

## **Advanced Critical Thinking**

### **Chapter 1**

*Suppose your university decides to lower the cost of parking on campus by reducing the price of a parking permit from €100 per semester to €5 per semester.*

1. What do you think would happen to the number of students desiring to park their cars on campus?

Answer: More students would wish to park on campus.

2. What do you think would happen to the amount of time it would take to find a parking place?

Answer: It would take much longer to find a parking place.

3. Thinking in terms of opportunity cost, would the lower price of a parking permit necessarily lower the true cost of parking?

Answer: No, because we would have to factor in the value of our time spent looking for a parking place

4. Would the opportunity cost of parking be the same for students with no outside employment and students with jobs earning €15 per hour?

Answer: No. Students that could be earning money working are giving up more while looking for a parking place. Therefore, their opportunity cost is higher.

### **Chapter 2**

*Suppose you are watching a news programme on television. During the programme there is a discussion of the pros and cons of free trade. For balance, there are two economists present - one in support of free trade and one opposed. Your flatmate says, "Those economists have no idea what's going on. They can't agree on anything. One says free trade makes us rich. The other says it will drive us into poverty. If the experts don't know, how is the average person ever going to know whether free trade is best?"*

1. Can you give your roommate any insight into why economists might disagree on this issue?

Answer: Economists may make different scientific judgments. Economists may have different values. There may not really be much disagreement because one of the economists on the programme may be one of a small minority while the majority of economists may actually agree.

2. Suppose you later discover that 93 percent of economists believe that free trade is generally best. Could you now give a more precise answer as to why economists might disagree on this issue?

Answer: Those opposed to free trade are likely to have different values than the majority of economists. There is not much disagreement on this issue among the mainstream economics profession.

3. What if you later discovered that the economist opposed to free trade worked for a trade union. Would that help you explain why there appears to be a difference of opinion on this issue?

Answer: Yes. It suggests that impediments to international trade may benefit some groups (organized labour) but these impediments are unlikely to benefit the public in general. Supporters of policies to restrict free trade are promoting their own interests.

### Chapter 3

*Suppose you are watching a news programme on television. It's reported that some European politicians have been arguing in favour of quotas to limit imports of textiles into the EU.*

1. Is it likely that the EU will be better off if textile imports are limited by quotas? Explain.

Answer: No. If the EU imports textiles, it is because the opportunity cost of producing them elsewhere is lower than in the EU.

2. Will anyone in the EU be better off if textile imports are limited? Explain.

Answer: Yes. Those associated with the domestic textile industry — shareholders of domestic textile producers and textile workers.

3. In the real world, does every person in a country gain when restrictions on imports are reduced? Explain.

Answer: No. When we reduce restrictions on imports, the country gains from the increased trade but individuals in the affected domestic industry may lose.

### Chapter 4

*Suppose you are chatting to a friend in Brazil on the internet. Your friend tells you that the weather is forecast to be really cold in the next few weeks and the frost that's expected will damage the coffee crop. Your friend says, "If there are going to be fewer coffee beans available, I'll bet that coffee bean prices will rise. We should buy enormous quantities of coffee beans now and put them in storage. Later we will sell them and make a huge profit."*

1. If this information about the weather is publicly available so that all buyers and sellers in the coffee bean market expect the price of coffee beans to rise in the future, what will happen immediately to the supply and demand for coffee beans and the equilibrium price and quantity of apples?

Answer: Sellers reduce supply (supply shifts left) in the hope of selling coffee beans later at a higher price and buyers increase demand (demand shifts right) in the hope of buying coffee beans now before the price goes up. The price will immediately rise and the effect on the quantity exchanged is ambiguous.

2. Can you "beat the market" with public information? That is, can you use publicly available information to help you buy something cheap and quickly sell it at a higher price? Why or why not?

Answer: No. Usually the market immediately adjusts so that the price has already moved to its new equilibrium value before the amateur speculator can make his or her purchase.

3. Suppose the expected frost in Brazil is not reported outside of Brazil. Can you "beat the market" with inside information? Why?

Answer: Yes. In this case, you can make your purchase before the market responds fully to the information about the weather. Coffee bean prices will probably rise somewhat straight away, as those with access to the information respond, but they will rise further when the information becomes known to all market participants.

## Chapter 5

In order to reduce smoking, the government places an additional tax of £2 per pack on cigarettes. After one month, while the price to the consumer has increased a great deal, the quantity demanded of cigarettes has been reduced only slightly.

1. Is the demand for cigarettes over the period of one month price elastic or price inelastic?

Answer: Inelastic.

2. Suppose you are in charge of pricing for a tobacco firm. The chief executive of your firm suggests that the evidence received over the last month demonstrates that the cigarette industry should get together and raise the price of cigarettes further because total revenue to the tobacco industry will certainly rise. Is the president of your firm correct? Why?

Answer: Not necessarily. Demand tends to be more price elastic over longer periods. In the case of cigarettes, some consumers would substitute toward cigars and pipes. Others would smoke less or give up smoking altogether. And some people who would have started to smoke in the future would not do so.

3. As an alternative, suppose the chief executive of your tobacco firm suggests that your firm should raise the price of your cigarettes independent of the other tobacco firms because the evidence clearly shows that smokers are insensitive to changes in the price of cigarettes. Is the president of your firm correct if it is his/her desire to maximize total revenue? Why?

Answer: No. While the demand for cigarettes (the market broadly defined) may be inelastic, the demand for any one brand (market narrowly defined) is likely to be much more elastic because consumers can substitute toward other lower priced brands.

## Chapter 6

*Suppose that the government needs to raise tax revenue. A politician suggests that the government place a tax on food because everyone must eat and, thus, a food tax would surely raise a great deal of tax revenue. However, since the poor spend a large proportion of their income on food, the tax should be collected only from the sellers of food (grocery stores) and not from the buyers of food. The politician argues that this type of tax would place the burden of the tax on corporate grocery store chains and not on poor consumers.*

1. Can the government legislate that the burden of a food tax will fall only on the sellers of food? Why or why not?

Answer: No. The tax burden is determined by the price elasticities of supply and demand. The burden of a tax falls most heavily on the side of the market that is less price elastic. That is, the burden is on the side of the market least willing to leave the market when the price moves unfavourably.

