

Dividing the Spoils

Markets, Government, and Corruption

Michael A. Brooks

Ben J. Heijdra

(1991 version)

Policy Paper No. 20

Australian Institute for Public Policy

A division of the Institute of Public Affairs Limited

The Authors

Michael Brooks is a Senior Lecturer in Economics at the University of Tasmania. He is a graduate from Monash University and holds a Doctor of Philosophy Economics degree from Virginia Polytechnic and State University in the United States.

Ben Heijdra is a Senior Lecturer in Economics at Monash University and a Research Fellow at OCFEB, Erasmus University in the Netherlands. His academic degrees include a Doctorandus degree from Erasmus University and a Doctor of Philosophy Economics from Simon Fraser University in Canada. Before taking up his current position, he was at the University of Tasmania.

Acknowledgments

John Hyde instigated this project and made extremely helpful comments during its very early stages. We would like to thank John Nurick, Bill Cole and an anonymous referee for helpful comments on an earlier draft, and Owen Powell for his comments upon a later draft. Chris Ulyatt is thanked for his excellent editorial work on the manuscript. Finally, we would like to thank the AIPP in general for allowing us the extra time needed to state the arguments in the clearest possible fashion. To the extent that we have failed to do this, we are solely responsible.

Michael Brooks & Ben Heijdra

Abstract

Recent events in Australia point to an increasing tendency on the part of public officials and entrepreneurs to use their position of power for their own identifiable private interests. The Fitzgerald Report shows it clearly and some of the testimony at various Royal Commissions hints at more of the same.

Clear illegality poses no special problems. But there remains a widespread sentiment that 'improper conduct' is wider than the strictly unlawful and that, for reasons we are not altogether sure about, we need to examine our institutions with a broader view of propriety in mind.

This monograph is the first in a series which intends to deal with this broader concern. Written by economists Michael Brooks and Ben Heijdra it presents a dispassionate examination of the origins of much that we have come to refer to as corrupt or merely improper. Their starting point is 'economic surpluses'. Far from being inherently bad, these are part and parcel of the operation of an efficiently productive economy. They, nevertheless, are at the same time the source of much temptation.

In search of economic surpluses, people not only think and work hard by the existing rules but they also devote their energies to achieving preferential treatment by the rule-makers, the government. The latter activity, which is termed 'rent seeking', tends to divert the governed and particularly the governing from their proper responsibilities. Given that governments necessarily are responsible for the maintenance of stable rules and property rights, corruption is thus often a case of government failure. The remedy is not the elimination of government. Rather it lies in designing institutions that minimise wasteful activities.

Along the way the authors ask some interesting questions: Would an extension of the market reduce the degree of corruption or would it merely make it worse? Is corruption necessarily a bad thing? How can we make our public officials more responsive to the legitimate concerns of the collectivity they are supposed to serve?

Although the authors conclude with a series of institutional reforms, *Dividing the Spoils* is not intended as a panacea for all our ills. Nor does it claim to be a comprehensive analysis of corruption. But if, as the authors suggest, the debate of the 1990s will be about institutional reform, broadly considered, then an understanding of the advantages of different institutional structures will be an essential part of that debate.

Australian Institute for Public Policy

A division of the Institute of Public Affairs Limited

46 King's Park Road,

West Perth WA 6005

ISBN 0 949186 46 5

ISSN 0815-9394

Price \$14.00

About the Australian Institute for Public Policy

The Australian Institute for Public Policy was founded in 1983. In 1991 it became a division of the Institute of Public Affairs. Its objective is to encourage understanding and appreciation of the free society and free enterprise. It applies classical economic and political analysis to Australian society and institutions, particularly when it appears that freedom or economic well-being are threatened. AIPP concentrates on making academic work available to a wider public, on examining the practical policy implications of work in economics, sociology and political science, and on urging the adoption of appropriate policies by all political parties.

AIPP's independence is one of its most valuable assets. Though overtly seeking to influence the political process, it avoids party politics and is no one's hired gun. It is financed by sales of publications, by voluntary contributions from individuals and organisations, and by any profit margin on commissioned studies. Publications may be produced using AIPP's own resources, or commissioned and paid for by an individual or organisation. No confidential studies are undertaken, and no sponsor controls what is published: the content of AIPP publications is subject to the Research Committee alone.

Research Committee

Dr David Band

Mr Brian Buckley

Prof. Ken Clements

Prof. Wolfgang Kasper

Dr Chandran Kukathas

Mr Robert Manne

Prof. Charles Mulvey

Prof. Patrick O'Brien

Mr Owen Powell

Prof. Ted Watt

Editorial Director: Dr Chris Ulyatt

Chapter 1: Introduction

This venture begins with a few simple observations. Recent events in Australia have revealed that there is an increasing tendency on the part of public officials and entrepreneurs to use their position of power for their own identifiable private interests. One need only turn to the pages of the Fitzgerald Report, or examine the media coverage of the Royal Commissions into malfeasance in Western Australia and Tasmania, to obtain an immediate appreciation of the extent of this phenomenon. Public commentators have been quick to analyse the characters involved in this play on large. The reasons why these activities are considered inappropriate have often been left unstated. Furthermore, there is little or no discussion of what should be done about the problem. Would an extension of the market reduce the degree of corruption or would this merely worsen the problem? How can our public officials be made more responsive to the legitimate objectives of the collectivity they are supposed to serve? One aim of the work here is to explore the corruption issue from the viewpoint of economics within the context of different institutional structures.

The problem of institutional design goes much wider than corruption in Queensland and Western Australia. Australia is experiencing many social problems. The debate of the 1990s should be about institutional reform, broadly interpreted. For example, the newspapers in Australia have been replete with comments about a Turkish man who had sold one of his kidneys to a group of doctors in the United Kingdom. Commentators were outraged by the prospect of a thriving market for body parts and British politicians have been quick to propose legislation to stifle the trade. In several states of Australia there have been discussions about the decriminalisation of prostitution, to allow a market to exist for sex. And in fact in the State of Victoria, the region where the wowsers once figured so prominently, prostitution was decriminalised several years ago. It is of course true to say that these moves have not gone unopposed. Both issues raise fundamental questions about the appropriate extent of market principles. Although not all issues in Australia are as sensational as these, it is nevertheless clear that the conflict and debate continues. It rages whenever entitlements are managed in the public sector. For example, if mineral deposits are discovered on Crown land, there is then a debate on how the government should capture the returns from the deposit. Should the land be sold to private developers? Should the Federal government tax the profits of the mining companies? What seems to be lacking in the public debate on all these issues

is an understanding of the benefits and costs of the different modes of distribution. A secondary objective of the work here is to explore the advantages and limitations of the market. By providing such a framework, at least the participants on both sides of the debate should be able to see the other side's point of view. Understanding is surely part of the road to consensus as opposed to conflict.

With this overall view of the objectives in mind it is perhaps useful to outline the major steps in our argument. In Chapter 2 we introduce some basic but crucial preparatory groundwork for the later chapters. There we show the importance of the market in the creation of the wealth of the nation. We introduce the idea that rents or economic surpluses are essential to the smooth operation of a decentralised capitalist society. These surpluses are like the grease on the wheels, without which the economy would come to a grinding halt. Profit is not a dirty word!

In Chapter 3 we explore the idea that certain types of institutions will fail to allocate resources to those who value them the most. We show how some actions by government can at least in principle, increase the wealth of the nation. Government need not be the dead hand on the economy.

In Chapter 4 we explore how some government actions can go awry and dissipate the wealth of the nation. In each case the argument is presented in its simplest form and supported by graphical and arithmetic examples wherever possible.

In Chapter 5 we identify a further source of waste caused by the government's ability to redistribute the nation's wealth. Individual agents in the economy perceive that the government can give and take at will, and these agents will rationally attempt to belong to the group of recipients rather than to the payers of the bill. In their efforts to obtain government transfers these agents impose additional costs on society in the form of corruption.

In Chapter 6 the strands of the preceding analysis are drawn together. Several general and specific suggestions for reform are proposed and analysed with the use of our framework. It must be pointed out at this stage that there is not one simple panacea for Australia's woes in this respect. As we indicated, the main objective is to explain the central elements of the case for one institutional structure over another. From this knowledge the debate on reform can proceed.

Chapter 2: The Distributional Struggle and the Good Life

2.1 Introduction

A popular song maintains that money makes the world go around. This basic fact of life forms the foundation for a good deal of modern economics. Suppliers enter the market not for the benefit of the consumer but to further their own ends. In the jargon of economics, they pursue the goal of maximising their profits or return on their assets. Consumers enter the market and purchase products from firms not for the benefit of the supplier but to increase their own satisfaction. In the rubric of economics, the consumer makes decisions in order to maximise consumer surplus. Neither party has the interests of the other in mind nor the interests of the members of the society as a whole. They are interested in pursuing only their own narrowly defined ends. Like Marie Antoinette, each person's interest lies only in how much of the cake they get and not at all in the portions received by other individuals or the overall size of the cake. It is the distributional struggle that is the basic feature of economic life, not the pursuit of the efficient utilisation of resources.

One might be inclined to argue that this distributional struggle of individual ends is the underlying cause of all or most of our current economic problems. The total disregard of all other individuals is the root, so it seems, of our current economic problems. If bankers were only more publicly spirited and less interested in the pursuit of building financial empires, then fewer individuals would have suffered financial losses in both the mortgage market and the savings market. If only public officials were more virtuous and less interested in pursuing their own greedy ends, then Australia would be a better and less corrupt society. And if the wharfies were only less interested in pursuing their own conditions of employment and more concerned with getting goods from one port to another at a low cost, then this would represent one large step forward for the once 'lucky country.' If we could only adopt some of the work ethic of the Japanese or the Germans, then we would turn the economy around and once again achieve riches. One need only watch the evening commentaries on the news to add to this litany of complaints about just what is wrong in Australia.

The purpose of this chapter is to show that this argument is flawed. It is not Australians who must change. They need not necessarily abandon their selfish money grubbing ways. It will be shown that the distributional struggle can lead to gains for all. At a risk of giving away one of the central plots of the book, it is our argument that it is the

institutions that are at fault. Our institutions have to be changed in order to channel selfish behaviour in ways that lead to benefits for all. Selfish greedy behaviour is not necessarily at fault. The propositions advanced represent some of the most fundamental principles of economics and as indicated constitute the backdrop to some of the main arguments of the book. It is therefore worth spelling out the intersection between the selfish individual distributional struggle and the good life for all.

2.2 A simple parable of money grubbing distribution

Consider a simple economy of six people. It is not Australia or any other economy of which we know. It serves merely as a vehicle for the economic parable to follow. The parable serves the secondary purpose of introducing some of the basic tools of economics. The notions employed here are addressed time and time again throughout the entire work.

Each person is endowed with various commodities and money but let us focus on, say, the humble egg. Let us further suppose, quite innocuously, that each individual knows how much that egg is worth to himself or herself. Each person has specialised knowledge about what uses the eggs may serve. Harpo has discovered, or at least he believes it is the case, that if he smears whisked egg over his face then there will be an improvement in his complexion--an important complement to his impish smile. He feels that one egg is worth \$13 to him and he would be willing to pay up to \$7 for a second egg. As for Groucho, he has discovered that if you crush the egg-shell this can be used to decorate a cardboard box. He would be willing to pay up to \$11 for one egg and \$9 for a second egg. He would be willing to part company with \$20 for two eggs. On the other hand, Chico has discovered that if he mixes his egg with oil paint this helps in his production of works of art to adorn his piano. He would be willing to pay up to \$8 for one egg and \$5 for a second egg.

These values are depicted in Figure 2.1 in terms of descending order. By joining up the end-points of each number of eggs with a line this figure describes the demand curve for eggs. The area under the demand curve reflects how much the various individuals would be willing to pay to obtain the six eggs. In this particular example the three brothers would be willing to pay up to \$53 to obtain six eggs. This implies that if they could obtain the eggs free of charge and without cost then they would be better off to the tune of \$53. In terms of the language of economics, this amount represents the individuals' consumer surplus.

Geometrically, it is depicted as the area under the demand curve but above the price, representing the difference between what they would be willing to pay and what they have to pay for the goods in question.

Fig. 2.1: The demand for eggs

It is worth noting that the individuals derive some consumer surplus even when they are required to pay for the eggs. Suppose the price is \$9 per egg. Harpo will decide that he is willing to purchase one egg but not the second. He only values the second egg as being worth \$7 which is, of course, less than what he is required to give up to purchase the second egg. His consumer surplus on the first egg is \$4.

Groucho is willing to purchase two eggs. He values the first egg more than what he is required to pay and would gain \$2 of consumer surplus. As for the second egg, it is clear that he values it at an amount just equal to what he has to pay. In the language of economics, he is said to be indifferent between purchasing and not purchasing the second egg. It is customary in economics for the individual, despite being indifferent, to go ahead with the purchase of the item in question. On the other hand, Chico is not prepared to buy any eggs. He does not value even one of the eggs as much as the price he is required to pay. The consumer surplus when the price is \$9 is the sum of the individual net gains from consumption, here \$6 (equals \$4 plus \$2).

The numbers here illustrate an important principle of economics. When the price of a good falls, individuals will tend to increase their consumption of a commodity and this leads to a gain in benefits. If the price is reduced from \$9 to zero, for example, then the potential gain to consumers will be \$47, consumer surplus rises from \$6 to \$53.

Up to this point in the story nothing has been said about who is supplying the eggs. It is certainly true in life that there ain't no such thing as a free lunch and this will hold in our parable as well. It turns out that three individuals who go by the names of Larry, Curly and Moe, had stumbled on six eggs in a field --mind you, without breaking them-- and each has a cache of 2 eggs. They have hit upon the idea that they can make some money by selling the eggs on the market. But each is reluctant to part company with his eggs unless he receives adequate remuneration. Each would sooner eat the eggs himself than give them away for nothing. Despite all this, Larry does not particularly like to eat more than one egg per period.

He feels that the first egg is worth \$12. He would be willing to give up the egg in return for any amount over \$12. And as for the second, he would be willing to sell it for \$2. Curly would be willing to sell his first egg for \$10 and the second for \$9.50. On the other hand, Moe would be willing to sell his first egg for \$9 and his second for \$3. These values are depicted in Figure 2.2 in ascending order. By joining up the end-points of each number of eggs with a line this figure describes the supply curve for eggs. The area under the supply curve reflects how much the various individuals would be just willing to accept to surrender their hold over the eggs.

Fig. 2.2: The supply of eggs

The reader should not be alarmed by these prices. Remember this parable does not represent modern Australia, or at least not just yet. It is worth emphasising what these figures represent. Larry would be willing to part company with one egg from his find for \$12. If he received any amount more, say \$13, then he would be glad to conclude the deal and count on his producer surplus of \$1. The term producer surplus is economic jargon for the net benefits experienced by sellers. It is also sometimes referred to as economic rent.¹ It represents the difference between what a seller receives and what he forgoes as a result of the activity.² In terms of the simple example here, if Larry sold the first egg then he would be giving up the possibility to consume that egg himself which he values at \$12 in return for \$13, leaving him with a surplus of \$1. The numbers here illustrate another important principle of economics. When the price of a good rises individuals will tend to increase their supply of a commodity and this leads to a gain in benefits. If the price is increased from zero to \$9, for example, then the potential suppliers will experience an increase in benefits of \$13.

In general terms and in the context of a production economy, the fact that the factors of production have alternative uses elsewhere in the economy is reflected in the positively sloping supply curve. The individuals give up time and effort in other activities if they set out to find their cache of eggs. The differing costs reflect differences among the individuals in their taste for leisure, their estimate of the likelihood of discovery and their earning opportunities in alternative activities.

Now suppose that a market-clearing or equilibrium price is established. Since both graphs have precisely the same dimensions, it is standard practice in economics to place the

supply and demand curves in one diagram, as could be achieved by superimposing Figures 2.1 and 2.2. The point of intersection of the two curves represents the equilibrium in the market. In terms of the egg market the supply and demand curves intersect at a price of \$9 and a quantity of three eggs. At such a price the amount being supplied to the market is equal to the amount that consumers wish to purchase. As a result there is neither a surplus nor a shortage of eggs on the market. In terms of our simple market, the equilibrium or market-clearing price is \$9 per egg. Harpo would like to purchase one egg and Groucho would choose to consume two eggs. The total amount of planned purchases is three eggs per time period. At this price Larry would be willing to sell one of his eggs and Moe would be willing to sell both of his eggs.

2.3 The fruits of the money grubbing distributional struggle

One particularly interesting and important result of this market process is that the equilibrium price results in the largest total gain in consumer and producer surplus. Larry gains \$7 and Moe \$6 in producer surplus; a total producer surplus of \$13. Harpo gains \$4 and Groucho \$2 in consumer surplus; a total consumer surplus of \$6. The total gain, or what is sometimes called the social surplus, from the market is \$19. In economics the situation we have described refers to an efficient allocation. In simple terms, efficient resource allocation refers to the case in which resources flow to the highest value user.

In order to make a stark contrast, suppose the market is replaced by a planning authority which seeks to provide a fair distribution of eggs. The planner takes the viewpoint that the holders of eggs should share their bounty with the other individuals. In his attempt the planner confiscates one egg each from Larry, Moe and Curly and provides one egg each to Harpo, Groucho and Chico. The three brothers gain from this redistribution of eggs; as they had been willing to pay for the eggs that they now gain free of charge. Harpo gains \$13, Groucho \$11 and Chico \$8 in terms of consumer surplus. The gain to the three brothers is \$32. The redistribution, however, imposes a loss on Larry, Moe and Curly. They have been forced to give up one of their eggs without any compensation in return. Larry's loss³ is \$2, Moe's loss is \$3 and Curly loses \$9.50. The total loss is \$14.50. From the standpoint of the group, the redistribution has resulted in a social surplus of \$17.50 (the gain of \$32 to Harpo, Groucho and Chico minus the loss of \$14.50 imposed on Larry, Curly and Moe). A simple

comparison of the social surplus under the two arrangements reveals that the redistribution by the planner is inferior to the distribution resulting from the interplay of market forces: \$17.50 is less than \$19.

It might be objected that the case here against the planned solution is biased in the sense that the three individuals have their eggs confiscated without any compensation. One might suspect that the case in favour of the market depends on the fact that the planner compels the individuals to give up the eggs without any compensation and that the case for the market would not hold if the three individuals were paid the equilibrium price of \$9. Suppose the planner obtains the required revenue for compensation by levying a compulsory charge of \$9 on each person who receives an egg. Under this arrangement, two of the three suppliers, Larry and Moe, would be as well off as they would be under the market -- Larry would gain \$7 and Moe \$6. Curly would remain worse off under this arrangement. He would receive \$9 in return for giving up an egg that he values as being worth \$9.50. The total producer surplus is therefore \$12.50 (\$7 plus \$6 to Larry and Moe minus the \$0.50 loss to Curly). On the consumer side of the market, two of the individuals, Harpo and Groucho, would gain the same⁴ amount under the planning arrangement as they would have achieved under the market, \$4 and \$2. Chico on the other hand is worse off as he now has to pay \$9 for the egg he only values as being worth \$8. From the standpoint of the three brothers the consumers' surplus is equal to \$5 (\$4 + \$2 - \$1). The social surplus under the planning arrangement is still less than the social surplus generated under the market: \$17.50 is less than \$19.

The general and important lesson to be drawn from the examples given here is that the selfish distributional struggle in the market place leads to the largest possible social surplus, the wealth of the nation is at its largest amount given the available resources. It is worth emphasising the central elements of this conclusion. Each individual entered the market in pursuit of maximising his own self-interest. The eggs were supplied to those individuals who were prepared to pay the going market price, not as a result of the benevolence of the supplier. Larry, for example, was only interested in supplying one of his eggs to the market because this made him better off. He cared not in the least why one of the Marx Brothers was interested in acquiring the eggs. The indifference to the lot of the other participants in the market was true also of the consumers. They gave not even a second thought to whether the exchange made the supplier better off. Their sole area of concern in determining whether they

were prepared to pay the going market rate was with whether or not this improved their own lot. Harpo, for example paid the going market rate because this increased his net benefits by \$4. And yet despite the indifference to their fellow man in this individual distribution struggle, the market both improved and led to the full exploitation of the potential gains of all participants.⁵

It might be objected that the conclusion about the wealth of the nation is an artefact of the numbers used in the particular example. It is not hard to observe, however, that the market process results in the largest possible social surplus. Any outcome other than the market equilibrium will result in either a smaller quantity of goods being traded or some individuals 'acceding to' trades that they would not agree to if they were free to fully negotiate the terms of the deal.

If the planner's interference leads to a smaller quantity being traded on the market, then the area of producer and consumer surplus must be smaller, as the individuals will forgo some surplus on the forsaken opportunity to trade. If the planner merely sets the price at say \$12 an egg in the declared interests of supporting the industry, then the amount of eggs traded on the market will not be three but one egg per time period. Although each of the Three Stooges would be willing to supply 2 eggs to the market, only one of the Marx Brothers would be interested in paying the set price. On the supply side, if Larry turns out to be the sole vendor, then he will gain \$3 (the new set price, \$12, minus the market equilibrium price, \$9) in additional producer surplus, but Moe will miss out on the benefits of exchange that would have occurred under the market (\$6 lost in producer surplus). On the demand side, Harpo will forgo \$2 of the consumer surplus he would have gained under the market and Groucho will forgo all of the consumer surplus he would have gained as a result of buying 2 eggs (\$2). The loss in social surplus resulting from the planner's interference is \$10 (\$6 plus \$4). The planner's intention of supporting the industry has instead dissipated, or perhaps more emotively, squandered a good part of the potential wealth of the nation.

Even if the planner's meddling ways result fortuitously in the market clearing quantity, there is no guarantee that there will be no dissipation of the social surplus. The planner, as demonstrated towards the beginning of this section, may take from those individuals who are the most reluctant of suppliers and give to those who are the least willing to pay for the planner's largesse. In the process, the potential social surplus is squandered.

It is important to understand why the market succeeds in exhausting the potential gains

from trade, while the planner, even with the best of intentions, will not succeed in achieving the same level of fruits, except perhaps by some freak of circumstance. The inestimable advantage of the market process lies in the fact that market prices convey more information about the valuation of goods and services by each participant than any single individual could possess, let alone comprehend.⁶ The reason why the planner in our example failed to allocate the eggs to those who had the greatest willingness to pay is that he does not know that Harpo placed a relatively high value on the egg required for his facial emulsion, that Groucho used crushed egg shells for decoration and was willing to pay as much as Harpo to have two eggs, or that Chico was interested in tempera paint and was willing to pay considerably less than the other two individuals for even one egg. By allocating each individual one egg he fails to acknowledge, as he must, the individual differences in what these eggs would be used for and how much each individual would be willing to pay in order to achieve their individual goals. The planner does not know of the painters, decorators and cosmeticians who are willing to pay for the limited number of eggs. In the case of the market process, the fact that individuals are willing to pay the market price solves the problem of deciding who places sufficient value on the good at hand without the need to know anything about the different objectives of the individuals in the economy. The market price divides the individuals into two classes; one comprises the individuals who value the commodity at least as much as the going market price, while the other consists of those individuals who do not. In doing so, the market price tells us something about the market for that good --the identity of those individuals who have been willing to pay the cost of providing the good.

The market price can also provide an up-to-date synthesis of the information advances made by individual agents that no single individual, equipped with even the mightiest of computers, could oversee, let alone absorb. A slight modification of the parable provides one direct way of seeing the point at hand. Imagine that Harpo has discovered quite by accident --he had observed the greedy mutt consume his 'facial lotion' one week prior to the agricultural show-- that raw eggs enhance the sheen of his showdog's coat. So impressed is he with this newly found knowledge that he is willing to pay as much as \$20 per egg to cover the entire market supply. In this setting, the total number of eggs traded on the egg market will be six eggs at a price of \$20 per egg. Harpo will indeed be the sole consumer of eggs. The new higher market price reflects the modified value of eggs in the economy. The hapless planner, on the other hand, does not know of the recent discovery and continues to

transfer one egg each to the three brothers scarcely aware that egg distribution as well as the total provision of eggs are inefficient under his regime. The new opportunities so readily exploited under the market remain totally unexploited under the dead hand of the planner.⁷

It is worth pointing out that the static or timeless nature of the parable analysed here does not offer any insight into the important concept of quasi-rent. Quasi-rents are of critical importance in the allocation of resources in any economy, although economists have often belittled their importance by focusing their attention on static equilibrium outcomes. In recent years, economists belonging to the so-called ‘Austrian school,’ especially Kirzner (1973, 1979), have argued that the notion of static equilibrium misses the importance of quasi-rents in the whole issue of resource allocation. The important lessons associated with the parable therefore need to be supplemented with a word or two about the role of quasi-rents.

2.4 The role of quasi-rents

Quasi-rent is a return to some durable asset over and above opportunity cost. Unlike the case of rent, where the supply of the factor is permanently fixed, the notion of quasi-rent attempts to capture the fact that while the resource is momentarily fixed in supply it will change in response to higher rewards over time.

Kirzner paints the following picture of the market process. At any particular point in time, existing quasi-rent provides a signal to ‘alert entrepreneurs’ that there is scope to earn an above-normal return. In the pursuit of these higher returns, the supply of the asset (or the output obtained from it) is expanded. As a result, given market demand, the price of the asset or output will fall over time, thus reducing, or at the extreme eliminating, the quasi-rents. In an uncertain world, some entrepreneurs will make mistakes and suffer losses as a consequence. This may be caused by several things: the perception of the return may have been too optimistic, or the fall in price due to supply expansion may have been much larger than anticipated. Entrepreneurs that are making ‘too many’ mistakes will eventually fall by the wayside. On the other side of the spectrum, some individuals will experience continual success in the market place. It is the pursuit of these quasi-rents by individuals that performs the essential function of resource allocation in the economy.

The explicit emphasis on quasi-rents as the dynamic of the market process makes Kirzner’s work more useful in interpreting the real world. The difference between the static

and dynamic interpretations of the market process can be illustrated with the aid of the following joke which is well known among economists:

Two economists are walking down the footpath. The one exclaims 'There is a \$100 note on the footpath over there', upon which the second explains 'That cannot be so, because if it were true then someone would have already picked it up'.

Although there is nothing worse than explaining a joke, what it means is that the second economist has adopted a static equilibrium perspective which does not allow him to acknowledge the existence of unexploited opportunities for gain. In the dynamic perception of the world, agents will actively search for \$100 notes, some of them will find some, whereas other individuals may fail to perceive the opportunity. In the process, real time will have elapsed, and the \$100 note will have been on the footpath for some time.

In the market process, assets can be augmented by individual decisions. This does not mean that the quasi-rents thus created are in any sense 'artificial' or to use Schumpeter's term 'contrived' (Schumpeter, 1954, page 937). In fact, quasi-rents are continually being created and eliminated in competitive markets --no single individual has the market power required to maintain any quasi-rent for a significant period of time. The quasi-rents earned over time can be referred to as the 'natural' return to the assets in question. Contrived quasi-rents occur in situations where an individual has the ability to alter market conditions and prevent the erosion of the returns to the asset. Examples of contrived quasi-rents mentioned by Schumpeter (1954, page 937) include scarcity created by collusion as well as other institutional conditions such as protective duties and pieces of labour legislation.

Recently there has been considerable interest in yet another aspect of quasi-rent. Alchian (1987, page 142) discusses so-called composite quasi-rents or expropriable quasi-rents. Composite quasi-rent is the difference between the rent arising from the joint operation of two or more separately owned resources and the sum of the rents these resources could obtain if operated independently. The concept can, perhaps, be illustrated with the aid of the following example based on Klein, Crawford and Alchian (1978). Suppose individual A has to obtain special printing equipment to fulfil an order placed by individual B, the only one who will make use of this equipment. B promises to pay \$5000 per day for A's printing

services. A is happy with this as his cost structure indicates that he will be able to make a profit. Assume that A's daily fixed costs are \$4000, daily variable costs are \$1000 and if he were to sell the printing press, the current salvage value would be \$50. The current quasi-rent on the machine once installed is \$3950, being the difference between the contracted rate (\$5000) and the opportunity cost of operating the machine (\$1000 plus \$50). Once the decision to purchase the machine was made, the fixed costs of \$4000 no longer play a role in his day-to-day decisions of whether to leave the machine idle or sell it for scrap. As a result, the fixed costs do not enter into the calculation of the daily quasi-rent. In other words, the \$4000 are only relevant before the machine is purchased and the contract with B is signed.

Once the machine is installed, B can then attempt to 'hold up' A by arguing that he is only prepared to pay \$1051 for A's services. A would still have an incentive to provide the service as B's offer is \$1 higher than the opportunity cost of operating the machine. B has managed to expropriate all but \$1 of A's original quasi-rent. The expropriable quasi-rent is therefore \$3949.

One might raise the objection that the example trivialises business operations and therefore raises doubts about the relevance of the whole section. Does it make sense after a contract has been drawn up that one of the parties will renege on the conditions, in this case proposing a smaller than agreed-upon payment? In a world of completely specified (and costlessly enforced) contracts, this would indeed be a valid objection. In practice, however, contracts can at best be only incompletely specified owing to the inherent uncertainty created by time. It is B's ability to exploit the terms of the contract that allows him to propose a lower payment.

The relevance of the concept of expropriable quasi-rents lies in the fact that it allows us to investigate the economic rationale behind observed business practices and institutional forms. Returning to the example, one way for A to reduce B's ability to act opportunistically post-contract is for A to demand a performance bond to be forfeited upon misconduct by B. Alternatively, A and B can vertically integrate to operate as one firm.

There is nothing in the logic of the analysis preventing A from trying to act opportunistically towards B. Suppose, for example, that B has no other immediate supplier of the required printing services. It may then be possible for A to 'hold up' B. But B's response to this could be to install or hold standby facilities which could perform the task.

Regardless of the direction of the opportunistic behaviour, real resources are being devoted in order to maintain the terms of the contract and the expected quasi-rents.

