UNIVERSITY OF AMSTERDAM

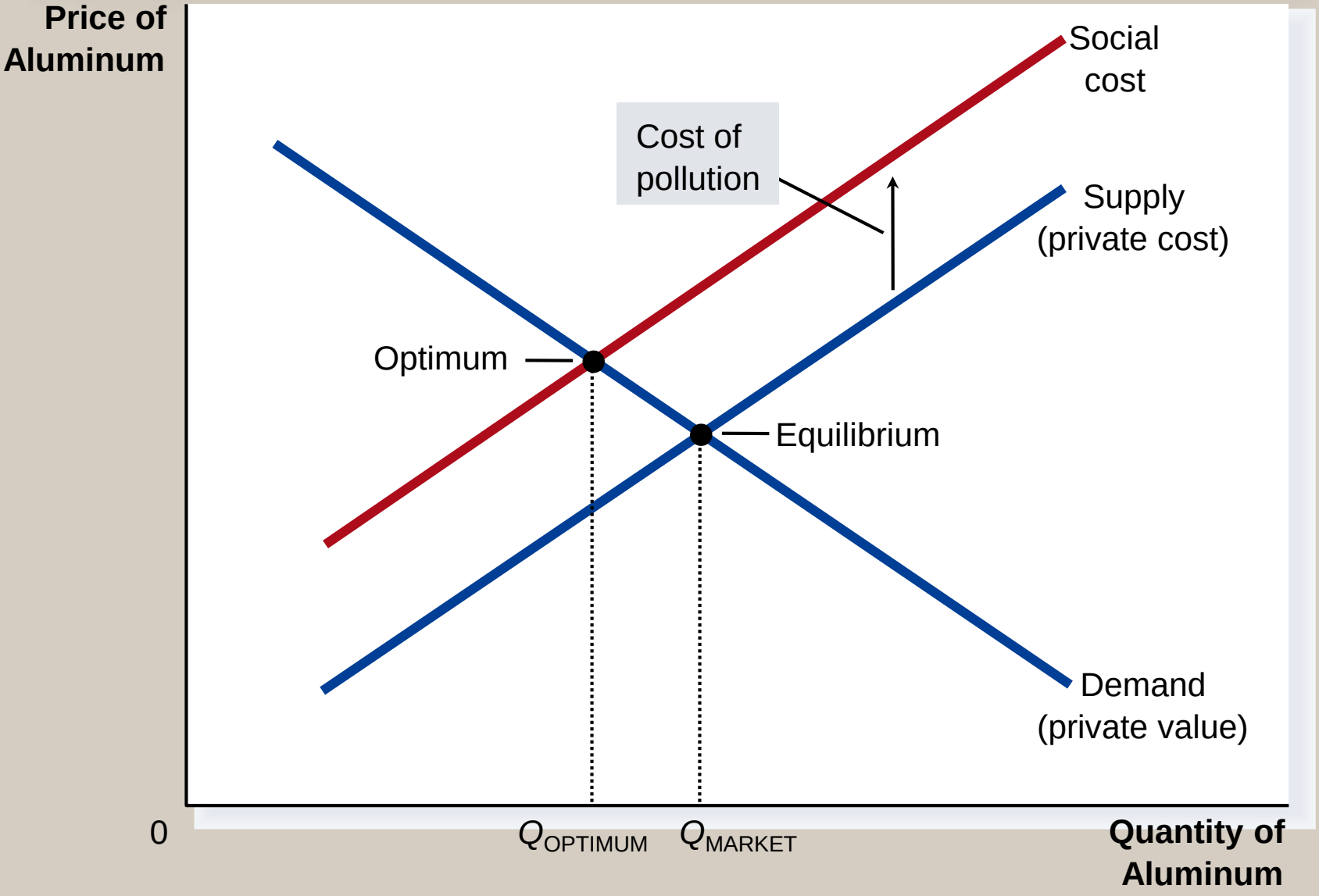
Economics, Markets and Organizations

Tutorial 14

Continuous exam 1

- 1. Explain the desirable government intervention in Figure 11.2. Indicate briefly what the desirable intervention would be if the production of aluminium instead would have produced positive externalities.

