

UNIVERSITY OF CALIFORNIA, LOS ANGELES
Department of Economics

March 23, 2000

Cameron

Economics 1 – Final Examination Key

There are two different version of the examination:

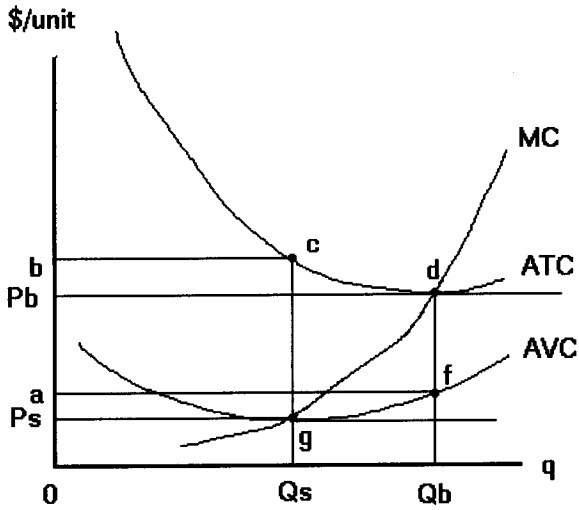
For Version 1, the first multiple choice question begins with: “Yellowstone National Park...”

For Version 2, the first question begins with: “In a perfectly competitive market,...”

	<u>Version 1</u>	<u>Version 2</u>
1.	a	a
2.	d	d
3.	b	b
4.	b	a
5.	a	d
6.	d	a
7.	d	d
8.	b	d
9.	a	d
10.	b	c
11.	c	a
12.	c	d
13.	a	b
14.	d	c
15.	d	b
16.	c	a
17.	d	c
18.	d	b
19.	a	c
20.	b	a
21.	c	a
22.	d	a
23.	a	b
24.	d	d
25.	a	c
26.	a	b
27.	b	a
28.	a	d
29.	b	d
30.	c	b

Essay questions: To save some time in preparing the computer graphics for this key, I have borrowed (or adapted) the relevant diagram from the corresponding lecture or the analogous diagram from the midterm key. A thorough answer will sometimes contain a little more detail than shown in these borrowed diagrams. I'm just cutting corners a little because it is so time-consuming to create the necessary .gif files, and I wanted to be able to post the key within an hour of the end of the exam.

1. Consider a competitive firm that uses a large amount of expensive capital and relatively little in the way of labor inputs to produce its product. Over the short run, a firm like this can withstand considerable variation in the price of its output without shutting down operations. True, False, Uncertain? Explain using appropriate diagram(s).

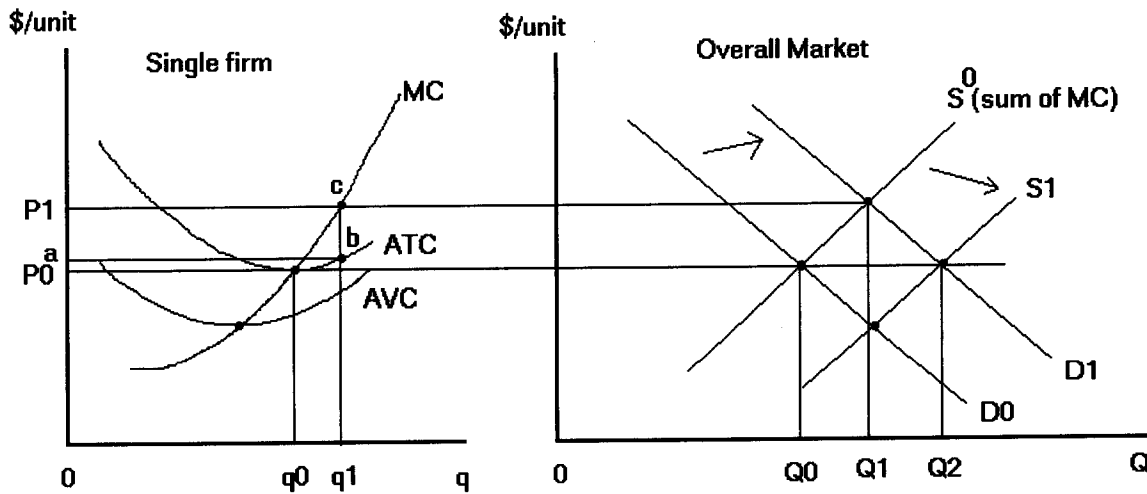


A firm with a large proportion of costs being fixed costs will have a relatively large interval between its “breakeven point” (P_b) and its “shutdown point” (P_s). Thus, the price picture can indeed get pretty bad before the firm will send the workers home in the short run and just bear its fixed costs.

