

# PRICE THEORY I TFUs

## PRACTICE SET 15

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1. Since a rise in the real interest rate will reduce wealth, holding current and future income fixed, higher interest rates make consumers worse off unless they are compensated by greater real incomes today or in the future. (Fall 2008 Final)

**False.** The net borrowers are clearly worse off. The net savers get a gain as creditors. However, holding future wage income fixed, the present value of the future earnings has fallen so they may also be worse off.

2. The recent fall in housing prices in many parts of the country has reduced people's real wealth and therefore should reduce their current and future consumption of income elastic goods. (Core 2008)

**Uncertain.** This depends on whether you're a home owner or not. If you are a home owner, it's clear that you're worse off with the recent fall in housing prices. However, if you're a potential home owner looking to purchase a new house, the recent fall in housing prices has worked wonders for you. If you do not own a home (a renter) and even if you do not plan on purchasing a new home, the recent drop in housing prices will lead to decrease in rental price also, so it's hard to say this person is worse off.

3. Assume the following new policy in the cigarette market: the government makes producers liable for the health consequences of their products and makes individual producers pay for the adverse health effects (i.e. compensate injured consumers for both the monetary and non-monetary costs of their injury). Then the aggregate health consequences from the consumption of this good should be improved. (3.20.4)

**Uncertain.** The cost of smoking for the unhealthy decreases while that for the healthy increases. The unhealthy will smoke more and this will increase the severity of smoking related illness. The healthy will decrease the consumption of smoking, and this will increase the health consequences for the healthy people. Hence the result depends on the proportion of the people with two health levels and the original level of smoking related illness for these two groups.

4. For a competitive industry with constant returns to scale, a tax on labor will raise the price of output more in the short run than in the long run if capital is fixed in the short-run but variable in the long-run.

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**Uncertain.** Consider the market for labor. Since labor is variable in the short run, we always have  $P = w/MPL$ , where  $w$  is the full wage paid by the firms. We see here that a tax must lower the amount of labor demanded by firms and that we must have a higher wage (including tax) paid for labor. This decrease in labor, in the long run, will have an effect on capital. If capital and labor are complements, then capital will fall, but if substitutes, capital will rise. Either way, however, the industry will be using an efficient mix of labor and capital on the long run. Thus, it is uncertain whether the price of output will rise more in the short run, since it will depend on the marginal productivity of labor and the substitutability between labor and capital.

5. If the government announces in 1996 that it will begin an investment subsidy in 1998, then capital rental rates will be higher than they otherwise would have been between 1996 and 1998; moreover, capital rental rates should be rising and capital prices should be falling over this period. (4.22.13, Final 2001)

**Uncertain.** Investment is cheaper in 1998, so investment will increase in 1996. There is less stock so the rental rate will be higher between 1996 and 1998. As we get closer to 1998, the capital price should be decreasing further and investment also decreasing, which implies rental rate should be rising over this period.

6. A fall in the cost of producing a durable good will reduce the capital price of that good more in the long run than the short run. In addition, in the short run capital prices will fall more in percentage terms than will rental prices. (4.22.16, Core 2008)

**True.** A fall in the cost of producing does not immediately impact the stock of durable good nor the demand for it. So, the rental prices will not change in the short-run. However, the fall in the cost of producing means investment will increase. This means the capital price will decrease. And as stock increase toward its new steady-state level, the rental rate decreases. And this means the capital price will decrease even further.

7. An increase in the cost of feeding cattle will raise the price of beef. (4.22.17, Final 2013)

**Uncertain.** An increase in the cost of feeding cattle will depress long-run supply (stock) and raise the price of beef in the long-run. If demand inelastic, ranchers will simply shift the cost of raising cattle onto consumers by charging a higher output price. If demand elastic, then stock has to decrease in the long-run. Rather than putting in the cost, ranchers may kill more cattle in the short-run than they had been doing before, and so the price of beef may actually fall in the short-run before rising back up again toward the new steady state price.

8. Consider a 10% tax on rental flows vs. 10% tax on investments. How do their impacts on the steady state stock of capital compare? Tax revenues? (4.22.18, Final 2013)

**N/A** Impact on the steady state stock of capital is the same – the difference is in the fact that the investment tax is paid up front whereas the rental rate tax is paid over time. Investment tax raises less revenue in transition since investment drops by a lot one time.

9. Assume that firms have the ability to cheat customers by providing them with only 90% of the quantity claimed to be in a package and that consumers cannot detect whether they are being

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short-changed. Assume some firms are “honest” (and provide consumers with only 90% of the quantity claimed). Consumers will be better off when at least some of the honest firms survive in equilibrium. (3.12.8, Final 2013)

**False.** The beauty of this question lies in recognizing that if the honest firms weren’t being so honest, they would drive out inefficient producers and consumers would end up in a better equilibrium where they end up getting what they paid for.

10. Assume that teenagers are getting fatter partly because they correctly anticipate new drugs that will reduce the likelihood of overweight persons getting diabetes. Then the effects of these drugs on the incidence of diabetes (multiplied by the cost of diabetes) will correctly measure the social value of the drugs. (3.20.7, Core 2004)

**False.** These drugs allow teenagers to eat more than they would have without the drugs without having a severe adverse impact on health. This means they would not have to exercise as much, which means change in social utility (or disutility, depending on whether you like exercises or not) will exist. Also, the heavier population overall will have changes in other markets, since people would demand for bigger cars, wider airplane seats, etc. So, the overall social value/cost of the drugs encompasses more than just the diabetes aspect.