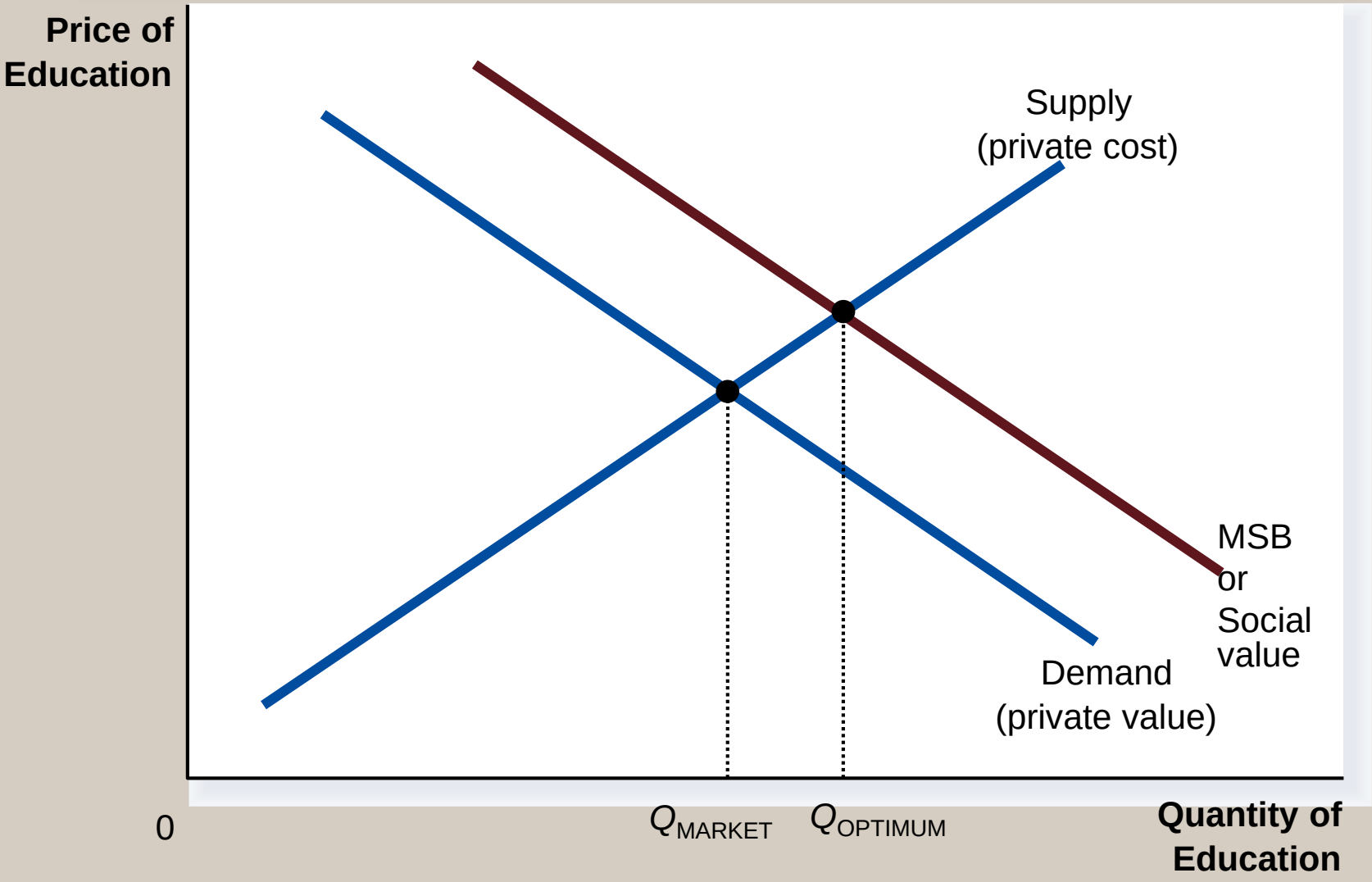
Figure 2 Pollution and the Social Optimum



Continuous exam 2

- 2. Explain Figure 11.3 and also calculate the total welfare effect via the concepts of the changes in the producer surplus, the consumer surplus, the government revenues and the social benefits.

Figure 3 Education and the Social Optimum



1. Explain the notion of positional externalities and illustrate your answer with an example.

Answer

- **positional externality** a situation which exists when the payoff to one individual is dependent on their relative performance to others
- Example: higher education. More and more people follows an college education to gain advantage in the job market, but by college graduates becoming more and more common, the positive effect from higher education is getting smaller.

2. Governments typically desire to limit pollution by local industries. If it is desirable from a societal point of view to reduce overall pollution by a certain amount, why is it efficient to have different targets of pollution reduction for different firms?

Answer

- The cost of reducing pollution is different with each firms and sectors. Asking each firm to cut pollution by a given amount, would affect them differently. Some would reduce the pollution easily others would go bankrupt.
- Tradeable permits would lead to an optimal solution.

Useful video on pollution permits

https://www.youtube.com/watch?v=9tUb3MDrgEc

3. In the analysis of government failures, the responsiveness of the government to special-interest effects was discussed. Lecture slide 31 gave an example on dumping to illustrate this point.

(a) How did that example illustrate that the EU valued the gain to a small group to a higher degree by than the larger loss to society? Assume in your answer that the EU already prior to the start of dumping was an importer of the good in question.

