

Section Exercise for February 3/4

1) In lecture, we went over the case of a quota in which the government required the economy to produce much more than the free-market equilibrium—50000 where the free-market equilibrium was 30000—and so the government had to draft people to produce. It was, then, obvious where the societal inefficiency came from: people with opportunity costs of making lattes between \$4/latte and \$6/latte were being commanded by the government to make and serve lattes to people whose willingness to pay varied between \$4/latte and \$0. On average, each of those extra 20000 lattes was worth -\$3 to society as a whole—a value-subtracting exercise that cost $-\$3 \times 20000 = -\60000 a day.



But what if the government commands a quota that is lower than the free-market equilibrium price? Is that equally bad.

a) Suppose that the demand curve is our standard: $P_d = \$10 - 0.0002Q$. Draw the demand curve:

b) Suppose that the supply curve is our standard: $P_s = \$1 + 0.0001Q$. Draw, on the same axes, the supply curve: calculate (again) the equilibrium price and quantity:

c) What is the consumer and producer surplus?

d) Now suppose that Avicenna Production Distribution Coordination—PDC—imposes a quota of 10000/day on the number that can that could be produced: it will issue 10000 licenses a day, and no license, no latte. At what price will these 10000 lattes be sold?

e) What is the consumer surplus? How much have consumers lost as a result of the quota?

f) Suppose that the low opportunity cost producers manage to gain the 10000 daily licenses to produce. What is their producer surplus? How much will they have gained as a result of the quota?

g) Suppose that the low opportunity cost producers manage to gain the 10000 daily licenses to produce. How much have the other producers lost as a result of the quota?

h) What is the total societal balance sheet for the quota?

i) Is it more likely that the LOC producers will get the licenses, or that those connected with the members and staff of PDC via various social networks will get the licenses to make lattes?

j) Suppose that each producer with an opportunity cost lower than the price at which the quota-constrained lattes will be sold has an equal shot at getting a license. What is your societal balance sheet for the quota now?