



Concluding thoughts

05

CHAPTER 16

→ CHAPTER FOCUS

The main aim of this book was to set you on the path to becoming a lifelong competent and creative economic naturalist. An economic naturalist, as we explained in Chapter 1, is someone who can recognise economic decisions in the world around them, apply economic thinking to make sense of the choices people make and see the consequences of these choices for society. It is also someone who recognises the power of incentives in shaping economic behaviour, and understands how they can be used to align the powerful forces of self-interested behaviour with societal objectives.

We began the journey to becoming a skilled economic naturalist in Chapter 1 by introducing a number of key economic concepts and core principles, each of which has been put to work in a wide variety of applications and examples throughout this book.

Fifteen chapters—and an introductory microeconomics unit—later, we will now revisit these same concepts and principles, as a way of both emphasising their importance and of demonstrating just how far you have come along the path of economic naturalism.

→ LEARNING OBJECTIVES

After working your way through this chapter you will be able to:

- 1 demonstrate your skills as a competent economic naturalist by:
 - a) identifying which economic concepts to apply to particular economic questions and using them, along with the economic way of thinking, to explain real-world behaviour
 - b) using your understanding of the link between incentives, cost–benefit thinking and economic behaviour to propose and assess the ability of a range of economic policies to effectively align the powerful forces of self-interested behaviour with societal objectives
- 2 identify and analyse relevant economic questions that arise within the context of health care

Thinking as an economist— revisited

- 3 identify and analyse relevant economic questions that arise within the context of workplace regulation
- 4 identify and analyse relevant economic questions that arise within the context of climate change.

→ INTRODUCTION

Have you ever wondered, as an economic naturalist, why:

- a healthcare system based on universal, first-dollar health insurance coverage might inadvertently contribute to long waiting lists and delays for patients requiring lifesaving procedures
- governments in industrialised countries enact laws to protect workers by regulating workplace health and safety standards, and why many employers regularly flaunt these regulations, preferring instead to risk incurring substantial fines and the possibility of doing time behind bars
- if the solutions to human-induced climate change rely on applying the basic concepts and core principles of economic thinking, is effecting coordinated change seemingly so difficult to achieve?

This chapter will be devoted to demonstrating that the knowledge and skills that you have acquired on your journey through this book provide you with a solid foundation for unravelling the puzzles that these questions, and others like them, present. That no new concepts or key economic terms are introduced in this chapter is deliberate. The chapter's purpose is instead to revisit, review and provide opportunities for you to practise some of the competencies that you have gained as an economic naturalist. We will discuss each of the economic questions posed above in turn, highlighting relevant concepts, principles and terms, and supporting each with related in-chapter exercises and end-of-chapter review questions and problems.

16.1

HEALTH CARE AND THE ECONOMIC NATURALIST

Governments in all countries must decide how healthcare services are to be delivered to their citizens. Should, for instance, the provision of health care be left to market forces, with the government's involvement limited to addressing specific market failures such as *externalities*, *public goods* and *imperfect competition* (see Chapters 12, 13 and 10, respectively)? To what extent, in a market system, should the government provide a safety net for low-income earners, and should individuals be encouraged to share their risks through private health insurance? Or should, as some suggest, the state use its tax-raising capacity to deliver health care free of charge to everyone, irrespective of their needs or income?

Australia has opted for a hybrid, two-tier healthcare system comprising both public and private hospitals and medical practitioners, with a universal tax-financed Australia-wide health insurance scheme called Medicare and literally dozens of private health insurance schemes offering a wide range of options for additional coverage. Of the roughly \$112 billion spent on health care in 2008–09, about 70 per cent was taxpayer-funded, with the remaining 30 per cent financed by private-sector expenditure (AIHW, 2010). The Australian system's heavy reliance on third-party payment schemes, especially Medicare, owes much to the belief that an inability to pay should not prevent people from receiving the medical care they need. Indeed, universal medical coverage provided by Medicare has surely done much to shelter many people from financial hardship.

As is the case in many other countries, real healthcare expenditure in Australia has grown steadily over the past two decades. Part of this increase is the result of costly new healthcare technologies and procedures, and of the higher healthcare demands of an ageing population. Yet sound economic thinking also suggests that a great deal of medical expenditure inflation may be the result of the way medical services are funded. The difficulty is that, whether publicly or privately funded, first-dollar insurance coverage—meaning that 100 per cent of claimants' medical expenses are covered by insurance—can result in literally hundreds of millions of dollars of waste each year. It can also result in a healthcare system in which some services are overprovided while in order to access some other services, those in need face long queues and potentially life-threatening delays.