Note that this firm’s fixed costs are given both by rectangle $bcg-P_s$ and rectangle P_b-dfa . If the ATC curve and AVC curve differ by FC/q , these areas have to be identical.

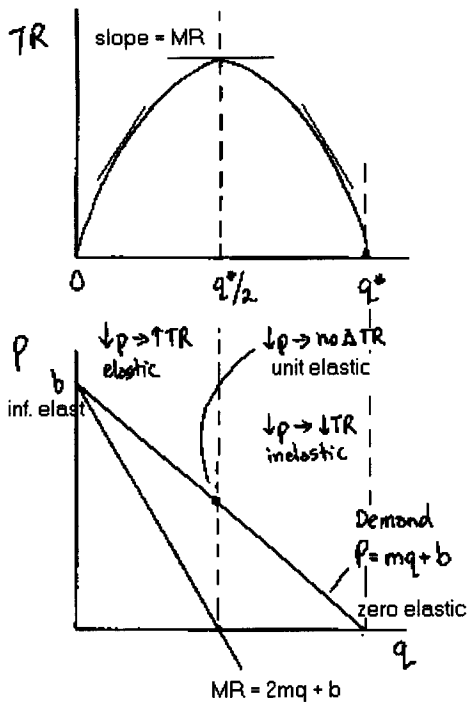
This firm will continue to produce in the short run as long as price is greater than or equal to P_s , which is a pretty low price, compared to its fixed costs.

2. Consider a competitive industry in equilibrium that experiences a sudden increase in market demand for its product. Explain what happens, to each firm and to the industry and market as a whole, as a new competitive equilibrium is established. Use appropriate diagram(s).



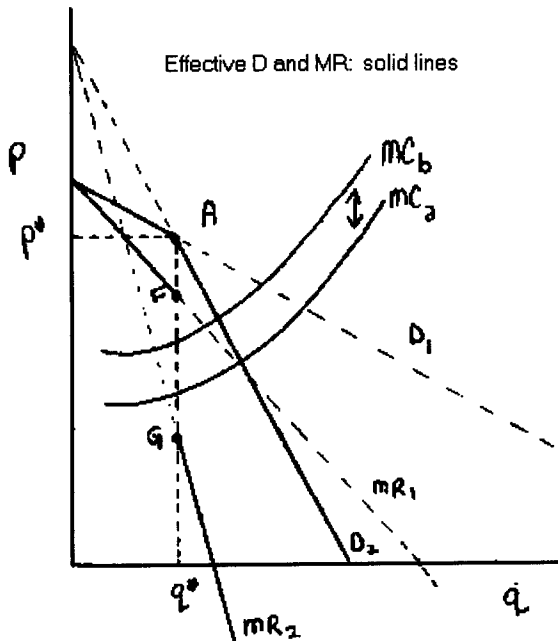
The initial long-run competitive equilibrium will have all firms just breaking even, with market price P_0 being equal to the minimum of their ATC curves. Economic profits will be zero so there will be no incentives for firms to enter or exit. The increase in demand shifts the market demand curve from D_0 to D_1 , driving the equilibrium price up to P_1 . At P_1 , each existing firm will profit maximize by producing q_1 and will earn profits equal to the area given by rectangle $abc-P_1$. These profits attract new firms to the industry, and new firms will continue to enter until the supply curve shifts out to the point where price is driven down to P_0 again, where there are no more profits acting to induce entry. When P_0 is reached again, each firm will be back to producing only q_0 , but there will be more firms in the industry, so that total output Q_2 is larger than the original total output Q_1 .

3. A monopolist will never produce a quantity of output that corresponds to the inelastic portion of the demand curve for its product. True, False, Uncertain? Explain using appropriate diagram(s).