2.5 A question of trust

There is, of course, a real danger in characterising all economic exchange as a continual process of 'cheat and be cheated' on the part of all agents. Basu (1983) tackles this issue in a particularly illuminating fashion when he asks why we don't walk off without paying after a taxi-ride. Consider the case of an individual late at night in Sydney. The street is deserted. If there is nobody on the street when he is getting out, then clearly economic rationality would seem to suggest that he run off and not pay (provided the taxi driver looks less fit than him or is incapacitated in some way).⁸ Or, alternatively, economic precepts might suggest that the taxi driver expropriates the passenger's wallet of its entire content. All this certainly follows from the perspective espoused by Klein et al. (1978), where each and every individual is out to exploit every opportunity for personal gain. A moment's thought about everyday life reveals that there must be something else accounting for the absence of extreme opportunism. Basu (1983) suggests that agents adhere to norms and morals, even at the expense of their pecuniary interests. We tend to pay for the taxi ride because we think it is right to fulfil one's obligations. The point we are trying to convey is that the successful operation of the market system will depend on unwritten moral rules as well as the more familiar and obvious explicit legal dimension of the parable.⁹

Endnotes

1. The concept of economic rent is one of the oldest concepts in economic science. Classical economists defined rent simply as payments to the owners of land. The concept of economic rent was extended by Alfred Marshall. He defines rent as 'income derived from the free gifts of nature' (Marshall, 1920, page 62). In that sense, the scarcity of the resource is considered to be a given state of nature, not subject to manipulation by any individual economic agent. The modern interpretation of economic rent is even more general. A factor of production is said to earn economic rent if its payments are above what would have induced it to its employment.
2. It is possible for the situation to be such that the market for a factor of production is as indicated in Figure 2.3. The supply curve (S) for the factor is vertical, which indicates that there are no alternative uses for this factor elsewhere in the economy. So, regardless of the payment to the factor, the quantity offered for sale in the market place is always equal to Q^* .

Fig. 2.3: Economic rent with fixed supply

Suppose that in equilibrium in the market for this factor, the payment to the factor will be at the level where demand equals supply, that is, at P^* . Now it is clear that the suppliers of the factor in question are earning economic rent. Indeed, the supply of the factor is equal to Q^* even if the factor is paid a zero amount. Hence, the entire amount paid to the factor, equal to area OQ^*AP^* in Figure 2.3, constitutes economic rent.

3. A question might be raised here. Why does confiscation result in a loss equal to the value placed on the second, as opposed to the first, unit held by each individual? In answering this query, it ought to be borne in mind that the eggs are identical to each other in all respects. One egg could be interchanged with the other egg without affecting in any way the individual's evaluation of the two eggs. It is simply not possible to identify the value of any particular egg. So when an egg is confiscated, the individual loses the value he had placed on the last egg, or what economists call the marginal egg. Larry had been willing to pay up to \$14 to consume two eggs. If asked how much he would be willing to pay to consume one egg, he would reply \$12, the value on his first unit of consumption. The confiscation of one egg results, therefore, in a loss of \$2--the difference between his willingness to pay for one and two eggs.
4. It might be argued that Groucho cannot be as well off under the planning arrangement as he only gets to consume one rather than two eggs. It is true that under the market arrangement he secures more eggs. But he also pays for each additional egg. In the case of the market he pays \$9 for each egg but only values that second egg as being worth \$9 to him, leaving a consumer surplus only on the first egg.
5. It is worth noticing that some economists argue that it is inadmissible to sum the consumer and producer surpluses across the individuals concerned and that the measure of social surplus is of little interest to the analyst in assessing the performance of some institutional arrangement. Instead, the outcome that follows from the interaction between individuals within some institutional context ought to be

assessed by asking whether or not each individual is no worse off as a result of the process. If some individuals are better off and no other individual is worse off, then the change is regarded as desirable. In the case of the market process each and every individual is made better off by trading. This of course follows from the simple observation that individuals would not voluntarily surrender their property right over a commodity unless this made them better off. In this particular case the two ways of assessing performance lead to the same end. The market exhausts all the potential gains from trade, which is to say that it improves and fully exploits the lot of all the participants. For the sake of simplicity, the performance of the various institutional arrangements discussed in this work will be made with respect to the size of the total social surplus.

6. The informational advantage held by the use of the market process was forcefully expounded by Hayek (1945).
7. In all the examples in this section we have implicitly assumed that the eggs cannot be re-sold.
8. It is worth noting that the scenario has been set up in such a way that the individual can draw the conclusion that he is not at risk of any penalty if he runs off into the night without paying. The individual's decision to pay the taxi driver cannot be explained, therefore, by making an appeal to the expected penalty of the law. In fact, for this type of individual --those who do not opportunistically exploit every situation to their own advantage-- the law does not influence their own behaviour. The possibility of altering the opportunist's behaviour by the law is examined in a subsequent chapter.
9. This phenomenon has been extensively studied by other social scientists as well as moral philosophers. See, for example, Elster (1989), Coleman (1987,1990), and Parfit (1984).

Chapter 3: Political Rents

3.1 Introduction

The previous chapter goes some way to describing the central advantages of the market process. Efficient resource allocation is achieved as if all decisions were guided by an invisible hand. The analysis is instructive. Push most conservatives and sooner or later their position will rest on the advantages of the market process. The discussion is, however, incomplete. Taken at face value the message of Chapter 2 seems to be that there is no role for political agents. Let the market do it, seems to be the catchcry. And to be sure the market will handle the production and exchange of goods and services in an appropriate manner. Individuals will be able to buy the refrigerator or toilet paper of their liking and in so doing, improve their feeling of wellbeing. By the same token, firms are willing and able to allocate resources in such a manner as to produce a sufficient number of fridges or so-called 'green' products to satisfy demand. Following changes to the demand for fridges, say due to the greenhouse effect, there is no need for the government to decree to the producers that they must build more fridges. Producers, in their pursuit of profits, will employ more resources to meet the increased demand. But this goes too far. There is a role for government. The market process will collapse without the benefit of the intervening hand of government.

3.2 The role of government in resource allocation

3.2.1 Static resource allocation

Indeed, a crucial role to be played by the government is the enforcement of the 'rules of the game.' In order for this voluntary exchange of refrigerators for money to take place unimpeded, individuals need to be secure of their property rights. For example, the individual who walks into a retail outlet must believe that the shopkeeper will not be allowed to simply take the money from his wallet. The choice to part with the money must lie in the hands of the purchaser. By the same token, the choice to part with the fridge must remain in the hands of the retailer. The government's role in this voluntary exchange is to protect these entitlements by means of the judiciary and the police force.

Since the notion of property rights features widely in this work, it is useful to explore the concept in some depth. Suppose an individual acquires a licence to open a shop.

Alternatively, imagine that a company acquires a licence to mine a certain tract of land in the outback. It is all too easy to draw the conclusion that these individuals have acquired a valuable asset. The value in use of these items is dependent, however, on what the individuals are entitled to do with these assets. Suppose, for example, that although the mining company has an exclusive right to mine the land, it has no entitlement to sell the output on either the domestic or the international market. In such a setting, the licence to mine the land would be virtually worthless. Alternatively, suppose that the licence to operate the shop prohibits the store from being opened over the weekend period. Here individuals would place a lower value on the licence than in the case where they had the option themselves to decide on their shopping hours. It is, therefore, worth bearing in mind that what individuals are acquiring are bundles of property rights rather than inanimate objects. A property right is a multi-dimensional concept. A property right specifies (a) the form of ownership, (b) the uses that may be performed, and (c) the forms of transferability that may take place with a resource.

Take the case of your motor vehicle. The law specifies that any individual may hold an entitlement in a motor car; the privilege is not restricted to some specified group of individuals. This would not be true if we had taken instead automatic assault weapons as our example. In this case, ownership is restricted to particular groups such as the armed forces and police departments.

With respect to use, you have a private property right if your decisions about the use of the asset dominate those of all other individuals. In the case of the shop operator, he has the private right to determine what prices he will charge. He is not restricted to some retail price maintenance scheme set in place by the manufacturer. Take the case of your automobile. You do not need to ask your neighbours, for example, whether or not you can drive your car down to the local corner shop, and your neighbours must first seek your permission if they wish to borrow your car. Your car is not some form of common property¹ or open access resource like international waters where anyone can avail themselves of the resource. Nor do you have to seek the permission of the government to drive your car to the country on a Sunday afternoon. It is not some form of social property right.

It is clear, however, that you do not have unrestricted right of use. Your right is attenuated by certain government laws. The Traffic Code specifies that while you may drive your car on a public road if your car is roadworthy and licensed, you must not, for example,

exceed a certain speed. Nor do you have the right to drive your car across double lines. You must drive on the appropriate side of the road. You do not have the right to drive your car through your neighbour's fence.

Finally, property rights encapsulate how assets may be transferred. In the case of your motor car, you are free to sell it on the used-car market. The law merely specifies what procedures must be carried out so that the exchange is recorded appropriately. In some cases, individuals cannot transfer their rights to some other individual. The rights of citizenship, for example, cannot be legally bought and sold on the market.

So far, we have argued that the government's role in the market process is indirect, aimed at designing and maintaining the appropriate institutional structure. The government may, however, have a more direct role to play in other situations. Consider, for example, the case of so-called externalities or neighbourhood effects. Here, the market outcome may be improved upon by government action. A classic example of an externality is based on Coase (1960) and further illustrated by Gifford and Santoni (1979, pages 38-40). Suppose there are two farmers that have contiguous unfenced plots of land; one grows crops, while the other raises cattle. The cattle have a tendency to stray and destroy part of the crops in the process, and this damage increases as the grazier increases the size of the herd. For the sake of simplifying the argument, Gifford and Santoni introduce the following arithmetical example, which is reproduced in Table 3.1.

Table 3.1: External effects, I

Cattle (\$)	Profit of grazier (\$)	Loss to farmer (\$)	Net benefit
9	94	0	94
10	100	2	98
11	105	3	102
12	109	6	103
13	111	10	101
14	112	15	97
15	111	21	90

In the absence of well-defined property rights, the grazier would maintain a herd size yielding the maximum profit. He would run 14 head of cattle and make a profit of \$112. The farmer's loss as a result of the grazier's decision is \$15. This loss represents the size of the external cost imposed on the farmer by the grazier. The net benefit to the collectivity is \$97, which represents the gain to the grazier minus the loss to the farmer.

It is clear from the figures in the fourth column of the table that it would be possible to raise the collectivity's net benefit by reducing the size of the herd. Indeed, if the grazier could be somehow persuaded to hold only 12 head of cattle, then his profit would be \$109, the farmer's loss would be \$6, yielding a net benefit of \$103. This outcome is referred to in economics jargon as the social optimum --the outcome associated with the largest net benefit to the collectivity. As it stands, the grazier has no incentive to reduce the size of his herd, as this would result in a loss of profits of \$3.

One way to achieve the social optimum is for the government to specify the rights pertaining to the use of the land. It can either allow the grazier to let his cattle graze without restrictions, or it can give the farmer the right to be free of straying cattle. In the first case, the grazier would simply choose his profit maximising herd size of 14. If the farmer and the grazier get together, however, it turns out that they can gain from trade. The grazier can be induced by the farmer to reduce the herd size. The farmer would be willing to pay up to \$5 if the grazier reduced his herd by 1 head from 14 to 13. If the farmer pays exactly \$5 then he is equally well off as a result of this move. If, however, the grazier accepts say, \$4, then the farmer is better off by \$1. He has paid \$4 in order to reduce his crop losses by \$5. The grazier is willing to accept anything equal to or above \$1, because the herd reduction reduces his profits by \$1. If he were paid \$4, then he would be better off by \$3. Using the same reasoning, the farmer would be willing to keep trading rights with the grazier until the herd size is 12. Although the farmer sustains a crop loss of \$6 at that point, there are no further gains to be had from trade. This is because he would have to pay at least \$4 to the grazier in order to reduce the herd to 11 and reduce his loss by a further \$3. Clearly, this is not economically rational.

The remarkable point is that the trade between the farmer and the grazier has yielded the social optimum. It was not necessary for the government to wield its heavy hand in the form of taxation or regulation, in order to obtain this result. All that was necessary for the government to do was to clearly specify who had the rights pertaining to the use of the land.

The same result would have been achieved had the right been assigned to the farmer. In that case, the farmer would have the right to be free from all strays and his choice would be for the grazier to run no more than 9 head of cattle, since his crop loss would be reduced to the minimum at that point. The grazier has an incentive to bargain with the farmer in this situation. In order to be allowed an extra head of cattle, he would be willing to spend up to \$6, which would more than compensate the loss to the farmer which is \$2. Obviously, there are gains to be had from trade. The trading would continue up to the point where no further gains can be attained. This occurs at a herd size of 12, which is of course the social optimum identified above.

Irrespective of the government's initial assignment of the property rights, the social optimum has been achieved. It is important to the subsequent discussion to bear in mind that the distribution of income is affected by the government's decisions. In the first case, for example, the grazier was assigned the initial property rights and the farmer had to pay the grazier in order to reach a better outcome for himself. Suppose for the sake of argument that the farmer paid \$7 to the grazier in order to get the cattle size down to 12. The grazier's income has clearly risen from \$112 to \$116 (being \$109 profit plus \$7 compensation). Although the level of the farmer's income is not given here, it is clear that his income has risen by \$2 (being the reduction in crop losses of \$9 minus his pay-out of \$7).

If the assignment of property rights had been the other way around, then the distribution would favour the farmer. Suppose that the grazier paid the farmer \$12 in order to be allowed to hold 12 head of cattle, then his income would only be \$97 (being \$109 profit minus the compensation of \$12). The farmer's income would have increased by \$6 (being \$12 pay-out minus \$6 crop losses).

Economists by and large worry only about achieving the social optimum, relegating these distributional effects to their more philosophically inclined colleagues. This occurs because economists feel that questions of resource allocation and efficiency are more objective than the value-laden questions about what the appropriate distribution of income is. As we shall argue below in Chapter 5, however, the distributional issue does have important ramifications for issues concerning efficient resource allocation.

Fig. 3.1: Gains from trade

Returning to the example of the grazier and the farmer, the issue at hand can be best captured with the aid of Figure 3.1. The vertical and horizontal axes represent the farmer's and the grazier's income respectively. The curve AEFB represents the collectivity's income possibilities curve² For each level of income for the grazier, points on this curve denote the maximum income possible for the farmer. Points along EF are often referred to by economists as efficient outcomes. Only combinations within the area OAB can be attained, and points outside that area are physically impossible to attain.

In the farmer/grazier example, the original situation before assignment of property rights is denoted in Figure 3.1 as point C. The income of the grazier is \$112 and that of the farmer is OD. Since point C lies within the area OAB, it is possible to improve the farmer's income without making the grazier poorer, that is, the move from C to E is possible. By the same token, the grazier can be made better off without harming the farmer's income, that is, the move from C to F is also possible. Of course, points E and F are the extreme cases and any point within the area CEF is preferred by both the farmer and the grazier. Points along the fine segment EF represent those situation in which all the gains from trade have been exhausted.

By assigning property rights the government enables the move from C in a north-easterly direction by means of voluntary trade between the grazier and the farmer. Economists consider this to be relatively uncontroversial since neither individual involved could complain about the result --they both end up at least as well-off as before the move. Neither individual chooses any particular point along EF. Rather, the outcome is generated by purely self-interested trading. The agents are driven by the famous 'invisible hand' towards the new outcome. Matters become much more controversial, however, if the government should attempt to directly choose the outcome along the curve AB by using its 'distributing hand'. Any point along AE could be chosen by the government, through taxation or regulation, and it would represent an efficient outcome. Any point along AE will leave the grazier worse off as compared to point C. So by choosing such a point, the government is making the much more controversial judgement that the farmer ought to gain at the expense of the grazier. Note that this is not the case for points along EF.

In the examples given here, the role of the government has been a fairly passive one. It has protected and assigned property rights and that proved sufficient to provide the appropriate setting for voluntary trade. It is, of course, true that in some cases more drastic

government action is needed. The examples we have already discussed worked because we implicitly assumed that the bargaining between the farmer and the grazier over the terms of the contract was inexpensive and free of the opportunistic behaviour identified in Chapter 2. These complicating factors fall under the general rubric of transaction costs.

A modification of the example of the grazier and the farmer can be used to illustrate the importance of transaction costs. Suppose that there is still one grazier, but that there are many small farmers on land adjacent to his. Here, each farmer can gain if there is a reduction in the herd size. Indeed, if one farmer bargains successfully with the grazier and the herd size is reduced, then all other farmers will benefit from this as well. If each farmer believes that he can obtain this benefit without paying any compensation to the grazier or contributing to a representative agent for all farmers, then no bargaining will occur and the social optimum will not be reached. This is known in economics as the free-rider problem. The transaction cost of organising the farmers to act as a collectivity are too high and cause the gains from trade to remain unexploited. The government may be able to overcome the free-rider problem and may achieve a better resource allocation by either taxation or regulation. Returning to the original farmer/grazier example, and assuming that transaction costs were too high for trade to take place, a tax of \$2.10 per head of cattle would lead the grazier to adopt the herd size of 12, since at that point his after-tax profits (being \$109 minus 12 times \$2.10) are maximised. Compared to the earlier case without government action, the income distribution is different. The grazier's after-tax income is \$83.80, the farmer's rise in income is \$9, and the government's coffers are richer by the tax revenue of \$25.20. Regulation specifying that the herd size is not to exceed 12 head of cattle would achieve an efficient outcome as well. Of course, all of this presumes that the government is omniscient and fair. The important point to note is that there can be a role for government in addition to protecting and enforcing property rights. We will take up the issue of imperfections in government's policies at a later stage.

It is also worth stressing that the government can, under certain circumstances, reduce the degree of waste due to transaction costs by initially assigning the property right to the individual who values the asset the most. In order to see what is at stake here, consider a slightly amended example of the farmer/grazier example.

Table 3.2: External effects, II

Cattle (\$)	Profit of grazier (\$)	Loss to farmer (\$)	Net benefit
9	94	0	94
10	100	1	99
11	105	2	103
12	109	2.5	106.5
13	111	3	108
14	112	3.5	108.5
15	111	4	107

Compared to the previous case, the farmer suffers a lower loss at each herd size. An examination of the column of net benefits reveals that the social optimum occurs when the grazier runs 14 head of cattle. The level of net benefits to the collectivity is \$108.50. It will be recalled that such a herd size is precisely the number of cattle that the grazier would run in order to maximise his own private profits. In this particular example, the private and social optima therefore coincide.

In order to appreciate the effect of transaction costs on the size of the collectivity's net benefit, consider the following setting. Assume it costs the grazier \$5 if he enters into negotiations with the farmer. If the government assigns the property right to the farmer, then it is clear from the structure of the example that there are potential gains to be made from trade. The grazier stands to make a net profit of \$107 if he can gain the right to run his herd (that is, a profit of \$112 minus \$5 worth of transaction costs) which is clearly greater than the profits he can gain if the farmer enforces his property right.

The farmer also stands to gain from the trade. The farmer's net gain from the exchange of property rights could be as much as \$9.50. This amount represents the difference between the grazier's maximum willingness to pay, net of transaction costs, to run 14 head of cattle and the farmer's loss of \$3.50. Given these limits, it is clear that in principle there exists some bargain that could be struck in which both individuals gain from the exchange.

It is all too easy to lose sight of the fact that the government's assignment of the property right to the farmer has dissipated some of the collectivity's net benefit from the two

farming operations. The net benefit to the collectivity associated with a herd size of 14 is \$103.5 --the net benefit minus the transaction costs of achieving the reassignment of the property right. If the government had assigned the property right to the grazier in the first place, then the net benefits from the two economic operations would have been \$108.5. The government can in principle avoid the dissipation of benefits by first assigning the property right to the individual who values the entitlement the most. In this way, the transactions costs associated with reallocating the entitlement to the grazier are avoided.³

It is important to bear in mind that the external effects discussed here are so-called technological externalities. The consequence of an individual's action is transmitted through the units of output (wellbeing) that can be obtained from an enterprise's (consumer's) resources. Pecuniary externalities result from a change in the price of some resource in the economy. The distinction is an important one in economics. While there may be a case for intervention to correct technological externalities, there is no case at all where pecuniary externalities are concerned.⁴

It is useful to illustrate these distinctions in terms of the example of the farmer and the grazier. Recall that the grazier's cattle strayed from his property and trampled some of the farmer's crop. This is an example of a technological externality. The actions of the grazier affect the amount of output that the farmer can obtain from his plot of land. The impact of this externality raises the social cost of producing steers. The analysis demonstrated that the individuals concerned should be induced by some institutional arrangement to take into account the cost of their actions on each other. One might believe that this situation is replicated exactly in the case of pecuniary externalities. Suppose that as a result of increased demand for fertiliser, the farmer experiences a rise in his costs. One might believe that government action is warranted here too, for the loss the farmer experiences from an increase in his costs would seem to be no different to the loss he experiences when his neighbour's cattle trample some of his crop. Both are surely equally annoying to the farmer irrespective of their source. Both result in an increase in the individual's cost structure. What is of crucial concern, however, is the source of the external effect. The change in costs to, say, the wheat farmer brought about by the change in input prices warrants no intervention since the external effect is an essential characteristic of the market process. A word or two of explanation is required here. Suppose the increase in the price of fertiliser arose as a result of sugar cane farmers increasing their demand for fertiliser. Sugar cane farmers had noticed that individuals

in the market were willing to pay more for sugar. The increase in the demand for fertiliser increased its price and this had brought about the increase in the wheat farmer's costs. Intervention is not warranted here. The increase in the wheat farmer's costs means that he will cut back on his demand for fertiliser. This releases resources to be used in the sugar industry where they are of greater value. The pecuniary externality does not generate any misallocation of resources that would warrant any institutional reform. In fact, the change in price is required to provide a signal that resources ought to be redirected to other parts of the economy.

It is, of course, true that some individuals are made worse off as a result of this adjustment. At the very least, the wheat farmer will sustain a loss in profits. At the most, he may be forced to sell up and move off the land. Specialised factors used in the wheat industry will have their economic rents reduced too as a result of the cut-back in wheat production. There will be a painful period of readjustment. There is a cost to using the market system. And in order to ameliorate this cost, there may be some role for a welfare state. Yet whatever the aid, one thing is clear: farmers in the sugar industry should not be forced by any institutional change to take the wheat farmer's change of costs into account. Such a change would defeat the purpose of the market system.

Given the strong theoretical case for government intervention where technological externalities exist and transactions costs are too high, an interesting question arises as to whether the general principles advanced here are helpful in explaining current existing institutional and legal practices. Is it really the case that governments are observed to be allocating rights on the basis of who values the entitlement the most? Some highly influential scholars have taken the view that the general principle advanced here goes a good way towards rationalising some aspects of our legal code.

Ronald Coase (1988), for example, argues that the law against blackmail can be explained as a way of reducing the transaction costs associated with blackmail itself. If blackmail is made illegal, then some individuals will decide that the risks of, and costs associated with, this criminal activity outweigh the potential gains from blackmail. In this case, such individuals will turn their energies and resources to some other activity, thereby increasing the value of production in other areas of the economy.

The principle advanced here has considerable general applicability. Parents, for example, are assigned certain rights over the newborn child. They can take the child home

and give it their name. Later, they can determine whether the child will go to a state or private school. There is no need for them to go through any costly process to claim that they, rather than some other adult, have the right to make such decisions. Such rights are given to the parents because a judgement has been made that they value the child's welfare more than some other adult, that efficient resource allocation is promoted by assigning these rights to the parents and not some stranger in the maternity hospital who happened to be passing by. The collectivity, therefore, avoids the waste that would occur if each parent had to go through the court system in order to establish that they had these rights of guardianship.

Or take another example. Individuals are assigned certain rights over their body. An individual's eyes are assigned to the person who presumably values them the most, the individual himself. The individual can decide whether or not he wishes to declare on his driver's licence that he is willing to have his eyes taken for a corneal transplant in the event of his death. The individual is assigned this right at low cost to the economy. He does not have to go through any costly court procedure in order to establish this right of use over his eyes.

Although this discussion goes some way to identifying the factors that ought to be considered when entitlements are initially distributed, it by no means spells out all the important factors. Reconsider the example of the farmer and the grazier. There it was argued that the property right ought to be assigned to the grazier since it is this individual who values the entitlement the most. In this way, the transactions costs which dissipate the return to the collectivity of the two farming operations would be avoided. The analysis relies on a certain epistemological premise. If it is relaxed, then the conclusion made about who ought to be assigned the entitlement is somewhat altered.

In truth, it may not be possible to specify who values the property right the most for precisely the same reasons that the planner could not identify who valued the eggs the most in the parable discussed in Chapter 2. Not all cases are as clear as who should be assigned the rights of guardianship over the new-born child or who has the right to determine whether his eyes should be used for some corneal transplant. It may be difficult to form any clear presumptive case of who values a particular property right the most. In a world in which transaction costs are positive and where individuals lack knowledge about other persons' willingness to pay, the task is to find a method of distribution that leads to an efficient initial allocation of resources. In this way, the needless waste associated with reassignment of the

entitlement may be avoided. Will random distribution of the entitlements do the trick? Should individuals be asked to queue and the entitlement distributed to those first in line? The general issue of how entitlements can be assigned to those who value them the most is explored in depth in Chapter 4.

Another set of problems arises when the rights to use a resource are either so poorly defined or enforced that individuals are free to use the resource as they see fit. The resource belongs to no one and is free to be used by anyone. International waters surrounding Australia, for example, are owned by no particular individual or country. Any individual can exploit the fish stocks in those waters without the need to seek permission from any other individual or national government. Fishermen can use fishing techniques such as drift lines that are banned in domestic waters. A particularly striking example of these so-called 'open access' or 'common property' resources is the global environment. Since the atmosphere is owned by no single entity, it is difficult, if not impossible, for Australia on its own to exercise any control over the use (or misuse) of the resource. A moment's reflection about Australia's inability to stop France testing her nuclear weapons in the Pacific Ocean illustrates the point.

The phenomenon of open access resources can arise even when ownership is technically feasible. Consider inland waterways; these are owned by the state. Suppose the state government for whatever reason fails to monitor the regulations that apply to the use of the asset. In this case, the resource can be analysed as an open access resource despite the fact that there are restrictions on use.

In order to gain some appreciation of the problems (and indeed tragedies) that can arise with open access resources, it is useful to consider a simple economy. Let us suppose that there are two sectors and 20 workers in the economy. Half of them work on the land and receive a wage of \$100 each. For simplicity's sake, suppose the wage in the agricultural sector reflects the value of output to the economy and that this return does not change as the number of workers in agriculture rises or falls. The other half of the labour force works in the fishing sector and brings back a catch worth \$2000. Suppose the workers in the fishing industry are equally productive and thus each earn a wage of \$200. The net social value of these two sectors to the economy is \$1000. The individuals working in the fishing sector forgo the wage they could have earned in the agricultural sector and this represents the cost to the collectivity of their involvement in the fishing industry. This cost must be taken away from the value of the catch in order to derive a measure of the net social value of this activity

to the economy.

Individuals who perceive the difference in the returns from the two sectors believe that they can improve their individual lot by changing occupations. An agricultural worker who has the opportunity to leave the land at low cost will expect an increase in his wages. Suppose the increased level of fishing effort results in an increased catch worth \$2035. The eleven workers engaged in fishing now each earn \$185. There are a number of points to be made about the analysis here.

Although the individual's decision to change occupations results in an increase in his own wages, it leads to a loss in the social value to the collectivity. The increase in social value arising from the entry of an additional worker in the fishing sector is \$35. This gain comes, however, at the expense of a loss of agricultural output, equivalent to \$100. The net loss to the collectivity is therefore \$65. The economic rent arising from the use of the land and the sea will have been reduced by \$65. In fact, the loss arising from the misallocation of resources will increase as workers in the agricultural sector who can leave the land at low cost continue to head for the sea in search of the relatively higher wage. The social value from fishing will continue to fall as the number of fishermen increases. The loss to the collectivity will therefore rise since the gap between what is gained from fishing and what is lost from agriculture will widen.

The source of the misallocation arises from the lack of well-defined property rights. The individual deciding whether to enter the fishing sector need only consider his own private costs and benefits. He will change occupations if there is an increase in his own income. That the other individuals in the fishing sector experience a fall in their wages as a result of his actions is of no interest to the individual. The individual is free to enter the industry; there is no social rule that encourages the individual to take into account the cost that he is imposing on his fellow workers.

The collectivity can improve the allocation of resources by restricting the number of individuals who can work in the industry. State authorities in Australia use a number of different methods to restrict the level of fishing effort, thereby avoiding the excessive entry that leads to the dissipation of rents. Some fisheries, for example, have short fishing seasons or year-round closure for one or two years. In other sectors, such as the abalone industry, individuals must purchase a licence before they can engage in the industry. A number of issues arise at this point. Should the state authority use regulations to restrict effort or should

it limit the number of entrants by forcing potential fishermen to purchase a fishing licence? If the latter is chosen, then the question arises as to whether the authority ought initially to sell off these licenses or distribute them free of charge on the basis of, say, the individual's credentials. These issues are explored in Chapter 4.

3.2.2 *Dynamic resource allocation*

In the discussion so far, we have ignored the important role of time in the allocation of resources. Generally speaking, investment decisions by economic agents are made on the basis of current and expected future events. In order to illustrate the peculiarities that emerge in a dynamic setting, consider the following simple example drawn from Haddock (1986) and presented in a modified form here. A group of Eastern farmers is considering occupying land in the West. There is only room for one farm. The West has recently been experiencing a boom and therefore the Eastern farmers believe that the value of agricultural produce in the West will rise over time. Suppose that current and expected future earning streams for farms in the East and in the West are as given in Table 3.3.

Table 3.3: Earning Streams

year:	t	t+1	t+2	t+3	t+4	t+5	t+10	t+15	t+20	t+25	t+30
Western farm now	150	155	160	165	170	175	200	225	250	275	300
Eastern farm now	200	200	200	200	200	200	200	200	200	200	200
Best mix	200	200	200	200	200	200	200	225	250	275	300

Period t is the current period. Row 1 indicates that the return from agricultural output on a Western farm increases by \$5 each year. Row 2 shows that the return value from agricultural output in the East is not expected to change. Clearly, from the viewpoint of the present (period t, it is optimal to keep farming in the East until period t+10, after which the farming in the West becomes more profitable. The decision to start farming in the West at period t+10 is optimal from the viewpoint both of the Eastern farmers and society. This is because the stream of agricultural output is maximised when the settlement occurs at period t+10. As the

third row in Table 3.3 shows, switching in period t would mean giving up \$200 from farming in the East in order to gain \$150 in the West. Clearly, this is not economically rational. The same holds for any settlement date before period $t+10$, when it becomes just rational to switch from the East to the West. After $t+10$ the return from farming in the West outweighs the output lost by giving up farming in the East.