To understand the nature of the problem of financing health care, the economic naturalist must begin by taking note of the point that, although medical services differ from other services in many ways, they are in one fundamental respect the same: the *cost–benefit test* (see Chapter 1) is the only sensible criterion for deciding which services ought to be performed. The fact that a medical procedure has *some* benefit does not, by itself, imply that the procedure should be performed. Rather, it should be performed only if its benefit exceeds its cost.

The costs of medical procedures are relatively easy to measure, using the same methods applied to other goods and services. But the usual measure of the benefit of a good or service—a person's willingness to pay—may not be appropriate in the case of many medical services. For example, most of us would not conclude that a lifesaving appendectomy is unjustified merely because the person who needs it can afford to pay only half of its \$5000 cost. When someone lacks the resources to pay for what most of us would consider an essential medical service, society has at least some responsibility to help.

Many other medical expenditures are not as pressing as an emergency appendectomy, however. Following any surgery, for example, the patient requires a period of recuperation in hospital. How long should that period last? Two days? Five? Ten? The cost–benefit principle can help us think clearly about such questions and can highlight the effect of third-party payment systems on the level of use.

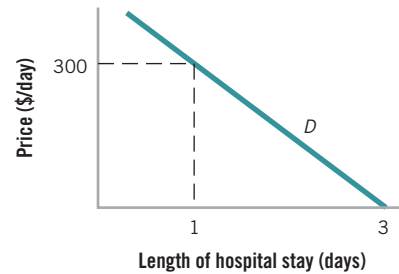
EXERCISE
16.1

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Following surgery for an emergency appendectomy, Rosie's surgeon tells her that the average hospital stay after this procedure is two days (some people stay only one day, while others stay three, four or even five days). Hospital rooms cost \$300 per day. Rosie's demand curve for days in hospital is as shown below.

a. How many days will Rosie stay if she must pay for her hospital room herself?

- b. How many days will she stay if she has first-dollar coverage for her hospital room?
- c. How many days will she stay if her health insurance policy requires that she pay 50 per cent of the daily cost of being in hospital?



The answers to Exercise 16.1 will show that, once insured, Rosie faces incentives that cause her to consume more days in hospital than she would have when she was directly responsible for the cost of the post-operative hospital stay herself. The change in Rosie's behaviour when fully insured is an example of *moral hazard* (see Chapter 14). Note that at the point at which Rosie must make her decision, it does not matter whether she is thinking 'Medicare will pay' or 'My private health fund will pay'—the important point is that *she* will not pay. Even though insurance is about minimising risk against future unforeseen misfortune and, once paid, the cost of securing coverage is a *sunk cost* (see Chapter 1), people also often make choices about their consumption of health care as if they were wanting to 'get their money's worth'.

Should we be concerned that people choose longer hospital stays when their expenses are fully insured? The cost-benefit principle tells us that a hospital stay should be extended another day if and only if the benefit of doing so would be at least as great as the cost of the resources required to extend the stay. But when the costs of an extra day are fully covered by insurance, the decision maker sees a marginal cost of zero, when in fact the marginal cost is several hundred dollars. According to the cost-benefit criterion, then, full insurance coverage leads to wastefully long hospital stays. This is not to say that the additional days in hospital do no good at all. Rather, their benefit is less than their cost.

In circumstances in which *cash has been left on the table* (see Chapter 3), a transaction can always be found that will make both the patient *and* the insurance company better off; and since no one else is harmed by this transaction, it represents a *Pareto improvement* (see Chapter 7) over full coverage.

Suppose that the insurance company in Exercise 16.1 gives Rosie a cash payment of \$700 towards hospital expenses and lets her decide for herself how long to stay in hospital. Show that this represents a Pareto improvement over the case in which Rosie has full insurance coverage.

The amount of waste caused by full insurance coverage depends on the price elasticity of demand for medical services: the more elastic the demand, the greater the waste. Proponents of full coverage believe that the demand for medical services is almost completely inelastic with respect to price, and that the resulting waste is therefore negligible. Critics of full coverage argue that the demand for medical services is actually quite sensitive to price, and that the resulting waste is therefore significant.

Who is right? One way to determine this is to examine whether people who lack full insurance coverage spend significantly less than those who have it. The economist WG Manning and his co-authors did so by performing an experiment in which they assigned subjects randomly to one of two different kinds of medical insurance policy (Manning et al., 1987). The first group of subjects received first-dollar coverage. The second group got '\$1000-deductible' coverage, meaning that only expenses beyond the first \$1000 a year were covered. (For example, someone with \$1200 of medical bills would receive \$1200 from their insurance company if they belonged to the first group, but only \$200 if they belonged to the second.) In effect, since most people incur less than \$1000 a year in medical expenses, most subjects in the second group effectively paid full price for their medical services, while subjects in the first group paid nothing. Manning and his colleagues found that people with \$1000-deductible policies spent between 40 and 50 per cent less on health care than subjects with first-dollar coverage. More importantly, there were no measurable differences in health outcomes between the two groups.

