

Information and Safety

Deception as to the physical nature of a thing offered for sale is practised through false weights and measures, adulteration and misnaming of goods, and dishonest advertising ... (Traditionally) the back streets of the manufacturing towns swarmed with small shops, in which the worst of everything was sold with unchecked measures and unproved weights.

Arthur Pigou, *Economics of Welfare*

Information Failures: Nature and Costs ♦ Policy Responses to Information Failures ♦ Product Quality and Safety ♦ Workplace Health and Safety ♦ Regulating Occupations ♦ Private and Social Insurance ♦ Merit Goods: Bounded Willpower and Rationality

When people are misinformed, market outcomes are inefficient and often unfair. In this chapter, we will be concerned mainly with issues relating to misleading information and information asymmetries. The provision of information as a public good with non-excludable or non-rival characteristics is a separate issue and discussed elsewhere, for example in Chapters 4 and 11.

In the first part of this chapter we describe the nature and costs of information failures. We then discuss product quality and safety, workplace health and safety, regulating occupations and insurance issues. Policies relating to information failures usually involve regulations and a theme of the chapter is the need to assess the costs and benefits of regulations. Many of the issues concern safety in the workplace and the community. There is finally a short discussion of merit goods or what today may be described as bounded willpower and rationality.

Information Failures: Nature and Costs

Table 15.1 overleaf provides examples of potential information failures in product, insurance and factor markets. Many would have significant potential costs.

Product markets. Failures in product markets occur when suppliers have information about product defects or risks that consumers do not have. The information asymmetry ranges from major fraud down to minor deceptions. In some cases, firms supply misleading information about product quality. In others, they suppress negative information. Possibly the most infamous case is cigarettes, where tobacco companies were aware of the fatal carcinogenic effects of tobacco consumption long before consumers were (Glaeser and Ujhelyi, 2010). Other examples are defective motor vehicles, ineffective or unsafe patent medicines, unsafe electrical products, unhealthy foods and unsafe or unhealthy buildings. Information problems

Table 15.1 Examples of information failures

Possible information failure	Examples
<i>Product markets</i>	
Producer knows more than consumer	Products such as: motor vehicles, electrical products, pharmaceuticals, food products, buildings Professional and technical services
<i>Insurance and personal finance</i>	
Consumer knows more than insurer	Insurance products: health, home, vehicles
Uncertainty about future income	Student loans, unemployment
<i>Factor markets</i>	
Workforce uninformed	Occupational health and safety
Asymmetric information in capital markets	Financial products Insider trading

may also arise with provision of professional or technical services, where inevitably the supplier has more information than the consumer.

We saw in Chapter 4 that in a market for ‘lemons’ (for example second-hand cars), inability to discriminate between good and poor products drives out the good products. Here we describe the implications when consumers buy goods in an uninformed market. Figure 15.1 contains demand curves (D_I and D_U) for informed and uninformed consumers respectively. Curve D_U is higher because uninformed buyers are willing to pay higher prices for goods than are informed buyers. Consumer misinformation raises the price from P_I to P_U and consumption from Q_I to Q_U . This raises producers’ profit by the area P_UACP_I at the expense of consumers. There is a deadweight loss equal to area ABC . This loss is the difference between the cost of supplying the extra goods ($Q_U - Q_I$) and the price that informed consumers would be willing to pay for these goods.

Insurance markets. Asymmetric information also occurs in insurance markets. In this case, purchasers of insurance products often know more about the risks than do insurers. Purchasers also have an incentive to hide information about risks from the insurer, for example health risks or vehicle accident history, to reduce the price of their insurance. Unless

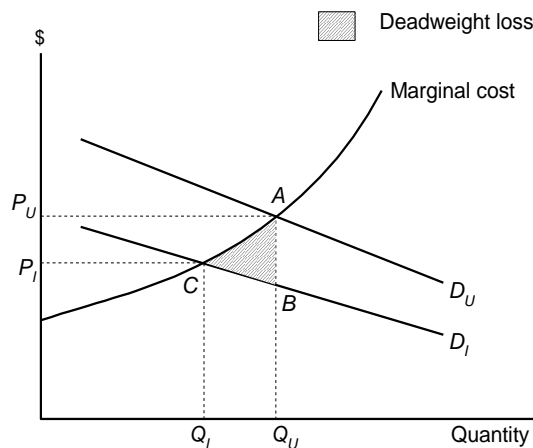


Figure 15.1 Costs of poorly informed consumers

insurers can acquire knowledge about their clients, they are likely to set average actuarial premiums for the population seeking insurance. Consequently, they attract a disproportionate number of poor risks and undersupply insurance services to low-risk firms or individuals (a consequence of adverse selection described in Chapter 4).

A lack of information about future income may also restrict the market for private loans and income insurance. It is hard for students to borrow against future income and for workers to insure against loss of income. Again, there is an adverse selection problem—insurers cannot easily distinguish between high and low risks.

Moral hazard compounds the problem. Once insured, individuals may change their behaviour. For example, they may make less effort to protect their property or to obtain work. To protect against such risks, insurers increase the price of insurance or in some cases decline to offer insurance. Some insurance contracts that would be provided with full information on the risks and no moral hazard are not supplied.

Labour markets. In labour markets, employers may provide minimal or even misleading information about workplace conditions and not provide safe working conditions. When workers are poorly informed about their work environment, they accept inadequate wage compensation for the risks involved. Labour resources are misallocated away from safe or pleasant jobs to unsafe and less pleasant occupations. This is a major area of government regulations.

