

17. Emission controls on automobiles is an example of
- a Pigovian tax on automobiles, based on how much they pollute.
 - a command-and-control policy to increase social efficiency.
 - a policy that reduces pollution by allocating resources through market mechanisms.
 - a policy to reduce congestion on urban freeways.
18. According to the Coase theorem, private parties can solve the problem of externalities if
- the cost of bargaining is small.
 - the initial distribution of rights favors the person being adversely affected by the externality.
 - the number of parties involved is sufficiently large.
 - All of the above are true.
19. Pigovian taxes and pollution permits are similar in that
- in both cases, firms pay for their pollution.
 - both internalize the externality of pollution by making it costly to pollute.
 - each policy allows for a market-based solution.
- all of the above
 - (i) and (iii) only
 - (ii) only
 - (ii) and (iii) only
20. Producer surplus measures all of the following EXCEPT
- the amount sellers receive above the minimum they would accept.
 - the benefit to sellers of participating in a market.
 - the amount sellers are paid less the amount they were willing to accept.
 - the total value of a good to sellers.

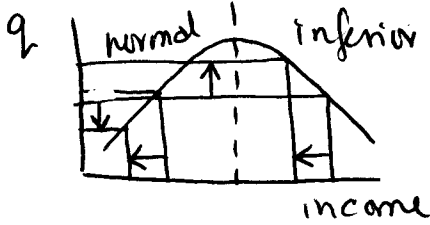
Short Answer Questions (5 point each). Use diagrams where appropriate.

1. Imagine that you are an economist in charge of economic analysis for the Environmental Protection Agency. A United States Senate Committee makes the following pronouncement: "Air pollution regulations are too severe. Their overall costs amount to more than society is collectively willing to pay for clean air. For example, every American car buyer should not have to pay more for their automobile so that residents of Los Angeles and Houston can enjoy cleaner air." Separate this statement into its normative and positive components and identify which part(s) your agency is willing to tackle through its research and which part(s) it should pass back to politicians to evaluate.

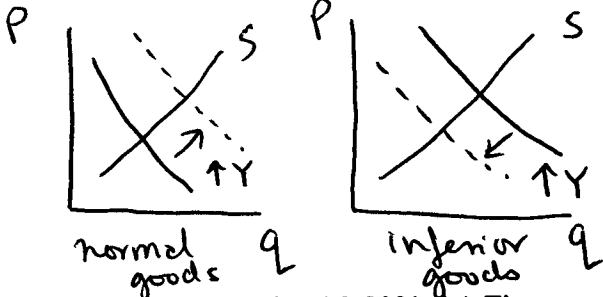
Whether or not "every American car buyer should not have to pay more for their automobile so that residents of Los Angeles and Houston can enjoy cleaner air" is a normative issue. It concerns the distributional consequences of a policy, which makes it an equity concern rather than an efficiency concern. The question of whether the costs of air pollution regulations are larger or smaller than the benefits of these regulations is a much more positive issue. We can go out and try to measure these costs, overall, and the benefits (willingness to pay for) these regulations. The Agency can and should address the positive question, but should leave the normative issues to be decided by the representatives of the people.

2. In an October 12, 2001, LA Times news item entitled "Discounters Help Sales Once Again," we learned that Wal-Mart Stores, Inc. and other "value-priced" retailers posted better-than-expected sales gains after September 11. "As expected, department stores, specialty apparel sellers and luxury goods merchants took the biggest hit...." Explain this phenomenon in terms of the economic concepts of "normal" and "inferior" goods, and use appropriate diagrams to illustrate what can be expected to happen to the quantities demanded from each of these two classes of retailers when household incomes are affected by world events.

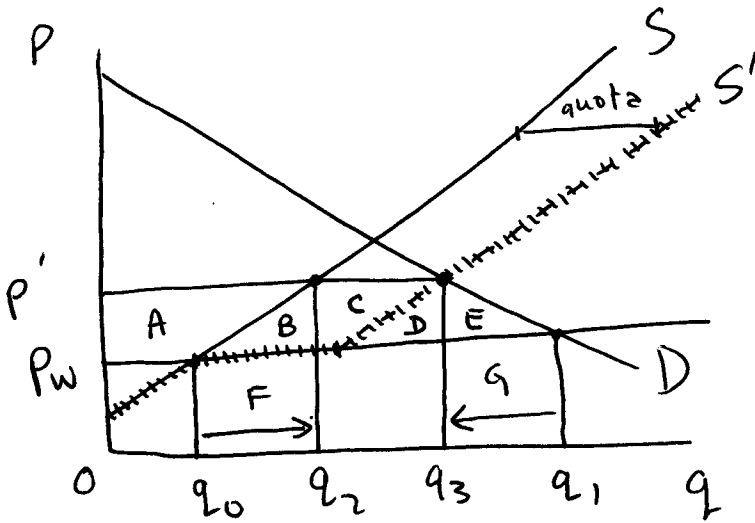
We talked about this in lecture. Normal goods are those goods for which demand decreases when income decreases (or increases when income increases). Inferior goods are goods for which demand increases when income decreases (or decreases as income increases). Normality or inferiority