Taken at face value, the results of the Manning study suggest that the moral hazard induced by first-dollar medical insurance may have a substantial effect on growth in medical costs, and may be in part responsible for the crisis in the availability of essential medical procedures. So why not simply abandon first-dollar coverage in favour of high deductibles, excesses or co-payments? People would still be protected against financial catastrophe, but would have a strong incentive to avoid medical services whose benefit does not exceed their cost.

EXERCISE 16.2

Some would say that medical insurance, whether publicly or privately provided, should not carry high deductibles or co-payments, because the resulting out-of-pocket payments would impose too great a burden on low-income households. But an economic naturalist would remind us that in other instances in which concern for low-income households is offered in defence of an inefficient policy, an alternative can be designed that is better for low- and high-income households alike. For example, all health insurance could be written to include high deductibles, and low-income households could be given an annual stipend to cover the initial medical expenses not covered by insurance. At year's end, any unspent stipend would be theirs to keep. Here again, concern for the wellbeing of low-income earners is simply no reason for not adopting the most efficient policy. As the *efficiency principle* reminds us, when the economic pie grows larger, it is possible for everyone to have a larger slice.

That access to medical care is extremely limited in many of the world's poorest nations is troubling, but perhaps not surprising. After all, citizens of those nations lack enough income to buy adequate food, shelter and many other basic goods and services. What *is* surprising, however, is that in the world's most affluent country, the US, where private health cover is the cornerstone of the healthcare system, many millions of people choose not to purchase cover. In Australia and New Zealand, where private health insurance is generally promoted as a way of augmenting the resources available through the publicly funded system, attracting and retaining members can also be problematic. Between 1984, when free, non-means-tested coverage was introduced in Australia, and the late 1990s, voluntary membership of private healthcare funds fell from a high of about 50 per cent to about 30 per cent. While the introduction of a number of policies, including a non-means-tested 30 per cent rebate on private fund premiums, resulted in participation recovering to about 50 per cent by 2005, the drift of younger policyholders away from health fund membership continued (AIHW, 2010). As the economic naturalist knows, in order to suggest a sound solution to this problem, policymakers must first understand why so many people might choose to go without coverage in the first place.

BACKGROUND BRIEFING 16.1

→ WHY HAVE SO MANY YOUNG PEOPLE ABANDONED PRIVATE HEALTH INSURANCE?

Despite the marked increase in the number of people covered by private health insurance since 2000, younger (and generally healthier) policyholders have continued to drift steadily away from private healthcare funds. Over this same period, the real cost of coverage has continued to rise, and affordability has fallen. When surveyed, the most common reasons cited by people who have elected not to buy private insurance are that it is 'too expensive' and that 'Medicare coverage is sufficient'.

In the spirit of a system founded on the belief that access to health care should be determined by need and not by ability to pay, private healthcare funds have been bound by the principle of **community rating**. Community rating prevents funds from discriminating between customers on the basis of their health risk. This has meant that, in setting premiums, private insurers cannot take into account the fact that the benefits paid to over-80-year-olds are nearly eight times the benefits paid to a 40-year-old member. This has limited the extent to which funds have been able to respond to the problem of *adverse selection* (see Chapter 14) which occurs when low-risk buyers, who are less likely to buy insurance when premiums rise, choose not to insure. The cost of adverse selection in private health insurance is felt across the system as policyholders pay higher premiums, private cover becomes less affordable for those on low incomes, the cost to taxpayers of the 30 per cent health insurance premium rebate increases and reliance on public healthcare resources increases. Evidence suggests that 17 per cent of premium increases in the 1990s were the result of adverse selection.

The introduction of 'lifetime health cover' in 2000 was aimed specifically at addressing the problem of adverse selection by allowing funds to reward young people for taking out private health insurance. For example, people who join a fund before they turn 30, and who maintain their membership, are able to enjoy lower premiums throughout their lifetime relative to people who join at a later age. Attracting younger members, who would have lower-than-average claims, would place downward pressure on both costs and premiums, helping to reverse the downward spiral of adverse selection. Nevertheless, the trend has continued and policymakers and insurance companies have continued to look for alternative solutions. Insurance providers now routinely offer a greater variety of types of coverage and premium options, including policies with generous gym memberships but with poor benefits for knee reconstructions.

community rating
the requirement that private health insurance companies must not use statistical discrimination to set higher premiums for fund members who pose higher risks.