Financial markets. Information asymmetry also occurs on a large scale in financial markets, in exchanges of assets and in capital raising exercises. We now know of many examples preceding and precipitating the global financial crisis in 2007–08 where leading financial firms sold at premium prices financial products that they knew to be sub-prime and highly risky and, in some cases, then bet that the price of these very same products would fall. Traders in financial markets can make large amounts of money when trading with insider commercial information known to only a few people.¹ Companies may spruik profits and conceal debts to raise their share price and lower the cost of new capital. Individual borrowers may misinform financial institutions about their true financial position. These information failures are inequitable and cause misallocation of capital. Firms and individuals who are poor risks attract more capital than they would from better informed lenders. On the other hand, confidence in the capital market falls and owners of capital require a higher price for providing capital than they otherwise would.

Information deficiencies in financial institutions can have even more critical systemic consequences. Most depositors with financial institutions can neither judge the solvency of these institutions nor insure against losses. Private rating agencies, often paid by the institution that they are rating, have shown that they cannot be relied upon. Indeed, financial institutions themselves may not trust other financial institutions. Consequently, credit markets may dry up, as in 2008–09. A failure of a major financial institution creates not only great personal hardships but may lead to a run of bankruptcies as funds are withdrawn from solvent as well as insolvent organisations. A system-wide run on financial institutions has severe consequences, including a very high cost of capital. Information failure here leads to the collapse of a major public good—the integrity and reliability of the financial system itself.

Market responses. Markets can respond to information deficits in various ways. An active market in expert independent advice or more broadly in information has developed in Australia and most OECD countries to deal with just such problems. Motoring organisations supply information about the quality of second-hand cars. Building surveyors advise on

¹ For insight and an excellent read, see Partnoy (1997) *F.I.A.S.C.O., Blood in the Water on Wall Street*.

building quality. Second or third medical opinions are nearly always available (at a price). Consumer organisations such as Choice in Australia advise on product quality.²

Also, most suppliers of goods and services depend on their reputation. The incentive to maintain their reputation is often (though not always) greater than the incentive to mislead. Some firms provide warranties (a form of insurance) for the performance of their goods.

Despite these private responses, asymmetric information between buyers and sellers in any market can raise prices significantly, distort the quantity and quality of goods consumed and create inequities. These distortions and inequities are large enough to warrant government involvement in many markets.

Policy Responses to Information Failures

Table 15.2 lists some policy responses to information failures. It may be observed that nearly all policies dealing with product and factor markets are regulations of one or other kind. The provision of public information to counteract misleading information in the market is a generic alternative policy. But it is rarely a sufficient policy response and is generally complementary to, rather than a substitute for, regulations. Opportunities to use market-based instruments are more limited than for externalities. However, financial penalties are essential to enforcement of regulations. In some cases, for example for serious contravention of consumer product safety provisions and for insider trading, criminal charges are also applied. In general, if penalties are too low regulations are ineffective.

Most regulations are aimed at firms supplying products or services or employment rather than at individuals or consumers. The regulations may be economy-wide measures or industry specific. Most OECD countries lay down general conditions for fair trading and rules for advertising of goods and services. Also, most countries have specific regulations dealing with food products, pharmaceuticals, transport and buildings and so on. In addition, they usually have regulations dealing with occupational health and safety, fair trading in equity markets and prudential safeguards for financial institutions concerning reserves, liquidity and so on.

Table 15.2 Information failure and possible policy responses

<i>Information failures</i>	<i>Some policy responses</i>
<i>Product markets</i>	
Product information	Regulation of advertising Public provision of information
Product safety	Regulation of quality of products
Professionalservices	Entry regulation (licensing of services)
Financialservices	Regulation of financial institutions
<i>Factor markets</i>	
Health and safety in the workplace	Regulation of workplace standards
Capitalmarkets	Regulations on provision of information Bans on insider share trading
<i>Insurance and personal finance</i>	
Risk and insurance	Compulsory third-party motor vehicle insurance Public insurance, e.g. public health insurance
Income uncertainty	Public loans to tertiary students Social security schemes

² There are also thousands of financial advisers in Australia, but many are conflicted because they receive commissions from the companies whose product they recommend. This issue is being examined by government.

These regulations usually have costs as well as benefits. The costs may involve some reduction in sales or increased costs of production. The benefits arise from the avoidance of the kinds of costs described above. For example, regulations on food production typically increase the costs of producing food and reduce foodborne disease. Accordingly, the Australian Office of Best Practice Regulation (2014) recommends that regulations should generally be evaluated using cost–benefit analysis.

The policy response in insurance markets is more complex. Typically, market failure means that various people cannot get actuarially fair insurance. However, governments are often more concerned that poor risks, often disadvantaged persons or families, cannot obtain insurance for say health care or motor vehicles at an affordable price. The principal problem then is one of social justice rather than market failure. In this case, the standard government response is either to mandate community insurance premiums (equal premiums for all persons in certain categories regardless of risk) or to cap premiums or alternatively to make public provision of insurance. All these practices can be found in Australia. For example, the Australian government mandates that private health insurance is based on community insurance principles where high-risk persons are subsidised by lower-risk persons. It also provides general health insurance for everyone. In New South Wales, the Motor Accidents Authority caps premiums for insurance of third-party vehicle accidents.

Consumer protection in Australia

In Australia, the principal legislation dealing with fair and safe trading in the sale of goods and services is the *Australian Consumer Law* (see Box 15.1). This is a schedule to the *Competition and Consumer Act 2010*, which replaced the longstanding *Trade Practices Act 1974*. The new Act applies nationally. It is implemented by the Australian Competition and Consumer Commission (ACCC) and each state and territory’s law agency.

Box 15.1 Consumer protection under the *Australian Consumer Law 2010*

The *Australian Consumer Law 2010* (ACL) outlines unfair trade practices and regulates product safety and information requirements.

Chapter 2 of the ACL provides general consumer protections and outlines general standards of business conduct in the market.