If the government does not intervene by assigning property rights, then it is likely that settlement of the West will not occur at the optimal time. The reason for this is that individuals will attempt to claim ownership of the farm in the West by settling there before any other claimants can do so. Suppose possession of the land in the West is determined on a first-come-first-served basis. In that case, it would be rational for risk-neutral farmers to settle in the West at the point where the present value of the net income stream of the farm in the West turns positive. Net income is defined as the difference between the present value of farming in the West minus the forgone present value of continuing to farm in the East. The figures are calculated on the basis of a series of time frames and have been presented in Table 3.4. The first figure in each row indicates the value of farming in the particular region from time period t . The second figure represents the present value of farming in the region as seen from time period $t+1$ and so on.⁵ For example, the present value of a farm in the West if settled four years from now (period $t+4$) is \$950 in period $t+4$ dollars.

**Table 3.4: Present Value of Earning Streams
with discount rate of 25 % per annum**

year:	t	t+1	t+2	t+3	t+4	t+5	t+10	t+15	t+20	t+25	t+30
Western farm now	850	875	900	925	950	975	1000	1025	1050	1075	1100
Eastern farm now	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Net	-150	-125	-100	-75	-50	-25	0	25	50	75	100

As this table shows, the present value of the farm in the East is \$975 five years from now. The individual would not make a decision to move to the West in five years' time as he would sustain a loss of \$25, as is indicated in the third row. At the beginning of year 6,

however, the present value of the farm in the West has risen by \$25 to \$1000, and the two ventures are equally profitable. As the third row in the table indicates, the Western farm is more profitable than the Eastern farm thereafter. The Eastern farmer would decide now to move to the West five years from now (at the beginning of year 6).

It is, of course, true that the farmer sustains a loss as a result of this premature settlement; the profit maximising date to begin farming in the West is ten years from now. The individual, however, cannot wait the additional five years. By then the land would have already been captured by someone else. This point is aptly mirrored in the adage that it is the early bird who captures the worm.

The individual's decision to settle prematurely has important implications for the use of the economy's resources. It is easy to see that the farmer's decision to move West in five years' time is not optimal from the viewpoint of the collectivity. In the analysis above, it was shown that if the objective is to maximise the return from agricultural land in farming as a whole, then farming in the West should only begin ten years from now. In fact, the farmer's decision to settle prematurely has dissipated the entire return from opening up farm land in the West. This is reflected in the fact that the discounted value of the losses of using land in the West prematurely (from period $t+6$ to $t+10$) just equals the discounted present value of farming in the West ten years from now into the future (from period $t+11$ to infinity).

Fig. 3.2: Premature settlement of land

The lost output as a result of the premature settlement of the West can best be illustrated with the aid of a diagram. Figure 3.2 depicts the income streams associated with the two farming prospects and corresponds to the figures underlying Table 3.3. The lines P_W and P_E denote the income streams associated with farming in the West and the East respectively. The socially optimal time to settle the West is at the end of period $t+10$ where the income stream from the West just matches that from the East. In the absence of government intervention, the privately optimal time to settle is at the end of period $t+5$. Then the net present value of the settlement is exactly equal to zero, that is, the present value of area ABC exactly equals the present value of area P_WCP_E . As a result of the early settlement, the present value of the area ABC is lost to society as a whole.

It may be possible to improve the allocation of resources through time by regulation

that proscribed premature entry. In the example here, a simple regulation that no settlement should take place in the West until ten years have passed would appear to prevent the dissipation of rents. There are, of course, other methods that the government could adopt to prevent the dissipation of rents from premature entry. Since we intend to examine some of these methods below at length, it will suffice to mention merely some of the main alternatives.

The government could implement a tax on settlers so as to make it in the individual's interest to settle at a later date. Alternatively, the government could auction off the land today. Individuals would be assured of ownership as long as they were willing to pay the price. This would eliminate the need to settle early. The successful bidders would then continue to farm in the East, resulting in an improvement in the allocation of resources.

3.2.3 Comparative institutional analysis

Up to this point, the impression may have been created that failure of the market to allocate efficiently provides a prima facie case for government intervention. In the case of the externalities discussed above, government intervention was invoked in situations where transaction costs made the private market trade of entitlements prohibitively expensive. In the dynamic case of premature settlement of the West, once again government intervention was called for in order to improve resource allocation.

All of this is in keeping with the standard view of the public sector in economics. Government is modelled as a single, benevolent, omniscient 'social engineer' stepping in where needed to correct the failures of the market. Of course, in reality the government consists of private individuals. The assumed behaviour of the individuals comprising the government stands in stark contrast with the way in which these same individuals are viewed in their private dealings. There, they are modelled as self-interested agents. Over the last three decades or so, public choice economists have urged the profession to adopt a more consistent view of economic man in their models. They argue that the same model of man ought to be used when carrying out a comparison of the market and the government. Failure to do so leads to the problem of comparing apples with oranges.

As soon as one adopts the view of man in government as being self-interested and imperfectly informed, then the case for government intervention may founder. For example,

in the farmer/grazier case discussed above (in Section 3.2.1), regulatory intervention by the government led to an improvement in resource allocation. This was the case because the government was implicitly assumed to know the appropriate herd size. This requires that the government be fully aware of the cost structure of the farmer and the grazier. In the absence of such very detailed knowledge, government intervention may in fact worsen the allocation of resources. For example, the tax may be set at an inappropriate level or restrictions on herd sizes may be incorrect. To make the point clear, suppose the government decrees that graziers shall not run any more than 9 head of cattle. In that case, as is indicated in Table 3.1, the profits of the grazier are reduced by \$18, while the crop losses of the farmer are reduced by only \$15. The collectivity has given up \$18 in order to save \$15, and is actually worse off as a result of the governmental decree. Even if the government had perfect information, it still may not have the incentive to provide the socially optimal policy. The reasons for this will be discussed at length below.

The general point to be drawn from this is that the case for government intervention requires a comparison of relevant alternatives. One must not compare an actual situation to some theoretically ideal state, which would only be attainable by a omniscient, benevolent government. Rather, the comparison should be between the original situation and whatever an imperfect government makes of it.

Endnotes

1. See Brooks and Heijdra (1990) for a further discussion of the economic consequences of common property resources.
2. We are assuming away so-called incentive problems, that is, individuals do not attempt to misrepresent their income and thereby avoid taxes. The second thing we are assuming is that there is a positive relationship between income and utility for both agents. Thirdly, we assume away envy: the well-being of one agent is not directly dependent on the well-being of the other.
3. The assumption is made that once the right has been assigned to the grazier then there will be no further transaction costs. This is an heroic assumption. Suppose that the property right is indeed allocated to the grazier. The farmer may nevertheless invest some time and resources in determining whether or not the grazier would be willing to reduce his herd size. For after all, the information contained in the table is not known in its entirety by either individual and the farmer may have to spend some resources to find out that there are no gains to be had from trade with the grazier. The transaction costs associated with this unfruitful search would reduce the size of the net benefits from the two farming operations. To the extent that these costs are an unavoidable part of the process of exchange, there is no problem of waste here. There is no alternative institutional form that could achieve the outcome of finding out whether or not trade is possible at lower cost.
4. The discussion here follows that of Roland McKean (1958, pages 137-8).
5. These figures are in dollars of the year indicated at the top of each column. As a result, they are compatible across columns but not across rows. The present value calculated at the beginning of period t , PV_t , is defined as follows.

$$PV_t = \sum_{\tau=0}^{\infty} P_{t+\tau} \beta^{\tau},$$

where $\beta \equiv 1/(1+r)$ is the discount factor, and $P_{t+\tau}$ is the earning stream in period $t+\tau$. In the example, the earning stream is described by $P_{t+\tau} = 150 + 5\tau$ ($\tau=0,1,\dots$). Under these conditions, PV_t can be calculated as $PV_t = 150/(1-\beta) + 5\beta/(1-\beta)^2$. From this, we can recursively calculate future present values, $PV_{t+1} = PV_t + 5/(1-\beta)$.

Chapter 4: Governmental Methods of Rent Creation and Distribution

4.1 Introduction

The previous chapters have indicated that government actions can affect the size of the rent from an asset. Scant attention has been paid to the benefits and costs associated with different types of government intervention. This chapter will examine the various methods used by governments to create and distribute economic rents. For each method the welfare implications will be examined in detail. Where possible, the methods are explained by means of simple numerical or graphical examples.

4.2 A simple framework

Suppose the government has a fixed supply of some resource. In terms of Figure 4.1, the supply curve is denoted by S and the quantity of the resource is OA . The resource is fixed in the sense that irrespective of the price offered for it, no additional units of the resource are forthcoming in this period. For example, OA could conceivably be the number of first year places offered in a university. Alternatively, it could represent the number of abalone licences offered by some State fishing authority.

Fig. 4.1: Abundant resources

Consider now the demand side. Suppose, for the sake of argument, that the demand curve for the resource is D_1 in Figure 4.1. This demand curve represents the market's willingness to pay for successive units of the resource. Let us explain the market here in a bit more detail in terms of the tools developed in Chapter 2 for the case of the egg market. For example, the willingness to pay for the B th unit of the resource is equal to BC . The willingness to pay declines as more units are purchased. Specifically, the willingness to pay for the D th unit is DE . So far, we have discussed the willingness to pay for additional units. The total willingness to pay for OD units is the sum of all the vertical distances corresponding to area $ODEF$. Suppose that the price per unit of the resource is, for whatever reason, set at P_1 . At that point, agents would be willing to purchase up to OD units of the resource. Their outlay would be equal to area $ODEP_1$. The outlay represents a cost to consumers since they have to forgo expenditure on some other item as a result. The total

willingness to pay for OD units is ODEF. The purchasers are giving up less than what they are gaining. The difference between the total willingness to pay and the outlay is represented in Figure 4.1 by area P_1EF . This area is often referred to by economists as consumer surplus.

If the demand for the resource is D_1 and the supply is S then the market price for it will be zero. The abundant supply at every particular price means that the price of the asset will be bid down to zero. At this price, OG units of the resource are demanded and GA units remain unused. In this situation, the resource yields no rents and there is no point for the government to price this resource. In fact, if the government were to decree that the price of the resource is P_1 , then the quantity demanded would fall to OD, the consumer surplus would be P_1FE and the revenue to the government would be P_1EDO . Hence, the net loss to the collectivity would be DEG. What this example shows is that in the case of abundant resources there is no need for the government to set a price. It should simply distribute them at zero price.

Fig. 4.2: Scarce resources

Consider now the case of a scarce resource. This case is similar to that described in the previous figure save for the fact that the supply curve has been shifted to the left. In such a case, demand outstrips supply at a zero price. This case is illustrated in Figure 4.2. Here, the government cannot simply distribute the resource free of charge and satisfy all those interested in acquiring it. If the government were to do that, then demand would be OB, supply would be OA and AB units would constitute the unfulfilled demand. As the diagram indicates, the market solution would be for the price to adjust until there is equality between demand and supply. This occurs at P_1 . If the resource were traded freely on the market, then individuals would bid with each other and purchase a total of OA of the resource. In accordance with the discussion in Chapter 2, the rent accruing to the owner of this resource would be OP_1CA and the consumer surplus is P_1EC . The total benefit to society is equal to the rent plus the consumer surplus and therefore is OECA. It is worth pointing out that the market clearing price maximises the total benefit to the collectivity; any other price would lead to a lower total return from the resource. For example, if the price were P_2 then rents would be equal to P_2FGO , consumer surplus would be P_2FE and total benefit to society would be lower than at P_1 by the area FGAC. The welfare cost of setting the price too high is

therefore equal to FGAC.

The analysis here indicates what is feasible under an efficient market process. The government as owner of the resource would sell the asset at a price of P_1 per unit and the total wealth of the economy would be maximised. The question becomes whether the government should in fact mimic the market. Are there any other choices? Should it distribute the available supply of the resource by giving it away? And if this is the case, should it be done randomly or on a first-come-first-served basis? The government must choose some method of distribution. Some of the factors on which that decision should turn are explored in subsequent sections of this chapter.

4.3 Auctions

In the economics literature, a widely discussed form of distributing the resource is through auctions. This method can be illustrated with the aid of Figure 4.2. Suppose the government is willing to sell off a parcel of land to a developer who makes the highest bid. In general, developers would be willing to pay up to the expected gain from owning and later selling the land. Suppose that the market for land is competitive, so that this parcel of land is not the only one available to prospective home owners.

Suppose the developer expects to be able to sell the land at P_1 per lot. In that case, developers would be only willing to pay up to P_1CAO , which is the area of the rent. The government would be better off by the amount of the revenue collected from the auction (P_1CAO), home owners would be better off by the amount of the consumer surplus (P_1CE) and the developer's return would have been transferred to the government in the form of his bid. In this particular case, the total benefit from the land would have been maximised; the auction has mimicked the competitive market outcome.

In the scenario sketched here, the developer is making no return on his efforts at all. This may affront some readers. The operator will certainly have costs associated with his enterprise. They would consist, for example, of the costs of drawing up the proposed development, and time spent in negotiating and formulating his bid, as well as the normal rate of return on his capital. In terms of Figure 4.2, these costs can be depicted as OAHI. The developer's net gain from obtaining the land is now equal to P_1CHI , and this would represent his maximum bid. If he obtains the land for exactly P_1CHI , then he will be making a normal return on his capital and time. All of this would alter the size of the benefit to the collectivity,

however. Since the developer's costs constitute forgone opportunities, they must be deducted from the total benefit arising from the land. Whereas these benefits were equal to ECAO in the absence of costs, they are now equal to ECHI.

It would be wrong to conclude from this that the government ought to sell the land itself to potential home owners rather than to a developer. Just as the developer incurs costs in the development of the land, so would the government face similar sorts of costs. One might infer that there is no way to choose between the two methods of land disposal. This would only be true if the administrative costs of the government were identical to the operating costs of the developer. There are good reasons to believe that the developer will actually have lower costs than the government. This arises from the fact that the self-interested developer has a more clearly identified incentive to reduce his costs than does the government bureaucrat. The private developer receives the fruits of his efforts himself, whereas the bureaucrat is not directly rewarded as a result of cutting costs. This is merely a specific case of the more general insight that 'there is no such thing as a free lunch'; both the government and the market are costly. The economists' job is to identify which particular institution can do a given task at lowest cost to society and the presumption here would be in favour of the developer.

In the discussion above, it was implicitly assumed that the developer possessed perfect information about demand conditions. If he is uncertain about the position of the demand curve, then it may very well be the case that he pays too little or too much for the land. In the first case, he makes above normal returns on his efforts, whereas in the second case, he suffers a loss as a result. If he does end up making large profits, then this result is not undesirable on efficiency grounds. He has gained merely at the expense of the government. Instead of the government receiving higher revenues from the land sale, the benefit is simply transferred to the developer. As we pointed out before, economists have little to offer in choosing between alternative distributions of gains. The point of this is, of course, that one cannot look at individuals who are making large profits and automatically infer that these profits were the result of a conspiracy against the public. The profits arise here from luck, or perhaps, better foresight constituting good entrepreneurship.

On the other hand, the developer could have sustained a loss if his expectation of demand conditions were overly optimistic. In such a case, the government gains at the expense of the developer. But again, total benefits to the collectivity are not changed.

The case of uncertainty highlights a crucial aspect of the competitive process. As we pointed out in Chapter 2, entrepreneurs are continually searching out opportunities for gain, and part and parcel of this process is the distinct possibility of mistakes and failure. The entrepreneurs who continually make gross mistakes should fall by the wayside. Their more successful compatriots will 'live' to fight another distributional struggle. This continual process of entry and exit, profit and loss, success and failure constitutes the cost of using the decentralised market system.

An important problem can occur if the government decides to interfere with the market process by 'bailing out' some or all of the unsuccessful entrepreneurs. Before we can discuss the so-called 'moral hazard' problem in the market place, the following example closer to everyday experience may be useful. Consider an individual who has taken out full insurance on his car. In the event of an accident the insurance company promises to pay the replacement value of his car and any damage caused to third parties. Once the individual has paid the premium, however, he has fewer incentives to be a careful driver for it is the insurance company which will have to pay the damages incurred by the individual. Consequently, it may be the case that the probability of having an accident rises as a result of the insurance. Of course, insurance companies are aware of the moral hazard problem and take measures to ensure that they will not go bankrupt themselves. One such measure is to charge a rate above the actuarial rate, with the surcharge covering the increased probability of an accident. An individual who is particularly prone to accidents will find that either his premiums rise or, worse still, no insurance company will be willing to insure his car. Another measure aimed at curtailing the impact of the moral hazard problem is to have a deductible. These measures are designed to encourage the individual to take better care of his assets even with insurance. There is some loss to the individual even with insurance.

If the government provides compensation to individuals who lose in the market place, then it encourages the moral hazard problem to emerge here as well. For example, take the case of deposit insurance provided by the government.¹ Suppose that all deposits below, say, \$100,000 are automatically insured by the scheme; irrespective of the bank's decisions the depositor will be covered by the insurance. Since the bank's liabilities are guaranteed by the government, the bank is, in effect, able to take on riskier lending prospects than it would have done in the absence of deposit insurance. Equally clearly, potential depositors will tend to take less care with their choice of banking institution, since all banks are covered by the

scheme. As a result of the deposit insurance scheme, banks and depositors are more prone to make poor choices than they would otherwise have been.

When viewed in this light, it is hard to rationalise the failed attempts by the Western Australian government at saving the Rothwell's merchant bank or the Victorian Government's interference with Tricontinental. Merchant banks² are mainly aimed at servicing the corporate sector. In such a setting the arguments in favour of deposit insurance are even less convincing than in the case of a normal savings bank. Depositors of merchant banks are (or should be) fully aware of the fact that the higher return on their funds reflects the greater degree of risk involved. As a result, the failure of one merchant bank is not likely to influence the economy-wide confidence in the banking sector as a whole.

A more appropriate scheme aimed at getting more security for depositors and forcing banks to take more care, is to encourage the banks to self-insure. Banks do this by borrowing and lending on the international financial markets, thus diversifying their risk. Of course, if there is a downturn in the world economy, then even this form of self-insurance will not be adequate to keep banks from failing. From the point of view of banking as an entrepreneurial activity, there is nothing wrong with the occasional bank going into liquidation. Nonetheless, there are certain aspects to banking that make it different from other entrepreneurial activities and provide some justification for government intervention. In particular, an important aspect of the lubricating role of credit in a market economy is that depositors have some security in the banking system as a whole. If individuals had no confidence in the banking system, then it would lead to a very sharp downturn in the level of economic activity.

The point of all this is that there is a role for government intervention in the banking system. Following a global downturn, the government cannot allow the banking system to collapse since that would create chaos. The government could use its monetary powers, say, by acting as a lender of last resort. The commitment by the government is to support the banks against problems which were outside the control of the individual banks. If individual banks run into financial difficulties for other reasons, for example, through excessively risky lending activities, then there is little case for government intervention. To do so would merely send a signal to that individual bank and other banks like it, that they can be largely immune from making mistakes.

Returning to the general topic of auctions as a method of distribution, some additional insight can be gained by reconsidering the case of premature land settlement discussed in

Section 3.2.2. There, we discussed the case of a group of Eastern farmers considering occupying the unsettled land in the West. Suppose that the land in the West is owned by the government and that it wishes to distribute the land in the current period t . If the auction method is chosen, then farmers in the East would be willing to pay up to the net present value of the rents from the Western farm. In terms of Figure 3.2, they would be willing to pay the present value of the area P_wCP_E . The successful bidder would settle in the West at the optimal time, 10 years from now. Hence, it would seem that the auction system would produce the socially optimal outcome.

Fane and Smith (1986, page 214) argue that there are three potential defects associated with the auction method. First, auctions are not costless; there are administrative costs in setting up and conducting auctions. Fane and Smith argue that these costs are typically a small proportion of the expected revenue from the auction. Whether or not these costs are small relative to the particular resource to be auctioned off is not the only relevant issue here. The important point here is that administration costs must be taken into account when assessing the relative merits of the different distribution methods. On a priori grounds, little can be said about these relative administration costs. For particular cases, however, comparisons ought to be fairly straightforward.

The second possible defect of the auction method is that the participants in the auction may attempt either to collude or to bid strategically in order to keep the price down. Collusion can be overcome to an extent by using sealed bids. In such a case, the partners in the collusion cannot ascertain whether their cohorts have stuck to the deal or not. Strategic bidding is also likely to be mitigated by sealed bids. If you cannot directly observe what other individuals are bidding, then all you can base your strategic bid on is what you expect them to have bid. Because of this extra uncertainty, you must bid more than you would have if bids were not sealed. Of course, it is always possible to obtain inside information about rival bids, say, from the auctioneer or the bureaucrat in charge. We elaborate further on the issue of corruption in Section 5.4 below.

Third, Fane and Smith (1986, page 214) discuss the so-called 'sovereign risk problem.' This is a specific example of the so-called 'dynamic inconsistency problem'.³ It occurs if an initial announcement by the government about the conditions of ownership is not believed by the auction participants. They, as a result, may bid less than if they had fully believed the government's announcement. The government then faces the choice between a rock and a

hard place. It either sticks to its word and is content with receiving less for the resource than it could have, or alternatively, it breaks its word after the auction and attempts to raise additional revenue from the successful bidder by other means. If the government is seen to break its word, then the next time an auction is held its announcements are not likely to be believed either. On the other hand, if the government does not break its word often enough then the sovereign-risk problem should disappear. Indeed, some economists have argued that the existence of so-called reputation effects may force the government to act in a dynamically consistent fashion.⁴

4.4 Random distribution

The layman often finds the market solution, as exemplified by the auction system, to be cold-hearted and markedly unfair, after all, the individuals who end up acquiring the resource are those willing to pay the highest price. This sentiment, or feeling of resentment, is magnified if they identify such individuals as being the richer members of society. As a result, some individuals may argue that the resource should be distributed randomly, so that nobody is favoured over anybody else. Economists' responses to these claims are twofold. First, they would argue that the price of an asset is determined by the total demand for the good. Rich and poor alike bid with each other and in so doing, determine the market price. The rich alone do not determine the going rate and as a result, should not be singled out for blame. Second, although the random system may be considered to be fair, it is easy to show that it is an inefficient method of distribution. The method will not mark a return of the lucky country.

Fig. 4.3: Random allocation

Suppose there is some commodity of which only one unit is desired by each consumer. Some consumers value this unit higher than other individuals. This is reflected by the downward sloping demand curve D in Figure 4.3. Consumers are ranked according to their willingness to pay for the commodity in a descending order. For example, the first individual's willingness to pay is OA whereas the last individual's willingness to pay is zero. The available supply of the commodity is OB , which is in this case by construction equal to half

of demand forthcoming at a zero price (OB is half OC). The government owns the units of the commodity and wishes to distribute them randomly to all those individuals interested in acquiring one, regardless of their willingness to pay. Since there are twice as many individuals as units of the commodity, the probability for each individual of acquiring one unit of the commodity is one half. Accordingly, each individual's willingness to pay is halved. For example, the first individual is willing to pay OA if he gets one unit of the commodity for certain. His willingness to pay for the chance of obtaining one unit if the probability of success is 0.5, is half of OA.⁵ The same reasoning holds for all individuals. The demand curve is therefore EC, rather than AC.

The probabilistic demand curve EC indicates that the total benefits to the agents in the economy derived from the units distributed in a random fashion are OEC. We can compare this with what would have occurred if the auction system had been used. In such a case, the price would have been set at OE, the point at which demand equals the available supply. Consumer surplus in that case would be AEG and the rent would be OBGE leaving total benefits equal to AGBO. The loss in benefits as a result of the government's random distribution method is equal to the difference between AGBO and OEC. This in turn is equal to AEG.⁶ Compared to the auction system, the method of random distribution actually leaves the collectivity worse off as a result.⁷

4.5 Distribution by characteristics

Suppose the government takes heed of the lesson against random distribution and decides instead to allocate the units of the resource on the basis of certain characteristics possessed by the individuals. The system of land distribution on Norfolk Island provides a good example of the method at hand. There, descendants of the mutineers from *HMS Bounty* have first right to buy any land that has become available. Other examples arise from the Welfare State; mothers receive benefits according to their marital status, Australians receive different land entitlements on the basis of their ethnicity, and students at Australian universities pay differential fees according to their citizenship.

Fig. 4.4: Distribution by characteristics

Suppose the government allocates units of the resource on the basis of characteristics

that are perfectly correlated with the individuals' willingness to pay. Consider the question of who should receive a certain plot of land. Suppose the plot is on a sacred site of the aboriginal community and that they would be willing to pay more than a developer interested in the same land. In terms of Figure 4.4, suppose that there are only OA (=AD) hectares of the land and two interested parties, the aborigines and the European land developer. Suppose that the aborigines' total willingness to pay is OABC and that of the developer is ADEF. If the government were to assign the available OA units of land on the basis of the ethnic characteristics and makes the assumption that aborigines value the site higher than the developer, then the units of land are allocated to the aborigines, who in this case also happen to be the highest valuing users. The market outcome, in the absence of strategic bidding, would be identical, in that the aborigines could outbid the developer by a maximum of GFBC. In this case, the two methods of distribution both result in an efficient allocation of resources.

Now consider the alternative case where the developer values the land higher than the aborigines. In terms of Figure 4.4, the former has a total willingness to pay of OABC and the latter are willing to pay only ADEF. If the government persists in its method of distribution by characteristics, then the land will go to the aborigines. Two scenarios are possible subsequent to the land allocation. First, if the aborigines are free to sell the land to the land developer, then they could conceivably make a profit equal to GFBC. In this case, the aborigines would be better off by that amount and the developer would be no worse off than before he bought the land, leaving a net improvement to the collectivity. All that has happened is a redistribution of income towards the aborigines.

The second scenario, on the other hand, entails a social loss. If the aborigines are prevented from selling the land by governmental decree, then the land will have been allocated inefficiently. The potential gains from trade with the developer (GFBC) remain unexploited in that case. The analysis echoes the theme developed in Chapter 2. The auction method harnesses the information possessed by all individuals. The method of distribution of characteristics fails to solve the information problem.

Some individuals may react strongly to the suggestions here. They may, for instance, argue that assets with religious bearing should not be assessed on the basis of a market concept such as willingness to pay. Although we defer our discussion of these issues until Chapter 6 below, it must be emphasised that they are important and must be taken into account in any assessment of the appropriate means of distributing resources.

It is useful to discuss the method of distribution by characteristics in a setting involving time. Consider once again the case of settlement of the West by Eastern farmers. We have already shown in Section 4.3 that the socially optimal time to settle the farm will be achieved under an auction system. So far, we have been assuming a unitary form of government. In a Federation, however, matters are not quite as simple as this. Suppose that it is a State government that has control over the sale of the land in the West. Its primary interest will not lie with the present value of all output produced in the two regions together. Rather, its interest may, for example, lie in luring industry to the State or in having farmers settle the land as early as possible. Suppose the ownership is conditional upon the farmer's residing on the land. This is clearly an example of the State government using the characteristic of residency as the grounds on which to distribute the land.

In the setting here, if the State government wishes to encourage settlement in the current period, then it would have to subsidise the settlers. In terms of Figure 3.2, individuals who leave the East in order to settle now give up a return of P_E per year in order to earn P_W in the West and conditional ownership over the land. The amount of the subsidy required in present value terms would have to be high enough to render the net present value of settling immediately equal to zero. On the basis of the analysis in section 3.2.2 we know that the net present value of Western farming in period $t+6$ is zero. Hence, areas ABC and P_WCP_E offset each other in present value terms. In order to compensate the farmers, the subsidy must be at least equal to the present value of the area ABDE.

If this avenue is chosen by the State government, then two things happen. First, the State government loses revenue from the land sales and needs to finance the subsidy somehow. Second, and more importantly, the State's action imposes a welfare cost on the entire Federation. The size of the welfare loss due to the State's actions depends on what method the Federal government would have used if it were in charge of land sales in the country. If it had adopted the auction method, then settlement would have occurred at the end of period $t+10$. The loss to the economy of the State's 'body snatching' policy would in that case be equal to the present value of DCE. This area represents the present value of lost output due to settling in period t rather than at the end of period $t+10$.

If the State government had not persisted in their requirement that the settlers must physically occupy the land in order to retain ownership, then matters would have been completely different. Farmers attracted from the East would be given the subsidy of the

present value of ABDE. But as soon as they arrive in their newly adopted State they would have an incentive to sell the land and receive the present value of the land when settled at the optimal time (area P_wCP_E). Let us suppose it took the farmer one year to sell his land and return to the East. The welfare cost to the economy as a whole would seem to be the lost output sustained during that period (area EFGD). The portion ABGF of the subsidy merely represents a transfer from the State government to the farmer and as such, imposes no welfare cost on society.⁸

4.6 Queuing

An alternative method of distributing units of the resource is on the basis of first-come-first-served. In the following, the initial assumptions are that time is the only cost of queuing, consumers are perfectly informed about the equilibrium queuing time and the opportunity cost of time is the same for all individuals. Consider Figure 4.5 which depicts the demand (D) and the supply (S) of the resource in question. As in the earlier case of random distribution, all individuals want one unit of the resource and they are ranked by descending willingness to pay. The willingness to pay is not expressed in money terms, but rather in terms of waiting time. For example, the most keen consumer is willing to spend OA units of time in the queue in order to obtain one unit of the resource. Here, the equilibrium price is P_1 and OB units of the resource are distributed. The successful individuals do not pay any money for the resource, but their payment is in kind in the form of time spent in the queue. As a result, the government does not receive any revenue from the resource. This has important welfare implications. In the market case, units of the resource would be sold for money and the government would obtain a revenue equal to the area $OBCP_1$ times the opportunity cost of time. Since this represents a gain to the government and a loss to the consumers, it is merely a transfer and consequently, has no welfare costs. In the case of the queue, however, the area $OBCP_1$ represents waste. The individuals suffer forgone earnings to the tune of $OBCP_1$ times the opportunity cost of time. These earnings are not transferred to any economic agent, however. They are dissipated in the queue.