2. Do you think the burden of a food tax will tend to fall on the sellers of food or the buyers of food? Why?

Answer: The burden will fall most heavily on the buyers of food regardless of whether the tax is collected from the buyers or the sellers. Food is a necessity and therefore the demand for food is relatively inelastic. When the price rises due to the tax, people still must eat. Grocery chains can sell another product line when the price they receive for food falls due to the tax.

## Chapter 7

*Suppose you are having an argument with your flatmate about whether the EU should subsidize the production of food. Your roommate argues that since food is something that is unambiguously good (unlike alcohol and tobacco) we simply cannot have too much of it. That is, since food is clearly good, having more of it must always improve our economic well-being.*

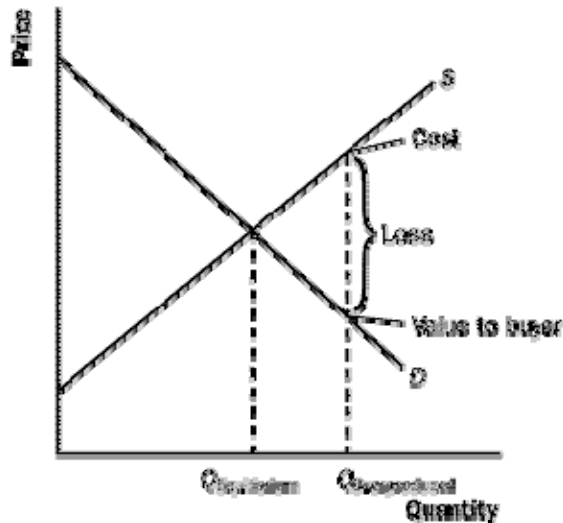
1. Is it true that you cannot have too much of a good thing? Conversely, is it possible to overproduce unambiguously good things such as food, clothing, and shelter? Why?

Answer: You can have too much of a good thing. Yes, any good with a positive cost and a declining willingness to pay from the consumer can be overproduced. This is because at some point of production, the cost per unit will exceed the value to the buyer and there will be a loss to total surplus associated with additional production.

2. In Exhibit 5, demonstrate your answer to question (1) above with a supply and demand graph for food by showing the impact on economic well-being of producing quantities in excess of the equilibrium quantity.

Exhibit 5

Answer:



## Chapter 8

*Suppose you live in a country whose government has a budget deficit of €100 million. Since the government currently collects exactly €100 million from its 5 percent sales tax, your flatmate says, "I can tell them how to fix their deficit. They should simply double the sales tax to 10 percent. That will double their tax revenue from €100 million to €200 million and provide the needed €100 million."*

1. Is it true that doubling a tax will always double tax revenue? Why?

Answer: No. Usually an increase in a tax will reduce the size of the market because the tax will increase the price to buyers causing them to reduce their quantity demanded and decrease the price to sellers causing them to reduce their quantity supplied. Therefore, when taxes double, the government collects twice as much per unit on many fewer units so tax revenue will increase by less than double and tax revenue could, in some extreme cases, even go down.

2. Will doubling the sales tax affect the tax revenue and the deadweight loss in all markets to the same degree? Explain?

Answer: No. Some markets may have extremely elastic supply and demand curves. In these markets, an increase in a tax causes market participants to leave the market and little revenue is generated from the tax increase but deadweight loss increases a great deal. Other markets may have inelastic supply and demand curves. In these markets, an

increase in a tax fails to cause market participants to leave the market and a great deal of additional tax revenue is generated with little increase in deadweight loss.

## Chapter 9

*You are watching the nightly news during an election campaign in which trade policy has been a big issue. A member of the public being interviewed says, "I'm for free trade, but it must be fair trade. If our foreign competitors will not raise their environmental regulations, reduce subsidies to their export industries, and lower tariffs on their imports of our goods, we should retaliate with tariffs and import quotas on their goods to show them that we won't be played for fools!"*

1. If a foreign country artificially lowers the cost of production for its producers with lax environmental regulations and direct subsidies and then exports the products to us, who gains and who loses in our country, producers or consumers?

Answer: Consumers gain, producers lose.

2. Continuing from question 1 above, does our country gain or lose? Why?

Answer: Our country gains because the gains of the consumers exceed the losses of the producers.

3. If a foreign country subsidizes the production of a good exported to our country, who bears the burden of their mistaken policy?

Answer: The taxpayers of the foreign country.

4. What happens to our overall economic well-being if we restrict trade with a country that subsidizes its export industries? Explain.

Answer: Producers gain, consumers lose, but consumers lose more than producers gain so total surplus is reduced and there is a deadweight loss. The result is no different than restricting trade when the foreign producer has no unfair advantage.

5. Is there any difference in the analysis of our importation of a good sold at the cost of production or sold at a subsidized price? Why?

Answer: No. In either case, the world price is lower than the before-trade domestic price, causing consumers to gain and producers to lose from trade. Also, restrictions on trade cause consumers to lose more than producers gain whether the production of the good was subsidized or not.

6. Is it a good policy to threaten trade restrictions in the hope that foreign governments will reduce their trade restrictions? Explain.

Answer: Usually not. If the other country fails to give in to the threat, the threatening country has to choose between backing down and reducing trade—neither of which is desirable.

## Chapter 10

*Suppose you are at home for a semester break. A letter in your local newspaper catches your attention. The letter is about a deduction in local property tax that can be claimed by a property owner if he or she has done anything to beautify his/her property. The property owner can deduct 50 per cent of any expenditure on things such as landscaping from his/her property taxes. For example, if your parents spent €2000 on landscaping their garden, they can reduce their tax bill by  $0.50 \times €2000 = €1000$  so that the effective cost of the landscaping would be only €1000. The letter in the newspaper claims: "This an outrage. If someone wants to improve their house, it is no one's business but their own. I remember some of my college economics and I know that taxes and subsidies are always inefficient."*

1. What is the local government trying to subsidize with this tax break?

Answer: Expenditures on home improvement.

2. What is the externality that this subsidy is trying to internalize?

Answer: When a house is well maintained, it raises the value (or fails to reduce the value) of the nearby property. Individual buyers and sellers in the market for home repair do not take this into account when choosing the quantity of home repair and, thus, the optimal quantity exceeds the equilibrium quantity.

3. While taxes and subsidies usually create inefficiencies, are taxes and subsidies always inefficient? Why?

Answer: No. Appropriate Pigovian taxes and subsidies move a market closer to efficiency because the market equilibrium is inefficient to begin with.