Part 2-1 sets out a broad provision that prohibits firms from engaging in any conduct that is likely to mislead or deceive. This covers false representations about attributes of goods such as the standard, quality, price, origin, composition, style, warranty or guarantee, as well as any prior history of the goods.

Part 2-2 is a general ban on unconscionable conduct in trade or commerce plus more specific prohibitions on certain business transactions. The concept of unconscionable conduct has developed in common law.

Part 2-3 makes void unfair contract terms in consumer contracts. A term is ‘unfair’ when there is any imbalance in the parties’ rights or obligations or when it causes any detriment to one party.

Chapter 3 of the ACL provides specific protections to address identified forms of business conduct.

Part 3-1 prohibits certain false or misleading representations, the supply of unsolicited goods or services, participating in pyramid schemes, bait advertising, and practices involving the display of prices, referral selling, harassment and coercion.

Part 3-2 provides guaranteed consumer rights for goods and services, national rules for unsolicited sales transactions, and five basic rules for lay-by agreements.

Part 3-3 creates a new consumer product safety law and regulatory framework that applies nationally.

Part 3-4 creates a single national law that prescribes information standards for consumer goods and services.

Part 3-5 creates national rules governing the liability of manufacturers for safety defects.

Chapter 4 sets out criminal offences relating to certain matters covered in Chapter 3.

Chapter 5 sets out national enforcement powers and remedies relating to consumer law.

Other important product safety agencies are Food Standards Australia New Zealand (FSANZ) and the Therapeutic Goods Administration (TGA).³ FSANZ is responsible for ensuring safe food in Australia and New Zealand. All food products have to meet detailed high standards across the whole food chain from primary production to manufacturing to distribution and retail. FSANZ also has the power to recall food products from the retail and distribution chain when there is an ‘unacceptable safety risk to consumers’.

The TGA regulates therapeutic goods in Australia, under the *Therapeutic Goods Act 1989*, to ensure their quality, safety and performance. Therapeutic goods are defined as any product which is represented in any way to be taken for therapeutic use, including complementary medicines. The TGA assesses therapeutic goods before they can be used and monitors their compliance with standards once the goods are on the market. Like FSANZ, the TGA can recall unsafe products.⁴

Product Quality and Safety

Most products carry some risk. This does not mean that they should not be supplied. Nor does product failure necessarily imply market failure. Suppose that consumers can purchase a product with an expected 1 in 20 probability of malfunction at a price discount of 15 per cent. Providing that the consumers suffer no personal harm, as a group they are better off with the product than without it even though 5 per cent of consumers will experience product malfunction. However, if suppliers are aware of the product risks and consumers are not, there may be misallocation of resources and a need for consumer protection, especially when products may cause personal harm.

As we have seen, governments usually enact general legislation to outlaw unfair trading and misleading or deceptive conduct to ensure that consumers are making an informed choice on product quality and price. Here we focus more specifically on safety and public health issues.

In general, products can be made safer by increased spending on product design, development and manufacture. Establishing an efficient level of product safety can be viewed as a cost–benefit exercise. The safety level is efficient when the marginal benefit of increased product safety equals the marginal cost. Equivalently, as a cost-minimisation exercise, an outcome is efficient when the total cost, including expenditure on product safety and damage costs, is minimised. In Figure 15.2, the efficient level of product safety is Q_E . Panel (a) overleaf illustrates the marginal approach, panel (b) the total cost-minimisation approach. Of course, equity considerations might suggest a higher, or lower, level of product safety.⁵

We consider below four strategies for ensuring an efficient level of product safety: product liability, regulation of information, regulation of products and processes and taxation of unsafe products.

Product liability implies that suppliers of unsafe products bear some or all of the damages from their products. Under a negligent liability standard, a firm pays for the damage costs that would have been avoided if it had adopted an ‘efficient level of safety’.⁶ Under strict liability, the firm pays all damage costs regardless of whether it has met an appropriate or efficient level of safety. Actually, if consumers are aware of their rights, whichever liability standard is adopted the firm has an incentive to choose an efficient level of product safety (the level at

³ The US Food and Drug Administration is the equivalent agency in the United States.

⁴ For information on FSANZ, see <www.foodstandards.gov.au>. For the TGA, see <www.tga.gov.au>.

⁵ The approach to obtaining an efficient level of product safety is of course the same as that employed to obtain an efficient level of environmental quality (see Chapter 13)

⁶ This definition comes from Viscusi *et al.* (2005, p. 812). However, Viscusi *et al.* also talk about ‘an efficient degree of safety at the medium level of safety’. A non-negligent level of risk is not a precisely defined concept.

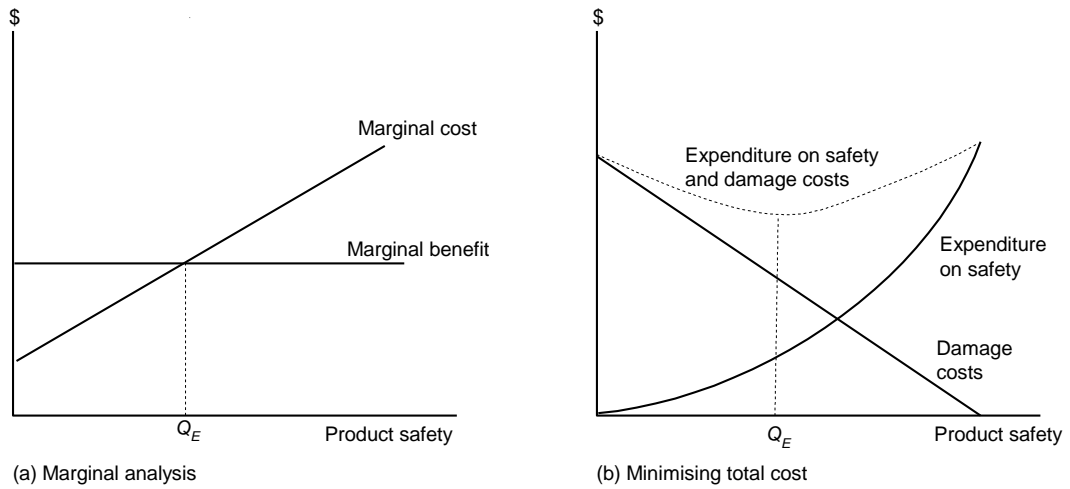


Figure 15.2 Efficient level of product safety

which the marginal benefit and marginal cost of an extra unit of safety are equal). This is an example of the Coasian theorem that markets can achieve efficient outcomes regardless of how property rights are assigned. Of course, the distribution of costs varies with negligent or strict liability.