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 Explain why means testing the 30 per cent rebate on private fund premiums might lead to an increase in the cost to government of financing health care.

16.2

WORKPLACE REGULATION AND THE ECONOMIC NATURALIST

Most industrialised countries have laws that attempt to limit the extent to which workers are exposed to health and safety risks on the job. These laws are often described as being necessary to protect workers against exploitation by employers with market power. Every year, scores of employers in these countries are reported for breach of workplace health and safety laws, and for each breach reported, many others go unreported. This is despite the tough penalties that companies and individuals can incur if they do not meet legal requirements governing the health and safety of employees while in the workplace, and the high cost of work-related injury and incidents.

In Australia the total of the direct and indirect costs of such injuries and incidents for the 2005–06 financial year was estimated to be a staggering \$57.5 billion, with employers shouldering just shy of 20 per cent of these costs and the remainder shared between employees and the community. So why would unregulated market outcomes result in employers exploiting workers by under-investing in workplace health and safety? Why, given the stiff penalties in place in many countries, would employers so regularly choose to break the law?

To answer these questions, the economic naturalist would begin by asking, ‘What is the optimal level of investment in workplace safety?’ and would approach this question in the same way as you would the question, ‘How often should I get the brakes checked on my car?’ If you are like most people, your answer to the second question will be perhaps once or twice a year. But your safety is an absolute priority, and the probability of your having an accident could be reduced by having your brakes checked more regularly. So why don’t you have them checked monthly, weekly—even daily? The reason, of course, lies with the *cost–benefit principle* (see Chapter 1). Daily brake inspections would be very costly, and would not reduce the probability of an accident significantly compared to semi-annual or annual inspections. However highly we value our safety, beyond some point, reducing the odds of an accident simply does not make good economic sense.

The same cost–benefit logic that underlies your own decision about getting the brakes checked on your car should drive our approach to workplace safety. Consider, for example, the question of whether a specific safety device—say, a guard rail on a lathe—should be installed in a factory. If the amount we are willing to pay to reduce the likelihood of an accident exceeds the cost of the guard rail, it should be installed; otherwise, it should not be. And we should continue to devote more scarce resources to improvements in workplace safety as long as *the marginal benefit of such measures exceeds the marginal cost* (see Chapter 1).

But in unregulated markets, will employers offer the level of workplace safety suggested by the cost–benefit principle? One argument suggests that they will. *Compensating wage differentials* (see Chapter 15) automatically adjust for differences in risks of injury across jobs by offering higher wages to workers in riskier occupations and lower wages to workers in safer occupations. As long as all workers have perfect information, in equilibrium, workers will choose the combination of wage rates and risk that is optimal given their preferences. In any particular workplace, if installing a safety guard on a lathe would increase employer and worker surplus, then it will be installed. Failure to do so would be to leave cash on the table. In fact, as long as all workers have perfect information about the riskiness of particular jobs, any attempt to regulate workplace safety must reduce economic surplus.

Advocates of regulation, however, suggest that workers may not have *perfect information* about job risk or know about the safety devices they lack. Since most workers believe themselves to be more careful than the ‘average’ worker, workers in high-risk jobs believe that they are getting high wages while facing only moderate risks.

Furthermore, even with complete information, workplace health and safety regulations might prove desirable even in a perfectly competitive environment if workers care about *relative income*. As Exercise 16.4 demonstrates, when workers care about their income, their safety on the job *and* their position on the economic ladder, the job–safety choice may confront them with a *prisoner’s dilemma* (see Chapter 11). As in all such situations, when workers choose independently their rational, self-interested actions will not always lead to efficient outcomes in the labour market, with some electing to settle for jobs that are too risky from both the individual and collective perspectives. This suggests an alternative explanation for health and safety regulation that is not based on the need to protect

workers from exploitation: if workers could choose collectively, they would pick a higher level of job safety and maximise their combined satisfaction. Thus, workers might support legislation that establishes safety standards in the workplace, with such legislation acting as a *commitment device* (see Chapter 11) for workers who might otherwise find it difficult to cooperate, and thereby providing a means of curtailing the wasteful *positional arms race* (see Chapter 12) that results from focusing on relative performance.