is not an intrinsic property of any good, but a property of people's preferences for those goods. A higher proportion of the goods sold by Wal-Mart are viewed as "inferior" by many consumers -- They will shop less at Wal-Mart as incomes rise, but more as incomes fall. The other class of retailers sells more "normal" goods -- people will shop there more as incomes rise and less as incomes fall.



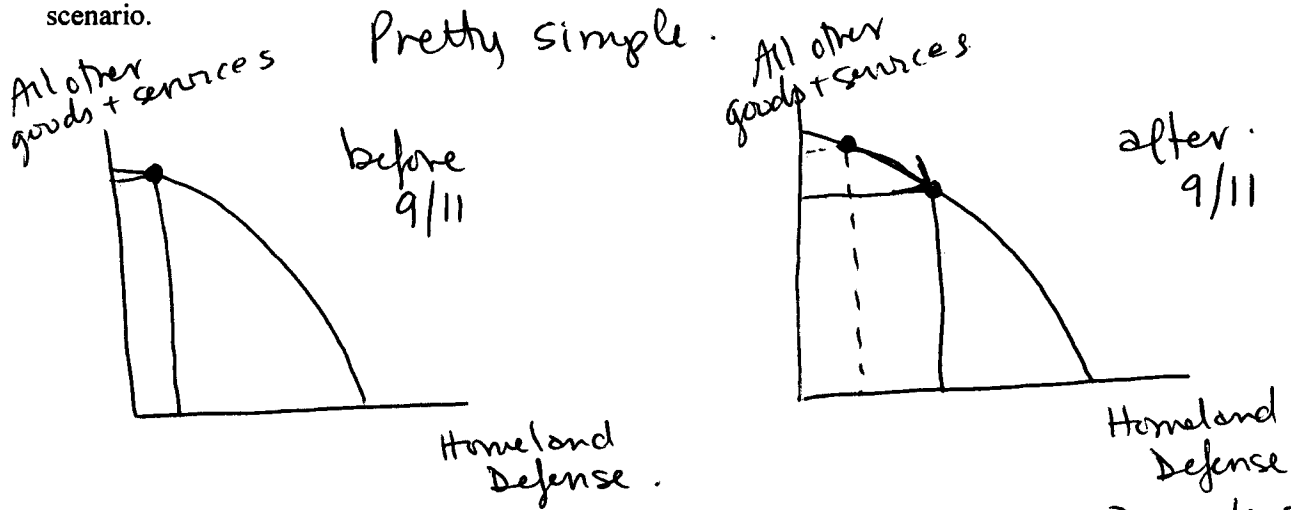
3. In an October 16, 2001, LA Times news item entitled "Bethlehem Steel Seeks Bankruptcy Protection," we learned that the U.S. steel industry cites cheap imports as one of the factors contributing to its hardships. Suppose that the "problem" of low-cost foreign steel is addressed by the US imposing an import quota on foreign steel. Use an appropriate diagram to illustrate who will gain and who will lose as a result of such a quota, and by how much. Will there be any "deadweight loss" associated with such a policy?



With free trade, the effective supply curve to domestic consumers coincides with the domestic S curve up to the world price, then it is horizontal at the world price P_w . With a quota, the horizontal section is only as wide as the quota, then additional demand will bid up the domestic price according to the domestic supply curve. The price will be bid up to P' . Only the