Despite its potential efficiency advantages, a public liability strategy may not achieve efficient outcomes. Individuals may not want to incur legal costs to obtain redress for minor damages. Even with class actions, consumers may free ride and not engage in the legal process to obtain redress for damages. This would lead to undersupply of safe products. On the other hand, if courts award costs in excess of actual damages, some socially valued products may become unavailable. Viscusi *et al.* (2005) suggest that, in the United States, high court-awarded damage costs have substantially increased the costs of public transport and other products such as ladders and led to the demise of the domestic aircraft industry, the withdrawal of vaccines from the market and the slow development of contraceptive devices.

Regulation of information. Regulations may require firms not only to not mislead their customers but also to advise of any potential safety risks associated with their product. For example, most pharmaceutical products carry warnings against excessive use. Many governments require tobacco companies to carry health warning messages on the packaging of their products. Indeed, the Australian government requires tobacco companies to carry graphic pictures of the risks of tobacco consumption. Before introducing this initially, the government commissioned a cost–benefit analysis that showed the proposed health warnings would provide a substantial net social benefit (Applied Economics, 2003a).

Regulation of products and processes includes regulation of technical standards of products, pre-market approvals and product recalls. A prime example of setting technical standards is the regulation of motor vehicles. Regulations typically include compulsory safety belts with specific design requirements, side door strength, bumper requirements and fuel system integrity standards. Viscusi *et al.* (2005) estimated that the total cost of vehicle safety regulations in the United States exceeded US\$1000 per vehicle. In the United States, as in Australia, traffic accidents per vehicle kilometre travelled have fallen a great deal in the last

30 years following the introduction of such safety regulations. However, this is also due to improved roads, better traffic management and controls over driving speeds and drinking and driving. Australian studies (Applied Economics, 2003b) show a high benefit–cost return for such road safety programs. However, it is often hard to estimate the benefits of specific product safety regulations.

A prime example of pre-market testing is licensing of drugs. Here a regulator typically seeks to determine whether a drug is technically effective and safe. Drugs with potentially adverse consequences are not licensed. Usually the determination is based on technical evidence and judgement rather than on economics. However, a regulator can make two kinds of error. The regulator may license drugs that are not safe or deny a licence to a safe drug. Licensing unsafe drugs has clear costs. Failure to license a safe drug also has costs as it denies consumers access to useful and possibly life-saving medicines. Ideally the regulator would review the costs of both kinds of error and determine the licence on the costs and benefits of the decision, rather than simply try to avoid one kind of error (licensing an unsafe drug).

Product regulators may also have the power to withdraw unsafe products from the market. In Australia, FSANZ typically orders about 50 food recalls over a year. In 2004 a major drug manufacturer (Pan Pharmaceuticals) went into liquidation following a major product recall by the Australian Therapeutics Goods Administration.

Regulatory capture. So far, we have assumed that regulations are designed to protect consumers rather than regulators. As discussed further below, this is not always the case. Australia has long prohibited the import of apples from New Zealand on the ground that they could introduce various diseases, but many people suspect that the main reason has been to protect the Australian apple industry. Likewise, several states restrict the number of taxis, ostensibly in part to protect public safety but primarily to protect the value of taxi licences.

Taxation of unsafe products is another approach. An example is the excise tax on cigarettes in Australia. Bardsley and Olekalns (1999) found that this tax had more effect on reducing tobacco consumption than did public anti-smoking campaigns. Where the harmful impact of the product is solely on the consumer, this is essentially a tax on a demerit good that aims to discourage personal consumption rather than a corrective tax on an externality.

However, taxation is not often employed for unsafe products. Governments tend to regard products as either safe or unsafe and do not recognise intermediate cases where taxes may discourage consumption without prohibiting it. Another reason for eschewing injury taxes is that it is often difficult to determine the relative contribution of the product and the consumer to injuries. Accidents with ladders may reflect unsafe use or poor climbing ability rather than unsafe ladders. Taxing ladders would have little impact on accidents with ladders.

Workplace Health and Safety

In informed and competitive labour markets, wage differentials compensate for differences in working conditions. Workers require higher wages to compensate for less healthy or safe working conditions or, equivalently, they are willing to accept lower wages for an increase in non-wage amenity.