EXERCISE 16.4

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Suppose Chris and Michael are the only two members of a hypothetical community. They each get satisfaction from three things: their income, their safety on the job and their position on the economic ladder. Suppose Chris and Michael must each choose between two jobs: a safe job that pays \$1000 per week and a risky job that pays \$1600 per week. The value of safety to each is \$800 per week. Having more income than one's neighbour is worth \$800 per week to each; having less income than one's neighbour means an \$800 per week reduction in satisfaction. (Having the same income as one's neighbour means no change in satisfaction.) Construct a payoff matrix using this data, and use game theory to explain whether Chris and Michael will make the best job choices possible in this situation.

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Even if workers do not care about relative income, the case for regulation can be based on the *negative externalities* (see Chapter 12) associated with workplace injuries or fatalities. For example, work-related injury and illness place the families and friends of victims under emotional and financial stress. Even if all workers successfully select the combination of risk and wages that is optimal for them, that choice does not take into account the *external costs* to other parties of work-related accidents and health-related conditions; and, as we showed in Chapter 12, an unregulated market will therefore undersupply workplace safety and health.

Most nations appear to have decided that unregulated markets will fail to produce the optimal level of workplace safety. As noted, virtually every industrial country now has comprehensive legislation aimed at improving workplace conditions. A common approach is to enact occupational health and safety laws aimed directly at preventing workplace injury and illness. Such laws often involve codifying employers' duty of care and prescribing myriad detailed and complex workplace regulations, standards and codes of conduct. Legislators then rely on extensive workplace monitoring and costly enforcement processes to achieve compliance. Yet, as we mentioned earlier, employers continue to break the law by failing to provide a workplace that is compliant with laws and regulations, preferring to risk incurring often substantial penalties. Again, the answer here lies with the cost–benefit principle. Firms in some jurisdictions complain that the unreasonably excessive and expensive health and safety measures mandated mean that the cost of compliance exceeds the expected benefits, including improved worker productivity, avoided fines and other penalties and damage to reputation.

So is there another way that the economic naturalist might approach this problem? As an alternative to highly prescriptive and costly regulations, many economists favour programs that increase employers' financial incentives to reduce workplace injuries. A system of compulsory employer insurance that provides benefits to workers who are injured in the workplace provides a mechanism through which changes in workplace safety might be achieved. In Australia, firms may purchase such workers' compensation insurance from private or government providers or may, in some cases, self-insure. Insurance premiums that reflect the full social cost of the injuries sustained by each employer's workers would provide the optimal incentive to reduce injuries in the workplace. In effect, premiums set at this level would be an optimal tax on injuries, and this would be efficient for the same reason that a properly chosen tax on pollution would be efficient. An injury tax set at the marginal cost of injury would encourage employers to adopt all safety measures whose benefits exceed their costs.

Recalling the discussion of insurance in Chapter 14, an astute economic naturalist might be led to question whether the need for premiums to signal the full impact of each employer's behaviour is consistent with the way in which insurance works—namely, by sharing, or pooling, risks and cost. In a 2004 inquiry into workers' compensation in Australia, the Productivity Commission asked this same question, and in fact much of the discussion about workers' compensation insurance revolves around how to set premiums that do not dull incentives for employers to make optimal investments in workplace health and safety reforms, but enable effective risk pooling.

In many cases, premiums are based on industry class ratings, whereby employers in industries classified as 'high risk' by an insurer will pay higher premiums than those in industries classed as 'low risk'. The practice of 'experience

rating' also allows insurers to adjust current premiums to reflect the recent claims experience or history of an employer. Compared with industry class rating, experience rating tailors premiums to individual employers and is more likely to send the right message about the need to reduce workplace risk. Most schemes in Australia also reward employers for making specific improvements in workplace safety with premium discounts. But, as Exercise 16.5 demonstrates, and as an economic naturalist will be aware, a workers' compensation system based on industry class ratings can easily create perverse incentives of its own.

Why might companies in the meat industry (a high-risk industry) have replaced many of their employees with workers provided by labour hire companies (a low-risk industry)?

As in other domains, we are far more likely to achieve optimal safety levels in the workplace if we choose among policies on practical cost–benefit grounds rather than on the basis of slogans about the merits or flaws of the free market. Regulation, however, does not always improve matters. The labour market may not be perfect, but government regulators aren't perfect either.

EXERCISE
16.5

CLIMATE CHANGE AND THE ECONOMIC NATURALIST

The earth's atmosphere contains a range of gases that allow light from the sun to pass through them but trap heat radiating back from the earth. A build-up of the concentration of these atmospheric gases, particularly carbon dioxide, results in warming of the planet. This phenomenon of global warming in turn results in a range of changes in climatic conditions. For example, in the marine environment it is experienced as ocean warming, changes in ocean currents, increased incidence of storms, acidification and sea-level rise. These effects then flow through to other ecosystem processes, manifesting as changes in phenomena such as species abundance and the distribution and physical characteristics of marine resources.