## Chapter 11

*Broadcast television and broadcast radio send out signals that can be received by an infinite number of receivers without reducing the quality of the reception of other consumers of the signal and it is not possible to charge any of the consumers of the signal.*

1. What type of good (private, public, common resource, produced by a natural monopoly) is a broadcast television or broadcast radio signal? Explain.

Answer: Public good. A broadcast signal is not rival and not excludable.

2. Are goods of this type normally provided by private industry? Why?

Answer: No, because it is not profitable to produce a good for which non-payers cannot be excluded from consuming it.

3. Private companies have been providing broadcast radio television and radio since the invention of the medium. How do they make it profitable if they cannot charge the recipient of the signal?

Answer: Broadcasters charge advertisers for the commercials they show during the broadcasters' programming. That is why it is called commercial television or commercial radio.

4. What are the "recent" alternatives to traditional commercial television and commercial radio?

Answer: Cable television, pay-per-view television, and cable music included with cable television.

## Chapter 12

*You are having a political debate with a friend. The discussion centres on taxation. You show your friend some data from your economics textbook that suggests that the average citizen paid about €10,000 in tax in 2005. Your friend says, "If €10,000 per person is what it takes to run this country, then I think that it would be much simpler if we just billed each citizen €10,000 and eliminated the complex tax system."*

1. What type of tax is your friend suggesting? What is its appeal?

Answer: Lump-sum tax. It is the most efficient tax—its marginal rate is zero so it does not distort incentives, and it imposes the minimum administrative burden.

2. Is this type of tax supported by the "benefits principle" of tax equity? Explain.

Answer: No, if some people benefit more from public services such as health care, police and education, they should pay more in taxes, and those who benefit less should pay less.

3. Is this type of tax supported by the "ability-to-pay" principle of tax equity? Is it vertically equitable? Is it horizontally equitable?

Answer: No, wealthy people have a greater ability to pay. Therefore, it is not vertically equitable. However, it is horizontally equitable in that people with the same ability to pay are paying the same amount because all pay the same amount.

4. Since your friend agrees that the tax she suggested is not equitable, she now suggests that we simply tax rich corporations since they can clearly afford it and then people wouldn't have to pay any taxes. Is she correct? Who would actually pay the taxes? Explain how she mistakenly employed the flypaper theory of taxation.

Answer: No, only people pay taxes—corporations collect taxes. The taxes are paid by the owners, workers, and customers of the corporations. The flypaper theory of taxation mistakenly says that burden of a tax is on the person or company from whom the taxes are collected.

## Chapter 13



*Your friend has a large garden and grows fresh fruit and vegetables to be sold at a local "farmer's market." Your friend comments, "I hired a college student who was on summer vacation to help me this summer and my production more than doubled. Next summer, I think I'll hire two or maybe three helpers and my output should go up more than three- or fourfold."*

1. If all production processes eventually exhibit diminishing marginal product of the variable inputs, could it be true that your friend hired a helper (doubled the labour) and more than doubled his production? Why?

Answer: Yes. Many production processes first exhibit increasing marginal product of the variable inputs (in this case, workers). This result may occur due to specialization of labour. After the second worker is hired, for example, one worker specializes in weeding while the other specializes in watering.

2. Is it likely that he could hire more workers and continue to reap greater than proportional increases in production? Why?

Answer: No. At some point, if any input is fixed (say the size of the garden) the firm will experience diminishing marginal product of the variable inputs. That is, at some point, the garden will become crowded and additional workers will add smaller and smaller amounts to output.

3. In the long run, what must your friend do to the scale of his operation if he wants to continue to hire workers and have those workers generate proportional increases in production? Explain. Even in the long run, could your friend expand his scale of operation forever and continue to keep average total costs at a minimum? Explain.

Answer: Your friend must increase the scale of operation. It is likely that the garden is small enough that the firm would experience economies of scale if it increased its scale of operation by expanding the size of the garden and hiring more workers. No, your friend cannot expand his scale of operation forever because, at some point, the firm becomes so large that it develops coordination problems and the firm experiences diseconomies of scale.

## **Chapter 14**

*In some places it is common for large supermarkets to stay open 24 hours a day.*

1. Suppose you walk into a large supermarket at 2 am with a friend to buy some blank CD-Rs. Your friend says, "I can't believe that these stores stay open all night. Only one out of fifteen checkout lines is open. There can't be more than ten shoppers in this store. It just doesn't make any sense for this store to be open all night." Explain to your friend what conditions must be true for it to be to the advantage of the supermarket to stay open all night.

Answer: For the supermarket to stay open all night (and not undertake a temporary shut down) it must be true that its total revenue at night must equal or exceed its *variable costs*

incurred from staying open for the additional hours (electricity, wages of night shift workers, etc).

2. Are the costs of rent, equipment, fixtures, salaries of management, and so on, relevant when the supermarket makes the decision whether to stay open at night? Why?

Answer: No. These costs are fixed costs or sunk costs — costs that cannot be recovered even if the supermarket chooses not to operate at night.

3. If the supermarket had the same number of customers during its daytime hours as you observed during its nighttime hours, do you think it would continue to operate? Explain.

Answer: It is unlikely. This is because the temporary shut-down decision (staying open additional hours at night) depends on whether total revenue equals or exceeds *variable costs*, but the decision to remain in the market in the long-run depends on whether total revenue equals or exceeds *total costs*. It is unlikely that the revenue earned at night covers total costs (both fixed and variable costs).

## Chapter 15

*Suppose you are watching a television business programme. A consumer advocate is discussing the airline industry. He says, "There are so many rates offered by airlines that it is technically possible for a 747 to be carrying a full load of passengers where no two of them paid the same price for their tickets. This is clearly unfair and inefficient." He continues, "In addition, the profits of the airlines have doubled in the last few years since they began this practice and these additional profits are clearly a social burden. We need legislation that requires airlines to charge all passengers on an airplane the same price for their travel."*

1. List some of the ways airlines divide their customers according to their willingness to pay.

Answer: Airlines segment people by age (young and old fly cheaper), by location (more competitive routes are cheaper), by length of time between leaving and returning (tourists fly cheaper than business travelers), by length of time of advance booking (later bookings can be more expensive until the very last minute when it may become cheaper again) and so on.

2. Is it necessarily inefficient for airlines to charge different prices to different customers? Why?

Answer: No. Price discrimination can improve efficiency. By charging buyers their willingness to pay, the monopolist increases production to the point where all units are produced where the value to buyers is greater than or equal to the cost of production.