The actual wage differential depends on both workers' preferences for health and safety and on the ability of firms to provide a safe environment. In Figure 15.3 overleaf the convex indifference (I) curves show the trade off between wages and workplace safety that an employee is willing to make for a given level of utility. A higher curve represents more utility. On the other hand, the concave iso-profit (P) curves show how firms can trade-off higher wages with lower provision of safety (for any given level of profit, including zero economic profit in a competitive market). Equilibrium is achieved in each market when the marginal rate at which

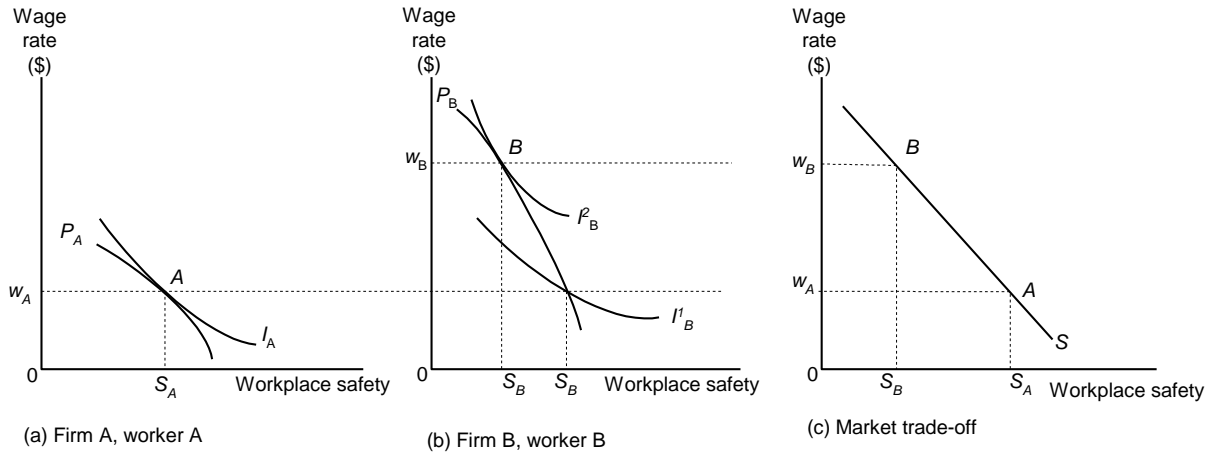


Figure 15.3 Price of safety in the workplace

Source: Based on McConnell, Bruce and Macpherson (1999).

workers are willing to substitute changes in wages for safety equals the marginal rate at which firms can transform wages into safety.⁷

Panel (a) shows a worker with a high marginal value of safety along with a firm that can provide safety at a low cost—the outcome is a low wage. Panel (b) shows a worker with a lower marginal value of safety combined with a firm that can provide safety only at high cost—the outcome is a high wage. Panel (c) shows the relationship between wage rates and job safety in a competitive labour market with heterogeneous workers and jobs. Other things such as productivity being equal, when workplace safety varies there is a trade off between wages and safety, with a higher wage for working in a less safe environment.

With the compensating wage differential model, a profit-maximising firm invests in safety so long as the marginal savings from greater workplace safety due to lower wages, less workplace disruption, and a more stable workforce exceed the marginal costs of providing the extra safety. Figure 15.4 shows the marginal cost and benefit of an extra unit of job safety. The efficient level of workplace safety is Q_E .

In a perfectly competitive and informed labour market, workers are compensated for any risk that they bear. If a worker is not compensated adequately, he or she moves to another firm. If there are no externalities, this level of job safety is efficient. The amount of job safety provided by the employer matches the level required by the employee.

Policy responses to market failures

However, markets provide an efficient amount of safety only when workers are aware of the risks and have alternative employment options. Viscusi *et al.* (*ibid.*) suggest that workers are generally aware of explicit technical risks, such as the risks of working at heights, but much less aware of chronic health risks, such as exposure to asbestos. In practice, information about occupational health and safety is incomplete and costly to obtain. If employees underestimate workplace risks, wages under-compensate workers for risks and employers under-provide workplace safety.⁸ Job safety is also under-supplied when some costs are externalised and the

⁷ This concept underlies the wage equations used to derive the value of life described in Box 11.2.

⁸ On the other hand, if workers overestimate job risks, wage premiums for safety may be high and employers may oversupply job safety.

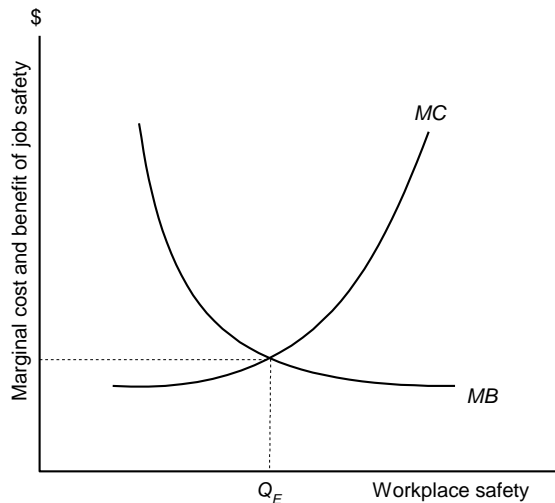


Figure 15.4 Optimal workplace safety

public health care system bears some of the injury costs. In this case, the marginal social benefit of job safety is greater than the marginal private benefit to the firm and the socially efficient level of job safety is again greater than the market-provided amount.

What is the appropriate policy in these cases? Public provision of information is the most direct response to misinformation. It eliminates directly the informational market failure. Viscusi *et al.* (*ibid*) cite an example relating to chemical labelling that suggests that hazard warnings may be effective. However, the information approach relies on market forces to change workplace conditions. It does not require employers to improve conditions. Therefore, regulators rarely rely on information alone to improve workplace safety.

Worker compensation policies imposed on firms are a market-based strategy that can influence employer incentives. Firms would bear the costs of injuries of workers either directly or via the intermediation of insurance premiums. This internalises the injury costs. With an efficient insurance market in which firms bear all the costs of employee injuries and there are no externalities, businesses would have an incentive to provide an efficient level of workplace safety. Additional regulations would be unnecessary.

However, a combination of regulatory and market failures may create an inefficient outcome. In Australia regulatory failure occurs because state governments prescribe insurance premiums for each type of business. Firms within each insurance category are not rewarded for a good safety record. Market failures include moral hazard (insurance makes workers less careful and more likely to claim for an adverse incident), transaction costs especially for court cases, and external costs borne by other parties, usually by government through the public health care system.

