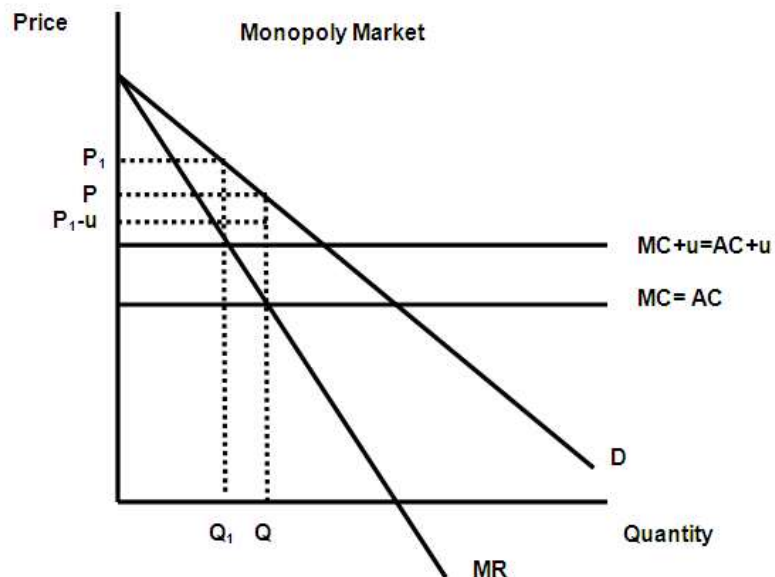
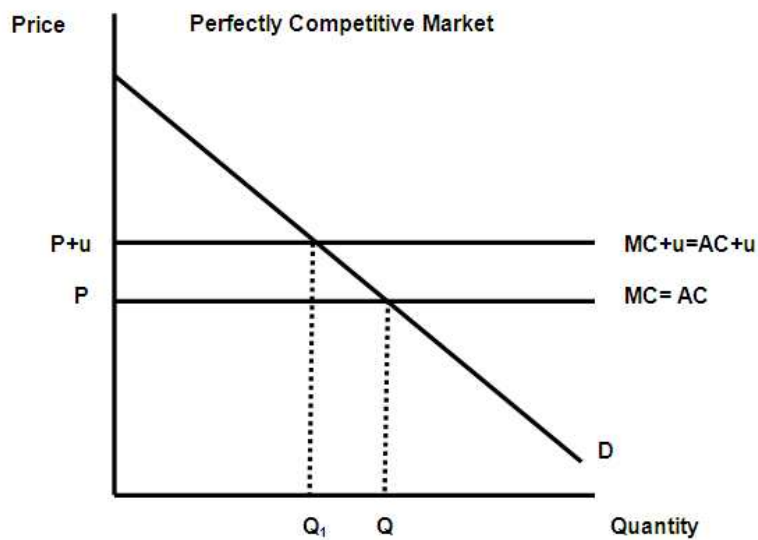


재정학 연습문제 풀이

14. 조세와 소득분배

[연습문제 #3]

In the competitive case, the full tax is paid by the consumer because the supply curve, given by MC, is perfectly elastic. With a monopoly, the tax is shared between the consumer and the producer depending on the elasticity of demand. (If the tax is imposed on the consumer, the demand curve falls by S_u , and the result is the same in both cases).



[문제 #4] 담배세의 귀착

If a tax is placed on cigarettes, markets other than the cigarette market will be affected. A tax on cigarettes is effectively a tax on the resources used to make them. The tax will reduce the quantity of cigarettes purchased, therefore decreasing the purchase of the resources used to produce cigarettes. If production of cigarettes is primarily labor intensive, then the tax primarily affects people who earn their incomes from labor in other sectors of the economy. The labor from the production of cigarettes will flow into other segments, increasing the supply of labor and decreasing the wages paid to labor in all sectors. The same thing would happen to capital if cigarette production were capital intensive.

[문제 #5] 술에 대한 1달러의 세금 부과

- a. Before-tax equilibrium: $P = \$10$ and $Q = 300,000$

$$\begin{aligned} Q_D &= Q_S \\ 500,000 - 20,000P &= 30,000P \\ 500,000 &= 50,000P \\ P &= 10 \\ Q &= 30,000 * 10 = 300,000 \end{aligned}$$

After-tax equilibrium: $P = \$10.60$ and $Q = 288,000$, producers receive $\$9.60$

$$\begin{aligned} 500,000 - 20,000P &= 30,000(P - 1) \\ 530,000 &= 50,000P \\ P &= 10.6 \\ Q &= 30,000 * (10.6 - 1) = 288,000 \end{aligned}$$

- b. Revenue = \$288,000. Consumers bear 60 percent of the tax burden and producers bear 40 percent. So, \$172,800 comes from consumers and \$115,200 from producers.
- c. With a more elastic demand curve, quantity consumed will decrease even more as a result of the tax, so the liquor tax will be more effective at reducing consumption among young drinkers.

[문제 #6] 종량세 u 달러 부과시 수요자나 공급자 어느 쪽에 부과해도 최종 결과는 같다.

강의시간 중에 풀었으므로 생략!

[문제 #7] 연간소득이 다른 세 사람의 경우 한계세율과 평균세율 구하기.

- A part-time worker with annual income of \$9,000 pays no taxes since everyone gets a \$10,000 deduction. Her marginal tax rate is 0% and her average tax rate is 0%.
- A retail salesperson with annual income of \$45,000 has taxable income of \$35,000 and pays \$1750 in taxes (5 percent of taxable income). As a percentage of income, the average tax rate is 3.89% (\$1750 is 3.89% of \$45,000). Her marginal tax rate is 5%.
- An advertising executive with annual income of \$600,000 pays \$2,500 in taxes since no tax is levied above \$50,000 in taxable income. As a percentage of income, the average tax rate is 0.42%. Her marginal tax rate is 0%.