Fig. 4.5: Distribution by queuing

In the present case, the waste could have been avoided if the resource had been sold in the market. It would not have been necessary for the individual to wait in a queue in order to acquire a unit of the commodity. In the market case, the total benefit would have been OACB and in the queuing case it is only AP_1C . This latter area is simply the traditional consumer surplus expressed in terms of time.

One should not draw the conclusion that wherever there is waiting there is inefficiency and waste. Indeed, it is hard to imagine any act of consumption that does not require time in one way or another. Examples of unavoidable waiting are easy to find: the individual who sits in his car while his petrol tank is being topped up, customers going down aisles in a supermarket in search for items or motorists waiting for the traffic light to turn green at an intersection are just some. It is necessary to devote time to these activities. As economists would put it, it represents an input into the consumption process. As such, expenditure on time in these cases does not represent a welfare cost because there is no other way of achieving the same result at lower cost.

Examples of government services that involve queuing aspects are plentiful and include licence bureaux, airports, public golf courses, public health clinics and municipal swimming pools. In each of these cases the government does have an alternative way of distributing the resource and hence, the waste associated with queuing could be reduced.

It is often claimed that the queuing method is used despite its efficiency cost because it redistributes these resources to the poorer members of society. The poor have a relatively low opportunity cost of their time since their wage rate is lower than that of their wealthier fellow citizens. A poor individual waiting all morning at an outpatients clinic would give up less income in terms of forgone wages than would a barrister. Consequently, the cost of queuing is relatively lower for the poor and more of them will find themselves successful in obtaining a unit of the resource. The rich, on the other hand, 'cannot afford' to wait for very long and are likely to miss out and end up buying the unit in the private market at a higher price.⁹ This argument was criticised by Barzel (1974) who showed that redistribution will only be towards the poor rather than away from them for certain kinds of goods. In the case of opera tickets, for example, the poor would not benefit greatly from free distribution as they are not likely to want to go to the opera. In the case of hospital care, however, free distribution achieves the distributional objective, the poor will queue in the outpatients section of the public hospital while the rich will attend private clinics.

Up to this point in the analysis, the examination has turned on the issue of how the wealth of the nation can be maximised. Some people would argue that the developer's wealth, or for that matter, the consumer surplus, should not figure much at all in the balance sheet. The government's objective should be to maximise the return or rents associated with the citizenry's property. Rather than concern themselves with the overall wealth of the nation, the mood of these people is captured in the following catch-phrase: 'If the developers want to exploit or buy our property, then they ought to be squeezed for every single cent they are worth.' In terms of the rubric of economics, the public wants to capture all of the rents accruing from the resource. This issue will be discussed further in the final sections of this chapter.

4.7 Exactions

Exactions are a popular method by which a community can extract the rents from a resource. Exactions take the form of payments in kind to the community. For example, Fischel (1987, page 103n) cites the case of a Los Angeles developer who financed a new museum for the city in exchange for the right to develop a city block into a commercial plaza. In order to examine the welfare effects of exactions, consider an entrepreneur who wishes to create and develop a pulp mill. The discharge from the mill will impose damages on the environment. The higher the discharge from the mill, the greater the cost of the pollution. These costs imposed on the community are in the form of forgone opportunities: it may not be possible to sit in one's backyard because the smell is too bad or toxins discharged into waterways may make swimming and fishing dangerous. Assume that the dollar value of these damages is \$140 million and that each of the 1 million citizens sustains a damage of \$140. The community would have to be compensated to the tune of \$140 million for the citizenry to feel equally well off as they would have without the mill. Suppose that the gain to the entrepreneur if the pulp mill goes ahead is \$600 million.

In this case, the mill should be constructed on the basis of economic efficiency: the gains to the collectivity net of damages are \$460 million. If the property right to clean water and air is held by the community, then the project will not go ahead unless the community is compensated for the damages. It should be possible to find an institutional arrangement that will exhaust the potential gains from trade. The discussion here parallels the discussion found in Chapter 3 where it was demonstrated that private bargaining can eliminate the externalities

associated with an agent's actions. The \$140 million worth of compensation can be transferred to the community in several different ways. The money could be paid directly into the government's coffers, a payment could be made to each individual or the payment could be in kind.

Starting with the case of payment in kind, the project proposed by the entrepreneur must be at least equivalent to a cash payment of \$140 million, otherwise the community would not be fully compensated. In general, a payment in kind will involve more expenditure than \$140 million by the developer. In order to see why this is so, consider the following additions to the example. If the community had received \$140 million in cash, then the individuals in the community would have been able to spend the money in their preferred manner. Suppose that, in the aggregate, the community would have spent \$10 million on a community centre and \$130 million on private goods such as cars, houses and drills. Suppose that the entrepreneur is vaguely aware of the community's desire for a meeting place and proposes to build a community centre of mega-proportions at the cost of \$140 million.

One might be inclined to think of these two alternatives as being worth the same to the community, since in both cases the community's 'balance sheet' is up by the same amount. Economists have typically argued that this need not be the case. The citizenry's preferred mix is \$10 million for a centre and the rest for private goods. A unanimous decision on how the developer could compensate each individual would result in each individual receiving his preferred bundle. It would have been possible for them to choose to spend the entire \$140 million on the centre, but they did not choose this option. This means that the privately selected option leads to a higher level of well-being.¹⁰

In order to attain this higher level of well-being through a community centre alone, the centre must be even bigger and better. Suppose that a centre costing \$200 million is equivalent in welfare terms to a cash transfer of \$140 million. The project would go ahead, the pulp mill would be constructed, but the community would have wasted \$60 million. The community could have been compensated for the damages through a \$140 million cash payment, leaving \$460 million to the developer. Upon receiving a gift in kind, costing \$200 million, the community is just as well off as under the cash payment, but the developer now only clears \$400 million and is therefore worse off by \$60 million. This would seem to suggest that gifts in kind in general carry heavy welfare costs, and governments should be discouraged from accepting them. But once this is accepted there is still a need to explain the

puzzle of why governments do in fact accept payments in kind. This puzzle is explored briefly in Section 5.3 below.

4.8 Resource rent taxation

A widely discussed method of extracting the rents from a resource is through taxation. In order to see why this form of taxation has some desirable features, consider the example, from Fane and Smith (1986, page 213), of a government which auctions off the right to explore and, if so desired, develop an offshore oil project. Suppose also that future rents are taxed at a rate α , and that rights are deemed to be permanent once granted. In the absence of uncertainty about future oil prices and costs, the stream of rents from the oil field are known. The present value of the stream of before-tax rents is equal to, say, V_0 . Since all rents are to be taxed at a rate of α , the present value of after tax rents is equal to $(1-\alpha)V_0$. Provided the bidding at the auction is competitive, the successful bidder will pay exactly $(1-\alpha)V_0$ to the government. Over time the successful bidder will pay taxes on the rents derived from the oil field, the present value of which is αV_0 . The receipts to the government in present value terms are equal to the auction receipts $[(1-\alpha)V_0]$ plus the present value of tax receipts (αV_0) , that is, V_0 . In this case, the entire net present value of the rents is captured by the government. All that the rent tax has done is to alter the timing of the government's receipts. The scheme is also neutral, in that individuals are not encouraged by the presence of the tax to undertake lower-valued activities. The exploration takes place, the development of the field is not affected and the government captures the rents from the resource. This is all predicated on the use of an auction to sell off the rights. As we found above this method appears to be less prone to economic waste than any of the other methods available.

Implicit in our discussion of the rent taxation is that the government receives a fraction α of rents if these rents are positive, but must compensate that same fraction of any negative rents that may occur through time. At times, the government would have to subsidise, rather than tax, the developer with cash payments. Before the reader closes the book, indignant at this suggestion, consider the problems which would emerge if the government attempts to compensate the firm through tax credits. The neutrality of the tax may be destroyed. To see why this is so, consider the case of a resource rent tax (RRT) as analysed by Fane and Smith (1986, pages 215-219). Under an RRT, tax credits due to negative rents can be carried

forward at a rate of interest to be used to offset future tax liabilities. If the rate of interest at which they can carry forward these tax credits (the so-called ‘threshold rate’) coincides with that available to agents in the private sector, then the RRT is neutral. This can be shown with the aid of a simple example of a resource which is only expected to last for three periods and has a salvage value of zero.

Table 4.1: Resource Rent Tax with full loss offset

Period	Rent (\$)	Rent tax	Net Rent	RRT	Tax Credit	Net Rent
1	-5	-2	-3	0	2	-5
2	0	0	0	0	2.20	0
3	15	6	9	6	2.42	11.42

The second column indicates the rents the company will make over the life of the asset. If the rate of tax on rents is 40 per cent, then the tax payments under the pure rent tax are as given in column three. The after-tax rents under this system are given in the fourth column. Notice that in the first period the government is compensating the company for 40 per cent of its loss. Using a discount rate of 10 per cent, the net present value of the after-tax rents is equal to \$4.03 ($=-3/1.1+9/1.1^3$).

Since the company makes no positive rents in the first two periods, it pays no tax in these periods under the RRT. Rather, it receives a tax credit in the first period equal to its loss times the rate of tax, that is, \$2. This tax credit is carried forward at the interest rate used for discounting (10 per cent), so that in period 2 it has grown to \$2.20. But in period 2 rents are exactly zero, so that no tax is levied nor are any new credits accumulated. The tax credit from the first period is carried forward to period 3, at the same rate of interest as before. In period 3, the credit obtained in period 1 is worth \$2.42. Column seven gives the rent figures net of the RRT. In period 3, rent net of tax is \$15, the tax liability is \$6 and the accumulated tax credit is \$2.42, leaving an after-RRT rent of \$11.42.

The present value of the after-RRT rents, calculated using the discount rate of 10 per cent, is equal to \$4.03 ($=-5/1.1+11.42/1.1^3$), which is identical to that under the pure rent tax. This shows that the pure rent tax is identical to the RRT with full loss offsets in the form of

tax credits. It is also possible to show that these taxes are both neutral, in that they do not affect the company's decision whether or not to explore and that the government captures all rents from the resource. Under both the pure rent tax and the RRT, present value of tax receipts is equal to \$2.69 ($=-2/1.1+6/1.1^3=(6-2.42)/1.1^3$). The company would have been willing to pay for the right to explore an amount up to \$4.03. The present value of before-tax rents given in column two is equal to \$6.72. This illustrates that the entire rent is captured by the government in the form of auction receipts (\$4.03) and tax payments (\$2.69).

The equivalence between the pure rent tax and the RRT is lost if less than full loss offsets are allowed as tax credits or if the threshold rate differs from the rate available in the private capital market. The following example illustrates this for the case of less than full loss offsets. In Table 4.2, the same project as in the previous table is analysed. The pure rent tax and the RRT are both based on a 40 per cent tax rate, but the RRT allows for only 80 per cent loss offsets.

Table 4.2: Resource Rent Tax with less than full loss offset

Period	Rent (\$)	Rent tax	Net Rent	RRT	Tax Credit	Net Rent
1	-5	-2	-3	0	1.60	-5
2	0	0	0	0	1.76	0
3	15	6	9	6	1.94	10.94

Since only 80 per cent of losses are turned into tax credits, in period 1 only \$1.60 is carried forward to period 3. Using the discount rate of 10 per cent, this tax credit is equal to \$1.94 in period 3, when it can be used to partially offset the \$6 tax liability. Column 7 shows the after-tax rent payments under the RRT with 80 per cent loss offsets. Using the discount rate of 10 per cent, the present value of this income stream is \$3.67. The present value of the after-tax rents under the neutral pure rent tax is equal to \$4.03, demonstrating the fact that the two taxes are now no longer equivalent.

It is also possible to show that the RRT with less than full loss offsets is no longer neutral either. Consider Table 4.3 where the rent streams of two projects are given. Column 2 replicates the project used above in Table 4.2. In column 6, rents from another project are

given. In this second project, no losses are incurred and hence, no tax credits are accumulated. As before, the present value of the first project before tax at a discount rate of 10 per cent is equal to \$6.72.

Table 4.3: The Non-neutrality of the RRT with less than full loss offset

Period	Rent (1)	RRT	Tax Credit	Net Rent	Rent (2)	RRT	Tax Credit	Net Rent
1	-5	0	1.60	-5	0	0	0	0
2	0	0	1.76	0	0	0	0	0
3	15	6	1.94	10.94	8.80	3.52	0	5.28

The before-tax present value of the second project is \$6.61. Hence, on the basis of before-tax returns, the first project is more profitable than the second and ought to be chosen.

Suppose now that a RRT is adopted with 80 per cent loss offsets. As calculated above the after-tax present value of the first project is now \$3.67. The after-tax present value of the second project is \$3.97. Hence, as a result of the RRT with less than full loss offsets, the project that was inferior before tax becomes the superior project after tax. The tax is non-neutral in the sense that the ranking of projects is altered by it. Of course, if 100 per cent loss offsets were allowed, then the after-tax present value of project 1 would have been \$4.03 and the relative ranking of the two projects would have been preserved; the RRT would have been neutral.

In the case where rent streams are uncertain, matters become more complicated. In the case of certainty, the government can acquire the present value of the rents from the project in the form of auction receipts and future tax receipts. If the rent tax is set equal to zero, then all the rents are received in the form of auction revenues. If, on the other hand, the rent tax rate is set higher, then revenues from the auction will be lower and part of the rents will be received over time in the form of rent tax payments.

Under uncertainty and with risk neutral firms, the RRT with less than full loss offsets is distortionary for yet another reason. Fane and Smith (1986, page 218) show that, effectively, the RRT becomes a tax on risk taking. This can be shown with the aid of the

following example. Consider a risky project that entails fixed exploration expenditure of $\$E$. If the project is successful, then the before-tax rents are $\$S$. Assume that the probability of success is π so that the probability of failure is $(1-\pi)$. Before tax the expected net rent from the project is equal to the expected rent minus the fixed exploration costs, that is, $V_0 = \pi S - E$. Provided V_0 is positive, the project is worth undertaking. Under a pure rent tax at a rate of α , the expected net rent from the project is equal to $V_1 = (1-\alpha)V_0$. This implies that the company receives an amount of αE from the government and expects to pay in rent taxes $\pi\alpha S$. Provided the project is viable before tax, it will also be viable after tax as long as the tax rate α is less than 1.

Now consider what would happen under an RRT with no loss offsets. If the project is successful, then net rents are equal to $(S-E)$ of which $\alpha(S-E)$ is taxed leaving $(1-\alpha)(S-E)$. This is equal to $\pi(1-\alpha)(S-E)$ in expected value terms. If the project is unsuccessful, then the loss is equal to E , or $(1-\pi)E$ in expected value terms. Combining the two terms yields the expected after-tax rent from the project, $V_2 = (1-\alpha)V_0 - \alpha(1-\pi)E$. This expression can be rewritten as $V_2 = V_1 - \alpha(1-\pi)E$. This shows that the value of the project under the RRT is different from that under the pure rent tax. If the project is viable under the pure rent tax, it may not be so under the RRT because the distortion term $\alpha(1-\pi)E$ may be so large as to render the project uneconomical. In that sense, the RRT is non-neutral. Since the distortion term is directly dependent upon the riskiness of the project, as captured by the probability of failure $(1-\pi)$, the RRT can be seen as a tax on risk taking.

4.9 Regulation

A common method of distributing rents used by the government is regulation. Regulation can take many forms and guises. Individuals are often required to possess a licence before they can carry out certain actions legally. For example, fishermen are required to hold licences to fish certain species, rate-payers need a licence to own a dog and drivers require a licence to operate a taxicab. Regulations which result in a reduction in the supply of a resource yield rents. It is easy to show the effect of regulation on rents with the aid of Figure 4.6. In this case, the supply of the resource (S) is horizontal, implying that it can be produced at constant unit cost, where costs include an imputed return for entrepreneurial capital. The demand (D) for the resource is downward sloping implying a decreasing

willingness to pay for additional units. In the absence of regulation, the equilibrium price would be P_1 and the quantity produced and sold would be Q_1 . Here, the producers of the resource are earning a normal return on their outlay; the revenue received from the consumers just covers the cost of producing the units.

Fig. 4.6: The effects of regulation

Suppose now that the government introduces a licensing system which has the effect that only Q_2 of this resource can be sold legally. Due to the restriction in the supply, the price of the product will be driven up to P_2 . Producers who have the licence will receive in total OP_2AQ_2 in terms of revenue, which exceeds their cost of production by P_1BAP_2 . This area represents the rents arising from the restriction in the supply.

If the government had sold the licences in the market by means of an auction system, then these rents would have ended up in its coffers; the rents are simply transferred from the producers to the government. (If these licences are viewed as permanent, then individuals would be prepared to pay up to the present value of these rents.) The restriction in supply implies that the factors of production previously used in the production of the resource can be used to produce goods elsewhere in the economy. A measure of this increased output is given by BCQ_1Q_2 . Consumers, however, value the units between Q_1 and Q_2 as ACQ_1Q_2 , so the loss in willingness to pay exceeds the cost of the resources released by ABC . This area represents an uncompensated loss to the collectivity and is conventionally interpreted to be the welfare cost of the regulatory action.

If the government had chosen to give away the licences, then all that changes is the distribution of income. The individual who first receives a licence earns a rent as a result. If the licences are permanent and resaleable, then a market for them will emerge and the holders of existing licences can expect to receive the present value of the future stream of rents from it. Individuals who buy these licences will not make above normal returns any more, the whole stream of rents has been captured by the original licence holder.

Regulations that lead to rents and subsequent changes in asset values through capitalisation of these rents are plentiful. For example, liquor licence laws that restrict the number of pubs that may operate in an area confer rents to the existing licensees. The market value of any existing pub depends heavily upon the amount of rent generated by the

restriction in supply. If one purchases an existing licence, however, there are no more rents to be earned by the new owner. The question of who is the beneficiary of the restriction is of importance in the issue of deregulation. One often hears that the publican has in effect ‘a licence to print money’ and that the industry is sorely in need of deregulation. Matters are not so simple, however. The move to deregulate reduces or even eliminates the value of the licence and, as such, holders of second-hand licences suffer a capital loss.¹¹ Before deregulation, these individuals were earning a normal rate of return. They paid the capitalised value of the rents for the licence in the expectation that these rents would be permanent. If the government subsequently changes the regulation, then these expectations are falsified and consequently, they will have paid too much for the licence. The question of whether or not these individuals should be compensated is addressed in Chapter 6 below.

Endnotes

1. The interested reader is referred to Kareken (1986) for a survey of recent contributions in the deposit insurance literature.
2. See Carew (1985, ch. 6) for an insightful discussion of the origin and role of merchant banks in the Australian financial markets.
3. The problem of dynamic inconsistency was discovered by Strotz (1955-6). Dynamic inconsistency occurs, for example, if the government's announcement regarding future policy is not believed because agents know today that in the future the government will wish to act differently from what it announced in the present. An illustration, from Fischer (1980, page 94), may clarify the problem. At the beginning of a university course, the optimal policy is to announce to the students that there will be a final exam at the end. On the morning of the exam, the optimal policy is to cancel the exam. This saves the students the effort of writing the exam and the instructor the chore of grading. Hence, the optimal policy is inconsistent. A consistent policy would be to announce that there will not be a final exam. This, on the other hand, is sub-optimal because the students are not likely to work as hard if there is no final exam. The dynamic inconsistency problem can be overcome by using a consistent but sub-optimal rule. In the exam case, this would be to have a final exam no matter what. Constitutional rules, such as those discussed in Chapter 6, may fruitfully be seen as examples in this regard.
4. See, for example, Barro and Gordon (1983) and Kreps and Wilson (1982).
5. This is under the presumption that all individuals are risk neutral. Risk neutrality implies that agents are equally happy with a fifty-fifty bet of \$0 and \$10 on the one hand and a certain return of \$5.
6. Area EGH is equal to BCH so that ECO is equal to OBGE. Since benefits under the auction system are AEG plus OBGE, the extra benefits due to the auction system are equal to AEC.
7. As we show in Chapter 5, this conclusion must be modified if rent-seeking behaviour emerges. For example, agents could attempt to lobby the government in order to make it more likely for them to receive a unit of the good. If this lobbying takes up real resources, then additional waste can arise.
8. Again this conclusion must be altered if rent seeking over the subsidy occurs, as we show in Chapter 5.
9. This argument was formulated by Nichols, Smolensky and Tideman (1971) in the context of merit goods.
10. This reasoning is based on the revealed preference notion. Strictly speaking, the argument in the text can only show that the private option is at least as good as the gift in kind. Most economists would assume that the private option is strictly superior to the gift in kind in terms of welfare.

11. Just as they would make a capital gain if a sudden wave of alcoholism, unforeseen at the time of the purchase of the license, hits the community, leading to an expanded demand.

Chapter 5: Implications of Rent Seeking

5.1 Introduction

In the previous chapter we discussed various methods the government can use to distribute resources. The welfare costs of the different methods were investigated and it was found that a number of these methods are inefficient. There seems to be a strong case for using the market as a distribution mechanism. In this chapter we wish to investigate how our conclusions would be modified if account is taken of so-called 'rent-seeking' activities. Rent seeking is defined by Buchanan as follows:

The term rent seeking is designed to describe behavior in institutional settings where individual efforts to maximize value generate social waste rather than social surplus (1980, page 4).

This stands in contrast to profit seeking defined as occurring when entrepreneurs' efforts to increase their wealth yield benefits to the collectivity as well. As we pointed out in Chapter 2, the entrepreneurs' efforts to maximise profits can result in the efficient allocation of resources. In simple terms, rent-seeking activities are observationally equivalent to profit-seeking activities, except for the fact that the costs imposed on the collectivity outweigh any benefits.

The rent-seeking phenomenon captures critically important aspects of the inescapable fact that there is no such thing as a free lunch; resources are used up in the process of creating and fashioning change. Even in the case of the market, resources will be used up in the to-and-fro of competition. Once this point is accepted, it is not at all obvious that the market towers above all other forms of distribution. Since all forms of distribution will use up resources, the question becomes which sorts of institutions minimise the costs of rent seeking?

5.2 Rent seeking and the assignment of property rights

Perhaps the easiest way of unfolding the concept of rent seeking is to reconsider the example of the grazier and the farmer. Consider Figure 5.1 which is based on the

farmer/grazier example discussed in Chapter 3. Recall that the farmer's crops were being damaged by straying cattle belonging to the grazier and that there exist potential gains from trade. Suppose that the initial point before negotiations have taken place is at point A.

Fig. 5.1: Welfare costs of rent-seeking

From the discussion in Chapter 3, we know that this point is inefficient and that points along the line segment BC are both efficient and feasible if the government acts costlessly. In order for the move towards BC to take place by means of negotiation between the farmer and the grazier, the government must assign initial entitlements. Suppose that the government has failed to do this and that the farmer wishes to convince the government to rule in his favour. In order to do this, the farmer takes time off work and forgoes income as a result. The grazier notices this and he also approaches the government in order to defend his claims.

The immediate effect of the lobbying efforts by the farmer and the grazier is to reduce both their incomes. They now find themselves at point D. Another result of the lobbying is to shift the income possibility curve inward. This occurs because both individuals are spending time in lobbying rather than in their usual profession; they cannot generate as much income as they did. The cattle have not been dipped as well as they should have been and the farmer has not had time to spray his crop. So even when the government makes a decision, the income available to them jointly will be lower. Suppose this is reflected by a shift of the income possibility curve to EF. Once the government has decided on whose rights should prevail, the farmer and the grazier can negotiate again. Trade would be expected to occur somewhere on the line between points G and H.

In comparing the outcome after bargaining to the point they were located at initially (point A), a number of possibilities arise. If the outcome is somewhere on GI, then the farmer will have gained at the expense of the grazier.¹ Similarly, if the outcome is on JH, then it is the grazier who gains at the expense of the farmer. The intermediate case occurs when bargaining results in some point on IJ. In that case, both the farmer and the grazier have gained despite lobbying. Notice that in all these cases the collectivity is better off in income terms despite the fact that lobbying occurred. This is all in comparison to the original income position at A and given that the government was not acting on its own initiative. Of course, the distribution may be such as to leave the farmer or the grazier worse off, but taken jointly

they are better off. In terms of our definition above, the lobbying has yielded a social surplus and hence does not constitute rent seeking.

Matters are much worse if the forgone output as a result of lobbying is such as to shift the income possibility curve to KL. In this case, the initial distribution of income at point A is no longer attainable even after negotiation has been successfully completed. The segment of mutual gain for the farmer and the grazier once a property assignment has been made is now MN. Irrespective of where the individuals bargain to on MN, the result of their opportunistic lobbying of the government has been to leave the collectivity poorer. In this case, lobbying constitutes rent seeking.² Both agents perceived that they could gain by lobbying the government and indeed, one of them may have gained. The point is, however, that collectively they are worse off because the other has lost by more than the successful individual gains.

The phenomenon of rent seeking occurs also in dynamic settings. Consider once again the example from Chapter 3 involving farmers contemplating settling a farm in the West. We had found that the social optimum could be achieved if the land was sold to the highest bidder in an open auction. If the government chooses to assign entitlements on the basis of first-come-first-served then, as we showed in Section 3.2, settlement will take place too early from the societal perspective, thereby dissipating the potential rent from the farm in the West. The behaviour leading to this welfare loss falls under the general rubric of rent seeking; the rent dissipation did not result in social surplus but rather led to a collective loss. The loss identified in Section 3.2 may in fact be an understatement of the actual loss for reasons identified by Dennen (1977). When, in the Nineteenth Century, the U.S. Federal government released land to be settled under the Homestead Act of 1862, a land rush developed. This Act allowed any person to take up 160 acres of land free of charge provided he resided on the land and cultivated it for at least 5 years, after which ownership resulted. In order to claim rights over the best land, individuals expended resources in order to arrive sooner than their competitors. Dennen gives some interesting details about this:

For example, considerable time was spent simply waiting, or jockeying for an advantageous position at the starting line. On occasion special vehicles were constructed which would presumably speed more quickly over the land to claim the site (1977, page 730).

The waiting at the starting line represents a waste of resources over and above that identified from premature settlement for precisely the same reasons that were put forward in Section 4.6. The time spent waiting represents the use of resources that is not captured by any other agent anywhere else in the economy. The waiting therefore represents a loss of wealth to the economy.

The rent-seeking problem captures the fact that resources can be wasted in the distributional struggle. The rent-seeking hand, unlike the invisible hand, contorts and threatens to choke off the wealth of the nation.

5.3 Rent seeking and methods of distribution

The phenomenon of rent seeking has far-reaching implications for all of the conclusions reached in Chapter 4. It turns out that in all forms of distribution, rent seeking may emerge and therefore affect the size of the burden on the economy. In this section, the implications of aspects of rent seeking for the methods of distribution are briefly explored.

5.3.1 Auctions

From a reading of Chapter 4, it is easy to gain the impression that the auction method stands head and shoulders above the other methods of distribution. It is the method that maximises total benefits to the collectivity. This conclusion does not follow automatically in a rent-seeking environment. Individuals will devote resources in order to capture the revenue of the auction. For example, they may lobby the government into spending the revenue in a manner beneficial to their special interests. The time engaged in lobbying can represent a waste from a societal point of view. Instead of devoting time to the production of goods and services, the special interest groups use their time in order to effect a transfer. To the extent that the lobbying does not yield socially valuable by-products such as information to imperfectly-informed politicians, it must be deemed to be socially wasteful. The lobbying has created nothing of value but has cost something in the form of forgone output.

The welfare analysis of auctions under rent seeking can be easily illustrated with the aid of Figure 4.2. As we saw in Section 4.3, the revenue from the auction is equal to ACP_1O and it was counted as a benefit to the government and therefore society as a whole. Now suppose that the loss of output due to the rent-seeking struggle over how the revenue will be

spent is exactly equal to the revenue.³ In order to gain some appreciation of what is going on, imagine five special interest groups that each devote time in order to gain the revenue of the auction. Suppose the revenue is \$100. Under certain conditions each will spend up to one-fifth of the revenue on this lobbying, that is, each group spends \$20 worth of resources on lobbying. The successful group will gain \$100 at a cost of \$20, clearing \$80. This is not a benefit to society, however, since the lobbying by the four unsuccessful groups has resulted in \$80 of forgone output. When the lobbying expenses are taken into account, it is clear that the revenue from the auction has been squandered in the distributional struggle.

If the entire revenue is dissipated through rent seeking, then the total benefit to the collectivity from the resource is only ECP_1 . As a result of the rent seeking, the total benefit is only equal to the consumer surplus. In Section 4.6, a similar result occurred under queuing. This is not surprising; both methods result in the dissipation of some portion of the rents from the resource because the time spent in lobbying or standing in the queue yields no tangible benefit. If rent seeking is rampant, then the auction method loses its glitter.

5.3.2 Distribution by characteristic

In Section 4.5, it was argued that the government could achieve an efficient allocation of resources if it chose to distribute entitlements on the basis of characteristics. This would arise in two settings. First, when the characteristic was perfectly correlated with the individuals' willingness to pay. Second, when the government allowed individuals to exchange their entitlements through a market. The two scenarios could, however, result in two fundamentally different distributions of income. Rent seeking will take place if individuals devote resources to influence a governmental agency to use a specific characteristic as the test of whether they receive the resource or not.

For example, in the case of the issue of land development versus aboriginal sacred sites discussed in Section 4.5, aborigines and other interested groups could lobby the government to use first inhabitancy as the relevant characteristic. Land developers, on the other hand, would probably lobby the government to adopt economic growth contribution as the relevant characteristic. Each party in the dispute will devote resources to the lobbying efforts and waste will occur if the amount spent in total exceeds the rent available from the land. For example, in terms of Figure 4.4, if the total sum spent on lobbying exceeds GFBC,

then the excess represents wasted resources. Implicit in this result are the assumptions that the lobbying itself creates no rents to any agent and that there are no externalities associated with giving the land to one group rather than to another.

In some but not all cases, once the characteristic has been adopted there will be a further round of rent seeking aimed at changing the individual's eligibility. Of course, in the case of the Norfolk Islanders, it is simply impossible to acquire the required characteristic if one does not already possess it; one either is or is not a descendant of a mutineer from *HMS Bounty*. In the case of old age pensions made on the basis of marital status, on the other hand, it is very easy to obtain the necessary characteristic. For example, a few years ago in Australia some pensioner couples were getting divorced in order to get higher benefits individually. In order to make their 'divorce' credible to the authorities, they had to undertake costly activities such as different postal addresses, separate bedrooms, etc., that were of no benefit to either themselves or anybody else. Their extra payments were dissipated to a certain extent by these rent-seeking activities.