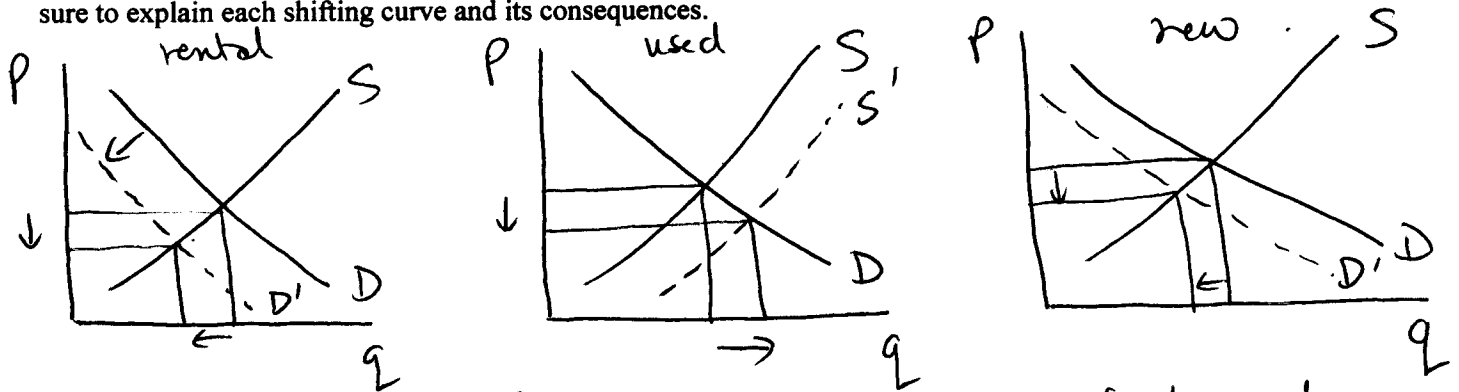
quote amount will be imported: $Q_3 - Q_2$. Domestic producers will gain surplus A . Domestic consumers will lose surplus $A + B + C + D + E$. Foreign suppliers will lose revenue $F + G$, but gain revenue $C + D$. Deadweight loss will be $B + E$. Compared to a tariff, $C + D$ is lost to foreign producers, rather than retained as tariff revenue by domestic government.

4. An October 15, 2001, story in the LA Times entitled "Defense of the Homeland Comes with Hefty Price Tag" notes that "...the new danger could pose shearing dilemmas for lawmakers, particularly local officials who may find themselves having to choose between school textbooks and firefighter gas masks." Using a production possibility frontier that summarizes the US's ability to produce "homeland defense" as opposed to "all other goods and services," explain the difference between the pre-September 11 scenario and the post-September 11 scenario.



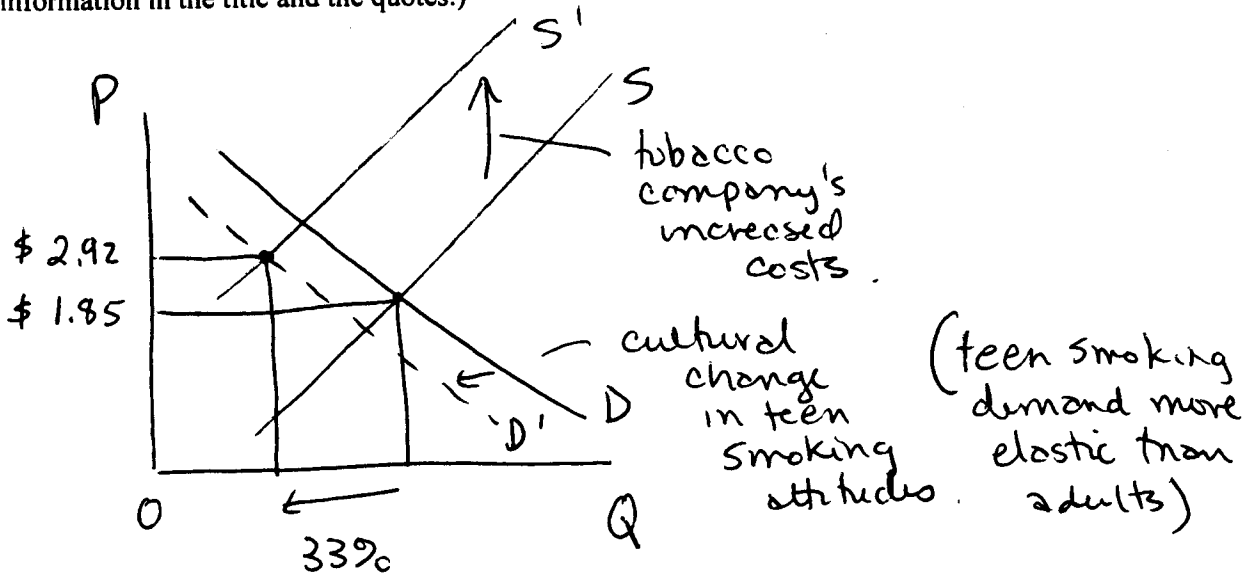
Same PPF exists before + after Sept 11, since there has been no change in available resources and minimal change in the technologies available to convert these factors of production into different outputs. We are merely opting to move to a different point on the PPF. We will have to give up something for more "Homeland Defense".