3. Is the increase in profits generated by this type of price discrimination a social cost? Explain.

Answer: No. Some of the additional profits are from the creation of additional surplus that accrues entirely to the producer and some of the profits are a redistribution of surplus from consumer surplus to producer surplus.

## Chapter 16

Suppose you are reading your local newspaper. An advertisement says in large letters: "Come on down to Warehouse Electronics. We've got deals so great you won't believe it! National brand 13-inch colour television sets for €99. The price is so low that we can't tell you the name of the manufacturer!"

1. Why would Warehouse Electronics be unable to reveal the name of the manufacturer when it advertises its television sets for an unusually low price?

Answer: The manufacturer may be engaging in "resale price maintenance" or "fair trade" practices with its retailers (including Warehouse Electronics). This may restrict the retailer's right to advertise a price below the suggested retail price for the product.

2. Although this activity appears like price fixing, is the objective of this practice to reduce competition? Why?

Answer: No, because any reduction in competition at the retail level generates market power for the retailer and fewer units will be sold. This is not in the interest of the manufacturer.

3. Why would the manufacturer place this type of restriction on the retailers that sell its products?

Answer: The purpose is to stop discount retailers from free riding on the services provided by full service retailers—retailers with a knowledgeable sales force, a repair shop, and so on.

## Chapter 17

*Suppose you are watching a sporting event on television. An advertisement featuring Tiger Woods (a famous golfer) is broadcast during a commercial break. In the advertisement, Tiger Woods does nothing but hit golf balls. He never speaks. There is no written copy. At the end of the advertisement, the Nike "swoosh" appears on the screen along with the words "Nike Golf." A short time earlier, you read in a newspaper that Tiger Woods received \$40 million to be the spokesperson for Nike golf equipment.*

1. A friend watches the Nike advertisement with you and says, "What a waste of society's resources. I didn't learn anything about Nike golf equipment from that ad. I think there should be government regulations requiring ads to be informative in some way." Explain to your friend what you did learn from Tiger Wood's presence in this advertisement.

Answer: Viewers learned that Nike was willing to spend an enormous amount of money to promote their new line of golf equipment. This signals that their market research suggests that they have a high quality product that will generate repeat sales.

2. Did the use of the Nike name and Nike "swoosh" provide any information? Explain.

Answer: Yes. The use of the brand name provides information that the product is of high quality and that the firm has incentive to maintain high quality. Nike is a multibillion-dollar company that would not want to risk losing existing sales of shoes and athletic ware by marketing poor quality golf equipment marked with the Nike brand name.

3. In general, does advertising tend to decrease competition and raise prices to consumers or increase competition and reduce prices to consumers? Why?

Answer: Advertising tends to increase competition and decrease prices to consumers because it often provides information about prices, the existence of new products, the location of retail outlets, and it provides new firms with the means to attract customers from existing firms.

## Chapter 18

*Suppose you are watching a debate about immigration on television with a friend. The participants represent two camps – trade unions and corporate industry. The trade union representative argues against increased immigration while the industry representative argues in favour. Your friend says, "I can't believe that these two groups can't get together on this issue. Both firms and workers join forces to produce our industrial output. I would think that their interests would be similar. Maybe a better arbitrator could help these groups find a position on immigration that would satisfy both groups."*

1. If there were increased immigration, what would happen to the value of the marginal product of labour and the wage?

Answer: Labour would become less scarce so the value of the marginal product of labour would decrease and so would the wage.

2. If there were open immigration, what would happen to the value of the marginal product of capital and land and their rental rates?

Answer: Additional labour could be applied to capital and land, which would increase the value of the marginal product of capital and land and increase their rental rates.

3. Are the positions that each group takes on immigration consistent with their interests? Explain. Is there likely to be a solution that satisfies both?

Answer: Yes. The workers' side wishes to keep the wage of labour high so it hopes to restrict immigration. Corporate interests wish to raise the return to capital and land so it hopes to allow open immigration. No, there is no solution that is likely to satisfy both sides.

## Chapter 19

*Suppose you are at a political rally. A speaker states that working women earn about 60 cents for each euro that working men earn. The speaker says, "This is clearly evidence of employers' discrimination against women. This gap between the earnings of men and women will never close because the professions women tend to choose are traditionally*

*low paying and the professions men choose are traditionally high paying. I demand that the government create a panel to decide what jobs should pay so that people of similar skills and education earn the same amount."*

1. Suppose a secretary and a truck driver are judged to require the same level of education and skills, yet a secretary earns €30,000 while a truck driver earns €40,000. What would happen to the quantities supplied and demanded in the market for secretaries and truck drivers if the wage for these professions were set by law at €35,000?

Answer: There will be a surplus of secretaries and a shortage of truck drivers. That is, it will increase the quantity supplied of secretaries and decrease the quantity demanded while it will decrease the quantity supplied of truck drivers and increase the quantity demanded.

2. What would happen to the level of effort and natural ability of the workers available in each market? What would happen to the quality of work generated in each market?

Answer: Hardworking, high-ability workers would avoid the truck driving market and the quality of truck driving would be reduced. Hardworking and high-ability workers would be attracted to the secretary market and the quality of secretarial services would be increased.

3. Suppose it is true that the skills and education required to do each job are, in fact, nearly identical. What explanation would an economist likely propose to explain why the equilibrium wage differs by €10,000 across these markets?

Answer: An economist would argue that €10,000 is the compensating differential necessary to get someone to undertake the disagreeable nature of truck driving — working alone, overnight travel away from home, less clean and less safe work environment, etc.

## Chapter 20

*Suppose a friend comments to you, "I think welfare recipients are simply lazy spendthrifts. I have a friend who receives Temporary Benefit for Needy Families and when she was offered a part-time job, she turned it down."*

1. What tends to happen to a benefit recipient's benefits if they increase their earnings?

Answer: They tend to lose benefits at a very high rate.

2. What is the effective tax rate on their additional income if they were to lose €1 in benefits for each euro of additional income?

Answer: The tax rate would be 100 per cent on the additional income, and could be more than this if they also pay income tax on the additional income.

3. How does this system affect a benefit recipient's incentive to work? Is a benefit recipient necessarily lazy if they turn down a part-time job?