5.3.3 Exactions

In Section 4.7 above, we saw that exactions, taking the form of payments in kind to the community, normally have significant welfare costs associated with them. This is because in general terms \$100 in cash is worth more than \$100 in kind. Despite these welfare costs, governments do on occasion accept payments in kind. One explanation of why they do is that payments in kind are more acceptable to the public at large than are straightforward cash payments. But these forms of payment can be of benefit to the politician too. The politician who gets a large company to build a swimming pool in his electorate on the eve of an election under the rubric of an exaction has his chances of re-election bolstered as a result. Hence, the gift in kind is equivalent to a boost in his (expected) income. Furthermore, there is nothing illegal about this implicit income transfer either.

5.3.4 Resource rent tax

In Section 4.8, it was shown that the appropriately structured resource rent tax (RRT) can be a means by which the government can extract the full amount of rent from a resource. It would seem, therefore, that the RRT is not marred by significant welfare costs, at least if uncertainty is not a problem.

Unfortunately, matters are not this simple in the rent-seeking society. Reconsider the case of complete certainty and full loss offset reported in Table 4.1. It was shown that the total amount of the rent is captured by the government in the form of auction receipts (\$4.03) and tax payments (\$2.69). In Section 5.3.1 we have already shown that rent seeking can occur over the auction receipts with possible rent dissipation as an unfortunate outcome. The same holds for the tax receipts as well. It may very well be the case that special interest groups in society observing the revenue raised from the RRT will attempt to lobby the government in order for it to spend the tax revenues in some preferred manner. In their attempts to influence the manner in which the tax revenue is spent, they may well waste resources, thereby dissipating yet another portion of the rent from the resource.⁴

5.4 Corruption

Up to this point we have been considering the various ways in which resources can be distributed legally in an economy. A moment's reflection upon past and current events in Australia indicates that entitlements are sometimes secured by illegal means. Indeed, one of the tasks of the Fitzgerald Commission has been to examine the extent of corruption in Queensland; that is, to explore to what extent entitlements have been unlawfully distributed in Queensland. Something similar can be said regarding the inquiry into WA Inc. in Western Australia.

In the preceding discussion the focus has been on two ways of exchanging property rights. One is through the use of the market, and the other is via lobbying of the political sector. Both methods involve the legal transfer or reassignment of entitlements. A third method that may be used is that involving corruption. Although there are various shades of meaning to the concept, Revel defines corruption in the following way⁵:

being 'corrupt' means somehow misapplying political or administrative power, whether directly or indirectly, outside its proper sphere, for one's own financial or material advantage or in order to distribute the gains among one's friends, colleagues, relations, or supporters.... (1987, page 36).

Corruption occurs, for example, when a government official reassigns a property right in a

manner deemed to be illegal by the judiciary. As such, it is a specific form of rent-seeking behaviour. The difference between lobbying and corrupting a government minister is subtle but clear. If the minister decides a certain course of action should be taken on the strength of arguments put forward and the decision is made according to the procedures of government, then lobbying is said to have occurred. If, on the other hand, the decision is made after free lunches are consumed or bags of money have been delivered to the minister's door steps --where the appropriate procedures have been sidestepped-- then corruption has occurred. The crucial difference is that one method of persuasion is legal and the other is not. One is within the rules while the other is outside the rules of the game. In the case of corruption, the rules of the game as laid down in the constitution and codified in the legal system, have been violated.

5.4.1 Why is corruption bad?

It is not always obvious from the discussion in the economics literature why corrupt activities should be proscribed in the first place. The exchange between the politician and the individual seeking the favour seems to be little more than trade, albeit in the political sector. Indeed economists normally talk of the payment between the farmer and the grazier discussed in Chapter 3 as representing a bribe. Here, bribery merely represents an act of compensation in a trade between two agents. One might argue that the conclusion that bribery can yield desirable end-results is deficient. The payment between the farmer and the grazier represents but an isolated case, even in the literature in economics. The presumption would seem to be that there are few activities where bribery will lead to an improvement in resource allocation.

But there are a whole range of examples, at least in the literature of economics, that are presented to illustrate the point that bribery can lead to a more efficient allocation of resources. Take the case of a highly paid business person who has just arrived in town and wants to eat at a particularly popular restaurant. Suppose that bookings to the restaurant have been fully made on a first-come-first-served basis and that there is no charge for making a booking. Let us assume the individual bribes the maître d'hotel in order to be given a table. The maître d' is in a position to bypass the conventional administrative or booking process to his and the businessman's advantage, which is, of course, to the detriment of the person who now finds that his booking is slighted. But this misappropriation of his power means, according to the definition given above, that the maître d' and the businessman have engaged

in a corrupt activity. Economists, however, normally laud the process as a means of overcoming a potential inefficiency. The conventional argument goes something along the following lines. Since the business person has a high cost of time he is willing to pay a good deal for a table at this well known night spot. Here, bribery can and will result in a better allocation of resources, if the payment to the maître d' results in the table being reallocated from an individual who is not willing to pay as much for this table.⁶

Alternatively, consider an individual who bribes a telecommunications official to place his request for a telephone line ahead of that of other individuals in a queue.⁷ The point raised about the beneficial effects of greasing the maître d's hand is a general one. It applies equally here. If the bribe to the telecommunications official results in the line being reallocated from someone who was prepared to pay less than this amount to have the service first, then there will be an improvement in resource allocation. The general point to be drawn from all this is that corruption is not normally considered, at least from the viewpoint of conventional economics, to be a socially wasteful activity. It is useful in overcoming the inefficiencies brought about when a property right is not allocated by the market or when there is a failure of the market.

Now all of this stands in stark contrast to the everyday understanding of the word 'corrupt' which immediately conjures up negative connotations. To say that someone is corrupt is to draw a pejorative assessment of that person's actions. One need not look too far for examples of bribery that are regarded as undesirable and unacceptable to the system as a whole. Attempting to bribe a police officer or an official of the court is almost universally accepted as wrong. Is economics so out of step with the average man on the street and the findings of the Royal Commissions which reach us each day in the newspapers or on the television? One is immediately forced to ask, what is the difference between these two activities. Why is it that compensation (bribery) in one circumstance is viewed as something entirely inappropriate and yet in other contexts is lauded for its role in resource allocation? As we shall see there are several reasons in economics for viewing corruption negatively.

5.4.2 Corruption and external costs

The first reason for viewing corruption in a negative light lies with the now familiar issue of externalities. In the case of the bribery of state officials, individuals suffer external costs that are only different in kind from the external costs borne by the farmer resulting from

the grazier's lack of control over his stock. Individuals suffer when they learn, for example, that public officials are exploiting their position of power to their own personal advantage.⁸ On the other hand, members of the community apparently bear no moral cost when the farmer bribes the grazier to change his actions. Their actions appear to be perfectly acceptable for they are regarded as part and parcel of the market process. In addition, the trade takes place only between the affected parties and therefore agreement is a sign that there have been gains from the reorganisation of assets. The trade between the entrepreneur and the public official differs in that other agents who are not party to this trade are adversely effected.

It will be worthwhile to analyse some of the aspects of this point with the aid of a diagram. In Figure 5.2 the demand curve (D) reflects the willingness to pay for corrupt activities. The supply curve (S) represents the compensation that bureaucrats require in order to engage in corruption.⁹ Under competition, the equilibrium level of corruption would be OA and the price of the bribe would be OJ. It is worth pointing out that the bribe need not take the form of a monetary exchange. The corrupt official may receive his compensation in kind, for example, free lunches, stock market tips, favourable coverage in the press, etc.

Fig. 5.2: The competitive and monopolistic markets for corruption

The competitive result is not necessarily an efficient one for the collectivity. Corruption will impose considerable costs on other agents. They include negative externalities in the form of psychic costs --you might, for example, be infuriated if you find out that the person you voted for is exploiting his position for personal gain.

Assume that the cost of corruption imposed on society (often called external cost) per unit of the corrupt activity is constant and equal to OB in Figure 5.2. The curve labelled EC denotes these constant per unit external costs due to corruption. As the level of corruption in society increases, the total damages caused by it increase as well. At the corruption level OA, these damages are represented by the area OACB. The direct cost of 'producing' the level of corruption OA is given by the area OAEJ. The social cost of the corruption level is given by the direct cost plus the external cost, in other words, the sum of areas OACB and OAEJ. By adding the supply curve (S) and the external cost curve (EC) vertically, we obtain the curve representing the social cost of corruption, labelled SC. For the corruption level OA, the social

costs are equal to OAFG. The total benefit of that corruption level is OAEH. The social surplus is represented by the area HIG minus FEI.

If the suppliers of corruption had incorporated the social costs of corruption into their supply calculations, then SC would be the supply curve of corruption and the equilibrium would be at I. The price of corruption would be OG and only OK units of corruption would be produced. It is easy to show that the equilibrium at I would be better for the collectivity than that at E, in the sense that the social surplus is larger at I than at E. The net improvement is equal to area FEI in Figure 5.2.¹⁰ By not taking into the account the social damages of corruption, the suppliers of corruption have produced too much of it and in the process, they impose waste on the collectivity equal to FEI.

In this case discussed here, the socially optimal level of corruption is OK units; it is not necessary, or even desirable, to stamp out corruption altogether. This conclusion holds because the external costs and the benefits of corruption were relatively low compared to the direct costs of the suppliers of corruption. Suppose, for example, that the external costs are larger, say OL per unit of corruption. In this scenario, the competitive outcome would still be OA, but the social optimum would now occur at a zero corruption level. The benefit from even the first unit of corruption (OH) is not sufficient to compensate for the social cost imposed on the collectivity (OL plus OJ).

This conclusion does not take into account the costs associated with attaining the social optimum of no corruption. Royal Commissions come with a high price tag and if these costs are taken into account, stamping out corruption altogether may no longer be the social optimum. Indeed, it is quite conceivable that these policing costs may become prohibitive as the level of corruption is reduced to very low levels. As a result, it is likely that the optimal choice to society is to tolerate a certain amount of corrupt activities.

An interesting paradox emerges if the political climate is such as to make one party virtually sure of a mandate regardless of its performance. This may be due to extreme gerrymandering, a divided opposition or a particularly charismatic leader. In such a case, the market for corruption is not competitive, but monopolistic. The officials of the party in charge are able to increase the rents they receive from corruption by restricting supply. The argument under pure monopoly in the market for corrupt activities can again be illustrated with the aid of Figure 5.2. The marginal revenue curve (MR) reflects the increase in total revenue from corruption as more units of corruption are sold. It is downward sloping because in order for

the monopolistic supplier of corruption to be able to sell more corruption, he has to lower its price. If all units are sold at the same price, this price reduction holds for all the units of corruption, not just the extra units.¹¹

The profit maximising choice for the monopolist occurs where the revenue from the sale of one extra unit is exactly equal to the additional direct cost incurred in producing that unit, that is, at the intersection of MR and S at point M. The level of corruption is ON which is less than in the competitive case discussed above (OA). On first glance, the reduction in the level of corruption would seem to be a good thing. The intuition behind this is that corruption is bad. A monopolist constrains output, thereby reducing corruption. Thus, we draw the paradoxical conclusion that if corruption is inevitable, part and parcel of political life, then it is better to have it supplied by a single entity.¹² The welfare analysis confirms this conclusion, the net improvement to society is represented in Figure 5.2 by area FEI minus area PIQ.¹³

Up to this point the discussion has centred on the psychic costs imposed on the community when they learn of the illegitimate transactions. The impression may have been created that if the collectivity is unlikely to learn of the graft, then there is no case to be made here against corruption. If, say, a speeding motorist bribes a police officer, in order to avoid a sanction that will be recorded by the authorities, then the collectivity will be none the wiser and would not seem to bear any external costs. This argument is, of course, a variant of the adage that what you don't know about won't hurt you. The argument is incomplete. In order to see this point, assume that the expected penalty imposed on individuals driving at excessive speeds is equal to the expected real costs of accidents caused by speeding motorists. In this setting the fine encourages motorists to reduce their speed to the socially appropriate level. The penalty acts like any other price and rations their use of the public road system. The bribe between the speeding motorist and the police officer may, however, break this nexus. This is true when the bribe paid to the officer is less than the fine he would have paid at the court. For while a potential speedster will reduce his speed in order to reduce the likelihood of having to pay a bribe to an officer, the expected fine will still be too low, his speed will therefore be excessive and there will be too many accidents.

5.4.3 Corruption and rent seeking

The second and perhaps primary reason why bribery can represent a waste of resources

is that it is merely another instance of rent seeking. If individuals have devoted resources to effecting a transfer, say, to get a government bureaucrat to waive a regulation to their advantage, then the transaction costs of the deal represent a waste of resources. Resources are dissipated when a businessman haggles and connives over the promise to build a swimming pool in the Minister's electorate. The resources put into setting up and disguising the act of bribery represent waste. They can be so great that nothing of value has been created in the process. In addition, officials may go out of their way to create situations in an attempt to increase the number or amount of bribes. In the beginning, the greasing of the maître d's palm may have occurred without design and corrected the inefficiencies created by the booking system. In the end the maître d' will be deliberately over-booking the restaurant, creating long queues in an attempt to regularly supplement his income. In the process of attempting to extract rents from potential customers, the potential efficiency gains from reallocation will be dissipated in the form of longer queues and poorer service from the maître d'.

The rent-seeking phenomenon is similar in many respects to the phenomenon of theft. Just as special interest groups compete for possession of rights 'held' by politicians, so do thieves compete for the possession of objects owned by the victims. Since theft is an example of the waste of rent seeking, it is useful to examine the relatively well-developed literature on the economics of theft in the private sector. Once the basic economics of theft is set out, attention can be turned to the more controversial issue of theft in the political sphere. The advantage of this approach is that the issue is not clouded at the outset with emotive issues.

The economics of theft is a relatively recent addition to the economics armoury. Authors such as Becker (1968) and Tullock (1967) were the main pioneers in the area. The central message of this literature is that criminal behaviour can be explained in terms of benefits and costs just like any other entrepreneurial activity. The difference between theft and other entrepreneurial activities is that the former is against the law and the latter are not. The illegality of theft affects the size of the benefits and costs associated with it. For example, \$100 (after tax) earned in a legal manner by working as a clerk in a bank is not the same as \$100 earned in a hold-up of a bank. The second prospect is by necessity much more risky; one may get caught, injured, tried and placed in jail for several years. This adds a cost in the form of forgone earnings. The individual weighing up which activity to pursue will compare expected income streams with an adjustment for risk associated with a criminal career taken

into account; if the reward from crime exceeds that of an honest life then the rational individual will choose the former.

It must not be concluded from this that there is a potential criminal in every one of us, waiting for the appropriate pecuniary incentives. Part of the cost of being a criminal includes the psychic cost associated with breaking one's own moral code of conduct. For some individuals this cost is not very high, but for other persons it is prohibitive. As we saw in Chapter 2 in the taxi ride example, the moral code has a distinct role to play in the smooth functioning of the economic system; most of us pay for our taxi ride despite the low risk of apprehension. The economics of crime has most relevance for those individuals who feel less inhibited by moral codes and as such, incur lower costs by breaking them. Institutions are put in place so as to raise the costs of crime to them through different channels, thereby providing an incentive to move into legal forms of entrepreneurship. For example, if police enforcement is undertaken to a greater extent, then the probability of getting caught is higher, which in turn increases expected costs and reduces the expected net return. One need only muse on the effect of random breath testing of drivers to see this mechanism at work.

The relationship between the probability of crime detection and policing activities is by no means simple and direct. In many cases, the transaction by its very nature is difficult to detect. For example, in the case of illegal drugs, it is often difficult to catch Mr Big as the industry operates through many links in the chain of distribution.¹⁴ Another example is that of prostitution. There, the crime is of such a transitory nature as to make detection very difficult; the agreement to trade sex for money, which constitutes the crucial element of proof, can take place in a matter of seconds.

The analysis of corruption is no different from theft in the private sector. Politicians and public bureaucrats will weigh the net returns of corrupt and honest behaviour against each other. As in the private setting, many politicians will have moral codes making them, in practical terms, incorruptible. Other persons may not have very strong ethical codes and may therefore be more easily corrupted.

One important point that needs to be made at the outset involves the relationship between the scope for bribery and the market process. If the market process is expanded, then the possibility for bribery generally decreases. In order to see this reconsider the example of the distribution of bookings at the restaurant. In the previous chapter it was argued that under a system of first-come-first-served the possibility arises that bribery may lead to a better

allocation of resources. There is little or no possibility for bribery to emerge if property rights are well-defined. Suppose bookings are allocated on the basis of a market process. The idea is not altogether fanciful. Individuals in the tourist market often reserve their place by making a down-payment and individuals who wish to see a particular performance of a movie or stage play often buy a ticket in advance. A competitive market for bookings at the restaurant would have the characteristic that all these individuals who value the resource less than the competitive price would not be allocated any units of the resource. Suppose for example, the going market price for a booking at the restaurant is \$35. Then individuals who do not value a seat at the restaurant as worth this amount will not be allocated a table. In this case, there would be little point for any of these individuals to bribe any current holder of a booking. As they would not be prepared to pay the going market price, any bribe they would offer would be rejected out of hand as being too small. In addition, notice that the power of the maître d' has been severely curtailed. It is the holders of the reservations and not the maître d', who determine whether their entitlement will be reassigned. The scope for rent seeking by the maître d' would be reduced.

The result that bribery is minimised under a competitive market process holds, however, only if the existing holders of the reservations have well-defined property rights. In order to see why this is the case, reconsider our example. Suppose a particular couple arrives on time to take up their reservation which merely specifies that under normal circumstances a table will be kept for them upon their arrival at an appointed time. Ten minutes before they had arrived the maître d' had, however, redistributed their booking to the business person in return for a bribe of \$30. The maître d' is suitably apologetic to the couple and explains that he is unable at present to honour the reservation. He proceeds to extricate himself from this predicament by explaining that customers are taking somewhat longer to eat their meals tonight --the situation is not normal-- and that if they would like to wait at the bar he will see what can be done about their position. The maître d' scurries off into the distance pretending that he has been called elsewhere leaving the couple to while the time away at the bar. The maître d' can only treat the couple in this highhanded fashion because the property rights are not well-defined. If, for example, their booking had guaranteed them both a table at a particular time and full compensation in the event of any delay, then there would be little scope for the maître d' to engage in bribery.

The rent seeking issue has implications for the conclusions made in the previous

section on the appropriate level of corruption. Agents will expend time and effort to obtain the potential profits from supplying the services required by the somewhat unscrupulous demanders. As Figure 5.2 illustrates, the monopolist earns a profit equal to $JMQR$. In the competitive case, all corrupt officials just cover costs and make only a normal return on their time and effort. There is consequently a clear incentive for agents to attempt to become the monopolist in the market for corrupt activities. Under competitive rent seeking, up to $JMQR$ will be dissipated on activities yielding no social benefits at all. This wasteful rent seeking changes our earlier conclusion about the desirability of monopolising the corruption market. Since $JMQR$ is wasted, the social benefit of monopolisation is now represented by FEI minus PIQ minus $JMQR$. In the case illustrated here, this is clearly negative. It can be preferable, therefore, to have the competitive case which involves a greater degree of corruption.

The policy choice seems clear. It is desirable to have some competition between corrupt agents in order to reduce the waste associated with rent seeking. But unfettered competition is not appropriate as this results in too much corruption from a social point of view. In order to reduce the costs of corruption, what is required is an incentive structure which induces self-interested agents to change their actions in such a way that the level of corruption is reduced without wasteful rent seeking. In Chapter 6 below, we indicate how this may be achieved in practice.

5.4.4 Corruption and democracy

Up to this point, the discussion has centred on why corruption may be considered a socially wasteful activity. There is a third reason why market-like forces are regarded as inappropriate in the political setting. For the purpose of developing the issue, consider the following example. Suppose a government calls an election but fails to secure a majority of the seats in the lower house. In fact, none of the political parties have secured enough votes to rule in their own right. Imagine that after the election three of the opposition parties form an accord that will leave them with a one-seat majority over the government. The parties to the accord threaten to pass a no-confidence motion in the government upon the resumption of parliament. Suppose a businessman attempts to bribe one of the members of the accord to cross the floor when the no-confidence motion is to be voted on. The politician, however, reports the incident to the police, who later charge the businessman with bribery.

When confronted with this example, some people see nothing wrong with the

businessman's behaviour. For the individual is merely attempting to 'buy' the politician's vote in order to pursue his own self-interest, an act no different in kind from Chico's when he purchased an egg. And just as the egg was efficiently allocated to the individual who is willing to pay the most, the politician's vote will be similarly efficiently allocated. The analogy here, between the expression of self-interest in a market and a political setting is, however, unsound.

One might be inclined to call the whole incident into question because the politician was asked to sell a property right he did not own; the attempt stepped outside the rules of the game. The electorate expects a politician to represent their interests rather than his own narrow interests. There are some difficulties with this argument as it stands. A politician could claim that he was supporting the opposition since it was his belief that this was consistent with his reading of his electorate. He could go on to claim that the money he received was simply part of his campaign contributions. We suspect that most individuals would feel uncomfortable with the politician's justification-that is, that there is something wrong about a politician accepting any amount of money to change his position on various policy issues, even if the money is transferred to the political party's campaign funds.

The argument against such influences rests on the fact that the political process must operate along fundamentally different lines to that of other institutions. One of the major strengths of the democratic process is the transient nature of the majority. On some issues individuals will find themselves holding the minority viewpoint and subject to the decisions made by the majority. While the individuals may be depressed and even angry with the majority decision on this issue, they find the process of majority rule to be acceptable since they know that on other issues their position will come to the fore. Moreover, they perceive that the decisions made by the government of the day can be overturned by new and transitory majorities of the future. Buchanan (1954) stresses that majority rule '...serves to ensure that competing alternatives may be experimentally and provisionally adopted, tested and replaced by new compromise alternatives approved by a majority group of ever changing composition.' Majority rule therefore holds out the possibility of compromise, and through time, the peaceful development of a consensus. In this way, the persistent tyranny of a specific minority may be avoided.

The tyranny of a specific minority is significantly advanced, however, if politicians can be bribed. If bribery were to become commonplace, then majority rule would no longer

exist as a process that allows social experimentation of a range of issues. The danger exists that individuals with greater wealth can purchase the power of politicians and thereby exert inordinate control over the political agenda and power over the outcomes of the political process. In such circumstances, it would not be surprising for the less wealthy minority to reject majority rule. Interpreted in this light, the recent allegations of political bribery in Tasmania can be seen as threatening the acceptance of majority rule decisions. Laws against the buying and selling of votes can be seen as an attempt to preserve a system of majority rule in which the minority are not persistently subject to the tyranny of the wealthy.¹⁵

Another cost of widespread corruption which diminishes the social capital of our democratic system is related to the breakdown of norms and moral codes of conduct. For example, most people file a tax return not as a result of a threat of the law but because they feel it is the correct thing to do. If they believe that politicians are reaping illegal untaxed gains through bribery, then they may feel less inclined to be so honest in the revelation of their earnings. Widespread tax evasion leads to significant welfare effects. The point is more general than simply tax evasion, however. If the corruption is rampant among our public officials, then it may very well be the case that the moral base underlying market exchange collapses and we return to the Hobbesian world where life is ‘nasty, brutish, and short.’

Perhaps the easiest way of seeing this point is through the case of the Prisoners’ Dilemma, a game attributed to the American mathematician A. Tucker.¹⁶ Two criminals have been caught by the police for a relatively minor offence. The evidence of this crime is irrefutable and each is bound to spend a brief period in jail upon conviction. The payoffs in terms of well-being for the two individuals are represented in the different cells of Table 5.1.

Table 5.1: Prisoner's Dilemma Game

		Individual B	
		do not confess	confess
Individual A	do not confess	I 3,3	II 1,4
	confess	III 4,1	IV 2,2

The police, however, suspect the two criminals of a far more serious crime but have insufficient evidence to go ahead with any charges. Note that the two criminals are held in separate jail cells and are kept isolated from each other for the entire time they are questioned in the city watchhouse. The police officer attempting to get a confession presents each criminal with the following alternatives. If you confess and your partner does not confess, then we will drop all charges against you. This is your reward for turning Queen's evidence against your companion in crime, who can expect a very long unpaid vacation at the government's expense. Such a case is represented in cell III where individual A who assists the Crown derives a payoff of 4 and person B who is ultimately convicted obtains a payoff of 1. Since each criminal is presented with the same set of alternatives, person B would derive a payoff of 4 from turning Queen's evidence and it would be A who spends the best years of his life behind bars. The payoffs are represented in cell II. If both confess to the crime, the police officer indicates that he will make a plea for leniency at the court proceedings. Each can expect an intermediate sentence --one somewhere between the brief stay and the long years of incarceration. The payoffs arising from this scenario are represented in cell IV. In this particular game the so-called dominant pure strategy for each criminal is to confess. If the prisoner confesses, then he will gain a payoff of 4 rather than 3 when his partner does not confess and a payoff of 2 rather than 1 if his partner does confess. Since

both criminals face the same set of alternatives, both will confess resulting in prison terms of the intermediate length which leads to a level of well-being for each criminal of 2. Here, the pursuit by each individual of his own self-interest results in an inferior outcome for both individuals. This outcome in cell IV is dearly inferior for both of the criminals. If each had remained silent of their deeds in the more serious crime, then each would have been a free man only after a relatively short period in jail and each would have received a payoff of 3 as opposed to 2. The Prisoner's dilemma is useful in reminding us that the invisible hand of self-interest played within the confines of some institutional settings can generate outcomes which are inferior for both players.

With a small amendment to Table 5.1 and a small amendment to the discussion, it is possible to cast some light on the point made on the intersection between corruption and morals. Suppose the choice 'do not confess' is replaced with 'obey the law', and 'confess' is replaced with 'evade the contract', and the two criminals are replaced with two citizens. The payoffs remain the same as in the case of the two criminals. The individual stands to gain an increased payoff when he evades the law and the other obeys the law since he can exploit the situation to his own advantage. When both individuals disobey the law, each receives a payoff of 2 units. The low payoff reflects the fact that individuals dissipate resources in protecting and seeking rents from other individuals when they step outside the implicit social contract. The dominant strategy of each individual as in the case of the two criminals is to evade the contract, that is to evade the law to his own advantage. The world here will ultimately be a 'nasty, short and brutish' one. The social consequence of the pursuit of individual self-interest here, is that each individual ends up in the inferior outcome.

It is important to bear in mind that corruption need not be the inevitable outcome of the prisoner's dilemma. Individuals may suffer psychic costs of breaking the norms of the society. An individual may bear a cost of 2 units as a result of violating his own moral code. The self-imposed penalty will reduce the payoff from non-cooperative behaviour to such an extent that each person's dominant strategy is now to obey the moral law, as Table 5.2 illustrates.

Table 5.2: Prisoner's Dilemma Game -- with penalties

		Individual B	
		obey the law	evade the contract
Individual A	obey the law	I 3,3	II 1,2
	evade the contract	III 2,1	IV 0,0

Moral codes are likely to be important in mitigating the effects of the prisoner's dilemma in small communities. Since they are constantly dealing with each other, the individuals can reap the gains from reciprocal behaviour. One good turn is noticed and deserves another is, perhaps, one way of capturing the idea of cooperative behaviour in the small community. The small number of individuals enhances also the building of shared interests and shared values. The social capital of norms can only be threatened by the nightly parade of public officials who have shown by their actions that they hold the community in disrespect, for soon the moral person will argue that if all of them are cheating, then I might just as well abandon the high ground and join the club. Now none of this is meant to deny the fact that legal rules of the game can be used to harness individual self interest for the good of all. Each person can recognise that if laws are obeyed in general, then each will secure a higher payoff. Fewer resources will be wasted in unproductive attempts aimed at personal gain. Each individual, even when unmoved by moral arguments, may be willing to accept a system of fines, of say 2 units, in order to escape the non-cooperative end. We nevertheless ignore the erosion of our social capital of norms at our peril: The law may not be enough to escape the prisoner's dilemma.

Endnotes

1. It may strike readers as odd that an individual would devote resources to lobbying the government and end up worse off as a result. Just as individuals spend money on court cases they lose, this is caused by the fact that in all cases considered here, the individual had some possibility of ending up in a better state.
2. See Brooks and Heijdra (1988, 1989) for a discussion of some of the issues regarding rent seeking.
3. This assumption has been used throughout the rent-seeking literature but is by no means uncontroversial. For some discussion on this issue see Tollison (1987) and Brooks and Heijdra (1989).
4. See Brooks and Heijdra (1989) for a discussion of these so-called 'revenue-seeking' activities.
5. See Nurick, (1989) where this definition is quoted and briefly discussed.
6. It is never made clear in the standard account how the maître d' solves the general information problem discussed in Chapter 2. Unlike the competitive market, there is no guarantee that the seats will be reallocated from those willing to pay little to those individuals willing to pay much more.
7. See Salim (1981) for an interesting account of how telecommunication facilities are distributed by means of bribery in India.
8. It ought to be made clear at this point that some care ought to be exercised in drawing on externalities as providing the rationale why bribery is intolerable in a modern economy. And there is some danger of rationalising all government action as the response to some external cost; that the mere whiff of an externality provides a case for government action. The case will not, however, bear scrutiny. Suppose you suffer some psychic cost as a result of your neighbour's decision to paint the eaves of his house some shade of pink. Or you grieve at the sight of males wearing earrings or having shoulder-length hair tied up in pony-tails. Should we prohibit these activities too? The answer is that it all depends. The cost you bear from living next door to that budding Jackson Pollock might be outweighed by the benefit he derives from his suburban work-of-art. In such a case, a government decree on what colours individuals may use to paint their house would not represent an improvement in resource allocation. Equally clearly, the youth's benefit from wearing earrings or having a pony-tail might outweigh the cost you suffer. These examples serve to illustrate the general and fundamental point that whether the phenomenon of external cost provides a case for prohibition depends on a comparison of the benefits and the costs case by case. The blanket case against corruption cannot be built on the notion of externalities.
9. It might be more reasonable to assume increasing costs in the production of corruption and consequently, an upward sloping supply curve. In view of the discussion in Chapter 2, this would give rise to quasi-rents in the market for corruption. In order to simplify the discussion, we assume constant costs so that there are no quasi-rents.