(b) Could you offer explanations according to which the EU's action could increase the EU's welfare despite ignoring the current price decrease to consumers?

Slide 31 from the lecture

4.4. Special-interest effects

Politicians are confronted with lobby groups. That, of course, is not surprising since politicians are required to represent the interests of the various societal groups. They thus have to talk with unions, employers, etc.

However, they may “somehow” respond more intensively to one group and even may favour a gain for a small group over the larger loss to society.

Example: dumping is selling abroad at a lower price than in the home country. It is seen as unfair. A Chinese firm was selling its goods at such lower prices in the EU. The EU, according to EU regulations, may counteract if this is in the “interest of the entire community”. How to ascertain this? By sending questionnaires to “all relevant parties”. In reality, questionnaires were only sent to EU firms (the losers of this dumping), but not to EU consumers (the winners of this dumping).

Answer

a. Questionnaires were only sent to EU firms (the losers of this type of dumping), but not to EU consumers (the winners of this dumping). As such, the EU seemed to have been “hijacked” by the interests of producers rather than the interests of consumers.

b. Positive externalities (knowledge, special skills) from the production can be one possible welfare improving effect. Also with dumping allowed, unemployment would have risen (at least temporarily).

4. Economists argue that state lotteries actually act as a regressive tax.

(a) What is meant by lotteries being regressive taxes?

(b) What explanations could insights from psychology and behavioural economics offer for this deviation from rationality for low-income individuals?

Answer

a) Lottery, when state monopoly, is a transfer from individuals to the state (a form of tax). Since the poor are more likely to play lottery, we can expect that they spend a higher share of their income on lottery than the wealthy: so this is equivalent with a regressive income tax.

b) The main reason for participation especially of the lower-income groups is their *feeling* poor. In many experiments, it has been found that low-income participants implicitly use comparisons with other income classes: if they perceived themselves as having an income that was below some standard, they became more likely to purchase lottery tickets. Also, lower-income individuals may be attracted by the relative size of the prizes (that are lower in relative size for richer individuals) giving them some period of even irrational hope and scope for daydreaming, which is obviously of higher value when income is low.

I5. In the following concluding question, we will first connect the welfare analysis of tariffs from lecture 11 with the presence of externalities as encountered in later lectures. Moreover, the question also aims at evaluating the choice of the particular method of intervention since most often more than one possible instrument can be employed to obtain the desired goal. Economists then suggest making a ranking as to the choice for the most appropriate instrument on the basis of the welfare effects that each instrument generates. This ranking is known as the hierarchy of policies in which policies are ranked as first-best, second-best, third-best, etc. In addition, when having decided upon the ideal method of intervention, the policymaker also has to determine the optimal size of the intervention (a subsidy of 5 or rather one of 8?) as, for instance, an insufficiently large intervention yields social benefits that are below the potential amount that could have been obtained.

We have a small importing country that under free trade imports a good at the world market price of 10 per unit. The domestic supply curve for this good is $S = 50+5P$. The demand curve for that good is $D = 400-10P$. In addition, you have to assume that the domestic production of that good yields a positive externality of 8 per unit.

(a) We will later on discuss a tariff, but why then did we not receive any information on the foreign supply curve? (Or in other words, why do we not have to know the foreign supply curve?)