Answer: Once one is on benefit, there may be little or no incentive to work. Once on benefit, a person need not be lazy to remain on it. It may be rational to remain on benefit if every time a person makes a euro, the person loses a euro in benefits.

## Chapter 21

*Suppose Marc and Nathalie both buy only two goods: food and wine. Consider what happens to their purchasing behaviour when the price of food falls.*

1. It is observed that if the price of food falls, then Marc buys more food and more wine? Explain why this happens.

Answer: If the price of food falls then food becomes cheaper relative to wine and Marc will substitute additional food for some of the wine he was previously buying. But the fall in the price of food increases Marc's real income. (The purchasing power of the Marc's income is increased.) So Marc is buying more wine because his income has increased; and this increase due to the income effect is larger than the reduction in his wine purchases due to the substitution effect.

2. It is observed that if the price of food falls, then Nathalie buys more wine but less food? Explain why this happens.

Answer: If the price of food falls then food becomes cheaper relative to wine and Nathalie will substitute additional food for some of the wine she was previously buying. But the fall in the price of food increases Nathalie's real income. For some goods, some consumers may buy less when their incomes rise. Such goods are called inferior goods. So for Nathalie, food is an inferior good. In fact, because the reduction in her food purchases due to the income effect is larger than the increase due to the substitution effect, we can say that food is a Giffen good for Nathalie. Wine, however, is a normal good – Nathalie buys more of it when her income rises.

## Chapter 22

*When you buy motor insurance the policy will generally stipulate that the policyholder is responsible for the first part of any claim; for example, you might have to pay the first €250 or €1,000 of any claim and the insurance company would pay the rest. The amount you would have to pay is called the deductible.*

1. How does this arrangement help to deal with the problem of moral hazard?

Answer: The problem of moral hazard in this case is that without the deductible policyholders might be less careful to lock their cars when leaving them unattended, and might engage in other risky behaviour, knowing that if their car is stolen or damaged then the insurer will pay all the consequent costs. They would not do this if they weren't insured. By forcing policyholders to pay some of the costs of a claim, this behaviour is discouraged.

2. How does this arrangement help to deal with the problem of adverse selection?

Answer: The problem of adverse selection is that motorists have more information about their driving abilities and habits than do insurance companies, making it difficult for the insurers to identify high and low risk drivers and charge them appropriate premiums. Stipulating a high deductible on lower premium policies and a lower deductible on higher premium policies will tend to encourage higher risk drivers to buy the higher premium policies. Lower risk drivers will buy the cheaper policies. So the insurance companies are able to separate high and low risk drivers and overcome the problem of adverse selection.

## Chapter 23

*Suppose you are watching a news report with a friend. The news report points out that a certain African nation generates a GDP per capita of only \$1,300 per year. Since your friend knows that UK GDP per capita is approximately \$26,000, he suggests that Britons are materially 20 times better off than the people of the African nation.*

1. Is your friend's statement accurate?

Answer: No.

2. What general category of production is not captured by GDP in both the United Kingdom and the African nation?

Answer: Non-market activities such as household production.

3. Provide some examples of this type of activity.

Answer: Household production done by an individual without pay such as gardening, cleaning, sewing, home improvement or construction, child supervision, etc.

4. Why would the exclusion of this type of production affect the measurement of African output more than UK output?

Answer: A greater proportion of the output produced by developing nations is non-market output. That is, it is not sold and recorded as a market transaction.

5. Does this mean that residents of the African nation are actually as well off materially as residents in the United Kingdom?

Answer: No. It just means that quantitative comparisons between nations of greatly different levels of development are very difficult to do and are often inaccurate.

## Chapter 24

*Suppose you've been talking to a friend's father who told you that he gave up smoking cigarettes in 1995. When you asked him why he quit, you got a surprising answer. Instead of reciting the health benefits of quitting smoking, he said, "I quit because it was just getting too expensive. I started smoking in 1965 and cigarettes were only 45 cents a pack. The last pack I bought was €2.00 and I just couldn't justify spending more than four times as much on cigarettes as I used to."*



1. In 1965, the CPI was 31.5. In 1995 the CPI was 152.4. While it is commendable that your friend's father quit smoking, what is wrong with his explanation?

Answer: He is only looking at the cost of cigarettes uncorrected for inflation. It is likely that the real cost has not risen as much as first appears and it may even have gone down.

2. What is the equivalent cost of a 1965 pack of cigarettes measured in 1995 prices?

Answer:  $\text{€}0.45 \times (152.4/31.5) = \text{€}2.18$  which is greater than  $\text{€}2.00$ , so cigarettes were cheaper in 1995 than in 1965 in real terms.

3. What is the equivalent cost of a 1995 pack of cigarettes measured in 1965 prices?

Answer:  $\text{€}2.00 \times (31.5/152.4) = \text{€}0.41$  which is less than  $\text{€}0.45$

4. Do both methods give you the same conclusion?

Answer: Yes, each method suggests that, after correcting for inflation, cigarettes were actually more expensive in 1965.

5. The preceding example demonstrates what economists refer to as "money illusion." Why do you think economists might choose the phrase "money illusion" to describe this behaviour?

Answer: When people base decisions on values uncorrected for inflation, there may be an illusion that the cost of living has risen.

## Chapter 25

*You are having a discussion with some friends. The conversation turns to a supposed lack of growth and opportunity in the Europe when compared to some Asian countries such as Japan, South Korea, Taiwan, and Singapore. One of your friends says, "These Asian countries must have cheated somehow. That's the only way they could have possibly grown so quickly."*

1. Have you learned anything in this chapter that would make you question your friend's assertion?

Answer: Yes. There are many sources of growth and a country can influence all of them except natural resources.

2. The phenomenal growth rate of Japan since World War II has often been referred to as the "Japanese miracle." Is it a miracle or is it explainable?

Answer: Japan's growth is explainable. Indeed, all of the high growth Asian countries have extremely high investment as a percent of GDP.

3. Are the high growth rates found in these Asian countries without cost?



Answer: No. The opportunity cost of investment is that someone must forgo current consumption in order to save and invest.

## Chapter 26

*Suppose you are listening to an opposition party spokesperson being interviewed on radio during an election campaign. When questioned about their position on economic growth, the spokesperson says, "We need to get this country growing again. We need to use tax incentives to stimulate saving and investment, and we need to get the budget deficit down so that the government stops absorbing our nation's savings."*

1. If the opposition party's spending plans remain unchanged from current government spending, what inconsistency is implied by the spokesperson's statement?