In practice, most governments employ a range of regulations to ensure safe practices in the workplace. In Australia, state agencies such as Workcover NSW prescribe safety practices for numerous activities and occupations. For example, there are detailed controls over the type of plant and equipment allowed in the construction industry, on farms, for long-distance truck driving and in brothels (see www.workcover.nsw.gov.au). These conditions deal with both the technology of plant and equipment and behaviour in the workplace. Commonwealth and state industrial courts also prescribe safety conditions in industrial awards.

As discussed in Viscusi *et al.* (*ibid*), regulators typically set safety standards on the basis of their 'affordability'. However, affordability is not a precise concept and there is rarely explicit consideration of an efficient level of safety based on the marginal costs and benefits of a

safety regulation. Regulators often know more about safety risks than employees do but less about both the safety risks and the costs of producing safety than the businesses themselves do. To achieve an efficient level of safety a regulator needs to know not only the technical risks in each case but also the marginal costs and benefits of producing safety.

In addition, the regulator must be able to monitor and enforce the regulation(s) without undue cost and the regulated party must expect to be caught and punished for any significant infraction of the regulation. And, of course, a regulator must not be captured by the parties that are being regulated.

Regulating Occupations

A major information concern is the quality of service supplied by professional and technical services. How do we know that our doctor, our builder or our electrician is competent? To ensure the quality of such services governments often regulate either the structure of the occupation or the conduct of practitioners in the occupation.

As shown in Table 15.3, there are several potential regulatory instruments. These include controls on entry, ownership of businesses, professional conduct, advertising and fee scales. These regulations are intended to provide social benefits by assuring quality services. However, most regulations have costs. For example, entry restrictions ensure that the provider

Table 15.3 Regulating occupations

<i>Regulation</i>	<i>Effect of regulation</i>	<i>Benefits</i>	<i>Costs</i>
Controls over entry	Excludes people lacking skills from providing a service	Ensures a competent level of service; reduces risk of harm; minimises flow-on effects of malpractice	Increases prices due to restricted supply; limits choice of provider; adds administration costs of registration
Controls on business ownership	Precludes some business structures and sources of capital	Minimises conflicts of interest between professional service providers and business interests; maintains trust between client and professional	Increases practice costs; inhibits innovation by restricting entry of capital and entrepreneurial expertise
Controls on conduct of professionals	Provides opportunities for removal of incompetent practitioners and redress of consumer complaints	Maintains integrity of profession and standards of service	Transaction costs of dealing with complaints; inefficient if controls are not related to professional services
Controls on advertising	Reduces false and misleading claims	Protects consumers; reduces wasteful expenditures; discourages competition by quality sacrifice	Discourages new entry into market; reduces consumer information on quality and price of services; reduces price competition
Controls on fee scales	Provides price stability and financial certainty	Removes risk that price cutting would reduce service quality; reduces transaction costs	Reduces ability of professionals to compete; may increase prices; restricts innovation

meets a competent standard and minimises the flow-on costs of malpractice to the community. On the other hand, they reduce service supply, increase the price of services and have administration costs. Controls on advertising prevent misleading information, but reduce service competition, increase the costs of entry into an occupation and may reduce the capacity of consumers to make an informed choice of a provider.

Figure 15.5 illustrates the possible deadweight loss from due to restricting entry into an occupation. With a free-entry occupation the market would supply Q_M labour hours at w_M wage per hour. If government limits the supply of services to S_2 , the quantity of services would fall to Q_R labour hours and the wage would rise to w_R . Would-be suppliers of labour who are prevented from supplying services suffer a loss of surplus shown by the area BCE . If consumers are well-informed, they would lose a surplus equal to area ABE from the non-availability of services. Thus, the total deadweight loss is given by area ACE . Consumers also bear the higher prices, but the rectangle w_RABw_M is a transfer from consumers to producers rather than a deadweight loss.

In Australia, under the National Competition Policy governments are required to justify all such regulations as being in the public interest or to repeal the regulation. In effect, a benefit–cost test is required. The benefits and costs of each regulation should be quantified where possible in monetary terms and the benefits shown to justify the costs. Box 15.2 summarises a cost–benefit analysis of a NSW state regulation that requires that all boundary surveys be done by registered surveyors.

In this case the costs of regulation are low because registered surveyors circumvent the regulations by employing other technicians, usually unregistered surveyors or engineering draftsmen, to do most of the work. On the other hand, the regulation probably reduces land disputes and saves some demolition and rebuilding costs. Consequently, the estimated benefits of the regulation exceeded the costs. However, the conclusion is not the main issue here. The purpose of the example is to show that regulations, like other policies, have benefits and costs that are amenable to cost–benefit evaluation.

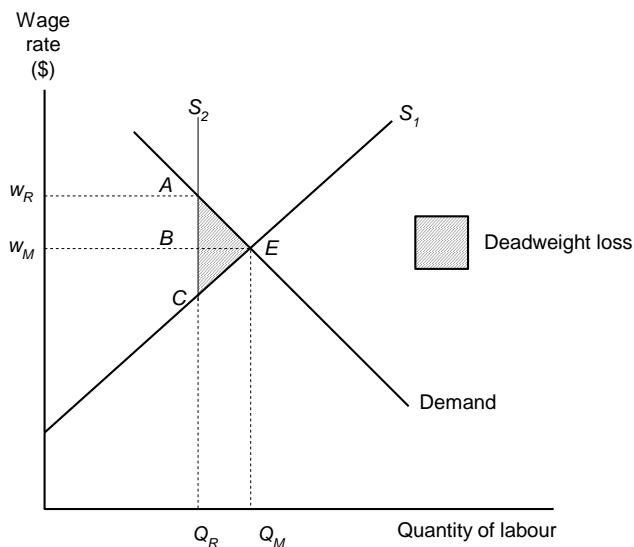


Figure 15.5 Costs of occupational licensing

Box 15.2 Regulation of land surveyors: cost-benefit analysis

Most Australian states have legislation that requires property boundaries to be certified by persons qualified and registered by the local Board of Surveyors. This regulation may be justified by the public’s lack of knowledge about the qualifications and experience required for land surveying, the costs of incorrect surveys to property owners and adjacent landholders, and the importance of accurate mapping for property exchange and contracts. Thus there are information, externality and public goods arguments for some regulation of the industry.