In his 2011 review of climate change science, Australia's Professor Ross Garnaut concluded that 'Observations and research outcomes since 2008 have confirmed and strengthened the position that the mainstream science then held with a high level of certainty, that the Earth is warming and that human emissions of greenhouse gases are the primary cause'. Having largely quietened the climate-change science sceptics, mounting empirical evidence leaves few in doubt that climate-induced changes in biophysical and human systems will be substantial and, if not already occurring, are imminent. The *cost–benefit* and *incentive principles* (see Chapter 1) should alert economic naturalists to the fact that people will automatically take measures to adapt to, and protect themselves from, the effects of a changing climate. However, the predicted residual effects on, and vulnerabilities of, individuals, businesses, communities and governments will remain substantial.

Climate change has been dubbed the biggest *market failure* of all time. Yet, given the high stakes, attempts to formulate and implement interventions aimed at mitigating further human-induced climate change and at ensuring efficient adaptation have been slow in gaining traction. The economic naturalist would be correct in asking why this is the case. Surely, after all, the biggest market failure of all time warrants sizeable government intervention and, if the experts are correct, the sooner it takes place the better (Helm, 2010).

The economic naturalist might begin by asking, 'What sort of economic problem is human-induced climate change?' Quite simply, it is a case of Adam Smith's celebrated '*invisible hand*' (see Chapter 9) failing, due to misalignment between the rational, self-interested actions of individuals and the result that is in the best interests of society. More particularly, climate change is a consequence of *negative externalities* (see Chapter 12), affecting both the consumption and production sides of the market.

Use supply and demand diagrams and welfare analysis to illustrate:

- the overproduction of goods whose production or consumption is associated with negative externalities**
- the deadweight loss that arises as a result of a competitive market process for such goods.**

As Exercise 16.6 reminds us, activities that create negative externalities will be over-provided by the free market and will reduce the *total economic surplus* (see Chapter 3). The problem of climate change is further complicated by the fact that the benefits of activities that produce greenhouse gases are often enjoyed today, while the costs

16.3

EXERCISE
16.6

may not become apparent for many years. Decision-making pitfall 6 (see Chapter 1) suggests that the tendency would be for people to weigh a dollar's worth of benefits enjoyed now more heavily than a dollar's worth of costs incurred in the future, leading rational individuals to opt for excessive levels of activities that contribute to global warming.

The practical upshot of all this is that workers will too often choose to drive to work rather than catch a bus or walk, firms will too often choose to power industrial activity with fossil fuels rather than with solar or wind-generated energy and landowners will too often choose to fell old-growth forests rather than preserve them. Climate change involves a large number of people generating harmful greenhouse gases and being exposed to the harmful effects of global warming, limiting the scope for *Coasian-style deals* (see Chapter 12) to be struck. Nevertheless, the economic naturalist's toolbox contains a number of *regulatory* and *market-based instruments* (see Chapter 12), including *Pigouvian taxes and subsidies* and *cap and trade permit systems* (see Chapter 12) that provide the theoretical basis for corrective action. So why, then, the apparent lack of well-conceived action?

Global warming can be conceived of as a problem of overuse of a *global common-pool resource* (see Chapter 12), requiring coordinated international action, which in turn relies on being able to sustain effective international agreements. Both economic theory and real-world experience confirm that such agreements are notoriously difficult to reach. Striking an agreement to 'de-carbonise' the global economy is a textbook case of a *prisoner's dilemma* (see Chapter 11). Quite apart from the fact that some countries may actually gain from rising global temperatures, the tendency is to agree to emission-reduction targets that are too low and to timeframes for achieving them that are too long. Even if countries can agree to a division of responsibilities without a monitoring and enforcement regime that signals a *credible threat* (see Chapter 11), signatories to international emission-reduction agreements will still be left with the temptation to *free-ride* (see Chapter 13) on the abatement efforts of others, and play their dominant strategy, which is to cheat.

The potential for government failure in both designing and implementing government interventions also looms large in areas such as climate change where the stakes, and their distributional consequences, are potentially high. Large-scale policy interventions that rely on the creation of tradeable permits or rights, taxes and subsidies all create a pool of *economic rents* (see Chapter 9). And, like cash left on the table, the lure of economic rents leads individuals to over-invest in actions that they believe will let them pocket a share of the spoils. Rent-seekers may, for example, try to influence the process of setting climate change policy objectives and targets through well-placed donations and kickbacks.

