個經作業, Ch.8
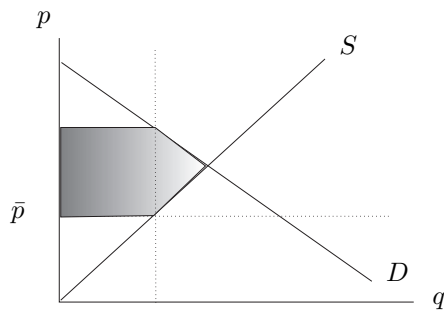
1. The market demand for good X, D, is negatively sloped and the market supply, S, is positively sloped. The equilibrium price is p^*. Now a price ceiling $\bar{p}$ is set on good X and $\bar{p} < p^*$ as shown in the following figure. Landsburg states in the textbook on p.244 that the shaded area is the deadweight loss due to this price ceiling. Why does he say so?

2. Landsburg, Ch.8, #9.

3. Landsburg, Ch.8, #36.

4. Landsburg, Ch.8, #38.

5. a、b 生產並消費 x、y 兩物, 其生產可能線分別爲下式:

$$a: \quad x^2 + y^2 = 100,$$
$$b: \quad x^2 + y^2 = 64, \quad x, y \geq 0$$

兩人的效用函數如下:

$$a: \quad u = xy^2,$$
$$b: \quad u = x^2 y$$

   (a) 若 a 自給自足, 他會生產幾單位的 x?

   (b) 如果 a、b 攜手合作生產, 當其 x 的總產量爲9單位時, y 最大的總產量可達多少單位?

   (c) 請證明一般均衡時, a 在 x 市場中爲淨賣者。

解答

1 The triangle at the right is due to a reduction in transaction. The rectangular at the left shows the cost of consumers to compete for the limited supply. This spending, for instance time spent on standing in line, is not received by the producer.

2 Before the excise tax is imposed, the deadweight is described as the previous problem. The excise tax causes the supply curve to shift up by \$1, and the new supply is S'. The consumer surplus is reduced by $a + b$, and the producer surplus is reduced by $c + d + e$, while the government has a tax revenue of $d + e$. The deadweight loss hence gets larger.
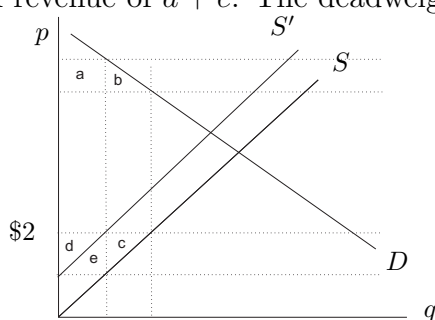
3 (a) The zero-profit condition requires that any reduction in fixed costs must be offset by an equivalent decrease in producers' surplus.

(b) By part a) $A + B = \$8000$. Therefore $A < \$8000$. It is given that the height of the rectangle A is \$1, so the width of the rectangle - i.e. the new quantity must be less than 8000.
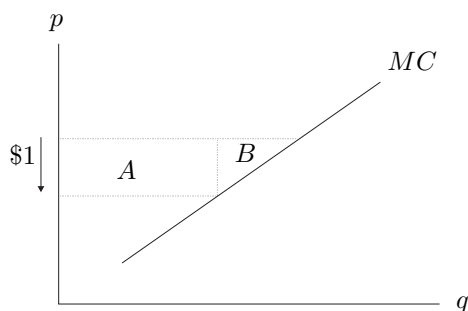
(c) In the long run, a \$1 per widget subsidy lowers the price by \$1 and so is exactly as good for consumers as the original plan. Producers earn zero profit either way, so both plans are equally good for producers. Taxpayers pay more than \$1 per widget under the original plan (\$8000

for fewer than 8000 widgets) and exactly \$1 per widget under the new plan; the quantities demanded are the same either way (because the price is the same either way), so taxpayers prefer the new plan. The new plan is good according to the efficiency criterion. (The industry as a whole pays more to produce the same quantity in the old plan.)

4 Point E is the initial endowment; the shaded area is the region of mutual advantage. Darkened axes from the contract curve. There are multiple equilibrium: $\overline{BA}, \overline{AC}$.
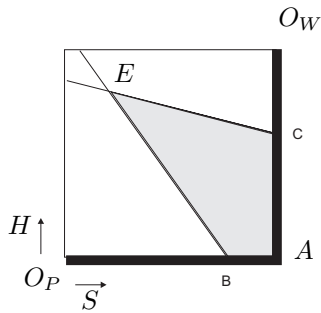
5a $MRS_a = y/2x$, $MRT_a = x/y$, $MRS_a = MRT_a \Rightarrow 2x^2 = y^2 \Rightarrow x = 10/\sqrt{3}$

5b $MRT_a = MRT_b \Rightarrow x_a/y_a = x_b/y_b$, from the following graph, $x_a/x_b = 5/4$. so $y_a = 5\sqrt{3}$, $y_b = 4\sqrt{3}$, $y = 9\sqrt{3}$
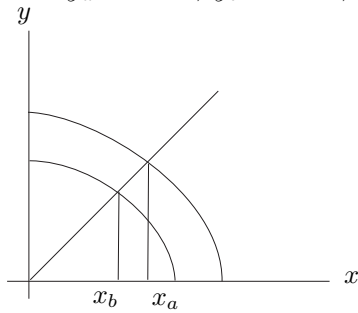
5c at the equilibrium, $MRT_a = MRT_b$, so their production points are like A, B in the following graph. let their consumption bundles be: (x_a, y_a), (x_b, y_b). at equilibrium, $MRS_a = MRS_b$, so $y_a/2x_a = 2y_b/x_b$, i.e. $y_a/x_a = 4y_b/x_b$ their consumption bundles are like C and D in the graph.

Slope = 4s

C

A

Slope = s

B

D