Price Theory I TFUs
Practice Set 05

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1. Suppose the supply function of servants is constant over time. A growth in income and wages in the country may reduce the number of servants even though the income elasticity of demand for servants is very strongly positive. (3.2.3, Core 1993)

   Uncertain. This depends on how the growth in income and wages look. If everyone's income increases, then the demand for servants will increase. Holding supply constant, this unambiguously increases the number of servants. In this case, the statement is true. Alternatively, suppose that aggregate income increases through a large increase in the incomes of the lower and middle classes accompanied by a decrease in the incomes of the upper class. If only the upper class employs servants, then demand will decrease. In this case, the statement is false.

2. A new law which mandates that employers provide health insurance to all workers will help workers that do not currently have employer-provided health insurance but will make those that do currently have it worse-off. (3.4.5, Core 2013)

   Uncertain. This is a scenario where we need to look at the total benefits being o↵ered. Companies can o↵er a lower wage in exchange for health benefits (or any other job perks). Therefore, those workers who do not currently have insurance may have to accept a lower wage, or di↵erent hours, in exchange for health benefits. The profit-maximizing firm will provide a compensation package that minimizes the average cost of each unit of labor. While some workers may be benefit from or be indi↵erent to the policy, there are likely others for whom the new regulations will be strictly worse.

3. A permanent increase in the demand for beef could lead cattle farmers to supply less beef in the short run. (3.6.5, Final 2008)

   True. If ranchers know that demand has increased permanently, then they will optimize by growing their herd to a new steady state level that can support a higher rate of slaughter. In order to bring about that growth, they will slaughter less in the short run.

4. An increase in the real rate of interest will lead to a fall in housing prices. This fall in prices will be greater in the short-run than in the long-run. (3.9.5, Final 2011)

   True. In the short-run, P decreases, which makes I decrease, which depresses K and brings back R up. This brings the price up, so the fall in prices will be mitigated in the long-run.

5. A new technology which allows all firms in a competitive industry to produce twice as much output from the same inputs will reduce prices and increase firm profits in the short run (when capital is fixed in the short run) and reduce prices more in the long run than in the short run. (4.2.2, Final 1998)

   True. Elasticity is always greater in the long run. Therefore, when the supply curve shifts down (thanks to the technology shock), the price will drop and quantity will expand, but in the short-run price will still be higher than in the long-run, when capital adjusts. In is true that profit will rise in the short run because firms are enjoying the benefits of the technology shock without the competitive e↵ects of entry. In the long run, with firm entry and capital adjustment, profit for the marginal firm will go back to 0 as with any competitive industry.

6. Industries with more variable demand will tend to have more elastic supply than industries with less variable demand. (4.4.3, Final 2008)

   True. This may be true if firms in such industries realize that demand for their product is variable. If that is the case, they may decide to use a mixture of inputs that are more variable than other firms'. For example, if the inputs they use are capital and labor, then they may choose more labor than they would have otherwise. This may incur a short run cost (they may not be using the optimal ratio of inputs to meet current demand), but if demand changes, they can more rapidly and cheaply adjust, thereby gaining higher future profits. Thus, their supply would also be more elastic.

7. If wage rates are increasing faster than the rental price of capital goods, then we would expect labor usage to be falling relative to capital usage and output prices to be rising more slowly for capital intensive goods (i.e. those goods where capital's share is high). (4.7.3, Final 1999)

   True. Output price change is given as $\Delta P = S_L \Delta W + S_K \Delta R$ so it is rising more slowly for capital intensive goods. As relative price of labor increases more, we expect the firm to substitute towards capital.

8. If Microsoft has monopoly power in computer operating systems due to network externalities, it might add to its monopoly profits by giving away free its internet browser. (4.16.3, Core 1998)

   True. This is related to both network effects and monopoly bundling of complementary goods. By pricing the internet browser (the elastic good) below marginal cost, Microsoft increases demand for the operating system and can raise its overall profit. (4.16.3, Core 1998)

9. If all individuals in the economy are identical in every way and have access to the same strictly concave technology for investing in human capital then in equilibrium all individuals will make the same human capital investment choice. (5.5.1, Midterm 2012)

   False. The key idea is that gains from specialization drive specialization, not necessarily underlying human differences.