For a monopoly to profit maximize in the portion of its demand curve where demand is inelastic, they would have to be in the “lower” half of the demand curve. This part of the demand curve corresponds to negative MR. The only way that MR could be equal to MC when MR is negative is if MC itself was also negative. It is hard to imagine a production process where the costs of production would be negative, so the monopolist will never profit maximize in the inelastic range of its demand curve. A really thorough answer would show a cost curve intersecting the MR curve below the horizontal axis for quantity.

4. In oligopoly markets, output and pricing decisions seem relatively insensitive to modest variations in production costs. This can be explained by each firm’s perception that other firms will match its price increases, but will not match its price decreases. True, False, Uncertain? Explain using appropriate diagram(s).



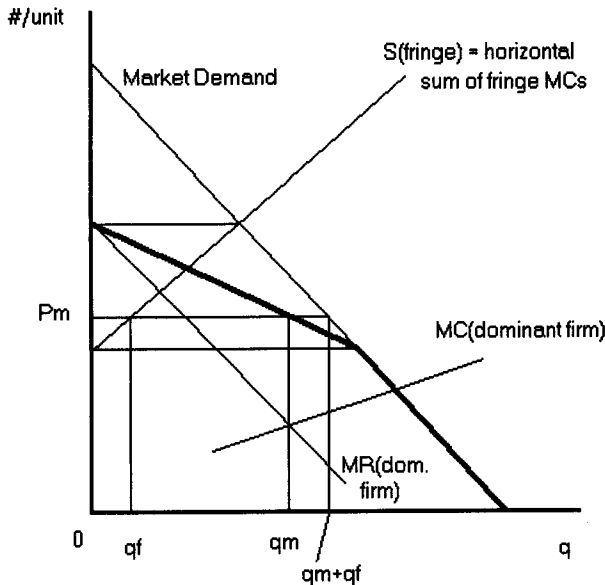
Start with a point like A, where a firm with some degree of monopoly power is profit maximizing. In contrast to what the question asserts, strategic behavior on the part of oligopoly firms suggests that if one firm raises its price, the others will not follow suit. This means that higher prices for this firm will cost it a lot of customers, since other firms retain their lower prices. Demand is relatively more elastic on the “up” side.

In contrast, if this firm lowers its price, it might think it could steal a lot of customers away from other firms which have not lowered their prices. However, other firms DO tend to match price decreases, so the demand response to this firm’s price decrease is much more modest than the response to their unilateral price increase.

This “kinked” demand curve goes along with a MR curve that has a vertical section between F and G. Marginal costs can vary rather extensively in this range without the firm changing its profit-maximizing quantity of output or the

price it charges for its product.

5. Monopoly and perfect competition are two opposite ends of the spectrum of market structures. Therefore, it is not possible for both “price-making” and “price-taking” behavior to co-exist in the same market. True, False, Uncertain? Explain using appropriate diagram(s).

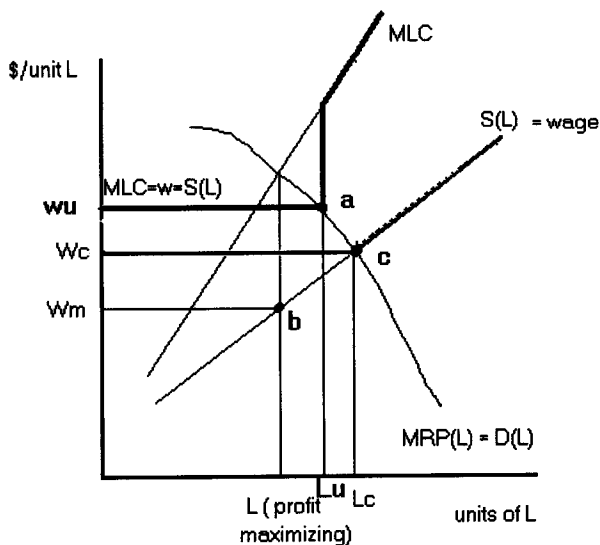


A “competitive fringe” of smaller, higher-cost firms is allowed to take as much of market demand as it is able to satisfy at each price. The remainder of market demand is “owned” by the dominant firm, which acts like a monopoly. The dominant firm decides upon an optimal output level by expanding output as long as its (lower) marginal costs are less than its MR. At quantity q_m , the dominant firm will set the monopoly price P_m . The rest of market demand is satisfied by the competitive fringe, which is willing to supply quantity q_f at price P_m . Quantities q_m plus q_f equal total market demand.