Answer: Tax incentives to stimulate saving and investment require a reduction in taxes. This would increase the deficit, which would reduce national saving and investment.

2. If the opposition party truly wishes to decrease taxes and decrease the budget deficit, what has the spokesperson implied about his party's plans for government spending?

Answer: The candidate plans to reduce government spending.

3. If policy makers want to increase growth, and if policy makers have to choose between tax incentives to stimulate saving and tax incentives to stimulate investment, what might they want to know about supply and demand in the loanable funds market before making their decision? Explain.

Answer: Policymakers would want to know the elasticity (similar to the steepness) of the supply and demand curves. If loanable funds demand is inelastic, changes in loanable funds supply have little effect on saving and investment, so tax incentives to increase saving at each interest rate do little for growth. If loanable funds supply is inelastic, changes in loanable funds demand have little effect on saving and investment, so tax incentives to increase investment at each interest rate do little for growth.

## Chapter 27

*Suppose you are about to graduate with a first class degree in economics. Your boy/girlfriend's parents are visiting. When they arrive they find you throwing darts at the share price pages of the Financial Times, which you have pinned to your notice board on the wall. You inform them that you received a generous signing-on bonus from the company for which you agreed to work after graduation. You are now in the process of picking the shares in which you plan to invest. Your visitors are horrified. Your boy/girlfriend's father says, "There's got to be a better way to choose shares. I can give you the phone number of my stockbroker, or you could at least buy a well-known, well-managed unit trust or investment fund."*

1. What is the stock valuation method to which your father is referring, and what is its goal?

Answer: Fundamental analysis. This is the detailed analysis of a firm's accounting statements and future prospects to determine its value. The goal is to choose shares that are undervalued — those whose share prices are less than their values.

2. Explain the efficient markets hypothesis to your visitors. If the efficient markets hypothesis is true, can your boy/girlfriend's father's method for picking stocks achieve its goal?

Answer: The efficient markets hypothesis argues that the stock market is informationally efficient in that it reflects all available information about the value of the traded shares. That is, market participants monitor news that affects the value of a share. Since at any given time the number of buyers of a share equals the number of sellers, an equal number of people think a share is undervalued as overvalued. Thus, stock is fairly valued all the time and its price should follow a random walk. If true, it is not possible to consistently buy undervalued shares.

3. If the efficient markets hypothesis is true, what is the only goal of your dart throwing exercise? Explain.

Answer: The only thing a person can do is diversify their portfolio to reduce idiosyncratic risk.

4. If the efficient markets hypothesis is true, which will likely provide the greater return in the long run: your dart throwing exercise or an actively managed mutual fund? Why?

Answer: If you throw enough darts to remove most of the idiosyncratic risk (your portfolio starts to resemble the entire market like an index fund) and if you bought and held the shares (you didn't trade often), then it is likely that throwing darts would give you the greater return. This is because active managers of investment funds tend to trade frequently, incurring trading costs, and they charge fees for their supposed expertise, yet they cannot reduce aggregate risk.

## Chapter 28

*Suppose you are watching the national news with your flatmate. The newsreader says, "Official unemployment statistics released today show an increase in unemployment from 6.1 percent to 6.2 percent. This is the third month in a row where the unemployment rate has increased." Your flatmate says, "Every month there are fewer and fewer people with jobs. I don't know how much longer the country can continue like this."*

1. Can your roommate's statement be deduced from the unemployment rate statistic? Why?

Answer: No. The unemployment rate is the ratio of the number of unemployed to the total labour force. If the labour force grows (new graduates, housewives and househusbands entering the labour force, etc) and if few of the new members of the labour force find work, then the unemployment rate will rise but the number of employed could stay the same or rise.

2. What information would you need to determine whether there are really fewer people with jobs?

Answer: The number of people employed is a component of the labour force and you can get information on that number directly.

## Chapter 29

Suppose you are a personal friend of the governor of the UK central bank, the Bank of England. He comes over to your house for lunch and notices your sofa. The governor is so struck by the beauty and comfort of your sofa that he says he simply must have it for his office. The governor buys it from you for £1,000 and, since it is for his office, pays you with a cheque drawn on the Bank of England.

1. Are there more pounds in the economy than before? Why?

Answer: Yes. When the Bank of England purchases anything, and pays with a cheque drawn on itself, it pays with newly created pounds, so there are more pounds in the economy.

2. Why do you suppose that the Bank of England doesn't buy and sell sofas, cars, and so on, instead of government bonds when it wishes to change the money supply?

Answer: The transactions costs and storage costs would be staggering. Also, the value of the inventory of "items" would never be certain. The open market for government bonds is much more efficient.

3. If the Bank of England doesn't want the money supply to rise when it purchases new furniture, what might it do to offset the purchase?

Answer: The central bank could sell government bonds of equal value to offset other purchases.

## Chapter 30

*Suppose you explain the concept of an "inflation tax" to a friend. You correctly tell them, "When a government prints money to cover its expenditures instead of taxing or borrowing, it causes inflation. An inflation tax is simply the erosion of the value of money from this inflation. Therefore, the burden of the tax lands on those who hold money." Your friend responds, "What's so bad about that? Rich people have all the money so an inflation tax seems fair to me. Maybe the government should finance all of its expenditures by printing money."*

1. Is it true that rich people hold more money than poor people?

Answer: Yes, rich people probably hold more money than poor people.

2. Do rich people hold a higher percent of their income as money than poor people?

Answer: No, by a wide margin, poor hold a larger percent of their income as money. In fact, the poor may have no other financial asset at all.

3. Compared to an income tax, does an inflation tax place a greater or lesser burden on the poor?

Answer: An inflation tax places a far greater burden on the poor than on the rich. The rich are able to keep most of their assets in inflation-adjusted, interest-bearing assets. We observed this in Brazil and Argentina during periods of high inflation.

4. Are there any other reasons why engaging in an inflation tax is not good policy?

Answer: Inflation imposes many other costs on the economy besides the inflation tax: shoeleather costs, menu costs, tax distortions, confusion, etc.

