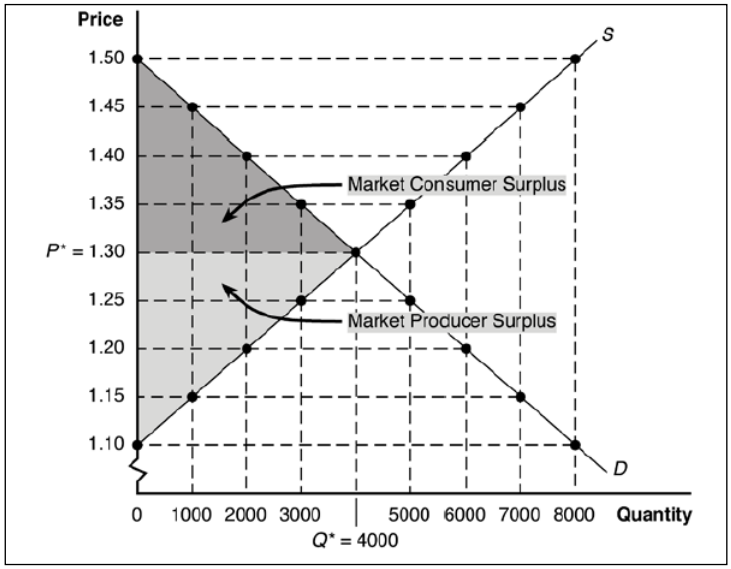
Homework Exercises 6: Market Efficiency

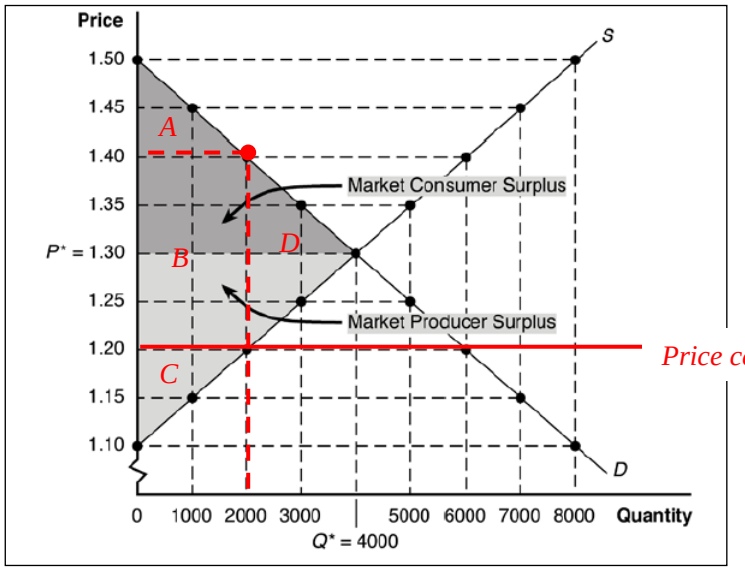
1a. The market equilibrium price is $1.30 and equilibrium quantity is 4000.



1b. See the graph in part (a).

1c. The dollar value of market consumer surplus = [(1.50 - $1.30) × 4000]/2 = $400. The dollar value of market producer surplus = [(1.30 - $1.10) × 4000]/2 = $400. The total surplus in the market at equilibrium = $400 + $400 = $800.

1d. Market consumer surplus (area A + B) = [($1.40 - $1.20) × 2000] + [($1.50 - $1.40) × 2000]/2 = $400 + $100 = $500. Market producer surplus (area C) = [($1.20 - $1.10) × 2000]/2 = $100. Total surplus in market (area A + B + C) = market consumer surplus + market producer surplus = $500 + $100 = $600. Deadweight loss (area D) = The total surplus in the market in competitive equilibrium – total surplus in market with price ceiling = $800 - $600 = $200.



2a. With very elastic supply and very inelastic demand, the burden of the tax on rubber bands will be borne largely by buyers. As Figure 2a shows, consumer surplus declines considerably, by area A + B, but producer surplus does not fall much at all, just by area C + D.