Thus, the dominant firm acts like a monopolist with respect to the remainder of the market after the competitive fringe has “done its worst.” The fringe firms then free-ride on the monopoly price established

by the dominant firm and supply however much they are willing to supply at that price (i.e. they set their outputs by adjusting q until $P_m = MC$ for each firm). We show the dominant firm having very much lower per-unit costs (like Saudi Arabia’s oil extraction costs, versus the U.S.’s).

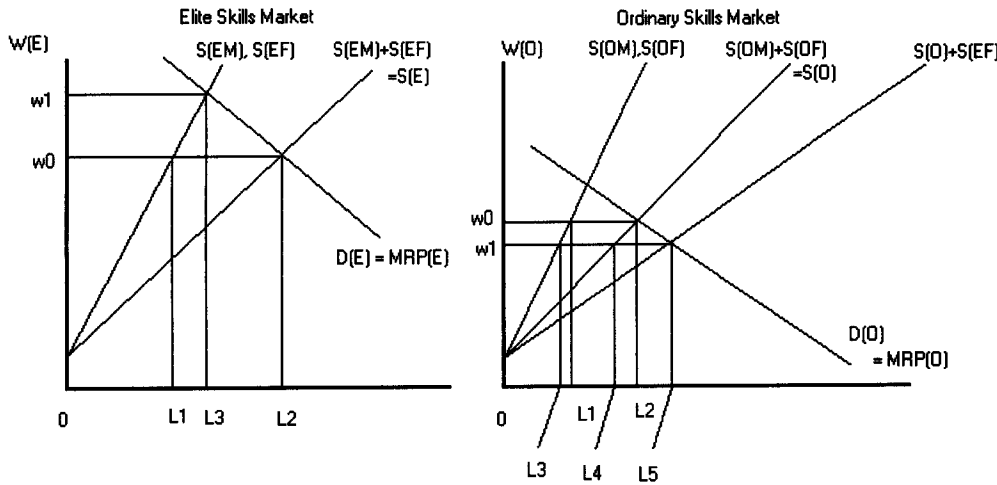
6. Monopsony wage-setting behavior by an employer in a one-company town can be offset by a workers’ union that sets a minimum wage. However, if the union overestimates what would have been the equilibrium wage if the labor market in this town had been competitive, workers will be unambiguously worse off than if the labor market had been competitive. True, False, Uncertain? Explain using appropriate diagram(s).



If the union sets a wage, w_u , that is higher than the competitive equilibrium wage, w_c , then the firm will employ a number of workers equal to L_u , according to point a, where $MLC = MRP$. If the labor market had been competitive, the wage would have been lower, at w_c , and the earnings of workers would have been rectangle w_c times L_c . Depending upon the elasticity of labor demand between points a and c, the earnings of workers could be larger or smaller at point a, with wage w_u but employment level lower at L_u . As with a minimum wage story, some workers are worse off at w_u than at w_c , if they are among the $L_c - L_u$ who are not working at the higher wage. Others who continue to work, however, will be better off. If earnings are higher at a than at b (e.g. if labor demand is inelastic), then maybe the winners could compensate the losers and

everybody would be better off. Without compensation, however, there are some winners and some losers.

7. Suppose that discrimination against one category of workers takes the form of exclusion of that type of worker from one labor market. They are forced to supply their labor services to some other market. In this case, the only effect of discrimination is that the earnings of that category of workers will be reduced. True, False, Uncertain? Explain using appropriate diagram(s).

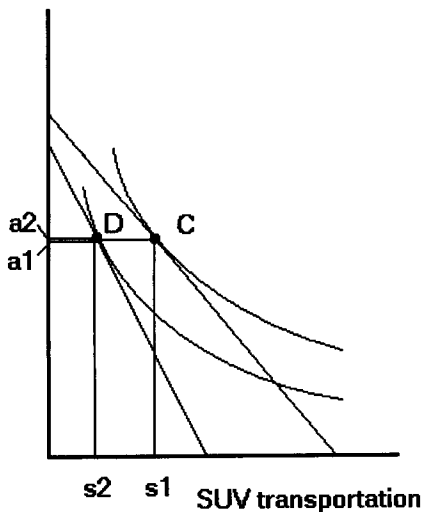


As in our lecture coverage of this topic, there are winners and losers from exclusionary discrimination. The excluded group does experience lower wages and earnings, but so do the original participants in the “receiving” labor market. The remaining employees in the market from which this category of workers is excluded

will benefit from a lesser total supply of labor in that market, since their wages, employment levels and incomes will all be higher.