5. In an LA Times story of October 2, 2001, "Rental Car Firms Hit a Bumpy Road," the reporter points out that "the unexpected flow of rental vehicles into the resale market will have an impact on new-car sales." Use a series of three demand-supply diagrams, for the rental-car market, the used-car market, and the new-car market, to illustrate how responses to the events of September 11 have been propagated through these three markets. Be sure to explain each shifting curve and its consequences.

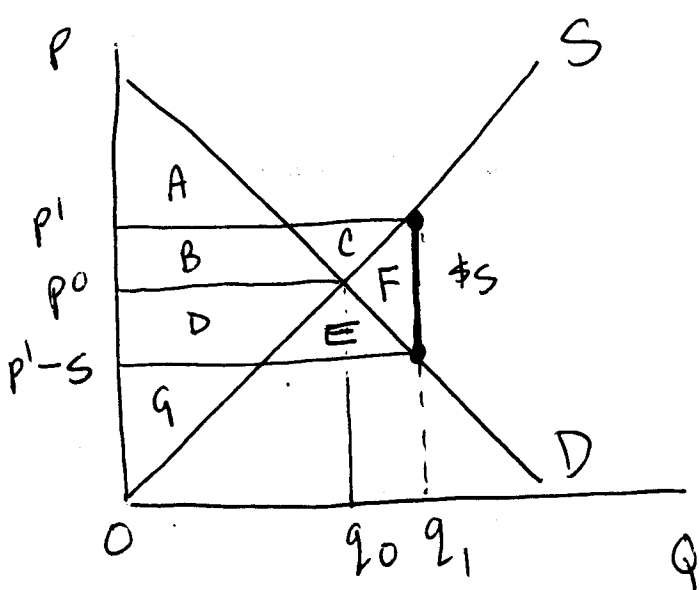


Here, we will look for your recognition of the first-round main effects. Less travel means a leftward shift in the demand for rental cars, decreasing the revenues of rental companies, who sell off vehicles in the used-car market, shifting supply of used cars to the right at all prices, driving down the prices of used cars, making them relatively cheaper compared to their substitute, new cars. Positive cross-price elasticities for substitutes mean that demand for new cars will shift leftward at all prices when used cars get cheaper. \Rightarrow lower prices and revenues for new car dealers too (in addition to lower demand from lower incomes)

6. An October 5, 2001, story in the LA Times was entitled "33% Drop in Teen Smoking: Two-year study finds significant decline. Experts cite cultural change, higher costs." In the story, it is reported that "In 1998, tobacco companies agreed to pay \$246 billion to settle lawsuits.... That contributed to higher prices." "The average price of a pack of cigarettes went from \$1.85 in the beginning of 1997 to \$2.92 at the end of 1999. Several studies have found that teens are particularly sensitive to the cost of cigarettes." Use a carefully labeled demand-supply diagram for the teen smoking market to illustrate (1) the effects of tobacco companies' increased costs, and (2) the additional impact of "cultural change" regarding attitudes by teens towards smoking. (Ensure that the overall effect on equilibrium prices and equilibrium quantities is as consistent as possible with the information in the title and the quotes.)



7. Challenging question: A subsidy per unit of production of some commodity can be viewed as the "opposite" of a tax, in that it "drives a wedge" between the price paid by consumers and the price received by sellers. But a subsidy means that the price received by sellers is larger than the price paid by buyers. An October 1, 2001, story in the LA Times, entitled "House May Weigh Strict Cap on Farm Subsidies" explain some serious flaws in the current U.S. agricultural subsidy program. Use an appropriate diagram to illustrate the consequences of a hypothetical per-unit subsidy of \$s on cotton output for (1) quantities of cotton produced, (2) selling prices of cotton, (3) consumer surplus, (4) producer surplus, and (5) the cost to the government of running the subsidy program. Be sure to identify the "deadweight loss" of such a program.



Subsidy increases eq^m output to Q_1 , raises seller's price to P_1 and lowers buyer's price to $P_1 - s$. Consumers surplus increases by $D + E$, Producers surplus increases by $B + C$. Sounds like a "win-win" situation, but the program cost society. ($\$s \times Q_1$) to run, which is area $B + C + D + E + F$. Area F represents deadweight loss from excessive production.