[문제 #8] 세율구조의 누진성 여부 판단.

The equation $T = -4000 + .2I$ is somewhat similar to the exercise in Table 14.1. If we follow the text and define progressivity with respect to *average* tax rates rather than marginal tax rates, then the average tax rate equals $ATR = (-4000/I) + .2$ for any income level. Clearly this average tax rate converges to $ATR = 20\%$ as income gets large, and is lower for lower income levels. The tax system is regressive. Replicating Table 14.1 for the tax system given here, we get:

Income	Tax Liability	Average Tax Rate	Marginal Tax Rate
\$2,000	\$-3,600	-1.80	0.2
3,000	\$-3,400	-1.13	0.2
5,000	\$-3,000	-0.60	0.2
10,000	\$-2,000	-0.20	0.2
30,000	\$2,000	0.066	0.2

To show that the tax system is progressive if a is negative, write ATR as:

$$ATR = T/I = (a + tI)/I = a/I + t$$

Then take the derivative of ATR with respect to I in order to check whether ATR goes up or down as I increases: $d(ATR)/dI = d(a/I + t)/dI = -a/I^2$. The change in average tax rate is increasing in income (which implies a progressive tax schedule) as long as a is negative.

{참고} 물론 위에서 누진성을 보이는 방식으로 방정식 $T = a + tI$ 의 그래프를 그린 다음, 그 방정식의 특정 점에서의 기울기는 MTR이고 원점에서 특정 점에 이르는 기울기는 ATR이므로, MTR은 불변이고 ATR은 a 가 0보다 큰 경우(작은 경우)에 세율구조가 역진적(누진적)임을 보여줄 수도 있다.

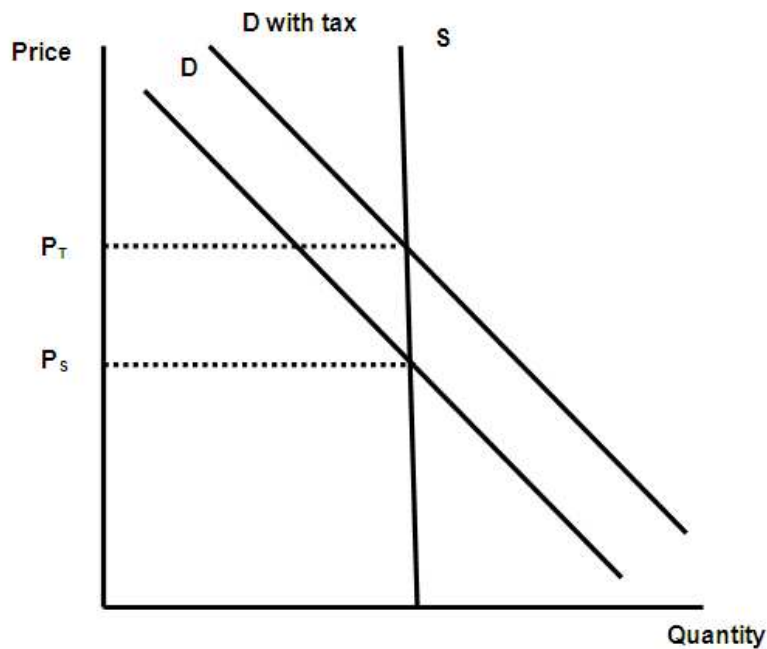
[문제 #9] 담배에 대한 세율 인상으로 세수가 증가했다는 주장에 대한 분석.

이 주장이 맞다면, 담배에 세금을 부과했을 때에 소비자 가격 인상으로 인한 담배 수요의 감소는 매우 작아야 한다. 즉, 담배 수요의 가격 탄력성이 매우 비탄력적이어야 한다. 왜? 흡연자들이 담배에 완전 중독되어 있어서 가격이 올라도 금연하기가 어렵기 때문에. 단기에서는... 뭐 그럴듯한 주장일 수도 있겠지. 하지만 우리가 경제원론 시간에 배웠듯이, 가격탄력성은 단기에서와 장기에서 다르게 나타난다. 담배 값이 크게 올랐을 때 6개월, 1년이라는 긴 시간이 흘러도 흡연자들이 계속 비싼 값을 치루며 담배를 피울까?

{참고} 이 문제에 대한 답을 그래프로 설명할 수 있다면 보너스를 받을 수 있을 것!

[문제 #12] 유류세 한시적 인하책의 귀착 효과.

The producer would gain the entire reduction in the gas tax ($P_T - P_S$) because the supply curve is perfectly inelastic, causing the full tax to be paid by the producer. When the tax is removed, the payment does not have to be made.



[문제 #13] 조세 경감에 따른 세제의 누진성 상승 여부 판별.

Using equation 14.1, the progressivity of the old tax system is: $0.00111 [= (50/200 - 1/20)/(200-20)]$, and the progressivity of the new tax system is exactly the same $[=(48/200 - .8/20)/(200-20)]$.

Using equation 14.2, the progressivity of the old tax system is: $5.44 [=((50-1)/1)/((200-20)/20)]$, and the progressivity of the new tax system is: $6. [=((48-.8)/.8)/((200-20)/20)]$. Thus, under this measure of progressivity, the new tax system is more progressive.