10. At point E total benefits are HEAO, social costs are OAFG leaving a surplus of HIG minus FEI. At point I total benefits are HIKO, social costs are GIKO, leaving a social surplus of HIG. Hence, the social surplus at I is larger than that at E by the area FEI.
11. This means that there is no price discrimination. Given the nature of the service, first-degree price discrimination may be more reasonable to assume since information about who is purchasing corruption will not in general be freely available, nor will units be resold. In this case, all the consumer surplus is transferred to the producer. The case discussed in the text differs only in terms of distributional considerations. The possible size of the loss due to rent seeking will be larger under first-degree price discrimination since the profits are larger. Of course, this is true as long as agents are not engaged in activities designed to protect their rents; so-called rent-avoidance activities. See Brooks and Heijdra (1989) for a further discussion.
12. Buchanan (1973) reached the same conclusion in the context of organised crime, a private market activity.
13. The reduction in external cost is represented by area NACT (=PFEM). The welfare loss due to the restriction in output is QME. Taking into account the common area PIEM, the welfare gain is FEI minus PIQ.
14. Michaels (1987) explains the manner in which the illicit drug industry is organised so as to reduce the probability of detection.
15. See Buchanan (1954) for a discussion of the desirability of inconsistent social choice in a democracy.
16. See Axelrod (1984) for a fascinating discussion of the Prisoners' Dilemma game and the emergence of cooperation in repeated PD games. Theoretical results are provided by Kreps et al. (1982).

Chapter 6: Reform of the Rent Seeking Society

6.1 Introduction

One clear conclusion to be drawn from the discussion so far is that the competitive market process has a good deal going for it. If the market is competitive and property rights are well-defined and enforced, then the degree of waste associated with rent seeking is reduced; resources are allocated efficiently and the level of bribery is reduced. The purpose of this chapter is to examine some of the policy reforms that might achieve that end.

6.1.1 How to mitigate corruption

As became clear in Chapter 5, not all distribution and allocation problems can be solved satisfactorily by appealing to the market. For example, in some settings there is a need to regulate the market process. But in finding a solution to one problem, another emerges. The regulatory process itself may lead to the emergence of socially wasteful rent seeking. Resources will be dissipated by special interest groups in the attempt to shape the form of regulation. Corruption may also emerge as a result of the infeasibility of the market approach. Take, for example, the case of the police force. For various reasons, the notion of competitive supply of certain policing activities such as enforcement of the criminal code seems unwarranted. Modern day Australians do not seem to accept the notion of a system of bounty hunters to enforce the criminal code. And nor does the government seem prepared to give up the exclusive right to the revenue it gains from the application of certain laws. As a result of the lack of a well-defined competitive 'market' for policing activities, corruption is a possible outcome.

Economic theory can be used to analyse possible institutional responses aimed at cutting down the incidence and extent of corruption and waste. In other words, even though the market solution is impossible, the disagreeable side-effects of the non-market solution can be mitigated (but not eliminated) by putting the appropriate institutional framework in place. Retaining the central idea of man as a rational egoistic maximiser, the correct institutional framework consists of altering the individual agent's environment in such a way as to make non-corrupt behaviour the optimal strategy. In colloquial terms, we must make corruption not worthwhile for those most in temptation. This does not, of course, eliminate corruption altogether. As we argued above, in many cases there may a socially optimal (non-zero)

amount of corruption and reductions beyond this level would be undesirable, at least from the standpoint of efficiency.

It might be thought that it would be possible to reduce the degree of corruption if 'better' individuals were attracted to occupations which may involve graft, with 'better' being defined in the sense of having higher moral standards. If we were only willing as a collectivity to pay our police officers, judges and officials a higher wage, then we could attract these sort of individuals. Part of the recent antagonism to the Guardian Angels, who wish to set up an organisation in New South Wales, seems to rest on the suspicion that this organisation attracts low-income individuals who hold dubious moral standards. This argument is problematic. First, there is the obvious point that high-income individuals do not hold an inherent monopoly on the high moral ground. Low-income individuals may hold the same moral standards as the richer members of the community. There would seem to be no clear relationship between an individual's income level and degree of morality. It would be wrong to conclude from this argument, however, that there is no relationship between the number of individuals who act as if they hold high moral standards and income.

Consider the following example in which, say, half the people have such high moral standards that they are beyond corruption. The other half can be bought for a price. In terms of Figure 6.1, suppose that the supply curve for both groups is given by S_0 . This curve indicates the amount of labour that the two groups are willing to supply at various wage rates. The total supply curve of labour, obtained by summing these curves horizontally, is given by S . If the government is willing to pay each employee a wage rate equal to W_0 , then OB units of labour will be employed for a total wage bill of OW_0CB . In this particular case, the proportions of ethical and unethical employees matches the proportions in the labour force: half of the employees in the bureau will hold high moral standards while the other half are unethical, in other words, OA equals $OB/2$.

Fig. 6.1: Bribery, morals, and malfeasance

Consider now the situation when the unprincipled employees can increase their remuneration by accepting bribes. In addition, assume that there is no way of monitoring the behaviour of the malfeasant or trustworthy. The individuals are free to follow their own moral codes. Suppose the amount of the bribe per unscrupulous employee is OD . The payment of

the bribe has the effect of shifting the supply curve of the unscrupulous employees to the right, to S_C . For example, prior to the malfeasance, OA unscrupulous employees were willing to offer their services to the government at the wage rate W_0 . These individuals would be willing, however, to supply the same amount of labour, if the government were only prepared to pay a wage rate of AE dollars, since their gross income, inclusive of the bribe, is equal to W_0 , that is, AE plus OD dollars. The total supply curve, inclusive of the effect of the bribe, is given by S_1 . The total number of individuals forthcoming now at the government wage rate, W_0 is OF.

What is of particular interest is the change in the percentage of unscrupulous individuals working now in the bureaucracy. The proportion of unscrupulous employees in the organisation is now more than half of the total work force, in other words, OG/OF is greater than 1/2. It is not hard to see why this result must hold. Since there has been no change in the official wage rate, the number of trustworthy employees has not increased. This means that the expansion in the number of employees comes solely from the group in the population which lacks the scruples to refuse a bribe. It follows that the proportion of unscrupulous workers in the bureaucracy will be more than half.

Interestingly, the proportion of unethical individuals in the bureaucracy will be larger than the proportion of unethical individuals in the community. It is not difficult to see why this result holds either. The untrustworthy and honest individuals are identical in the decision to work for the government save for their attitude to graft. But it is the dishonest who can obtain the larger take-home pay, consisting of their government wage topped up by the bribe. A greater percentage of unethical employees will therefore be attracted to the government employment at any given wage.

It is worth noting that the point about the percentage of unethical employees in the organisation holds for all wage rates. This is not surprising. If the government bureaucrats were paid, for example, a higher wage, then they would still continue to take the bribe as an added bonus of the job. It is therefore clear that the problem of corruption in the bureaucracy cannot be solved here by merely paying government officials a higher wage. It will not necessarily attract a 'better' class of government agents. An assumption made in the discussion here is that the unscrupulous individuals can receive their bribes without any penalty. Is it possible to reduce the degree of corruption by either lowering the expected benefits or raising the costs of such activity to the participants?

In order to explore the measures which may be taken to reduce the degree of malfeasance, it will be useful to set out the individual calculus of a government representative. A risk-neutral¹ official will accept a bribe (B) if his expected income [E(Y)] including all costs and penalties (F) exceeds the income he receives for certain as his salary (Y_0). In mathematical terms, the agent accepts the bribe if $E(Y) > Y_0$, where $E(Y) = P(Y_0 + B) + (1 - P)(Y_0 + B - F) - C$. Here, P represents the probability of committing the offence undetected, F represents the fine or penalty imposed on the individual when he is caught, and C represents the costs to the individual of engaging and hiding his involvement in the activity.

It may be useful to illustrate the principle here with a simple arithmetical example. Suppose his certain annual income is equal to \$30,000, the probability that this offence will go undetected is 0.9, and he is offered a bribe of \$5,000. Assume, furthermore, that if he is caught, he will bear a penalty valued at \$10,000 and that his own costs in executing the crime, such as the time he spends in gathering the information and concealing his deeds, is \$200. Under these conditions, the risk-neutral agent will undertake the graft as he expects to be better off by \$3,800.²

An examination of the above equation reveals that there are two major ways to reduce the incentive of the representative individual to undertake the corrupt activity. First, society may undertake monitoring and policing activities which are designed to reduce the probability that the crime will go undetected. Second, society can raise the size of the penalty. Both measures are designed to decrease the individual's expected income associated with accepting the bribe. These measures will have the additional effect of raising the costs of engaging in corruption itself, C, which will reduce the level of malfeasance.

There are several ways of reducing the probability that the offence will go undetected. First, the bureaucracy can hire additional personnel to undertake monitoring and policing activities. Second, in order to reduce the possibility of friendships arising which tend to diminish the enforcer's judgements about other individuals, it would be useful to constantly rotate partnerships and individuals at various posts within the organisation. Third, employees could be encouraged with the prospects of promotion if the information they offer on the nefarious dealings of other persons in the organisation leads to a conviction. In terms of the arithmetical example presented above, suppose these measures lower the probability of being undetected to 0.5. In this case, the individual's expected income associated with malfeasance would be \$29,800.³ Since the individual would be worse off by \$200, he will decide it is

better to follow the straight and narrow path of honesty.

It is important to fully recognise that this reduction in the incentive to engage in corruption comes at a cost. The personnel required for the increased monitoring activities will increase the cost of supervision to the government. Encouraging individuals to inform on other people can harm the degree of trust that is important to the efficient performance of the bureaucrat's dealings. Individuals will waste time and money in following false information on other individuals. Since there is a cost to stamping out the costs of corruption, society should undertake monitoring activities up to the point where the marginal benefit from policing equals the marginal cost of monitoring the level of malfeasance in the organisation.

There is one significant indirect cost of the increased monitoring that should not be overlooked. If the policing is effective, then malfeasant individuals will sustain a loss in their income. They will no longer be able to augment their official income with bribes. This means that there will be a reduction in the number of individuals who are willing to supply their labour to the government agency. This means in turn, that if the agency is to maintain its numbers it will have to increase the wage bill, thereby adding to the explicit costs of the public sector. For example, in terms of Figure 6.1 the additional cost of continuing to attract OF employees would be $WIHW_0$.

Fig. 6.2: The optimal level of policing

It is useful to depict geometrically some of the basic elements of the argument presented so far. It will also provide a framework for the subsequent discussion about how to reduce the degree of corruption. In Figure 6.2, panel (a) represents the demand and supply curves for corruption within a government agency. The supply curve indicates that N_1 officials are willing to offer their services for corrupt activity when they are paid at least W_0 dollars. The demand curve indicates how much individuals are prepared to pay for the corrupt activities, that is, to have the officials turn a blind eye to their criminal activities, for example, or contort the agency's rules in the criminals' favour. In this particular example, the malfeasant government officials receive a bribe of OW_1 dollars. In panel (b) the marginal benefits and costs of reducing the number of corrupt officials are depicted. In this panel, the horizontal axis measures the reduction in the number of corrupt officials in the organisation as a result of increased monitoring. In the absence of any costs of policing, the number of

corrupt employees would be reduced to zero, that is, to the point at which the marginal benefit of monitoring falls to its lowest level. The marginal cost is assumed to increase as the level of policing is increased. The efficient level of policing is determined by the intersection of MC and MB, given by P^* . The efficient level of monitoring is less than when the cost of policing is not taken into account. It is not efficient to reduce the level of corruption in the organisation to zero.

The second major way of reducing the incentive to engage in corruption is to increase the value of the penalty upon employees who are convicted of malfeasance. Any increase in the value of the penalty will reduce the expected income from malfeasant activity and therefore reduce the incentive to engage in criminal activities. There are a number of specific options which can be used to raise the value of the sanction.

6.1.2 Performance bonds

One system which would raise the value of the sanction is to use some form of bonding. The central idea of bonding has emerged from the literature on principal and agents.⁴ It is, perhaps, worth introducing at this juncture the concept of the principal/agent problem.

A principal/agent relationship exists if one party (the agent) agrees to act in the interests of another party (the principal). The relationship is only worthy of attention when there is a conflict of interests between the principal and the agent. Secondly, the information available to the two parties must be asymmetric. If both conditions are met, then the principal is faced with devising a method which provides the agent with the incentives to act in the principal's interests, rather than his own. The parallel with the case of a corrupt police force is immediately obvious; the collectivity is in this case the principal and the police force is the agent. The conflict of interest between principal and agent exists in the sense that the principal wishes a safe society, whereas the members of the police force wish to make a good living without too much dangerous chasing of suspected criminal elements. There is an incentive for the police force to enter into an agreement with criminal elements not to 'over-police' certain activities in exchange for bribes in money or in kind. As a result, the principal's interests are not fully served. It is clear that in the absence of informational problems, an omniscient public (the principal) would always be able to observe corruption immediately and respond by sacking the corrupt elements in the force. In such a case, the

principal/agent problem does not exist; there is immediate measurability of the agent's output (policing services). In the absence of full information, however, the problem can exist.

One way to reduce the incidence of corruption in the police force is, as mentioned, by using the method of bonding. It is possible, for example, to specify in the employment contracts that the police officer in question will lose his job and his superannuation should he be found to have acted in a corrupt fashion. This means that, in effect, the police officer posts a performance bond to be forfeited if his performance falls below the level set by the principal. In such a case, there is a stronger incentive for members of the police force to act in the appropriate manner; effectively, the opportunity costs of acting in a corrupt manner have been raised by the existence of the performance bond. Since the bond raises the cost of engaging in malfeasance, the supply curve of corrupt officials will shift to the left. In terms of Figure 6.2, if the cost of the forgone bond (in present value terms) is represented by W_2W_0 , then the bonding will raise the minimum acceptable bribe to W_2 and the supply curve will shift upwards to the dotted curve W_2S . The equilibrium bribe will increase to OW_2 dollars. Individuals seeking corrupt officials will therefore find it more expensive to engage in corruption. Consequently, there will be a fall in the level of corruption as measured in terms of the number of malfeasant officials.

The police trade union might claim that there is an opportunity here for the principal (the holder of the performance bond) to act in an opportunistic manner. If the performance bond is in the form of a superannuation payout at retirement age, then an opportunistic treasurer could save the government some money by forfeiting the bond to all members of the police force just about to retire. But forfeiting the bond unjustly would lead to a loss of reputation on the part of the principal and subsequent agents would take this opportunistic behaviour into account when dealing with the same principal. As a result, opportunistic behaviour on the part of the principal would defeat the purpose of the performance bond to a large extent. The rational agent would anticipate the loss of his performance bond at retirement age and would face even stronger incentives to act corruptly than if no performance bond had been posted. For that reason, it is not in the principal's interests to act opportunistically.

Becker and Stigler (1974) suggest that implicit bonding can be achieved by paying the law enforcers a higher wage than they could earn in other occupations with the same risk structure. They show that the wage premium depends positively on the gain from malfeasance

(the size of the bribe) and negatively on the probability of detection of malfeasance. This case differs from the one analysed in Section 6.1.1 as there is now a positive probability of detection. An illustration of the general principle is as follows. Consider the case in which police officers are paid a salary of \$21,000. Suppose the officers' next best alternative occupation pays only \$20,000 a year. In this case, a risk-neutral police officer who estimates that there is a fifty-fifty chance that he will be detected and convicted would reject any bribe equal to or less than \$1000. In fact, the argument here offers one way of interpreting the horizontal segment of the supply curve of corrupt officials. The officials must be paid at least W_0 (here \$1000) before they will offer their services to criminal ends. If the officers are paid a higher salary, then this increases the cost of engaging in malfeasant behaviour because the cost of getting caught would include the loss of the now more lucrative salary. In terms of Figure 6.2, an increase in their salary would cause the supply curve of corrupt officials to shift upwards leading to a fall in the number of corrupt officials.

It is interesting to reflect on the recent public outrage when judges in Australia were granted an increase in their salaries. The analysis here suggests that there might be a genuine case for paying them higher salaries when there is a probability that their transgressions will be detected. The higher wage increases the expected cost of conviction and reduces the gain from engaging in corruption. Consequently, these salary increases may not be unwarranted as the usual public cry would have it. If we continue to pay our judges and public enforcers in general, relatively unattractive salaries, then we will continue to be plagued by the dead hand of the malfeasant; if you pay peanuts, you'll employ monkeys.

An alternative method aimed at reducing malfeasance is to alter the pay structure of the enforcers. Instead of paying the enforcers a straight salary, Becker and Stigler (1974) suggest that a 'piece-rate' or 'bounty' system would be superior. Under such a system, the enforcers are rewarded on performance and there is a strong incentive to perform adequate enforcing activities, provided the piece-rate is sufficiently high to compensate for the bribes on offer. But as we have already indicated, the competitive solution proposed here would not be seen as desirable by most Australians.

6.2 On correcting the government agent

Up to this point, the implicit assumption has been made that the will of the collectivity was accurately reflected by the politician. That is, the politician accurately and faithfully

reflects the will of the electorate. In this case, there is no principal/agent problem. The politicians' actions mirror precisely the actions that would be carried out if there were a system of direct democracy in which all policy decisions were made by a system of referenda. But it is clear that the principal/ agent problem applies also to the electorate and the politicians. For various reasons, it is possible for politicians to pursue their own goals even when these objectives are in direct conflict with the general stance of the electorate.

First, the principal/agent problem emerges here too, as there is asymmetric information between the electorate and the politicians. It makes economic sense for voters to be ill-informed about political events. Each voter has little, if any, chance of influencing political events since his vote is only one amongst many in electorates involving a large number of voters. In such a setting, individuals will reckon that any time invested in understanding political platforms and ideas is wasted.⁵ That individuals do invest time in reading the political columns is explained by the argument that time so spent represents a consumption activity no different from spending time reading the sports column. In neither case is his knowledgeable choice instrumental in changing the outcome.

A second reason why the principal/agent problem emerges in the political sector is that politicians can use the political arena to further their own ends which may diverge dramatically from those of the electorate.

In the last decade, a number of suggestions have been put forward which aimed to improve the performance of the public sector. One suggestion which has recently received a good deal of public attention is that electoral boundaries ought to be recast in order to make politicians more responsive to the majority of the electorate. Indeed in the Fitzgerald Report on corruption in the State of Queensland, a recommendation was made to review all electoral boundaries in Queensland with an eye to correcting the gerrymander. The argument behind this recommendation is that voters in Queensland had lost hope in getting the parliament to reflect the will of the majority and that this was instrumental in creating a climate in which malfeasance would be tolerated. It should be easy to see that the argument put forward by Fitzgerald is consistent with one of the themes running throughout the chapters of this work. A good many of our exchanges depend on some degree of trust between the agents. From the taxi cab example in Chapter 2 to the discussion of the political corruption in Chapter 5, we have been at pains to point out that trust can be damaged if there is widespread perception that it is the strategy only of the loser. There is considerable merit therefore in revising

electoral boundaries in the attempt to restore the citizenry's faith in the fairness of the political sector. Politics should be seen to be a process free of rorts. There needs to be increased public understanding that trust is social overhead capital⁶ that has been seriously ravaged by recent events in Australia. The rorts of the politicians and the chicanery practised by some of Australia's leading business people foster only contempt for the law in general and lead to the destruction of the social capital trust. The widespread disregard of the maintenance of this social capital is a problem which besets the Australian economy on par with unemployment and inflation. We ignore the problem at our own peril.

Yet while fully acknowledging the merits of Fitzgerald's arguments on this score, it must be recognised too that electoral reform alone does not offer sufficient protection for the electorate. First, it is simple to demonstrate that redrawing the electoral boundaries is not sufficient to produce a government of the majority. There can be a tyranny by the minority even when all electorates have equal numbers of voters.

In order to present a simple arithmetical example of the tyranny of the minority, consider a state in which there are eleven electoral divisions, each with 100 voters. Six of the electoral districts are rural and the other districts are urban. Suppose further, that there is a proposal to woodchip the native forests throughout the state. In order to further simplify, assume the proposal will provide work only to rural timber workers. In each rural electorate there are 51 timber workers in favour of the development policy. All other voters favour a policy of conservation. The political party that runs a development policy in a one-issue campaign will secure six of the electoral divisions required to form a government, this is despite the fact that it has only secured about 28 per cent of the vote. It is clear, therefore, that the support of a majority within the legislature need not imply the support of a majority of the electorate. Evidently, the institution of representative democracy need not ensure protection to the majority from special interest groups.

6.2.1 Monitoring and the free press

If the redrawing of political boundaries cannot be relied upon alone to force government to reflect the will of the majority, then are there any other possible means of controlling the politicians' activities? One way which has been suggested to increase the politicians' accountability is to foster a more competitive press. It has been remarked by some that the degree of concentration in Australia of the media is not conducive to a wide and

varied market for ideas. In some ways this is true. The ownership of the Australian media is held by a small number of individuals. In such a setting, it is easier for corrupt individuals to control the information about the activity under question. The malfasant politician need only gain the cooperation of a small section of the media in order to effectively suppress information about the issue under inquiry.

There are a number of elements of this argument which demand comment. First, a small number of enterprises in the media industry does not necessarily preclude competition. In Tasmania for example, there has been of late a good deal of rivalry and competition between the media in the North and South of the state and this only involves two newspapers. Equally clearly, small numbers do increase the chance of collusive behaviour. Perhaps an investigation of the relationship between the degree of media ownership and the competitive supply of well-founded and well-researched ideas should be undertaken. What is clear, though, is that the decision process should not be left in the hands of the politicians. Politicians in power cannot be expected to bite the hand that writes of them in a favourable light. Nor would we want politicians making decisions with an axe to grind against certain individuals. There is therefore a case for an independent authority to examine the role of the media in the competitive supply of scrutiny of the public officials. Our guess is that the outcome of such an inquiry would be a call for stronger and more independent media in Australia.

On this score, there might be some individuals who believe, at least on the basis of recent events, that our libel laws are not conducive to good investigative reporting. In Australia a food critic had large damages levied against him as a result of a critique written about the quality of the restaurant's food. Since the Court's ruling there has been a spate of criticism in the press claiming that the damages awarded to the restaurateur were excessive and that the decision will stifle the press since it places too large a cost on printing information subject to interpretation.

The statements in the press have been on the whole far too simplistic. It is, of course, widely acknowledged that the reporter has an obligation to be careful about how he reports and finds his information. He should not behave negligently by failing, for example, to take adequate precautions that his information was indeed accurate. In terms of economics, the socially optimal degree of precaution occurs at the point where the cost of precaution at the margin equals the expected marginal benefit due to the precautionary activity. For example,

if the individual could have undertaken additional care at a cost of \$10 and thereby avoided inflicting expected additional damages of \$100, then the Court ought to award damages. Individuals who take heed of the general ruling in their future activities will perceive that it is cheaper for them to take precautionary measures than to pay the damages. In this way, the collectivity puts in place an institutional structure which minimises the total amount of resources forgone in careless or accidental behaviour.⁷

We do not wish to pass judgement on the particular case at hand. Our comment extends only so far as mentioning the matters of concern raised by the rule. We would be interested in whether it is costly for a food critic to take due care in writing and preparing his article on a particular restaurant. Is the presentation of his critique likely to lead to damages? In assessing the measure of damages, we would like to know whether the food critic is highly influential and whether the level of circulation of his opinion is widespread in the market niche of the particular restaurant in question. Did the restaurateur's reputation sustain any damage? Was there a noticeable decline in trade after the article? Is it expensive for the restaurateur to restore his reputation? We will leave it up to the reader whether the court was justified in awarding damages.

One implication that is worth drawing from this discussion, however, is that the courts ought to be more lenient in requiring reporters to exercise due care when the case involves politicians and well-known public officials. Compared to the restaurateur, the politician has easier access to the media in order to present his counter-argument and thereby reduce the damages of the allegedly false report. The standard of care ought to be less for cases involving well-known figures than cases involving everyday citizens. There ought to be a review whether the courts have muzzled an effective watchdog of the public official by requiring the press to meet the same standard of care in its treatment of politicians as that demanded of the average citizen.

6.3 Constitutional political economy

To be sure, electoral reform and a critical press do offer some prospect of reducing the ability of politicians to advance their own interests to the detriment of the majority of the electorate. But these procedural reforms will not carry the task alone. The incentive structure within government must also be erected on the basis of constitutional rules. The constitution should be redesigned to place restrictions on the ability of self-interested politicians to further

their own ends while they carry out the desires of special interest groups. Government must be subject to limits on what activities it can undertake, and for obvious reasons, these limits must not be under the control of the government of the day to change at its whim.

Two economists who have sought an answer to the problem of how to specify the rules that government ought to operate within are the Americans James Buchanan and Gordon Tullock. Their seminal work on this issue is found in *The Calculus of Consent. Logical Foundations of Constitutional Democracy* (1962). There, they argue that unanimity ought to be the test of whether a rule is warranted.

The analogy of a card game may be usefully employed here. Unanimity may be sought at the selection of the rules of the game. This is the so-called constitutional stage. Alternatively, it may be sought once the game has begun under a given set of rules. This is referred to as the in-period stage. Buchanan and Tullock claim that the possibility of reaching consensus looms large if decisions are taken not on the outcomes of the game, but on the rules under which the game will be played. Individuals, for example, before the hand is played can agree quite readily whether an ace will count high, low or both. Once the hand has been played agreement, if any, on the value of the ace in the absence of any prior rule is likely to lead to protracted and time-wasting debate. It is easy to understand why this would be so. Agreement before the game is commenced is easier to secure as the vested interests are yet to be drawn. The individuals are searching for a set of rules that will lead to a good game of cards. If all individuals agree prior to the game that the maximum bet should be, say, twenty cents a hand rather than the existing ten cent limit, then it is possible to say that this rule change represents an improvement. If all individuals do not agree, then another proposal should be put forward until a consensus is reached. The protracted debate in Australia at the turn of the century offers an example of how mutual agreement of the States was achieved by a process involving a good deal of give and take.

The political economist interested in the basic democratic attributes of implementing only those rules that have secured unanimous agreement takes on the same mantle as the card players reviewing the set of rules prior to commencement of the game. The economist, for example, might propose a constitutional rule that government can enact outcomes if there is a simple majority for the proposal. There may be unanimous approval for such a rule at the constitutional stage since individuals recognise that decision-making rules that approach unanimity will involve large decision costs at the in-period stage. At the constitutional stage

there may be universal agreement for a rule that will allow the redistribution of wealth from one individual to another at the in-period stage, since this is the price of saving on the costs of reaching a true consensus at the in-period stage. So individuals who, for example, fume at the mere thought of giving government relief to some particular individual may, nevertheless, support the constitutional provision that such decisions need only secure majority support.

Fig. 6.3: The welfare costs of price controls

6.3.1 A case for the market

The discussion about the constitutional political economy has, up to this point, been at a fairly abstract level. It is possible to illustrate the nature and importance of the constitutional perspective by reexamining the case for the price system. It is fair to say that we have come out strongly in favour of the market system as the preferred method of distribution. It should be acknowledged that there will be a substantial deal of consumer resistance to the idea that resources ought to be allocated by an unfettered price system.⁸ For purposes of simplicity, consider a market in which, for all intents and purposes, consumers are identical. In terms of Figure 6.3, each individual is consuming Q units of the resource at a price represented by P_0 . Suppose there is an unexpected reduction in the amount of the good coming on the market. There could have been an unexpectedly dry season in the Riverina resulting in a poor harvest and shortfalls in production and output over several seasons. Alternatively, the recent flooding of agricultural lands has led to a reduction in the numbers of livestock coming to the market. For simplicity, let us suppose that there is a reduction in per capita supply to M units. If the market price is allowed to adjust, then individuals noticing the shortfall in their planned consumption will bid with each other for the available supply. The market price would be P_2 and each consumer's loss in consumer surplus is equal to the area P_0P_2AB .

In this case, consumers appear to have an incentive to prevent the increase in the market price. Consumer-voters will prefer a case for explicit rationing and price controls. There will be a call to restrict the ability of producers to raise prices. The call to control the gougers in these dire times will be strong. If the politicians accede to the voters' demands and manage to keep the price at P_0 , then consumers will be better off by the area P_0P_2AC . This

is the amount of income that would have been transferred from consumers to suppliers in the absence of price controls and quotas. Consumers appear to have a clear preference for price controls to cure their immediate concerns. The unfettered price system will emerge from the political battle bloodied and down for the count.

A moment's reflection might raise some doubts that are evident to all about the wisdom of price restraints. The Australian media is currently replete with examples of the difficulties that can arise when there is too much central control over prices. Indeed, the recent decision by Qantas to have the major servicing of its planes performed by Aer Lingus, rather than its maintenance crews in Sydney, is claimed to be the result, in part, of Qantas' inability to offer sufficiently higher wages to attract appropriate personnel. The government's control over the rate at which remuneration can rise is causing problems for the efficient allocation of resources.

It is easy to observe the improvement in supply if prices are allowed to increase over time introducing the supply curve, S in Figure 6.3. Here, there is some expansion of supply in response to the higher equilibrium price P_1 . The gain to each consumer from this expansion is represented by the area AHF . So there is some meat in the argument of allowing the price to increase. The consumers gain from the expansion in supply.

This gain does not come without a cost. Each consumer is now paying a higher price for the units that were previously subject to the price control. The net loss to consumers is represented by the difference between the controlled and market prices multiplied by the number of units that would have been consumed under the price control scheme represented by area P_0P_1HC . In this particular example, the loss in consumer surplus from paying the higher free market price is greater than the gain in surplus anticipated from the expansion in supply.⁹ Consumers-voters, largely ignorant of the effect of the price control will provide an incentive for producers to expand operations elsewhere and will support calls to constrain market prices. One need only look as far as the situation of the mortgage market to find evidence for calls on the government to control the prices, here, the interest rate. Our previous argument that rights ought be allocated by a price mechanism therefore seems to be vulnerable to the attack that it fails to recognise the political reality of consumers' apparent short-run preference for price controls in order to further their own ends. Consumer-voters at the in-period stage are not interested in the overall gains to the economy that arise from the market method of distribution. They are not interested in the beneficial effects of the

invisible hand. The hand that distributes resources is the one they will follow.