8. “Gasoline prices have recently experienced sharp increases. As a result, we can expect that people’s preferences for automobiles will shift away from large sport-utility vehicles and toward smaller, more fuel-efficient cars.” Using the language of micro-economics, is this assertion correct? Be sure to differentiate between choices and preferences. Illustrate with appropriate diagram(s).

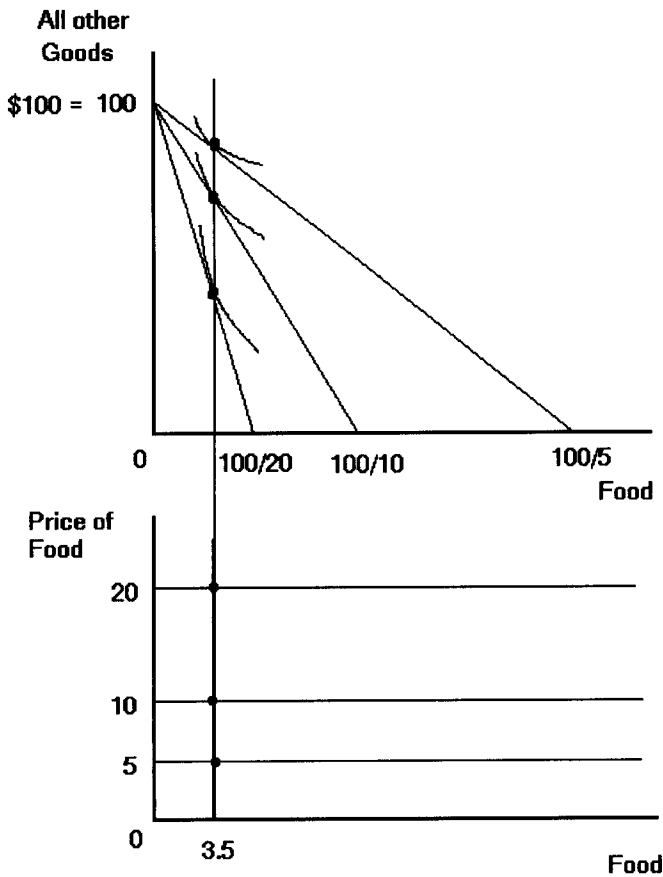
small auto transportation



Preferences interact with constraints to produce utility maximizing choices. If gasoline prices go up, less transportation of any kind will likely be consumed, because all kinds will become more expensive per unit. However, given their worse gas mileage, SUV transportation will get more expensive per mile than will smaller auto transportation. Consumer preferences for SUVs could remain completely unchanged (e.g. the same family of indifference curves could apply). However, now that SUV transportation has become relatively more expensive, people will substitute out of SUV transportation and into smaller auto transportation. Depending upon the configuration of preferences, the amount of smaller auto transportation could go up or down, but it is pretty unambiguous that SUV transportation will go down, since it has become more expensive.

Note that a2 could be larger or smaller than a1, depending upon the individual’s preferences. However, it is pretty clear that the slope of the budget constraint, $P(\text{SUV})/P(\text{auto})$ will increase, since SUV’s are get expensive to operate more quickly than do cars as fuel prices increase (because of their generally worse gas mileage).

9. In the very last lecture of the quarter, we looked at how an individual's demand curve for a particular good could be derived from his or her process of utility maximization subject to a budget constraint. We looked at inelastic, elastic, and unit elastic demand curves. Use a similar pair of diagrams to show the type of preference function (indifference curve map) that would be consistent with zero elastic demand for a good. Label the diagram carefully and describe its relevant features.



Zero elastic demand means that the price of the good changes, but nothing happens to the quantity demanded of that good.