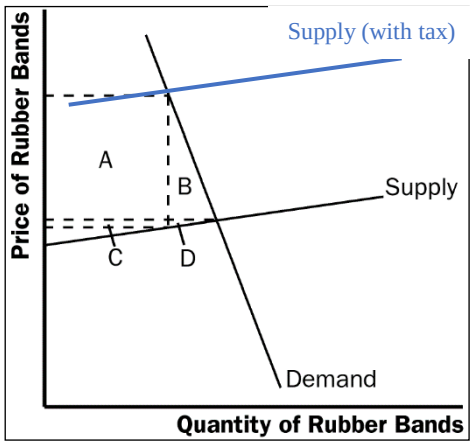


Figure 2a

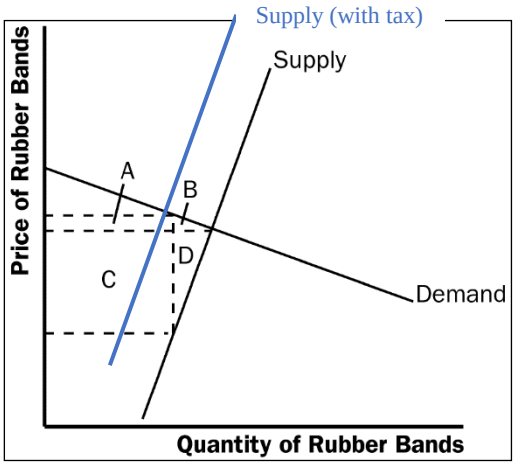
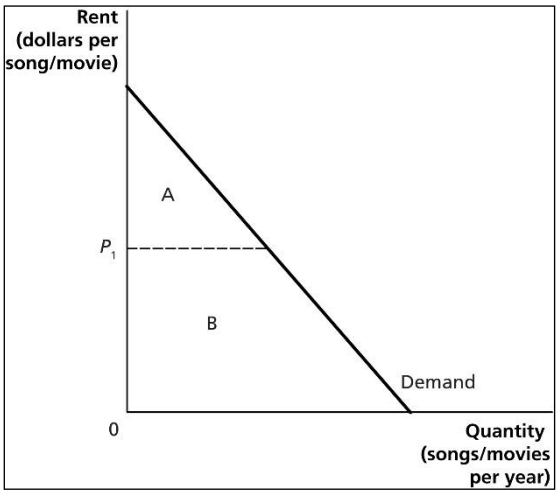


Figure 2b

2b. With very inelastic supply and very elastic demand, the burden of the tax on rubber bands will be borne largely by sellers. As Figure 2b shows, consumer surplus does not decline much, just by area A + B, while producer surplus falls substantially, by area C + D. Compared to part (a), producers bear much more of the burden of the tax, and consumers bear much less.

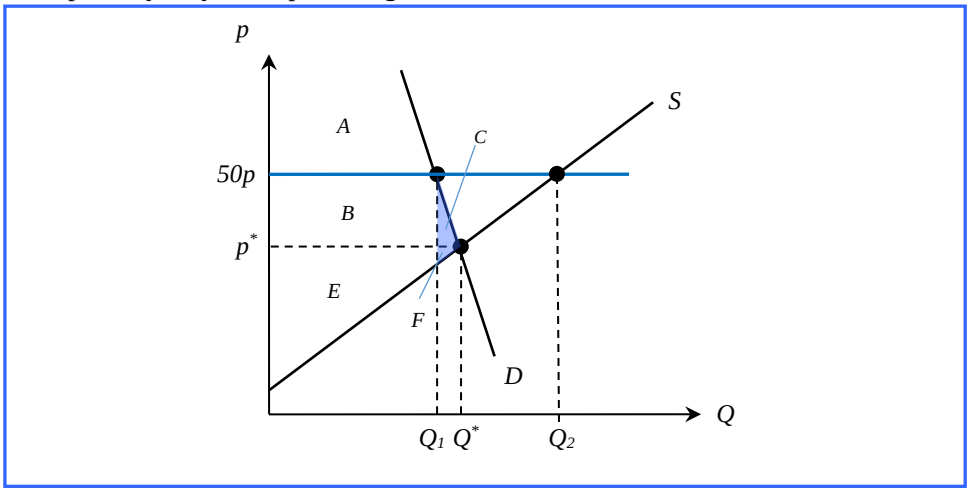
3a. File sharing does increase the consumer surplus from consuming existing songs and movies, at least in the short run. In the demand curve below, consumer surplus without file sharing when the price is P_1 equals area A. The consumer surplus with file sharing when the price is zero equals area A plus area B.