The case for the market is, however, strengthened if one adopts the constitutional-contractarian approach to policy matters. There, individuals are concerned with the choice of rules under which the activity of trade should be conducted. All individuals at the constitutional stage can recognise that they may, in fact, be producers after the rules of the game are determined. The effect of price controls is to restrict the gains that can be earned by producers. In terms of Figure 6.3, the producer surplus, from per capita sales, is reduced by an amount equivalent to the area P_1P_0CF when price controls are applied. Individuals at the constitutional stage will recognise the potentially adverse distributional qualities of the regulation. Accordingly, there can be general support for the principle that interference in markets ought to be kept at a minimum. Parliament ought to be required to establish in the Court system whether its decisions to undertake new policy directives are constitutional or not.

One fundamental question which emerges from this discussion is how far the market process can be extended. Is it truly the panacea for all our social dilemmas? It will be instructive to analyse a few examples of the extension of market principles. We then discuss some of the factors which ought to be taken into account when discussing the desirable extent of the market process.

6.4 Increasing the extent of the market

Throughout the economics literature arguments can be found for more extensive use of the market in areas such as adoptions (Landes and Posner, 1978) and the sale of genetic material (Buchanan and Prior, 1984). Even more controversially, greater utilisation of the market process has been advocated as a means of diminishing the social dilemmas that beset the issue of abortion. It will be useful to explore some of the issues surrounding the extended use of the market in such areas. In doing so, the limits to how wide the market process may be cast will be explored.

In the debate about abortion, there is immense conflict about who has the right to abort the child. Does the pregnant mother have inalienable rights to seek an abortion on demand? Or must she first seek the approval of a medical practitioner or that of the biological father? Groups such as Right to Life argue that none of these groups should have the right to an abortion and that the foetus should be carried full-term. In the debate between the

different sides, the foetus is either accorded no rights whatsoever (pro-abortionists) or an inalienable right to be carried full-term once conceived (Right to Life). In both cases there is a good deal of conflict. Individuals feel exasperated; they feel powerless to alter the situation. It is either all or none. There is none of the push and pull of the market place.

Some economists feel that this is the wrong way of approaching the problem. The idea has been advanced that there would be greater scope for the beneficial effects of the market if the right to abort a foetus were invested in some independent agent at a 'Foetal Bank'.¹⁰ In this way, the foetus who, for practical reasons, cannot be given any direct representation, can nevertheless receive indirect representation from interested groups. The final decision about whether a particular foetus would be aborted would not rest with the pregnant mother. Rather, the right to make the decision would go to the individual who was prepared to pay most for this right. The mother would have to pay a fee to gain the right to have an abortion. Groups such as the Right to Life could outbid the mother and in doing so, they would gain the right to the abortion. They would presumably hold on to this right until the baby had been born or until they received a higher payment to relinquish that right. Efficiency would be seemingly met as the right to the foetus would be allocated to the individual who valued that right the most.

Somewhat less controversially, greater market freedom has been advocated in areas such as prostitution and drugs. In recent times, there have been renewed calls to decriminalise drugs in Australia. And in the last decade, there have been moves to decriminalise prostitution in some states in Australia. In fact, the State of Victoria has already decriminalised prostitution and allows this industry to operate under a form of zoning. In terms of economic theory, there is some justification for allowing greater market choice in these sorts of areas. Where these activities are illegal, suppliers have to organise their industry in such a way that it is difficult for enforcement agencies to detect all the individuals in the industry. The concomitant increase in costs drives up the price of the product or service. This result leads to a number of costs to the community. In the case of drugs, individuals who have a habit are forced to spend more for a given amount of drugs. It has been claimed that drug addicts resort to theft in order to maintain the habit that is requiring greater expenditure. While theft is an unpleasant phenomenon, the theft itself does not constitute a social cost to the community. Measured in terms of income as opposed to utility, the theft merely represents a transfer of income from one individual to another. Theft does, however, impose costs on the community

in the form of rent-seeking and rent-protection costs. The expenditure individuals undertake to protect their property represents a waste of resources to the extent that the drug addicts merely spend more time in devising new ways to break the bars on the window. Both perpetrators and victims spend more on predation and protection without creating any net value in the process. If decriminalisation of drugs lead to a fall in their price, then this would reduce the incentive of thieves to resort to burglary, which would in turn reduce the waste arising from the resources devoted to theft and protection.

The decriminalisation of drugs and prostitution would also reduce the degree of corruption of our law enforcement agencies. Under the present system, individuals in these unlawful activities have an incentive to pay bribes to the law enforcers in order to avoid the stiff penalties imposed by the courts. In Chapter 5, the costs of this form of corruption to society were discussed. Some of the costs could be avoided if prostitution were, for example, decriminalised. The police would have fewer incentives to become involved in the extortion of prostitutes and brothel owners. There would be a reallocation of their enforcement activity to other criminal activities involving victims where there is less scope for extortion and corruption. There seems to be a strong case for relaxing the government's control over the distribution of certain resources and extending the market principle.

6.4.1 How wide a net? On the appropriate extent of the market

Individuals may well feel that the case here for the unbridled extension of market principles is incomplete. It is also worth noting that not all economists would unequivocally accept the wholesale advancement of the market process.

First, some individuals believe that there ought to be limits on the extent to which the market is used to distribute resources. There is the paternalistic argument that the government ought to be there to protect those unwilling/unable to make reasonable decisions. That is, the mentally handicapped and minors should not be permitted to place themselves in certain situations. There ought to be restrictions on what acts certain individuals may undertake.

Second, the decriminalisation of activities involving drugs and prostitution may lead to the inculcation of socially undesirable values. Once the social stigma of a criminal record has been removed from drugs and prostitution, then there may be a number of individuals who will begin to consume drugs and frequent prostitutes. As a collectivity, the choice may be made that trade in certain rights ought to be actively discouraged. We do not pretend to

have any easy answers to these social problems. The concerns expressed by those against the decriminalisation of certain activities have some social merit. We may not want to live in a society where everything and every act has a price.

Third, there are some activities that cannot be effectively administered under a market regime. Some policies need to be performed by some bureaucratic structure. It may not be possible to eliminate the problems of the non-market method of distribution by using a market for the simple reason that the market may not be a viable alternative.

In order to gain some appreciation of the problem here, reconsider the issue of abortion. Recall that the argument was that the unborn would have its right to life decided by the highest bidder. Property rights pertaining to the unborn child would reside with a 'Foetal Bank.' The scheme would require the agent to represent the baby by placing a bid on its behalf. In order to invoke even moderately purposeful actions on the part of the agent representing the child, it is clear that the agent will have to make a bid that is expressed in monetary terms based on the future income-earning ability of the foetus. The foetus with genetic defects will have a relatively lower earning potential than a genetically normal foetus and it is here that the parents could, if they so desired, outbid the agent of the foetus and secure the right to abort the unwanted foetus. One problem with the scheme is that the unborn child represents extremely poor security for a loan, even if it is genetically normal. Anyone who has witnessed the difficulties teenagers experience in seeking a loan to finance their education will readily appreciate the fact that (in the absence of slavery) human capital is meagre collateral for a loan. The greater level of uncertainty involved with the future income-earning ability of the foetus as opposed to the teenager raises the distinct possibility that an important participant, as represented by the foetal bank representative, may not be able to exercise his choice. Moreover, it is not at all clear how the agent could ever gain the information of the foetus's willingness to pay for the right in question. In the absence of such knowledge, it is not clear how this market will allocate resources to the highest bidder.

In addition, the specific issue of abortion raises a fundamental problem inherent to almost all of the methods of distribution discussed in Chapter 4. The market can provide a solution if the property right is clearly defined in the first place. If the collectivity cannot come to some agreement about whether or not the right to abortion or life of the foetus can be sold to any individual, let alone a 'Foetal Bank,' then the market will not allocate resources at low cost to the highest bidder. Before the market process can be called on at all,

the collectivity, through its parliament, has to specify the nature and initial distribution of rights in those situations where there is no clear answer to be found in the common law or past statutes. Accordingly, there is the need for a constitutional convention to discuss the entitlements to be held by Australians in the next century. The debate on constitutional reform needs to be much wider in scope than the one so far envisaged by our politicians.

6.5 An agenda for constitutional reform

Although it is certainly presumptuous to set out the rules that ought to form the constitution, it is nevertheless possible to indicate some of the broad proposals that might form part of the agenda.

6.5.1 Reforming the public sector

One proposal that ought to be put on the agenda is the requirement that all public officials and the members of their families should give up all interests in firms that are directly affected by the decisions of the public bureaucracy. Public officials should be freed from the temptation of making decisions in the public domain which further their own narrow pecuniary interests at the expense of the electorate at large. It is clear that if this requirement were set in place, then we should be prepared to increase the salaries of public officials in order to compensate them for the lost unofficial earnings. There would still be a need to monitor the performance of public officials in carrying out all laws. The higher salary may, over certain ranges, act as a substitute for increased and highly expensive monitoring and therefore, there may be some resource savings under such an arrangement. To be sure, bureaucrats who would not ordinarily acquire shares will receive a bonus under our scheme at a cost to the public purse. The additional cost of paying all officials a higher wage may be outweighed, however, by the gains of having a less corrupt government.

In Chapter 5 it was argued within the context of the Prisoner's Dilemma that cooperation is a good thing in that it exhausts the potential gains from trade. It was argued that cooperation is more likely to occur in small communities where economic agents are constantly dealing with each other. By turning this argument on its head, reforms are suggested that will discourage cooperation between corrupt individuals. When cooperation leads to inferior outcomes, institutions ought to be designed to reduce the number of individuals who are in constant contact with each other. Here lies a rationale for Fitzgerald's

proposal to disband special squads within Police departments. In large number situations, where all officers are responsible for the enforcement of laws against, say, vice, there is less chance of officers developing means to bypass the dominant strategy of the Prisoner's dilemma, interpreted in this context as defection from the police culture.

6.5.2 Fiscal discrimination

It should not be overlooked that special interest groups use the public sector to appropriate resources for their own ends. A rather straightforward application of externality theory can enrich our understanding of the issue.¹¹

In Chapter 2 it was argued that individuals may ignore the impact of their actions on other individuals and that, as a result, there is an excessive level of output in the market. Much of the discussion in that chapter was devoted to showing how the institutional structure should be designed so that individuals will take account of the costs they impose on other individuals.

Under a representative democracy, operating to the tune of majority rule, the problem of externality arises too. When the majority votes for a particular government program, it is true that the minority will have to live with the consequences of the majority decision. In that sense, actions by the majority impose costs on other individuals. Clearly, this raises the level of tension in the collectivity. And more to the point, majority rule allows the winning party to foist some of the costs of its program on the minority. Since the institutional structure here does not force the majority to take account of the costs it imposes on the minority, a very real danger exists that there will be an excessive degree of public sector activity.

It is well worth noting too, that politicians have a direct hand to play in the bias towards an overexpanded public sector. Political parties are naturally interested in winning and retaining power. So self-interested, vote-maximising politicians have a clear incentive to put forward policy packages in which the benefits are highly visible. Naturally enough, the electorate is interested in any political party that promises much for little cost. The pressure on expanding the size of the public sector therefore also arises from political parties.

There is little scope here for changing this bias against the market mechanism by appealing to the public-spirit of politicians. Economists are rightly worried about relying on any proposal that places demands on one of the most scarce of all commodities, love. As in the market setting, reform ought to be sought in designing an institutional structure that will

blunt some of the excesses of human nature; to design an institutional structure that harnesses the vote-maximising politician's action for the good of the electorate at large.

Those acquainted with some knowledge of the Constitution of Australia will recognise that the authors of this instrument did make some attempts to reduce the potential excesses of the Federal parliament. One of the reasons why the debate on the constitution was so protracted in the 1890s was that the less populous colonies felt that they would be exploited by the more populous colonies of New South Wales and Victoria.

The participants in the debate recognised the potential tyranny of the majority. The proposal put forward and finally accepted was that the Senate would be the States' house and that the House of Representatives would reflect the interests of more narrowly defined electoral districts within each State. It was hoped that by drawing the electoral districts along radically different lines, the interests of the collectivity at large would be represented within the bicameral legislature and that State rights would be protected by the Upper House.

Put simply, it was felt that the Parliament had been organised to reduce the impact of any special interest groups or factional parties. It is, of course, true with the benefit of hindsight that their hopes have not been met. To a considerable extent, Senators vote along party lines. The Senate does not act as the watchdog of the States. The desire to achieve a consensual process that would reduce the degree of exploitation of minorities has not been achieved.

One institutional reform that would go some way to fulfilling the hopes of the statesmen of the 1890s would be to reform the Electoral Act. In order to break the stranglehold of the two major parties over the Senate, what is needed is some institutional structure that will better reflect minority interests in the Senate. One such reform is to use a strict Hare-Clarke voting system in all Senate elections, rather than the method of Proportional Representation that operates at present. Under the Hare-Clarke system, official 'how-to-vote cards' do not exist and there is no provision for a single 'list vote' that distributes preferences in a manner pre-determined by the political parties. The evidence --in particular, from recent Tasmanian elections-- shows that the Hare-Clarke system reduces the impact of the 'donkey vote,' diminishes the influence of the major political parties and as a result, ensures that the electoral outcome better reflects the range of community interests. If such a reform were introduced at the federal level, then the competitive forces within the Senate would limit the ability of the government to pursue their own interests and that of their supporters to the

detriment of the citizenry at large.

6.5.3 Compensation

In order to provide a clear and viable incentive for individuals to undertake market based activities, limits ought to be set on the government's power to take. If entitlements are poorly and inadequately protected, then self-interested individuals will attempt to use the political sector to redirect the resources in their favour. The message of Section 5.2 is that the wealth of the nation may be dissipated in this process of rent seeking. If rights are better defined and enforced, then the cost of engaging in rent-seeking behaviour will have increased; individuals will leave the rent-seeking industry to search for profits elsewhere in the economy.

To be sure, the present Commonwealth of Australia Constitution Act already sets out in a number of sections limits on the power of the government to commandeer resources. This set of rules enriches, of course, the definition of the set of property rights, a foundation stone of the market system. And yet it is not at all clear that the Acts adequately cover the issues at stake. When State and Federal governments make legislative changes, it is clear from the discussion found in Section 4.9 that certain individuals will sustain capital losses. The question is whether these losses ought to be considered when evaluating the worth of a regulatory change. That is, whether the property rights ought to be protected by some constitutional amendment that would require the government to compensate any losers.

It is worth noting from the outset that the notion of losses due to the actions by some other party is a general one. The actions of one agent in a competitive market will affect the welfare of other suppliers and consumers. Pecuniary externalities do not, however, warrant any government intervention. As we indicated in Chapter 3 the reallocation of resources resulting from the agent's decision will be efficient, as long as prices fully reflect benefits and costs. This argument, however, does not explain whether or not the individuals who have lost from the reallocation of resources should be compensated.

Economists, after duly noting that the external effect is transmitted through the market in the form of a price signal, for the most part ignore the question of whether compensation is required. It is difficult, therefore, to discern the economists' reaction to the issue of compensation. One response would maintain that in the case of pecuniary externalities, all that has transpired is that the economy has moved from one efficient allocation to another. And that, as the new outcome is an efficient one, it would not be possible to compensate the losers

without making someone else worse off. Consequently, there is no case for compensation quite simply because there are no gains to be had from settlement. The loss incurred by some agents due to the change in price is transferred to other agents. This seems to be what economists have in mind when they argue that pecuniary externalities do not matter. They fail to matter because there are no welfare costs associated with such changes.

This argument so far is incomplete. It only tells us what is required if the economy is a purely static one, instantaneously moving from one efficient state to another when there is no net surplus. What should happen if compensation is feasible (that is, if the gain exceeds the loss)? Is compensation required for those individuals who have their rents eroded through the course of time? Should the saddler receive compensation for the loss he sustains when farmers stop demanding his wares and start doing all their stock work on trail-bikes? In a dynamic setting, should the gainers be required to compensate those individuals who have sustained a loss as a result of a change in prices?

A fruitful way of approaching these questions is to carry out a thought experiment along the line broached in the section on constitutional political economy. Place yourself in an imaginary state where you have to make decisions about the rules that will be applied at some later date. You do not have knowledge, however, of whether you will stand to lose or win as a result of the particular set of rules. Most individuals would attempt to design a set of rules that eliminates the degree of exploitation that any individual or group can impose on them. Think of a jury system where jurors have to reach a unanimous decision. The individual is prepared to accept this sort of rule because there is some chance, ever so slight, that he will stand before the bench accused of murder. In such a circumstance, each one of us will want to be treated fairly. Moreover, each can be expected to desire a stringent decision-making rule as the cost of a mistaken decision can be relatively high. Of course, such rules come at a cost. We would not want all decisions to be made on the basis of unanimity. Imagine the cost and disruption to a cricket game if the two umpires had to confer on all decisions. Individuals will be prepared to accept a compromise in which the decision-making costs are weighed against the inefficiencies that arise from less than unanimous rules. Individuals adopt this sort of procedure when they sit around a table to play cards. The rules for the game are specified before the individuals know how the cards will fall that night. The individuals agree to a set of rules in full knowledge that they may win or lose over the course of the game: the rules are designed to make for a fair but interesting game.

It is possible to mount much the same argument for the losses which arise from changes in legislation. Individuals have agreed to a decision-making process in which, while they may sometimes gain and sometimes lose, they expect on the whole to be made better off in the long run, as a result of a more efficient institutional structure. In that sense, compensation need not be paid to the individuals who sustain losses as a result of a change in policy.

Yet in the case of changes in the rules themselves, it need not be the case that changes should always be made without any restitution. Unlike in the case of pecuniary externalities where changes do not lead to any net gain, the change in some constitutional rule designed to rid the economy of some inefficiency will result in a net gain. In this case, those who gain should be able to compensate those who lose and yet still be made better off. The difficult question then is to devise programs where these gains arising from the move towards the price mechanism as advocated in the preceding pages of this work are distributed across all participants. And this should be the objective of consensual democracy rather than the plunder of the many to the benefit of the few. But as we indicated in the introduction to this section, the suggested reforms remain our tentative proposals. So let the discussion begin.

Endnotes

1. Risk neutrality has been defined in Chapter 4 above. Basically, it means that the agent is equally happy with a fifty-fifty bet of \$0 and \$10 on the one hand, and a certain return of \$5, on the other.
2. Using the formula in the text, the expected income when taking the bribe is given by $E(Y) = 0.9[\$30,000+\$5,000]+(1-0.9)[\$30,000+\$5,000-\$10,000]-\$200=\$33,800$. His certain income is \$30,000, leaving an expected gain of \$3,800.
3. Now expected income when taking the bribe is given by $E(Y) = 0.5[\$30,000+\$5,000]+(1-0.5)[\$30,000+\$5,000-\$10,000]-\$200=\$29,800$. His certain income is \$30,000, leaving an expected loss of \$200.
4. See Ricketts (1987, ch. 5) for an excellent discussion of the agency problem and institutional devices aimed at cutting down shirking etc. Becker and Stigler (1974) suggest different methods aimed at reducing malfeasance.
5. See Downs (1957) for an extensive discussion of why it is rational for voters to be ill-informed about political events.
6. See Coleman (1987, 1990) for the notion of norms as social capital.
7. See Posner (1986, pages 629-33) for an extended view of this argument.
8. The analysis in the next section draws on the arguments in Buchanan and Tideman (1974).
9. Buchanan and Tideman (1974) demonstrate that this conclusion is not true in general. One can envisage cases where the supply is highly responsive to price, demand is unresponsive to price and the shortfall in supply so large that the size of the gain from allowing the market to operate freely will exceed the loss from not being able to consume the rationed resource at the controlled price. Their analysis shows, however, that consumers will continue to prefer the regulatory scheme under a wide range of values.
10. See Macaulay and Yandle (1977, pages 119-21) and Marks (1988, pages 175-7) who explore some of the relevant issues surrounding abortion from an economic perspective.
11. The relevant theory here was first put forward by Tullock (1959).

Bibliography

Alchian, Armen A., 'Some economics of property rights, *Il Politico*, 1965, 30, pages 816-829. Reprinted in A.A. Alchian, *Economic Forces at Work*, Indianapolis: Liberty Press, 1977.

Alchian, Armen A., 'Specificity, specialization, and coalitions', *Journal of Institutional and Theoretical Economics*, 1984, 140, pages 34-49.

Alchian, Armen A., 'Rent, in J. Eatwell, M. Milgate, and P. Newman, (eds), *The New Palgrave. A Dictionary of Economics*, London: Macmillan, 1987.

Alchian, Armen A. and Susan Woodward, 'Reflections on the theory of the firm,' *Journal of Institutional and Theoretical Economics*, 1987, 143, pages 110-136.

Ault, Richard W. and Robert B. Ekelund, 'Rent seeking in a static model of zoning,' *Journal of the American Real Estate and Urban Economics Association*, Spring 1988, 16, pages 69-76.

Axelrod, Robert, *The Evolution of Cooperation*, New York: Basic Books, 1984.

Barro, Robert J. and David Gordon, 'Rules, discretion and reputation in a model of monetary policy', *Journal of Monetary Policy*, July 1983, 12, pages 101-122.

Barzel, Yoram, 'A theory of rationing by waiting,' *Journal of Law and Economics*, April 1974, 17, pages 73-95.

Barzel, Yoram, 'Measurement cost and the organization of markets', *Journal of Law and Economics*, April 1982, 25, pages 27-48.

Basu, Kaushik, 'On why we do not try to walk off without paying after a taxi-ride', *Economic and Political Weekly*, 1983, 18, pages 2011-2012.

Becker, Gary S., 'Crime and punishment: An economic approach', *Journal of Political*

Economy, March-April 1968, 76, pages 169-217.

Becker, Gary S. and George J. Stigler, 'Law enforcement, malfeasance, and the compensation of enforcers', *Journal of Legal Studies*, January 1974, 3, pages 1-18.

Becker, Lawrence C, *Property Rights: Philosophic Foundations*, Boston: Routledge & Kegan Paul, 1977.

Benson, Bruce L. and John Baden, 'The political economy of governmental corruption: the logic of underground government', *Journal of Legal Studies*, June 1985, 14, pages 391-410.

Benson, Bruce L., 'A note on corruption by public officials: The black market for property rights,' *Journal of Libertarian Studies*, Summer 1981, 5, pages 305-311.

Brooks, Michael A. and Ben J. Heijdra, 'In search of rent seeking', in C. Rowley, R.D. Tollison, and G. Tullock, (eds), *The Political Economy of Rent-Seeking*, Boston: Kluwer Academic Publishers, 1988, pages 27-49.

Brooks, Michael A. and Ben J. Heijdra, 'An exploration of rent seeking', *Economic Record*, March 1989, 65, pages 32-50.

Brooks, Michael A. and Ben J. Heijdra, 'Rent-seeking and the privatization of the commons', *European Journal of Political Economy*, August 1990, 6, pages 41-59.

Brooks, Michael A., Ben J. Heijdra, and Anton D. Lowenberg, 'Productive versus unproductive labour and rent-seeking: Lessons from history', *Journal of Institutional and Theoretical Economics*, September 1990, 146, pages 419-438.

Buchanan, Cathy and Elizabeth Prior, 'Bureaucrats and babies: Government regulation of the supply of genetic material', *Economic Record*, September 1984, 60, pages 222-230.

Buchanan, James M. and T. Nicolaus Tideman, 'Gasoline rationing and market pricing: Public

choice in political economy, *Atlantic Economic Journal*, November 1974, 2, pages 15-26.

Buchanan, James M., 'A defence of organized crime?' In: S. Rottenberg, (ed.), *The Economics of Crime and Punishment*. Washington, DC: American Enterprise Institute for Public Policy, 1973, pages 119-132.

Buchanan, James M., 'Rent seeking and profit seeking', in J.M. Buchanan, R.D. Tollison, and G. Tullock, (eds), *Toward a Theory of the Rent-Seeking Society*, College Station, TX: Texas A&M University Press, 1980, pages 3-15.

Buchanan, James M., 'Social choice, democracy, and free markets', *Journal of Political Economy*, April 1954, 62, pages 114-123.

Buchanan, James M., 'Positive economics, welfare economics, and political economy', *Journal of Law and Economics*, October 1959, 2, pages 124-138.

Buchanan, James M. and Gordon Tullock, *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor, MI: University of Michigan Press, 1962.

Call, Steven T. and William L. Holahan, *Microeconomics*, Belmont, CA: Wadsworth, 1983, (second edition).

Calabresi, Guido and A. Douglas Melamed, 'Property rules, liability rules, and inalienability: One view of the cathedral', *Harvard Law Review*, April 1972, 85, pages 1089-1128.

Campbell, Harry F. and Robert K. Lindner, 'A model of mineral exploration and resource rent taxation', *Economic Journal*, March 1985, 95, pages 146-160.

Carew, Edna, *Fast Money 2*, Sydney: George Allen & Unwin, 1985.

Coase, Ronald H., 'The problem of social cost', *Journal of Law and Economics*, October 1960, 3, pages 1-44.

Coase, Ronald H., 'Blackmail', *Virginia Law Review*, May 1988, 74, pages 655-676.

Coase, Ronald H., *The Firm, the Market, and the Law*, Chicago: University of Chicago Press, 1988.

Coleman, James S., 'Norms as social capital', in G. Radnitzky and P. Bernholz, (eds), *Economic Imperialism: The Economic Approach Applied Outside the Field of Economics*, New York: Paragon House, 1987.

Coleman, James S., *Foundations of Social Theory*, Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1990.

Dennen, R. Taylor, 'Some efficiency effects of nineteenth century Federal land policy: A dynamic analysis,' *Agricultural History*, October 1977, 51, pages 718-736.

Downs, Anthony, *An Economic Theory of Democracy*, New York. Harper & Row, 1957.

Eaton, B. Curtis and William D. White, 'The economy of high wages: An agency problem', *Economica*, May 1983, 50, pages 175-181.

Elster, Jon, *Nuts and Bolts For the Social Sciences*, Cambridge: Cambridge University Press, 1989.

Epstein, Richard A., 'My restrain alienation?' *Columbia Law Review*, June 1985, 85, pages 970-990.

Fane, George and Ben Smith, 'Resource rent tax', in C.D. Trengove, (ed.), *Australian Energy Policies in the 80's*, Sydney: Allen and Unwin, 1986.

Fischel, William A., 'The economics of land use exactions: A property rights analysis,' *Law and Contemporary Problems*, Winter 1987, 50, pages 101-113.

Fischer, Stanley, 'Dynamic inconsistency, cooperation and the benevolent dissembling government', *Journal of Economic Dynamics and Control*, February 1980, 2, pages 93-107.

Friedman, David., *The Machinery of Freedom: Guide to a Radical Capitalism*, La Salle, IL: Open Court, 1989, (second edition).

Fung, K.K., 'On the slippery slope: Conformance vs defection in a multi-party prisoners' dilemma', *Journal of Economic Behavior and Organization*, June 1988, 9, pages 325-343.

Gifford, Adam Jr. and Gary J. Santoni, *Public Economics: Politicians, Property Rights, and Exchange*, Hinsdale, IL: Dryden Press, 1979.

Goldberg, Victor P., 'Relational exchange: Economics and complex contracts', *American Behavioral Scientist*, January-February 1980, 23, pages 337-352.

Haddock, David D., 'First possession versus optimal timing: Limiting the dissipation of economic value', *Washington University Law Quarterly*, 1986, 64, pages 775-792.

Hayek, Friedrich A., 'The use of knowledge in society,' *American Economic Review*, September 1945, 35, pages 519-530.

Kareken, John, 'Federal bank regulatory policy: A description and some observations,' *Journal of Business*, January 1986, 59, pages 3-48.

Kirzner, Israel M. et al., (eds), *The Prime Mover of Progress. The Entrepreneur in Capitalism and Socialism*, London: Institute of Public Affairs, 1980.

Kirzner, Israel M., *Competition and Entrepreneurship*, Chicago: University of Chicago Press, 1973.

Kirzner, Israel M., *Perception, Opportunity, and Profit. Studies in the Theory of Entrepreneurship*, Chicago: University of Chicago Press, 1979.

Klein, Benjamin, 'Transaction cost determinants of "unfair" contractual arrangements,' *American Economic Review, Papers and Proceedings*, May 1980, 70, pages 356-362.

Klein, Benjamin, Robert G. Crawford, and Armen A. Alchian, 'Vertical integration, appropriable rents, and the competitive contracting process,' *Journal of Law and Economics*, October 1978, 21, pages 297-326.

Klein, Benjamin and Keith B. Leffler, 'The role of market forces in assuring contractual performance', *Journal of Political Economy*, August 1981, 89, pages 615-641.

Kreps, David, Paul Milgrom, John Roberts, and Robert Wilson, 'Rational cooperation in the finitely repeated prisoners' dilemma,' *Journal of Economic Theory*, August 1982, 27, pages 245-252.

Kreps, David and Robert Wilson, 'Reputation and imperfect information', *Journal of Economic Theory*, August 1982, 27, pages 253-279.

Lake, Marilyn, *The Limits of Hope: Soldier Settlement in Victoria 1915-38*, Melbourne: Oxford University Press, 1987.

Landes, Elisabeth M. and Richard A. Posner, 'The economics of the baby shortage', *Journal of Legal Studies*, June 1978, 7, pages 323-348.

Macaulay, Hugh H. and Bruce Yandle, *Environmental Use and the Market*, Lexington, MA: D.C. Heath, 1977.

McKean, Roland N., *Efficiency in Government Through Systems Analysis*, New York: John Wiley & Sons, 1958.

Marks, Stephen, 'Teaching guide: Abortion economics,' *Economic Inquiry*, January 1988, 26, pages 175-177.

Marshall, Alfred, *Principles of Economics*, London: Macmillan, 1920, (eighth edition).

Michaels, Robert J., 'The market for heroin before and after legalization', in R. Hamowy, (ed.), *Dealing with Drugs: Consequences of Government Control*, Lexington, MA: D.C. Heath, 1987.

Monteverde, Kirk and David J. Teece, 'Appropriable rents and quasivertical integration', *Journal of Law and Economics*, October 1982, 25, pages 321-328.