Another avenue for rent seeking in climate change is to exploit the asymmetry of information that exists between policy makers and the consumers and producers whose behaviour is to be regulated. For example, knowing how reliant policymakers may be on information provided by heavily polluting industries, firms may be inclined to disclose inaccurate or incomplete information. Rent seeking may also lead to firms that stand to be disadvantaged by policies aimed at mitigating emissions hiring scientists and opinion-formers whose task it is to discredit legitimate, but potentially damaging, studies (Helm, 2010).

One final question that the economic naturalist might be tempted to consider is the extent to which we are able to fall back on *social norms* (see Chapter 13) as a way of controlling externalities, to effect changes in behaviour of a type and on a scale that would make a dent in climate change; and, if the answer is not at all, whether the government can (or, for that matter, should) create, modify or even activate latent environmental protection norms that would see individuals doing 'the right thing' of their own volition.

The astute economic naturalist might also be led to ask, 'What would be the effect of various forms of government intervention on the evolution of social environmental norms?' Could, for example, as Green (2006) suggests, the use of subsidies to encourage behaviour that reduces greenhouse gases actually *crowd out* (see Chapter 13) existing norms and, by signalling a price rather than a sanction for a particular activity, weaken the force with which societal norms are expressed and thereby erode individual environmental norms? After all, failure to install solar panels in response to a government subsidy is not generally regarded as a moral failing, but failure to meet environmental regulations may well be.

SUMMARY 16



- Providing health care to a country's citizens is one of the single most challenging tasks facing governments today. In Australia, Medicare provides a universal, tax-financed third-party payment scheme that reflects the principle that access to health care should be driven by need and not by ability to pay. A large number of private health insurance schemes provide people with the option of buying additional cover.
- The escalation in medical expenditures during the past decade is attributable in part to the widespread use of first-dollar insurance coverage, which gives rise to a moral hazard, as people behave as if medical services were free of charge. Total economic surplus would be larger if insurance coverage incorporated high deductibles or co-payments, because such policies provide an incentive to use only those services whose benefits exceed their costs.
- Attempts to encourage private health insurance are often frustrated by adverse selection. Mounting insurance premiums have caused many people in good health to do without health coverage, resulting in higher premiums for those who remain insured.
- While perfectly competitive markets may provide the optimal level of workplace safety, incomplete information, externalities and workers' concern for relative income mean that most countries regulate safety in the workplace. The cost-benefit principle means that employers will sometimes rationally disregard workplace health and safety regulations, thereby exposing themselves to possible penalties, lower worker productivity and loss of reputation. Direct regulation of workplace conditions and practices and compulsory workers' compensation insurance are the policies most commonly used by government.
- Climate change presents one of the most serious economic problems of our time. Climate change is an extreme example of the consequences of negative externalities, or of the overuse of an open-access global common-pool resource. Although challenging, interventions could be designed to mitigate further inefficient levels of human-induced climate change and to assist people to adapt to its effects. Such interventions include direct regulation and market-based instruments. Inaction in tackling climate change can in part be explained by the difficulties encountered in forming effective agreements for global commons and by rent-seeking behaviour. On their own, social environmental norms are not powerful enough to guarantee that individuals will take responsibility for addressing climate-change issues.

REVIEW QUESTIONS

1. As part of its healthcare reform package, the Australian Government has introduced incentives for private health funds to offer 'gap insurance', thereby enabling individuals to insulate themselves against any out-of-pocket expenses when hospitals charge patients fees in excess of the amount insurance companies allow them to claim. How will this affect healthcare expenditures? [LO 1, 2]
2. Explain how workers' compensation insurance could be used to address the under-provision of workplace health and safety. [LO 1, 3]
3. Why does the government require safety seats for young children who travel in cars, but not for young children who travel in aeroplanes? [LO 1, 3]

4. Use the cost–benefit principle to explain how a system of publishing the details of employers who breach workplace health and safety regulations could help to improve compliance. [LO 1, 3]
5. Use decision-making pitfall 6 (see Chapter 1) to explain why cost–benefit thinking might lead individuals to underinvest in actions that could mitigate future human-induced climate change or assist them to adapt to the effects of climate change. [LO 1, 4]
6. Explain why, even under a socially optimal climate-change mitigation policy, there would still be a need for government policies to assist adaptation to the effects of climate change. [LO 1, 4]

PROBLEMS

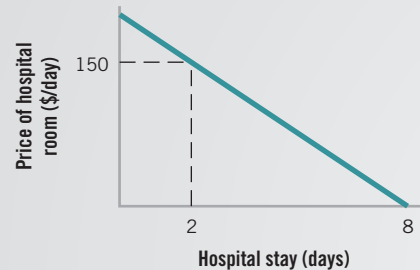
1. Suppose the world consists of two countries: the ‘Haves’ and the ‘Have nots’. The marginal cost of mitigating the greenhouse gas emissions of both countries is shown in the table below. If total global emissions must be reduced by 6 units, show that equal responsibility for mitigation will not be efficient. Design a solution to the problem of needing to reduce emissions by the targeted amount that is efficient and that both countries would agree to. [LO 1, 4]