3b. File sharing decreases the economic return (profits) from producing songs and movies. So, in the long run, file sharing will reduce the quantity and quality of songs and movies, which will likely result in a reduction in consumer surplus.

4a. As the government imposed a price floor at *50p*, consumers would want to purchase Q_1 but producers would be willing to sell Q_2. The resulting surplus would result in non-price competition and therefore extra opportunity cost for sellers to sell the alcohol, making them

worse off. However, as the demand is very price inelastic, the price ceiling would reduce the consumption by very small percentage. So, the total revenue of the alcohol sellers will increase.

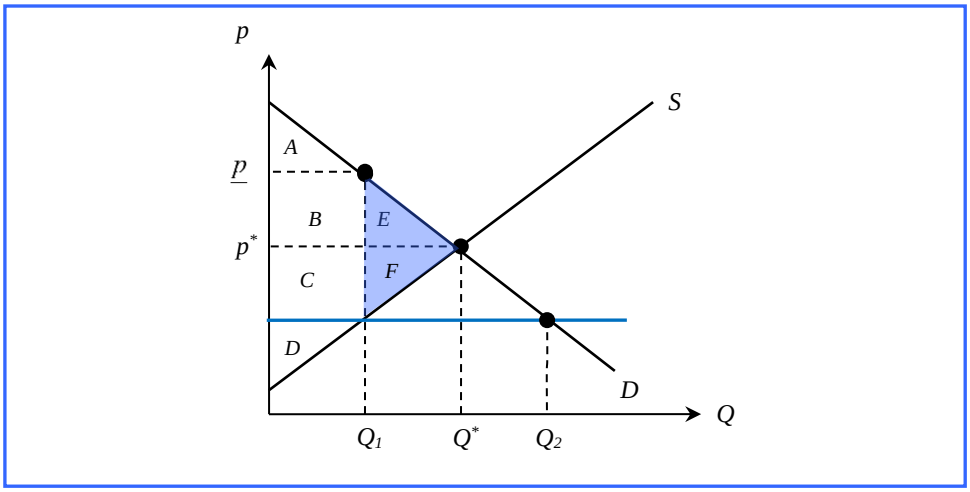


4b. The welfare impact analysis is as follows:

	Competitive Equilibrium	With Price Floor	Change
CS	$A + B + C$	A	$-(B + C)$
PS	$E + F$	$B + E$	$B - F$
Welfare	$A + B + C + E + F$	$A + B + E$	$-(C + F)$

Note that, as the demand is very inelastic, the producer surplus will increase.

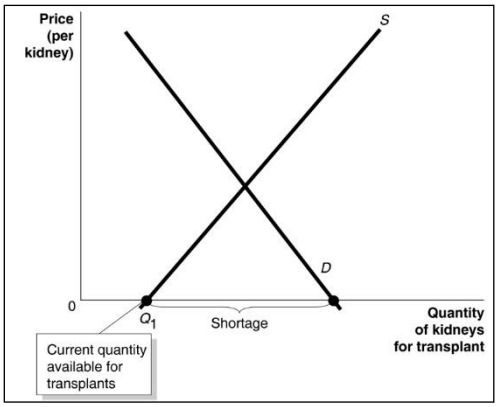
5a. At the ceiling price of €0.50 per mask, consumers would want to purchase Q_2 units but producers would only be willing to sell Q_1 units. It results in a shortage, and leads to non-price competition.



5b. The welfare analysis is as follows:

	Competitive Equilibrium	With Price Ceiling	Change
CS	*A + B + E*	*A + B + C*	*C – E*
PS	*C + D + F*	*D*	*– (C + F)*
Welfare	*A + B + C + D + E + F*	*A + B + C + D*	*DWL = – (E+ F)*

6a.



6b. By legalizing the buying and selling of organs, the price would begin to rise, and the quantity supplied would also rise. As a result, the shortage of organs could be eliminated. However, by making the sale of kidneys legal, some members of society who are less educated or less well-informed might end up selling their kidneys even if it was not in their long-run best interest[1].

[1] There may be other solutions that would avoid the ethical problems of making kidney sales legal. Some economists, including Lloyd Shapley and Alvin Roth, Nobel Prize winners in Economics in 2012 have helped set up a kidney exchange that matches up compatible kidney donors and recipients, which greatly improves allocation of resources when the use of market system is limited.