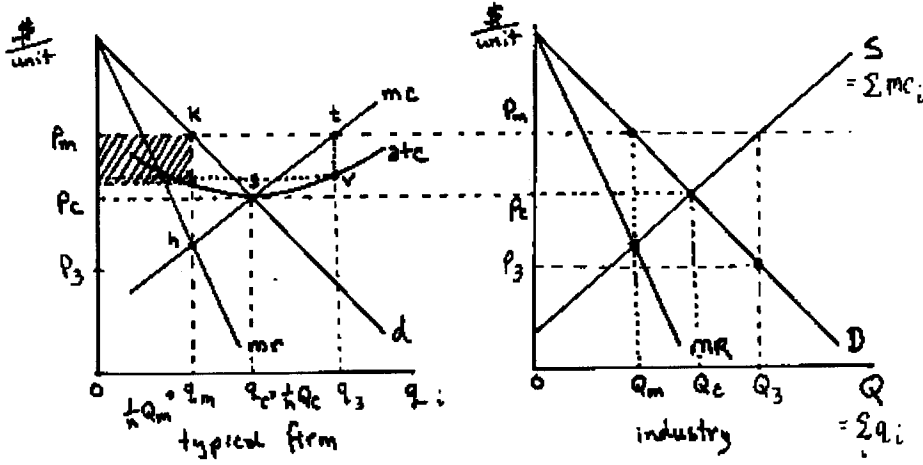
In the diagram, the price of food starts out at \$20, falls to \$10 and then to \$5. However, the quantity of food consumed remains constant at 3.5 units.

If quantity of food consumed remains constant, then all of the money freed-up as the price of food falls is spent on all other goods.

The price consumption path for zero elastic demand is a vertical line as well, with indifference curves being tangent to the expanding opportunity set boundary at a set of points that progress vertically upward.

10. A cartel is a fundamentally stable form of economic organization. True, False, Uncertain? Explain using appropriate diagram(s).

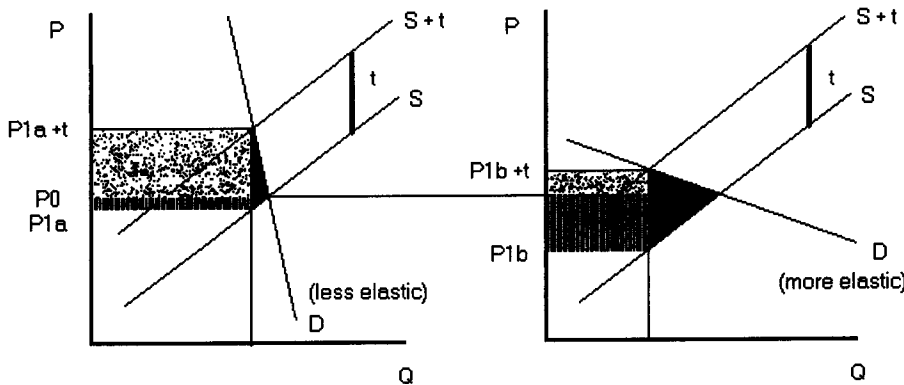
Cartel Model



Our lecture coverage of cartels used a simple model where the cartel consisted of n identical firms that originally operated as a competitive industry, with all firms earning zero profits. They get together and decide to act like a collective monopolist (i.e. to collude by restricting output via production quotas of $1/n$ of the entire market). When they recognize that this gives each of them an effectively downward-sloping demand

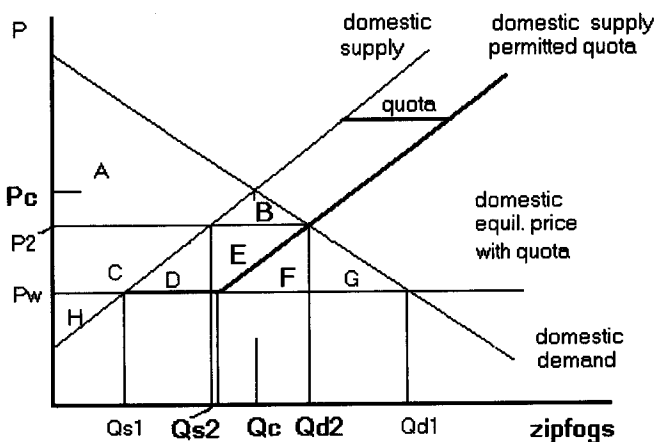
curve, they act like monopolists, setting outputs where $mc = mr$, and producing output q_m each. This allows them each to earn profits given by the shaded area. However, each is used to being a price-taking competitive firm. If they think that they can enjoy p_m by cheating on their quota, any one firm might decide to produce q_3 , which would be the competitive profit-maximizing output level if p_m was a competitive market price. This would let the firm earn an even greater profit (in the amount of rectangle with height t_v and base $0-q_3$). There is a profit incentive for firms to cartelize, but an even bigger profit incentive to cheat. Rampant cheating will cause the cartel to “break down,” at least until the members can get organized and cooperate again to restrict output and raise prices.