## Chapter 31

*Suppose you are having breakfast with your parents one Sunday. Your father is reading the paper and comments on a report that the exchange rate for the pound has just hit its lowest value in a decade. He reads on and then exclaims that JCB, a heavy equipment manufacturer, has reported that sales of their earth moving equipment have hit an all time high. Your parents are shocked by the report's positive view of the low value of the pound. They've recently abandoned plans to visit Australia because of the pound's low value.*

1. Why might JCB and your parents have different opinions about the value of the dollar?

Answer: JCB sells much of its equipment to foreigners and the low value of the pound makes JCB's products cheaper to foreigners. Your parents were going to buy foreign goods and services and the cost in pounds became higher.

2. JCB imports many parts and raw materials for their manufacturing processes and they sell many finished products abroad. If they are happy about a low pound, what must be true about the ratio of JCB's imports and exports?

Answer: JCB must sell a greater value of products abroad than they purchase. That is, the company is a net exporter.

3. If someone argues that a strong pound is "good for the UK" because UK residents are able to exchange some of their GDP for a greater amount of foreign GDP, is it true that a strong pound is good for every UK resident? Why?

Answer: No. A strong dollar benefits UK residents who are net importers and harms K residents who are net exporters.

## Chapter 32

*Hong Kong has a capitalistic economic system. It was leased from China by Great Britain for 100 years. In 1997, it was returned to China, a socialist republic.*

1. What do you think this event might have done to the net capital outflow of Hong Kong? Why?

Answer: It might have increased the *NCO* of Hong Kong because of capital flight. Investors in Hong Kong, fearing that China may nationalize much of Hong Kong's industry, would buy assets abroad; and foreign investors would not wish to buy assets in Hong Kong.

2. If the residents of Hong Kong chose Canada as a place to move some of their business activity, what impact do you suppose this will have on the value of the Canadian interest rate and exchange rate? Why?

Answer: This will decrease Canada's *NCO*. This shifts the demand for loanable funds left and lowers the real interest rate. The reduced *NCO* reduces the supply of Canadian dollars in the foreign-currency exchange market, raises the exchange rate, and moves *NX* toward deficit.

3. Which Canadian industries, those engaged in importing or exporting, are likely to be pleased with Hong Kong's investment in Canada? Why?

Answer: The increase in the value of the Canadian dollar will make Canadian producers less competitive abroad, but will make imports cheaper.

4. What impact will Hong Kong's return to China have on the growth rate of Canada?

Answer: The reduction in Canada's *NCO* (due to Hong Kong's increased *NCO*) increases the capital stock of Canada, causing it to grow.

### Chapter 33

*Suppose you are watching the evening news on television. The newsreader reports that union wage demands are much higher this year because the workers anticipate an increase in the rate of inflation. Your flatmate says, "Inflation is a self-fulfilling prophecy. If workers think there are going to be higher prices, they demand higher wages. This increases the cost of production and firms raise their prices. Expecting higher prices simply causes higher prices."*

1. Is this true in the short run? Explain.

Answer: Yes. An increase in price expectations shifts the short-run aggregate supply curve to the left and prices rise.

2. If policymakers do nothing and allow the economy to adjust to the natural rate of output on its own, does expecting higher prices cause higher prices in the long run? Explain.

Answer: No. In the long run, the increase in unemployment will cause wages and price expectations to fall back to their prior levels.

3. If policymakers accommodate the adverse supply shock, does the expectation of higher prices cause higher prices in the long run? Explain.

Answer: Yes. If policymakers accommodate the adverse supply shock with an increase in aggregate demand, the price level will rise permanently.

## Chapter 34

*Suppose you are watching the news on television during a general election campaign. The opening report is a story about today's announcement that the Bank of England has raised interest rates by a quarter of a percent today to head off future inflation. The report then moves to an interview with a politician from the governing party with a marginal constituency in an industrial area. She says, "The Consumer Price Index has not increased, yet the Bank of England is restricting growth in the economy, supposedly to fight inflation. My constituents will want to know why they are going to have to pay more for their mortgages, and why their jobs are being put at risk, and I don't have a good answer. I think this is an outrage!"*

1. What interest rate did the Bank of England actually raise?

Answer: The repo rate.

2. State the Bank of England's policy in terms of the money supply.

Answer: They decreased the money supply (or lowered its growth rate).

3. Why might the Bank of England raise interest rates before the CPI starts to rise?

Answer: Because monetary policy acts on the economy with a lag. If the central bank waits until inflation has arrived, the effect of its policy will arrive too late. Thus, the central bank may wish to respond to its forecast of inflation.

4. Use the politician's statement to explain why most economists believe that the central banks need to be independent of politics?

Answer: Politicians must be responsive to the short-term needs of voters. Monetary policy must take a long-term view and make politically painful decisions when the economy is overheating (when output is above the long-run natural rate) because the proper policy response is to contract aggregate demand.

## Chapter 35

*Suppose a worldwide drought has reduced food production. Inflation has increased; unemployment has risen above the natural rate. Americans are frustrated with their government. Your flatmate says, "This economic mess has got to be the government's fault. A year ago, both inflation and unemployment were lower. We need to vote in a new government that knows how to get rid of this inflation and unemployment."*

1. Whose fault is the stagflation that is present in the economy?

Answer: No one's. It was an act of nature.

2. Are the current inflation and unemployment choices facing the economy better or worse than before the supply shock? What has happened to the short-run Phillips curve?

Answer: Worse because the short-run Phillips curve has shifted upward.

3. If policymakers increase aggregate demand in response to the supply shock, in what direction will the economy move along the new short-run Phillips curve? What will happen to inflation and unemployment?

Answer: The economy moves upward along the new short-run Phillips curve. Unemployment will be reduced but inflation will be increased.

4. If policymakers decrease aggregate demand in response to the supply shock, in what direction will the economy move along the new short-run Phillips curve? What will happen to inflation and unemployment?

Answer: The economy moves downward along the new short-run Phillips curve. Inflation will be reduced but unemployment will be increased.

5. Is there a policy that can immediately reduce both inflation and unemployment? Explain.

Answer: No, the economy faces trade-offs in the short run. A policy that reduces inflation increases unemployment. A policy that reduces unemployment increases inflation.

## Chapter 36

*You are the manager of a large investment bank with a significant exposure to high risk assets. You are at lunch with a member of the financial press who is talking to you about changes in banking practice up to the financial crisis. The journalist is looking for information about why your bank had chosen to accept higher risk assets as part of its lending practice.*

1. The journalist asks for a rationale for increasing lending to the sub-prime sector. What is your response?

Answer: You might respond by referring to the recent default history of loans and the monetary policy stance adopted by the world's major central banks in the first few years of the new century. You might also comment on the desire by governments to expand home ownership and the pressures on you to increase returns and shareholder value.