However, the regulations prevent unregistered surveyors, engineering technicians and geographical systems experts from certifying property surveys, which increases the costs of surveys. In practice, the cost increase is not high because registered surveyors often employ engineering technicians to do

much of the work and the surveyor simply certifies the product!

The then NSW Department of Information Technology and Management (2000) estimated that the regulation of land surveying in New South Wales increased surveying costs by only \$2.5-\$5.0 million per annum.

The study estimated that the benefits of regulation (savings from dispute reduction and lower demolition and rebuilding costs) probably exceeded the cost of regulation. It also found that the costs of using market mechanisms to deal with poor information, for example by insurance of property titles against error, would probably exceed the costs of the regulation. The study concluded that regulation is justified, but that some relaxation of the qualifications required for registration of boundary surveyors should be considered.

Regulatory capture and rent-seeking costs

Although regulations may be intended to protect consumers, not infrequently when designed they give as much or more assistance to producers. An industry may seek and obtain regulation to reduce competition and raise prices. As Friedman and Friedman (1980, p. 282) observed, ‘there is no occupation so remote that an attempt has not been made to restrict its practice by licensure’. **Regulatory capture** occurs when a regulator identifies with the interests of an occupation or industry that they are supposed to regulate.

In a classic study of regulatory capture, Stigler (1975) explained how regulations develop because of the advantages that they confer on the regulated industry. Stigler argued that regulations are made because industry demands them. Stigler then showed that regulation of occupations in the United States is more likely when the occupation is large (carries many votes), per capita income is high (individual gains are large), urban concentration is high (organising costs are low) and opposition is dispersed. Although consumers generally have more votes than the regulated party, producers often succeed in extracting and maintaining regulations that restrict competition. Producers have more to gain individually, are more concentrated geographically, and are better organised and resourced.

Regulatory capture is not a zero sum game in which producers simply gain from higher prices what consumers lose. Deadweight losses occur not only as a result of supply restrictions (as we have observed), but also in the form of rent-seeking costs. The latter costs are resources that firms expend in order to gain economic rents (area $wRABwM$ in Figure 15.5). Firms and industry associations of all kinds often expend considerable resources to create and maintain this economic rent.

Private and Social Insurance

Can private insurance markets protect or compensate consumers and workers against uninformed decisions? If the answer is ‘no’ for whatever reason, there may be a case for publicly provided social insurance. This could replace, or be additional to, other regulations designed to protect consumers or workers.

Insurance (private or public) generally provides two main benefits. First, it compensates individuals for injuries or misfortunes. Insurance against damage to properties, motor vehicles or health are prime examples. Second, it evens out consumption over time. By purchasing

Regulatory capture

Situations in which a regulator advances the interests of the industry or occupation that they are set up to regulate

insurance against future adverse effects, whether it is a motor vehicle accident or loss of a job, an individual can ensure that their consumption level is smoothed out regardless of what happens. Gruber (2016, Chapter 12) shows that, if individuals experience decreasing marginal utility from consumption, in a perfectly functioning insurance market, individuals will purchase insurance to smooth out their consumption fully against various possible states of the world.

However, as we have seen, markets may fail to produce an efficient amount of insurance because of asymmetric information and related adverse selection problems. Consequently, insurance companies charge average or higher than average insurance premiums and low-risk individuals cannot buy actuarially fair premiums.⁹ In addition, individuals may under-insure because of a lack of information about risks or because they do not understand the benefits of insurance. In the latter case insurance would be a merit good.

Policy responses to insurance market failures include doing nothing, mandating that individuals hold a certain level of private insurance, subsidising private insurance, providing full or partial public insurance, and providing social assistance to persons in need. For example, the Australian government mandates that at least 9 per cent of all wages must be paid into private superannuation funds (a form of compulsory consumption smoothing) and all states require that motorists purchase third-party motor vehicle insurance. The Australian government is also considering mandating that insurance companies must offer households compensation for flood damages. On the other hand, the Australian government subsidises private health insurance and provides a form of universal health insurance (from consolidated revenue). Under a social assistance strategy, government picks up the costs of risks such as unemployment or disability, but government generally does not cover damages to property except in extreme cases.¹⁰

Evaluating policy responses is complicated by various factors, notably externalities and social justice issues. Often there are third-party effects, for example with motor vehicle accidents or fire damage to properties. And often the party suffering the injury will be disadvantaged in some way.

Focusing here on the efficiency issues arising from adverse selection and moral hazard, government faces similar problems to the private sector and its intervention may not improve matters. For example, mandating that everyone must be fully insured against health risks is likely to require some low-risk consumers to pay average premiums when they would prefer to be self-insured. They are required to take out more insurance than is efficient and are implicitly taxed to support the market. Similar problems arise with public provision of insurance. If it is funded by an equal levy on everyone, low-risk individuals are required to over-insure. Also, public insurance may crowd out some private insurance.

In addition, insurance of any kind (private or public) raises problems of moral hazard. Insured individuals may change their behaviour and take more risks than they otherwise would. Also, they may claim more compensation or use more services, such as medical services, than they would otherwise. Therefore, although the provision of insurance, whether mandated or publicly financed, is designed to reduce market failure, it introduces another set of costs.

