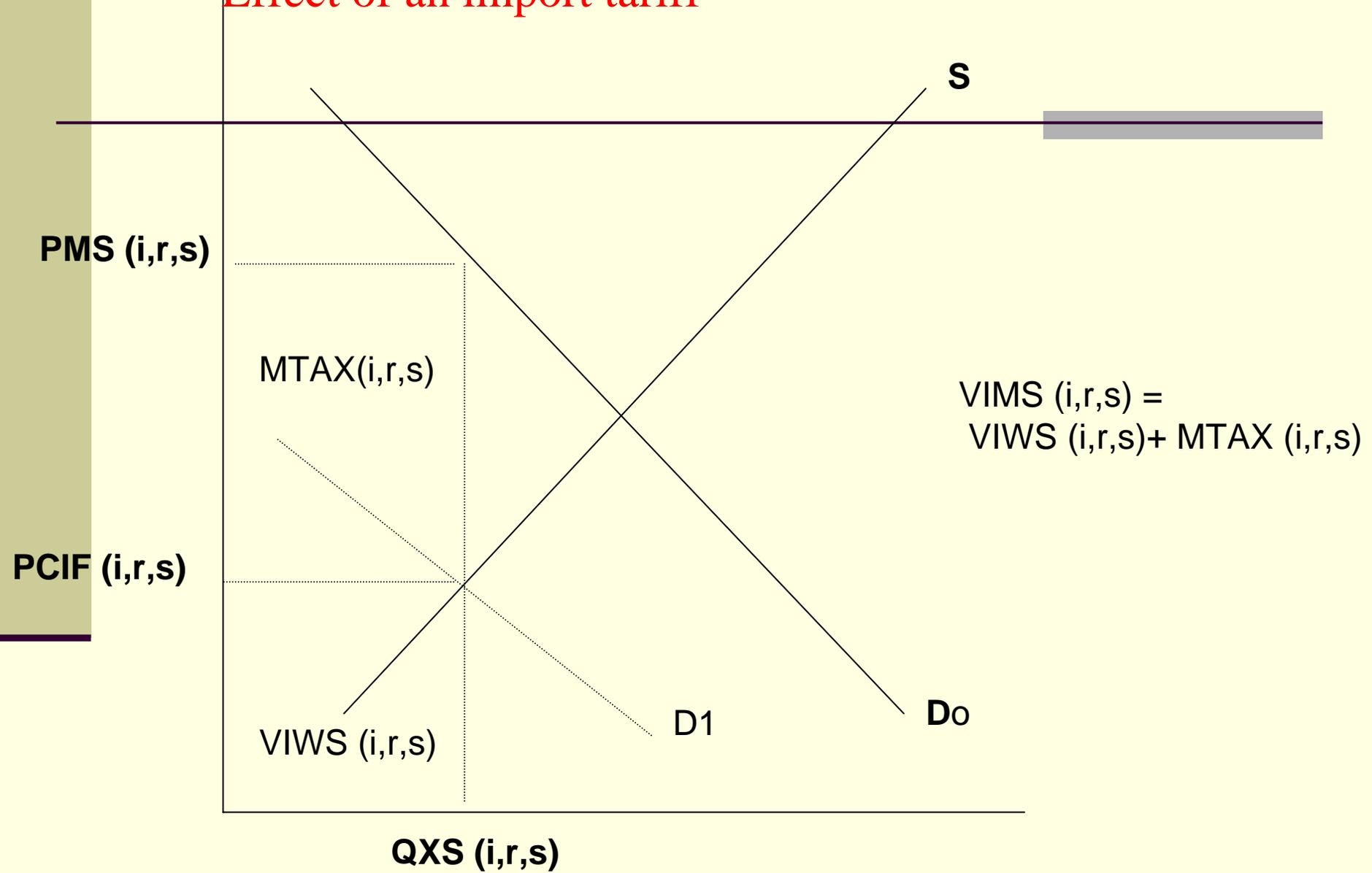


$$VXWD(i,r,s) = VXMD(i,r,s) - XTAX(i,r,s)$$

Import tariffs

- Click on **View|Base Data|Core Data**
- Find the value, at MARKET prices of the EU's imports of food from the ROW
 - The variable is **VIMS**
 - = \$70,507.8
- Now look at **VIWS** for the same trade flow – this is the value of imports at world (CIF) prices
 - = \$61,301.6
- So the tariff revenue is the difference
 - = \$ 9,206.2
- **View|Base Data|GTAPView**
- Click on **line 8**:
 - You should be able to find this number

Effect of an import tariff



Subsidy rates

- Click on **View|Base Data|Tax Rates**
- Double click on **line 9**
- Select 'Food', 'all REG', 'all REG' in the drop down boxes
- The rate for Food exports from EU to ROW is 20.2%
- This is $\$10,794.2 / \$53,415.4$
- $(XTAX/VXWD)*100$

Tax rates

- **View|Base Data|Tax Rates**
- Double click on **line 10**
- Select 'Food', 'all REG', 'all REG' in the drop down boxes
- The rate for EU imports of food from ROW is 15.0%
- This equal to $9,206.2/61,301.6$
- Or $(MTAX/VIWS)*100$

The power of the intervention: GTAP notation

- Power of tariff/subsidy = $\frac{\text{Value of transaction at market price}}{\text{Value of transaction at world price}}$
- Export subsidy:

$$\begin{aligned} \text{TXS_L} &= \text{VXMD}/\text{VXWD} \\ &= 1.202 \text{ in previous example} \end{aligned}$$

To eliminate this subsidy, TXS_L has to be reduced to 1.0
This will require a change of -16.8%

The GTAP variable *txs* measures the percentage change in TXS_L.

Power of the import tariff

- Import tariff: The GTAP variable is:

$$\begin{aligned} \text{TMS_L} &= \text{VIMS/VIWS} \\ &= 1.150 \text{ in previous example} \end{aligned}$$

To eliminate this tariff, TMS_L has to be reduced to 1.0
This will require a change of -13.0%

The GTAP variable *tms* measures the percentage change in TMS_L.

Summary

- Tariffs:
 - If $TMS_L > 1$ is an import tariff
 - If $TMS_L < 1$ is an import subsidy
- Export taxes:
 - If $TXS_L > 1$ is an export subsidy
 - If $TXS_L < 1$ is an export tax

Some price linkage equations

- Click on **View|TAB files|Main Model**
- Search for *tms*

- Now search for *txs*

Equation MKTPRICES

eq'n links domestic and world prices (HT 24)

(all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

$$pms(i,r,s) = tm(i,s) + tms(i,r,s) + pcif(i,r,s);$$

Equation EXPRICES

eq'n links agent's and world prices (HT 27)

(all,i,TRAD_COMM)(all,r,REG)(all,s,REG)

$$pfob(i,r,s) = pm(i,r) - tx(i,r) - txs(i,r,s);$$

Also are taxes/subsidies on output or inputs

- An output subsidy
- **VOA** = value of output at agent's prices
- **VOM** = value of output at market prices
- **TO_L** is the power of the subsidy/tax
= VOA/VOM

If $TO_L > 1$ is a subsidy

If $TO_L < 1$ is a tax

Example of output subsidy

- EU subsidies on food output
 - **View|Base Data|GTAPView**
 - **VOA** and **VOM** are computed within GTAP.TAB
 - Double click on **line 13**
 - Drop down boxes:
 - ‘Food’ ‘All REG’ All OUTVALUE’
- You will see that $VOA > VOM$
Total subsidy = \$13,731.6 million
 $TO_L = 1.0106$
Percentage change variable is *to*