Price Theory I TFUs
Practice Set 06

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1. In general, the demand for a good is more inelastic for the poor than for the rich. (3.1.6, Final 2002)

   False. Consider a person on the extensive margin for a good: they will buy one unit of a good at the given price, but if the price rises they will exit the market altogether. This person has perfectly elastic demand at this price. Meanwhile, a wealthier person may decrease consumption on some infra-marginal units of the good but will continue consuming; thus, their elasticity is lower.

2. Suppose the government attempts to cut the pollution of carbon dioxide gas by firms. The government could either tax the output of this gas, or give firms a limited number of salable permits to emit this gas. If the tax system and the permit system lead to the same total output of the gas, firms would be indifferent between the two systems. (3.4.6, Core 2007)

   False. The surplus generated by these policies accrue to two different entities. Taxing the output of this gas means the surplus becomes government revenue while giving firms permits means that the surplus will be part of producer's surplus as firms can trade these permits between themselves. Since both systems were assumed to lead to the same total output of the gas (which means DWL is the same between two options), the firms will definitely prefer salable permits that will enable them to increase producer surplus.

3. A technology improvement which increases the reproductive rate of livestock will (all else equal) reduce the price of livestock in the long-run but can increase the price of livestock in the short-run. (3.6.6, Midterm 2012)

   True. The increase in reproductive rate increases the steady-state of livestock. In order to reach the steady-state, farmers may have to reduce quantity today which will increase the price of livestock in the short-run.

4. A reduction in the tax rate on earnings for low wage workers will raise pretax wages for these workers. (3.10.4, Final 2013)

   Uncertain. Think about the labor demand and supply curves intersecting without any government intervention. The distance between the supply and demand curves to the left of the intersection point is the tax wedge. When the tax wedge decreases, quantity moves to the

right closer to the intersection point. Since the demand curve is downward sloping, the pre-tax wage decreases for these workers. But is the supply curve really stationary? Even before we ask that, is this a compensated supply curve? If the tax reduction is coming from reduction in services for low income workers, then the supply curve is fully compensated. But if the reduction is coming from paying for roads, then higher income guys now have to pay more. In the latter case, maybe the labor supply curve shifts out for low wage workers since now they are getting a fuller return on effort than before. Then the pre-tax wage drops even further. But maybe lower tax on earnings increases human capital investment. If more people are going to school rather than working, then the labor supply curve may shift inward in the short-run and raise the pre-tax wage. This may be a bit less likely than scenario 2, since the reduction in the tax rate on earnings is only for low wage workers.

5. If an industry has both profit-maximizing and non-profit-maximizing firms (as with nursing homes) a shift down in the demand for the product would mainly lead to non-profits dropping out since non-profits tend to be the "marginal" firms. (4.1.6, Core 2006)

   False. It would rather be profit-maximizing firms that are marginal, since they are the ones that are producing at a level where marginal cost equals marginal revenue. The non-profit firms do not face the same marginal conditions as profit maximizing firms, often maximizing utility instead of profit. Often, it's also the case that non-profit firms have a big endowment of some sort. Hence, if demand shifts down, we would see profit-maximizing firms drop out first, given that non-profit firms have endowments that they can draw upon.

6. An increase in the price of an input to a competitive industry will often increase the profits of firms in that industry when output demand is relatively inelastic and some factors are fixed. (4.5.3)

   True. Profits rise when the price increases more than the average cost. This could occur if (1) output demand is inelastic (so consumers bear the tax) and (2) some factors are fixed.

7. In the neoclassical growth model a permanent increase in productivity caused by neutral technical progress will increase the current interest rate and reduce current consumption. (4.7.4, Midterm 2012)

   True. Recall that in NCG, we have $F_K(K) = \rho+\delta$. Increase in productivity causes $F_K(K) > \rho+\delta$ so a large increase in investment is needed. This requires a large decrease in consumption, but consumers like to smooth their consumption so the interest rate rises to choke off an immediate, large increase in investment.

8. In the 1950s, an antitrust suit against the single manufacturer of cellophane was correctly dismissed because the cellophane accounted for only a modest share of the market for flexible wrapping materials, even though the price of cellophane was very high. (4.9.1, Core 2000)

   False. One cannot use current price or market share to determine whether a firm is anti-competitive; it is better to use some measure of cost. The firm is anti-competitive only if it is restricting output.

9. Suppose it costs \$200,000 in present value to raise a child to age 19. The government is considering whether to provide \$15,000 to subsidize the college education of 18 year olds in order to increase

fertility and the number of children that are sent to college. An economist argues that this subsidy is too small relative to the $200,000 cost to either appreciably affect fertility or the number of children sent to college. (5.5.2, Core 2008)

Uncertain. It is likely to have a small e↵ect on the decision of new parents to have a kid since the $15,000 bonus comes 18 years in the future so its present value is small (about $5,000) so the savings are not that great. This would shift some people on the margin into having a kid, but not that many. It could have a much larger e↵ect on college attendance for those facing the decision. The two costs of college are the fees and forgone time. The fees are pretty large, and if young folks are credit constrained the bonus could lift many more into college.