NUMBER OF UNITS MITIGATED PER YEAR	MC OF MITIGATION (\$'000/YEAR)	
	HAVES	HAVE NOTS
1	5	10
2	10	15
3	35	20
4	50	25
5	75	30

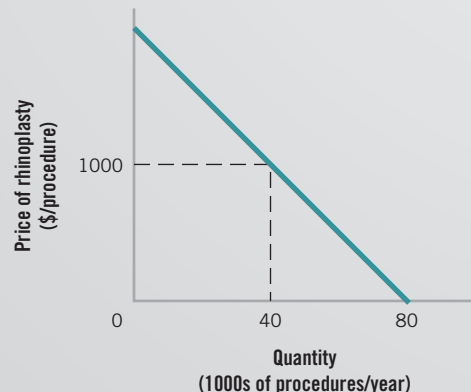
2. Construct a payoff matrix that depicts the problem of enforcing a global climate change agreement as a prisoner’s dilemma. What measures could be put in place to increase the likelihood that countries will agree to maintain the cooperative outcome? [LO 1, 4]
3. In the event that he requires an appendectomy, David’s demand for hospital accommodation will be as shown in the diagram below. The marginal cost of providing a hospital room is \$150 per day. David’s current health

insurance policy fully covers the cost of all hospital stays.

- a. If David’s only illness this year results in an appendectomy, how many days will he choose to stay in hospital?
- b. By how much would the total economic surplus have been higher this year had David’s health insurance covered only the cost of hospital stays that exceed \$1000 per illness?
- c. Suppose David’s employer adopts a new healthcare plan that pays 50 per cent of all medical expenses up to \$1000 per illness, with full coverage thereafter. How will economic surplus under this plan compare with economic surplus with the policy in part (b)? [LO 1, 2]



4. Suppose that in Sydney, the demand for rhinoplasty (cosmetic surgical procedures that alter the appearance of the nose) is as shown in the diagram below. The marginal cost of a rhinoplasty procedure is \$1000, and the procedure is not currently covered by health insurance.
 - a. By how much will total economic surplus change if the government passes a law requiring employers to include full reimbursement for rhinoplasty in their employees’ health coverage?
 - b. How would the change in total economic surplus be affected if the law instead required health insurance funds to pay only \$500 per procedure? [LO 1, 2]



5. Recall Exercise 16.4, in which Chris and Michael were the only two members of a hypothetical community. They each get satisfaction from three things: their income, their safety on the job and their position on the economic ladder. Suppose Chris and Michael must each choose between two jobs: a safe job that pays \$1000 per week and a risky job that pays \$1600 per week. The value of safety to each is \$400 per week. Having more income than one's neighbour is worth \$800 per week to each; having less income than one's neighbour means an \$800 per week reduction in satisfaction. (Having the same income as one's neighbour means no change in satisfaction.) Construct a payoff matrix using this data, and use game theory to explain whether Chris and Michael will make the best job choices possible in this situation. How does your answer to this problem differ from your original answer (when the value of safety was \$800 per week)? [LO 1, 3]
6. Many people report regularly working more than 60 or 70 hours a week. There are, however, both personal and social costs associated with this escalation in working hours. If relative income matters to workers, explain why legislation preventing people from working too many hours in a week might be justified. [LO 1, 3]
7. Tom and Al share a house, and are the only two members of their household. Each gets satisfaction from three things: his income, the amenities provided at his workplace and his income relative to his housemate's income. Suppose Tom and Al must each choose between two jobs: a job where the amenities are good and that pays \$100 per week, and a job where the amenities are poor and that pays \$130 per week. The value of good amenities to each person is \$40 per week. Each person evaluates relative income as follows: having more income than his housemate provides the equivalent of \$30 per week worth of satisfaction; having less implies a reduction of \$30 per week worth of satisfaction; and earning the same income as his housemate means no change in satisfaction.
- Will Tom and Al choose optimally between the two jobs?
 - If Tom and Al could each negotiate binding agreements with one another at no cost, which job would each choose? Suppose negotiation is impractical, and that the only way Tom and Al can achieve better workplace amenities is for the government to adopt regulations. If enforcement of the regulations costs \$25 per week, would Tom and Al favour their adoption? [LO 1, 3]

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