11. *Ceteris paribus*, if a per-unit tax is imposed on a good for which demand is relatively less elastic (rather than more elastic), the deadweight loss associated with the tax will be smaller, but the tax revenue collected will also be smaller. True, False, Uncertain? Explain using appropriate diagram(s).



A lot like a midterm question... The market with the less elastic demand is shown on the left. IN that market, the deadweight loss (black triangle) has a smaller area than the deadweight loss in the more-elastic case. However, the tax revenue in the less elastic case is larger, because there is less of a decrease in demand from the tax in that case.

12. Suppose that the opening of unrestricted international trade in zipfogs means that domestic consumers in Autarkia can now buy zipfogs at a lower price on the international market than the price they previously had to pay in the domestic market. Is everybody in Autarkia likely to be thrilled about cheap zipfogs? Autarkian zipfog producers successfully lobby for an import quota to restrict zipfog imports to one-third the amount that would be imported under free trade. Use two carefully labeled diagrams to explain (a) who wins and loses with the opening of free trade in zipfogs, and (b) who subsequently wins and loses with the imposition of the import quota on zipfogs.



Also a lot like a midterm question....The “closed economy” demand and supply for zipfogs would have been Q_c , with a corresponding price. The sum of consumer and producer surplus under no trade in zipfogs would have been $A+C+H$.

When trade opened, and the price moved to the “world price” at P_w , producer surplus shrinks to just triangle H, but consumer surplus grows to $A+B+C+D+E+F+G$. The net gain in total social surplus is $B+D+E+F+G$. Domestic consumers of zipfogs are thrilled with the new lower world price, but domestic suppliers have lost a lot of their consumer surplus and are selling not Q_c , but only

Q_{s1} of zipfogs.

A quota limited to $1/3$ of the amount that would be imported under free trade would be one-third the difference between Q_{d1} and Q_{s1} . I show this as the length of the line segment just under the B in the diagram...of length $Q_{d2}-Q_{s2}$. The quota limits the difference between domestic demand and domestic supply to just $1/3$ of $Q_{d1}-Q_{s1}$. This should look like about $1/3$ in your diagram for a complete answer.

This quota increases the domestic price to P_2 , thereby increasing producer surplus by area C and decreasing domestic consumer surplus by $B+D+E+F+G$. However, foreign sellers can now sell the limited quota amount in Autarkia at price P_2 , rather than at world price P_w , so they are better off, gaining $(Q_{d2}-Q_{s2})$ times (P_2-P_w) in revenues at the expense of domestic consumers. There is deadweight loss from this trade restriction as well. Areas D and G are lost to domestic consumers, and not gained either by domestic producers or foreign producers.

Optional Extra Credit Question (2 points)

13. Describe what is meant by the “efficiency” and the “equity” of a tax system and explain why these two issues can make changes in tax policy controversial.

As suggested at the end of lecture 9, we did not cover Chapter 12 in the textbook formally. However, since the stuff in this chapter is interesting and important, I suggested that an optional extra question on the final might let you show that you had read the chapter anyway. The following is pretty much what you could have culled from the chapter summary:

The efficiency of a tax system pertains to the costs that it imposes on taxpayers. The taxes themselves merely represent a transfer of resources from taxpayers to the government, so these resource are not “lost.” However, tax systems can be costly because of the way they distort the allocation of resources by creating incentives to allocate resources differently. There is also a substantial administrative burden upon taxpayers and others that is created by the activities necessary to comply with tax laws.

The equity of a tax system concerns whether the burden of the tax is distributed “fairly” in the population. According to the benefits principle, it is fair for people to pay taxes based on the benefits they receive from the government. According to the ability-to-pay principle, it is fair for the people who can best afford the taxes to pay relatively more of them. Tax incidence is an important dimension of taxation. As Mankiw points out, “the distribution of tax burdens is not the same as the distribution of tax bills.”

Debate over changes in tax policy often has to do with people placing different emphasis on the competing goals of tax efficiency and tax equity.