Muris, Timothy J., 'Opportunistic behavior and the law of contracts', *Minnesota Law Review*, April 1981, 65, pages 521-590.

Nichols, D., Eugene Smolensky, and T. Nicolaus Tideman, 'Discrimination by waiting time in merit goods,' *American Economic Review*, June 1971, 61, pages 312-323.

Nurick, John, *Wet, Dry and Privatise: A New Political Phrasebook*, Perth: Australian Institute for Public Policy, 1989.

Palmer, John, 'The social cost of adoption agencies,' *International Review of Law and Economics*, December 1986, 6, pages 189-203.

Parfit, Derek, *Reasons and Persons*, Oxford: Oxford University Press, 1984.

Posner, Richard A., 'The regulation of the market in adoptions,' *Boston University Law Review*, January 1987, 67, pages 59-72.

Posner, Richard A., *Economic Analysis of Law*, Boston: Little, Brown and Company, 1986, (third edition).

Prichard, J. Robert S., 'A market for babies?' *University of Toronto Law Journal*, Summer 1984, 34, pages 341-357.

Revel, Jean-François, The varieties of corruption, Encounter, March 1987, pages 36-38.

Report of a Commission of Inquiry Pursuant to Orders in Council, [Fitzgerald Report], Commission of Inquiry into Possible Illegal Activities and Associated Police Misconduct, North Quay, Brisbane, 1989.

Ricketts, Martin J., The Economics of Business Enterprise. New Approaches to the Firm, Brighton, UK: Wheatsheaf, 1987.

Rose-Ackerman, Susan, 'Inalienability and the theory of property rights', Columbia Law Review, June 1985, 85, pages 930-969.

Rose-Ackerman, Susan, Corruption: A Study in Political Economy, New York: Academic Press, 1978.

Rose-Ackerman, Susan, 'Bribery', in J. Eatwell, M. Milgate, and P. Newman, (eds), The New Palgrave. A Dictionary of Economics, London: Macmillan, 1987.

Salim, Rashid, 'Public utilities in egalitarian LDCs: The role of bribery in achieving Pareto efficiency, Kyklos, 1981, 34, pages 448-460.

Schelling Thomas C., Choice and Consequence: Perspectives of an Errant Economist, Cambridge, MA: Harvard University Press, 1984.

Schumpeter, Joseph A., History of Economic Analysis, London: Allen & Unwin, 1954.

Scott, Russell, The Body as Property, London: Allen Lane, 1981.

Smith, Ben, 'Resource rent tax and the allocation of mineral exploitation rights,' In: Committee for Economic Development of Australia. Growth 34: Taxation Reform, Melbourne: Committee for Economic Development of Australia, 1984.

Strotz, R.H., 'Myopia and inconsistency in dynamic utility maximization', *Review of Economic Studies*, 1955-6, 23, 165-180.

Tollison, R.D., 'Is the theory of rent-seeking here to stay?' In: CK Rowley, Ed. *Democracy and Public Choice: Essays in Honor of Gordon Tullock*, Oxford: Basil Blackwell, 1987, pages 143-157.

Tullock, Gordon, 'The welfare costs of tariffs, monopolies, and theft', *Western Economic Journal*, June 1967, 5, pages 224-232. Reprinted in J.M. Buchanan, R.D. Tollison, and G. Tullock, (eds), *Toward a Theory of the Rent-Seeking Society*, College Station, TX: Texas A & M University Press, 1980.

Williamson, Oliver E., 'Transaction-cost economics: The governance of contractual relations', *Journal of Law and Economics*, October 1979, 22, pages 233-261.

Williamson, Oliver E., 'The economics of organization: The transaction cost approach', *American Journal of Sociology*, November 1981, 87, pages 548-577.

Williamson, Oliver E., 'Credible commitments: Using hostages to support exchange', *American Economic Review*, September 1983, 73, pages 519-540.

Fig. 2.1. The demand for eggs

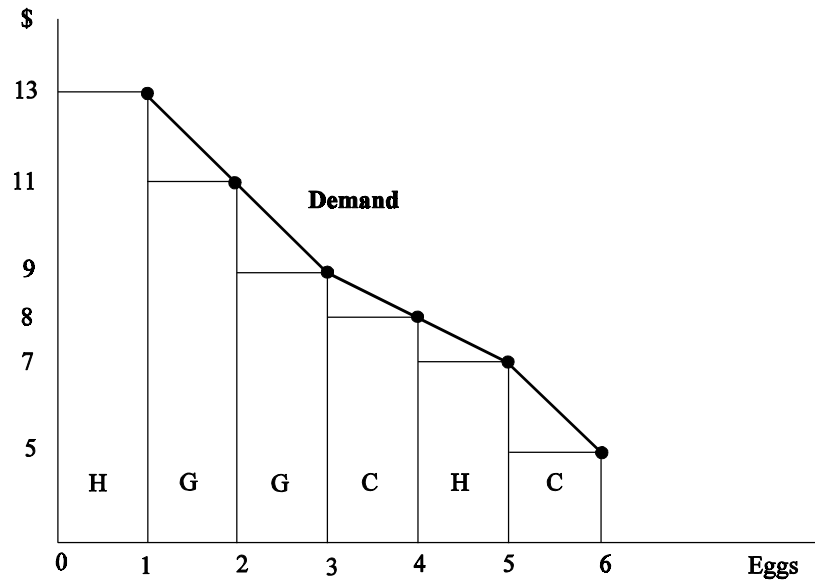


Fig. 2.2. The supply of eggs

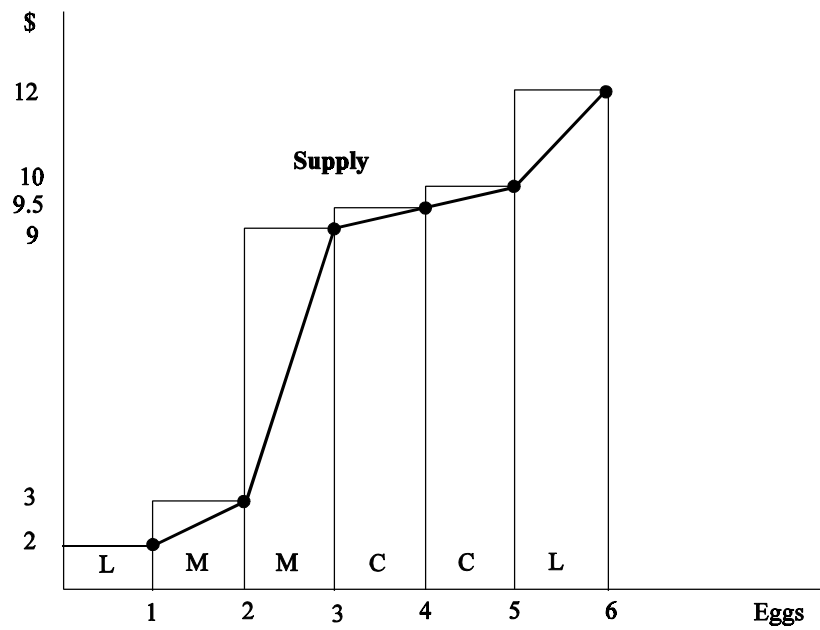


Fig. 2.3. Economic rent with fixed supply

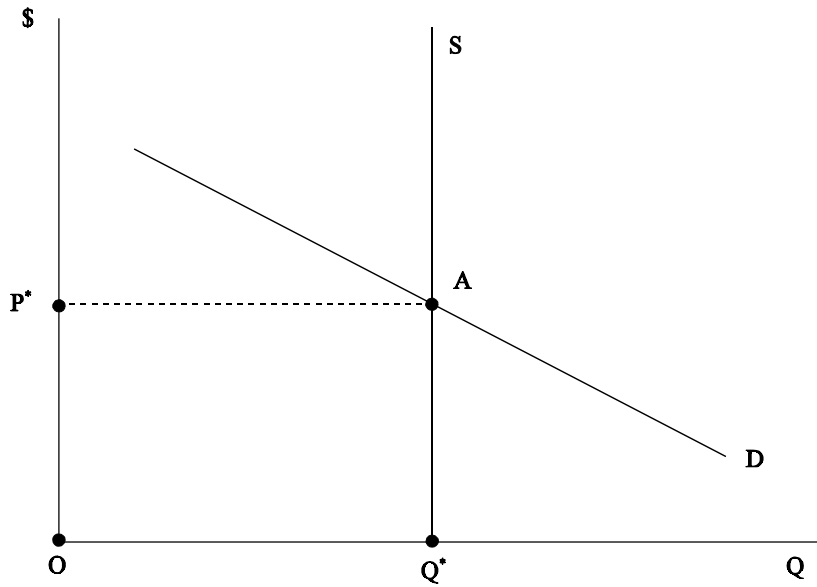


Fig. 3.1. Gains from trade

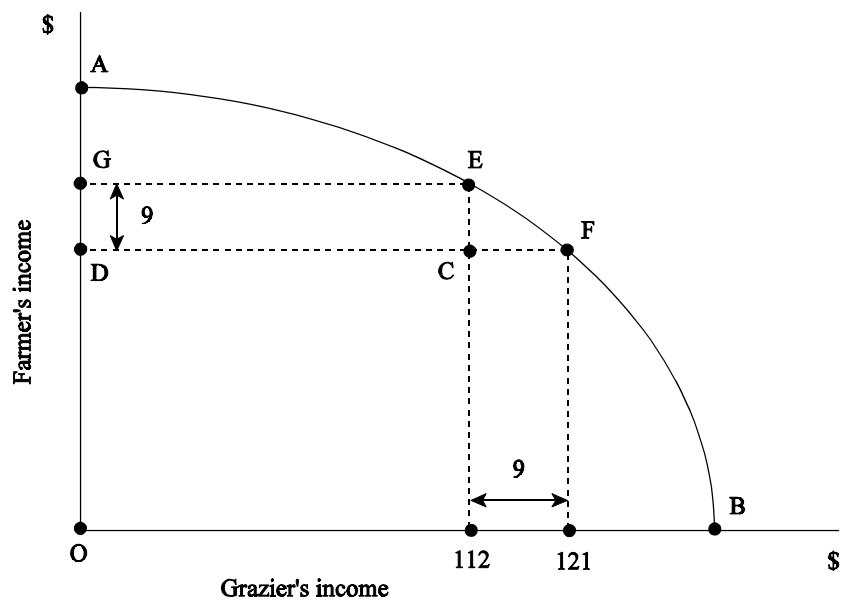


Fig. 3.2. Premature settlement of land

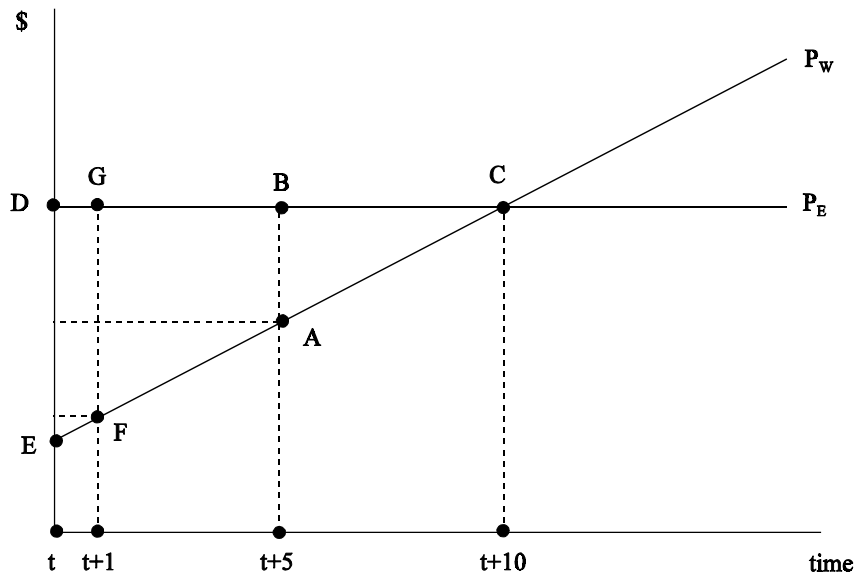


Fig. 4.1. Abundant resources

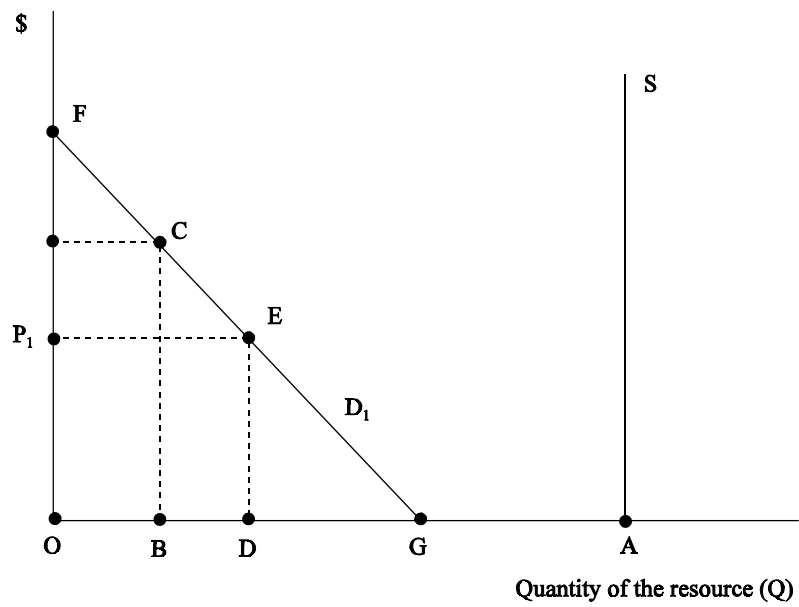


Fig. 4.2. Scarce resources

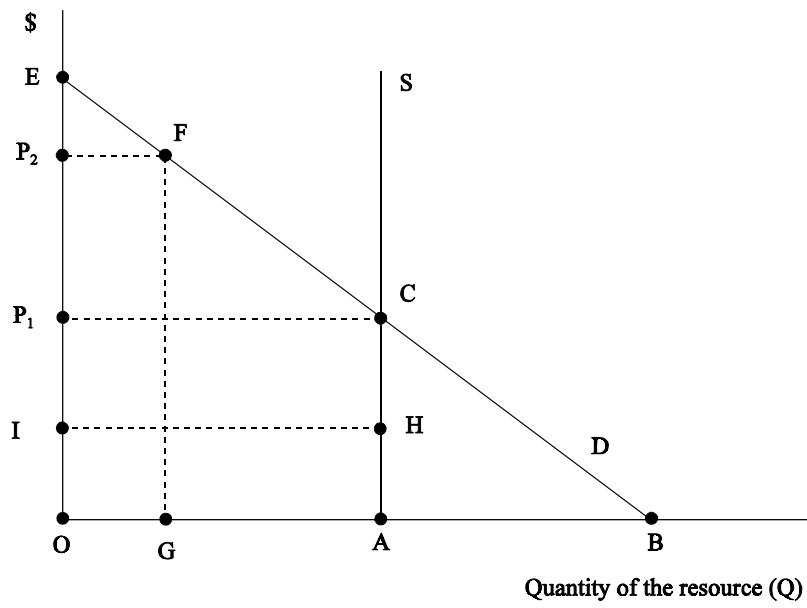


Fig. 4.3. Random allocation

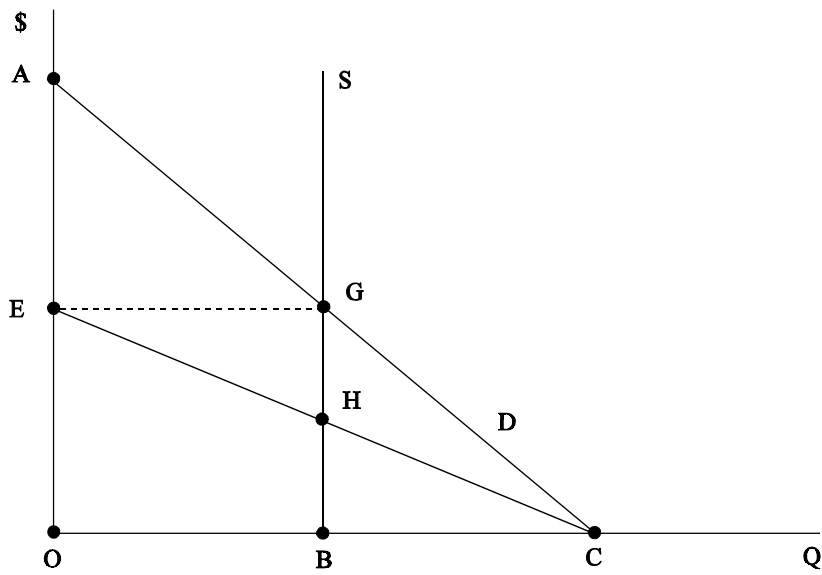


Fig. 4.4. Distribution by characteristic

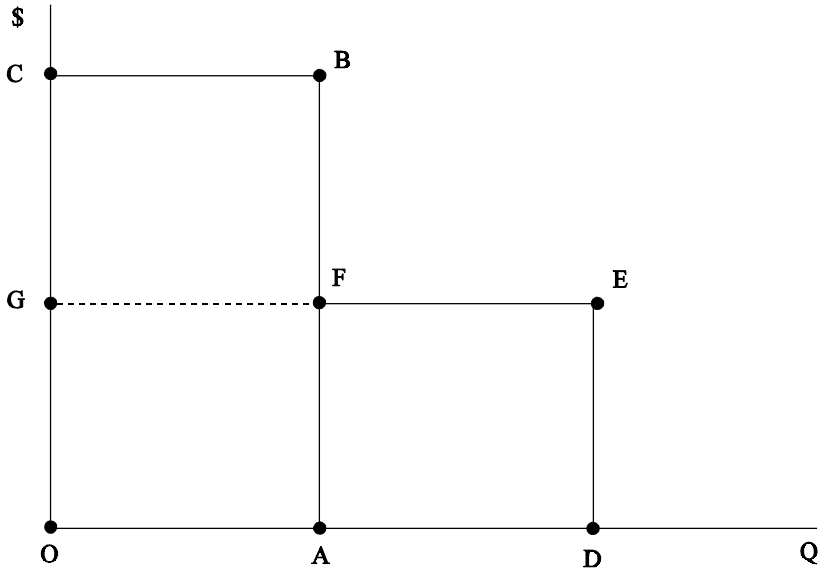


Fig. 4.5. Distribution by queuing

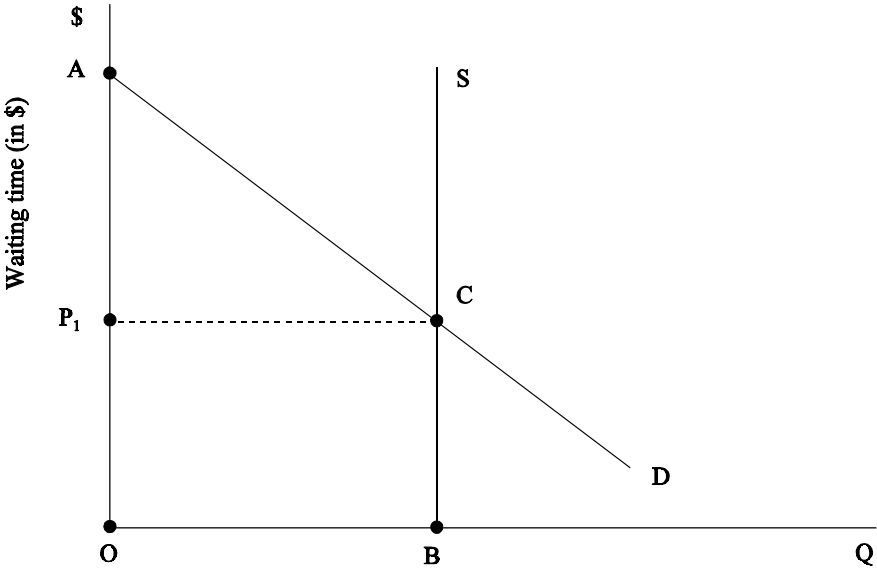


Fig. 4.6. The effects of regulation

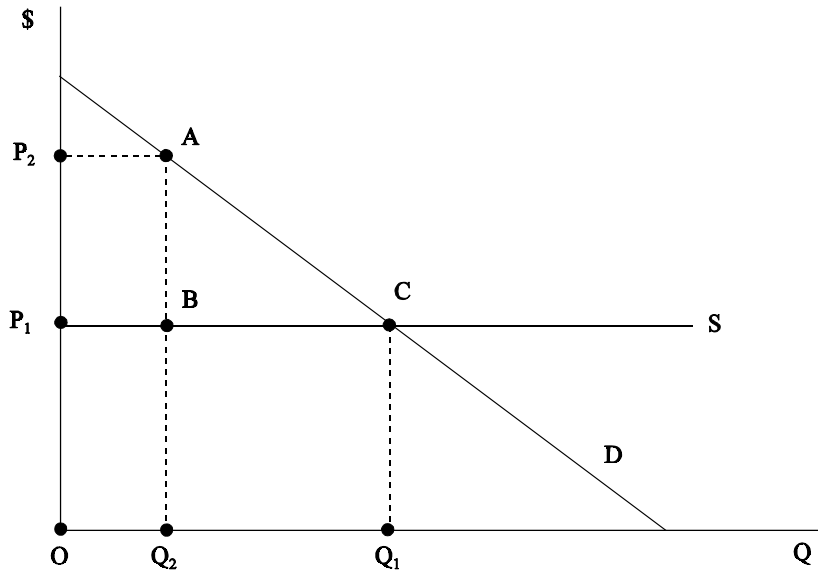


Fig. 5.1. Welfare costs of rent-seeking

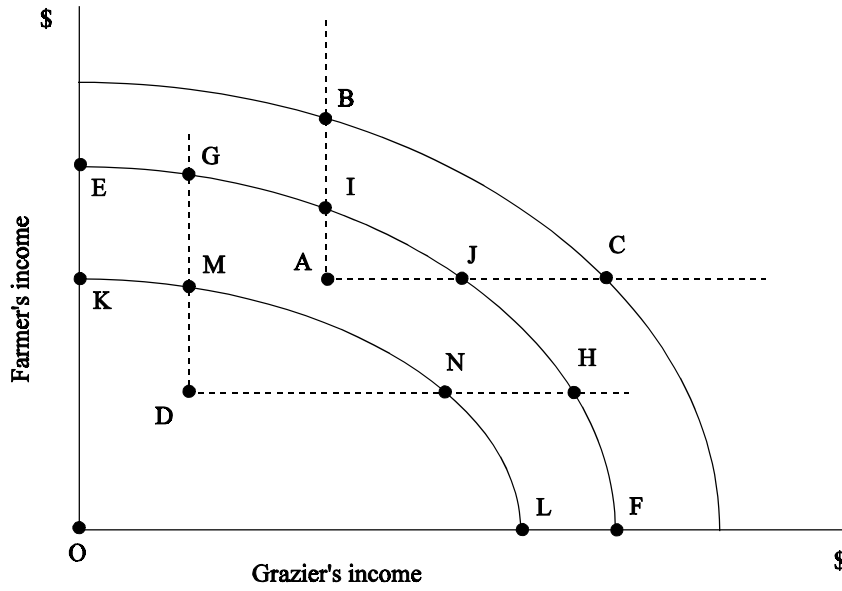


Fig. 5.2. The competitive and monopolistic markets for corruption

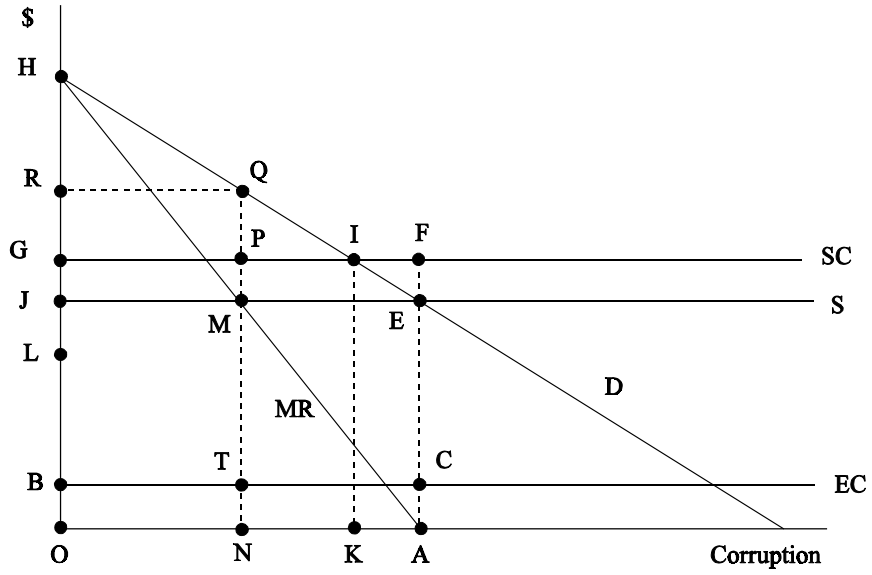


Fig. 6.1. Bribery, morals, and malfeasance

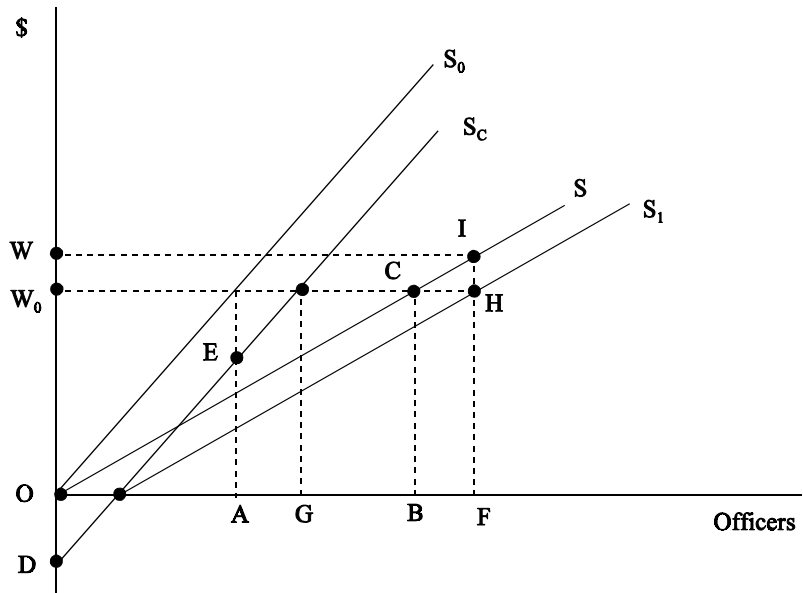


Fig. 6.2. The optimal level of policing

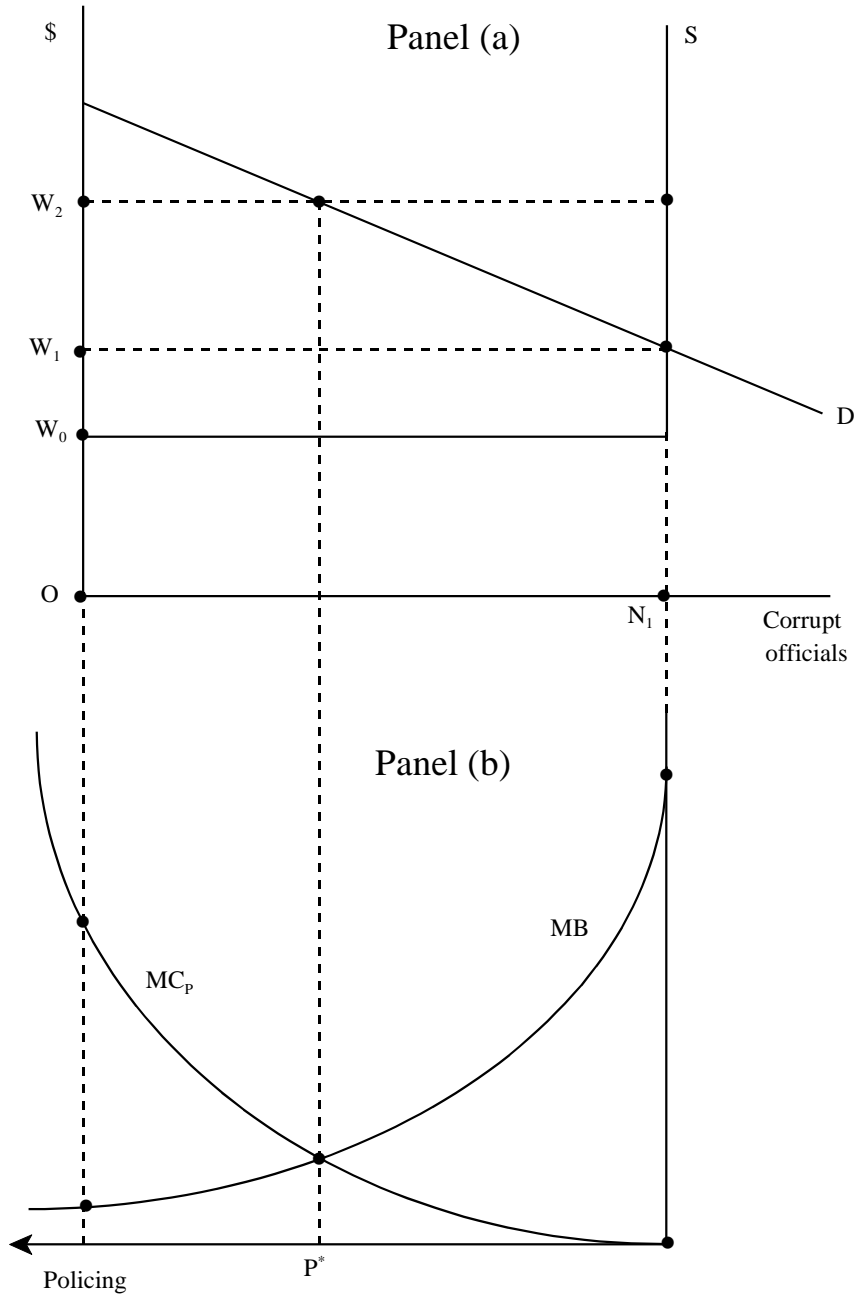


Fig. 6.3. The welfare costs of price controls