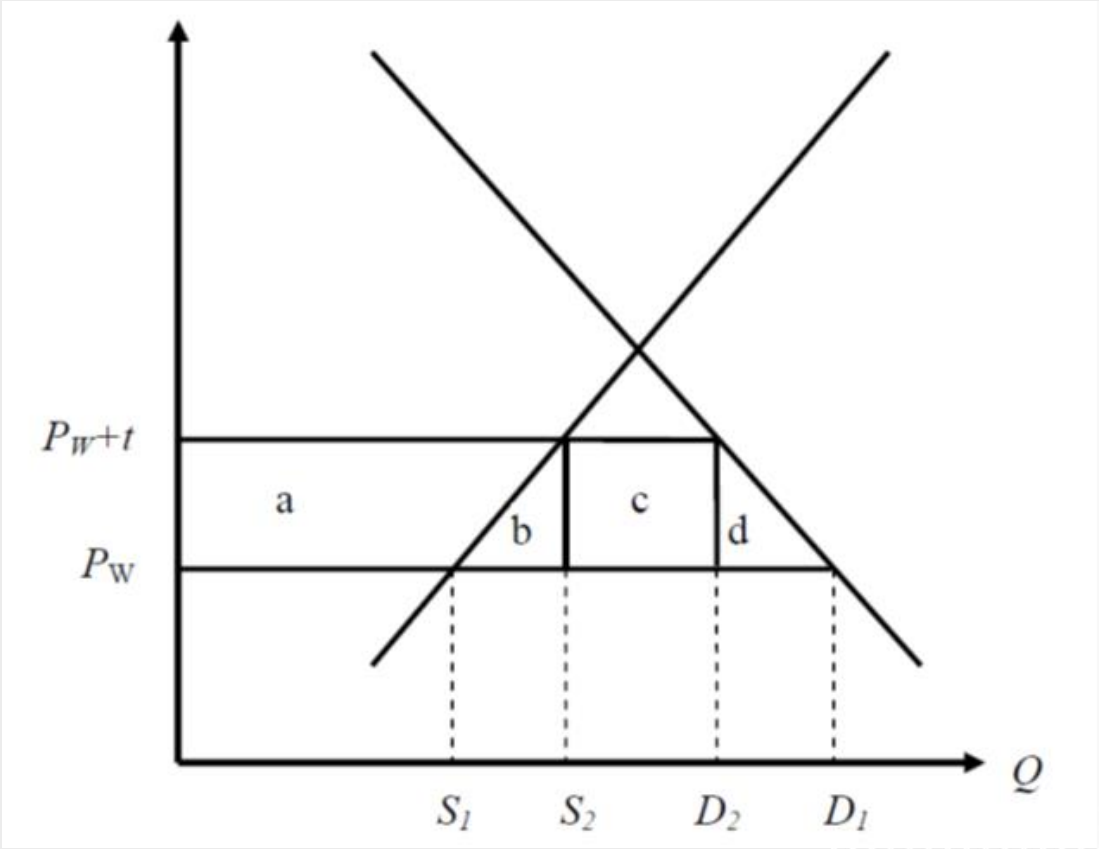
Answer

a) Because the trade policies of a small country will not affect other countries. We do not need to know the foreign supply and demand curves.

The domestic government desires to expand domestic production in order to harvest the positive externalities that the expansion of domestic production brings. It therefore introduces an import tariff of 5 on each imported unit.

(b) Calculate the welfare effect of this tariff.

Answer



Answer

Under free trade:

$$S^{FT} = 50 + 5P^{W} = 100 \quad D^{FT} = 400 - 10P^{W} = 300$$

So import is 200.

With tariff:

$$S^{T} = 50 + 5(P^{W} + T) = 125$$

$$D^{T} = 400 - 10(P^{W} + T) = 250$$

So import reduces to 125.

Answer

$$\Delta CS = -(a+b+c+d) = -\left((15-10)\cdot 250 + \frac{(15-10)\cdot(300-250)}{2}\right) = -1375$$

$$\Delta PS = a = (15-10)\cdot 100 + \frac{(15-10)\cdot(125-100)}{2} = 562.5$$

$$\Delta TR = c = (15-10)\cdot(250-125) = 625$$

$$\Delta SB = 8\cdot(125-100) = 200$$

$$\Delta W = 200 + 625 + 562.5 - 1375 = 12.5$$

However, harvesting the externalities is also possible if the government would alternatively opt for giving a production subsidy of 5 per unit. Such production subsidy will yield a better outcome since it enables obtaining the positive externalities without incurring one of the distortion losses.

(c) Which distortion loss is meant? You subsequently have to calculate the welfare effect by adding the remaining distortion loss to the externalities that are generated. You need to compare with the situation of free trade.

Answer

Consumption distrotion loss: this amounted to d so:

$$CDL = (15-10)\cdot\frac{(300-250)}{2} = 125$$

With production subsidy, the welfare gain would be then 125+12.5=137.5.

- However, the country can do even better than having a welfare increase of 137.5 as in the case of a production subsidy of 5 per unit. In fact, it can increase welfare more by opting for the so-called optimal production subsidy.
- (d) What is the level of the optimal production subsidy? Show that opting for the optimal production subsidy indeed yields a superior welfare outcome when compared with the import tariff of 5 and the production subsidy of 5.

Answer

The optimal subsidy fully internalizes the posirive externalities, so it equals 8.

Then domestic production would be:

$$S^{\mathrm{Pr}odSub} = 50 + 5 \cdot 18 = 140$$

The production distortion loss is then:

$$PDL = (18 - 10) \cdot \frac{(140 - 100)}{2} = 160$$

And the social benefit gain is: 8x40=320

Change in welfare is: -160+320=160

Again, you compare with the situation under free trade.

(e) Discuss the above three policy instruments in terms of the hierarchy of policies and indicate which of them is first-best, second-best and third-best. As always, including at the exam, you have to be clear on the intuition in order to signal your understanding of the course materials.

Answer

- The first best policy is production subsidy at 8 euro per unit. This leads to the maximum social welfare improvement.
- The second best is the production subsidy at 5.
- The third best is the tariff of 5.
- The fourth best is the free trade.

Helpful video

https://www.youtube.com/watch?v=tB2gMxz7-Y0