2. The journalist asks for a justification for the existence of the CDS market.

Answer: The credit default swap market in itself is not a problem, it represents a sensible way in which risk can be swapped and investments can be protected. The problem may lie in the way in which the CDS market is used and how the institution finances its involvement in this market.



3. The journalist quotes the head of the FSA as suggesting that much of the work of banks are 'socially useless' How would you respond?

Answer: It depends on what 'socially useless' means and what 'socially beneficial' would mean. Trading different financial instruments generates incomes which are subject to tax and the City does contribute a huge amount in tax to the Treasury. This tax revenue can be used to promote 'socially useful' projects. The implied criticism of the trade in financial instruments might also ignore the role of derivatives and options in managing portfolios in an increasingly complex financial world. The welfare of millions (in the form of pensions, for example) depends on the skills utilized by traders in these products in managing portfolios and raising corporate finance.

4. The journalist asks if, with the value of hindsight, you would have still chosen to increase exposure to high risk assets if you knew how it was going to end. How do you respond?

Answer: The question assumes that exposure to high risk assets is per se, a bad thing. In any financial market there is risk and the skill of the bank in pricing that risk is the crucial point. Being able to price risk effectively is dependent on having accurate information. The information on the risk posed by the sub-prime market could have been better and as such would enable the bank to make different decisions. But, given the information it had at the time the bank might argue it would still have taken those same decisions. If it knew then what it knows now then its decision making would be different because it would have access to better information.

## **Chapter 37**

*You are working as an advisor to a central bank that is faced with decisions on responding to a financial crisis, a deepening recession and public anger over the activities of bankers. The central bank has a remit to control inflation with a target of 2.5 per cent. You have been given the following questions to consider. Offer your judgements and rationale in each case.*

1. Despite the signs of economic slowdown, inflation remains higher than target. Do you loosen monetary policy to counter the threat of recession?

Answer: You will need to consider the main purpose of the central bank's policy. In the light of this you may discuss the threat of inflation in the medium and long term and the length of time which monetary policy takes to work through the economy. What impact will recession have on the inflation target and does this mean that a looser monetary policy will bring inflation back to target in the medium to long term?

2. You are asked for your opinion on whether bankers' bonuses should be subject to a significant tax. Give your opinion and the reasoning behind it.

Answer: Try to provide a balance to the answer by considering the costs and benefits of such a tax prior to arriving at your judgement. To make any sense



the answer will need to ask key questions such as what the incentive and disincentive effects might be, what the size of the tax is, on whom it is levied and whether it is a one-off tax or a permanent one. When considering the possible disincentive effects and the impact on firms in the industry try to comment on the extent to which these effects are likely to manifest themselves. For example, if you believe that a tax will promote a flight of key talent and businesses from the country, will this be a large flight or only relatively small? You might also want to ask if such a policy is being considered in isolation or whether it is repeated in other major financial centres as this may have an impact on the effect of the tax.

3. Eight months after the first asset purchasing auction was held, the press are voicing concern that the effects seem to be minimal. How would you answer such a criticism?

Answer: You will have to make some comments on the state of financial markets prior to the commencement of the asset purchasing facility commencing. How serious was the log jam in lending? What sorts of assets are being purchased? Can the facility be expected to show significant effects in only 8 months?

4. You are asked whether the central bank ought to treat financial stability as an equally important role as price stability. Do you agree?

Answer: The links between longer-term price and monetary stability can be outlined here – it is any use having a stable price level for ten years and then three years of economic crisis? What role do other regulators have in the financial system which might impact on the central bank taking on these twin responsibilities? Is it too much to expect the central bank to do both? What is the government's view on the issue – do they feel that price stability is the main function of the central bank? In order to maintain price stability (which implies the economy must also be stable) is it necessary that the central bank also is able to monitor systemic and individual risk in the banking and financial system?

## Chapter 38

*Suppose you are discussing with a friend the pros and cons of the UK adopting the euro to replace the pound. You explain, correctly, that one of the criteria for judging whether a group of countries is an optimum currency area (OCA) is their degree of trade integration. And you caution that it may be wise for the to wait until there are clear plans for fiscal federalism in Euroland before joining.*

1. What would you say to your friend when she points out that the UK's trade with eurozone countries represents a rather low proportion of UK GDP, and claims that therefore the UK should not adopt the euro?

Answer: Although the level of trade integration is one of the criteria by which we judge whether a group of countries is an OCA, this criterion might be endogenous – that is, once a common currency is adopted then trade integration will increase. So you would be right to be more cautious in reaching a conclusion than your friend.

2. Your friend is shocked by your apparent enthusiasm for fiscal federalism. Explain the argument in its favour.

Answer: Labour mobility is relatively low within the eurozone. So if one country suffers an asymmetric shock that reduces aggregate demand, unemployment in that country will rise, and its government's tax revenue will fall while its spending will rise – these are the effects of the automatic fiscal stabilizers. If that country's government further increases its spending or cuts taxes to boost aggregate demand and reduce unemployment, then it is likely to incur a large budget deficit. Other eurozone country governments would be in much stronger fiscal position to assist in bringing down unemployment in the country affected by the shock.

## Chapter 39

*Those opposed to government budget deficits argue, among other things, that budget deficits redistribute wealth across generations by allowing the current generation to enjoy the benefits of government spending while future generations must pay for it.*

1. Under which of the following cases would you argue that there is a greater intergenerational transfer of wealth? Why?

- a. The government increases spending on social programs by buying apples and oranges for the poor but refuses to raise taxes and instead increases the budget deficit.
- b. The government increases spending on bridges, roads, and buildings but refuses to raise taxes and instead increases the budget deficit.

Answer: Case (a), because the government purchased consumption goods that cannot be enjoyed by later generations, while in case (b) the government purchased capital which is durable and can be enjoyed by later generations.

2. Does the preceding example provide a method by which we might judge when a government budget deficit is fair to each generation and when it is not? Explain.

Answer: Yes. It is more reasonable for the government to run a budget deficit and force future generations to pay for current expenditures if the expenditures are for capital goods.

3. Why might this method be difficult to enforce in practice?

Answer: Nearly every interest group can defend spending on things they want on the basis that it has a positive impact on future generations — military, education, etc.