In conclusion, there are limited effective policy responses to insurance market failures. Government is unlikely to have superior selection knowledge to private firms or more capacity to handle moral hazard behaviour. However, when there are third-party effects, there may be a case for mandating insurance for individuals or for some social insurance, but this

⁹ Gruber (2011) shows that risk-averse individuals may be willing to pay a higher premium and still purchase insurance.

¹⁰ The Australian government does provide drought relief for farmers and occasional compensation to households who experience extreme fire or flood damages.

raises the potential of moral hazard. Also, when adequate private insurance is not available, for reasons of social justice government may provide assistance to individuals suffering substantial adverse events, so long as this does not itself create significant moral hazard and unduly reduce the precautionary actions that individuals would otherwise take.

Merit goods

Goods that are believed to provide more benefits to consumers than they themselves believe

Demerit goods

Goods that are believed to provide more harm to consumers than they themselves believe

Bounded willpower

Occurs when individuals cannot behave in their best long-term interest

Bounded rationality

Reflects an inability to process information sensibly

Merit Goods: Bounded Willpower and Rationality

Merit goods are goods that are believed to provide greater benefits to consumers than they themselves believe. **Demerit goods** are goods whose consumption is believed to provide more harm to consumers than they themselves believe. Such goods arise principally because of inadequate information, bounded willpower or bounded rationality.¹¹ **Bounded willpower** occurs when people have difficulty implementing strategies that are in their best interests in the long run. **Bounded rationality** reflects incomplete information processing and an inability to weigh up the costs and benefits of alternative actions. In each case, an individual would be better off if she consumed more, or less, of a good than she would ordinarily do.

Inadequate information is not inconsistent with the concept of consumer sovereignty. Consumer sovereignty assumes that (1) personal preferences matter and (2) individuals are the best judges of their own welfare if they have adequate information. Thus, when information is lacking, provision of information is often an appropriate policy response. On the other hand, bounded willpower and rationality are inconsistent with consumer sovereignty. In these cases, the individual can no longer act consistently in their own best interest. Here, provision of information is not a sufficient policy response.

Examples of bounded willpower, or incomplete self-control, include excessive current consumption (too little saving) and addiction spending. Pigou (1920) contended that most people undervalue future consumption even when it is ‘perfectly certain to occur’. However, the evidence for this is not clear. Becker and Murphy (1988) famously argued that some people can rationally choose to consume addictive goods such as drugs, tobacco and alcohol. Some drug and alcohol addicts and possibly even gamblers are aware of the consequences but claim that on balance the pleasure from these activities increases their well-being. The view that drug consumption and gambling are demerit goods implies that these claims are misguided.

Evidently, the line between bounded willpower and bounded rationality is often grey. But bounded rationality, or incomplete information processing, also includes situations where individuals rely on rules of thumb rather than data to make decisions, make biased probability judgements or are over-confident or anchor on irrelevant information (Diamond and Vartianen, 2007). A classic merit good and example of bounded rationality is the value of education, where it was traditionally contended that poorly educated households underestimate the benefits of education.¹² Another example would be the failure of gamblers to understand that expected statistical losses often far exceed expected gains, or indeed to understand the real odds of gambling at any point in time (see Box 15.3).

Merit (or demerit) goods should be distinguished from moral goods. For example, some people contend that homosexual acts between consenting adults, abortion and euthanasia should be banned because they are morally wrong. This is a quite different contention to the merit good one that an individual’s personal utility would be enhanced if they consumed more of some goods and less of others.

¹¹ Individuals may also under-value the benefits of some goods, such as cultural goods or heritage, because of a lack of experience or education in them. Such under-valuation does not fall readily into any of these three categories.

¹² Musgrave (1959, p. 14): ‘the advantages of education are more evident to the informed than to the uninformed’.

Policies for merit and demerit goods

As we have noted, the policy response to inadequate information is improved information. Other issues arise with failures of consumer sovereignty when individuals may not be the best judges of their own welfare.

Economists have generally considered that most people are the best judges of their own welfare most of the time and been wary of policies justified by reference to merit goods. As John Stuart Mill observed, individuals can learn from their mistakes and there are advantages in treating individuals as if they are the best judges of their own interests. Political judgements about the best interests of citizens may themselves be poorly informed. They may also be moral judgements rather than merit good judgements.¹³

Nevertheless, most people would agree that government should protect the young, the mentally disadvantaged or disturbed and the elderly infirm who lack adequate family support. Many governments have offices to assist with the financial affairs for people deemed incapable of handling these matters themselves.¹⁴ And compulsory education up to a certain age is generally justified as a merit good as well as an equity issue. Taxes on addictive and harmful goods, such as drugs and alcohol as well as on gambling, are widely justified on demerit good grounds as well as externalities. Recently the literature on behavioural economics has greatly expanded the potential areas of consumer failure and correspondingly increased the scope for possible government intervention (Bernheim and Rangel, 2008).

Box 15.3 Gambling and public policy

The Productivity Commission's (2010) report on gambling in Australia identified the main impacts of the industry and implications for government regulation.

The report found that estimated losses exceeded \$19 billion in 2008-09. It also found that there were 115 000 'problem gamblers' and that another 165 000 people were at 'moderate risk'.

It estimated that the social cost of gambling is at least \$4.7 billion a year. The costs include depression, relationship breakdown and family neglect, domestic violence, crime, lowered work productivity and job loss and the drain on public resources.

Gambling takes many forms. It includes electronic gaming machines (EGMs, called 'pokies'), casino gambling, wagering, lotteries, pools, keno and online gaming. EGMs account for 62 per cent of turnover and for most of the problem gamblers.

Significantly, many players of EGMs have no idea of the real odds or price of playing. Over half the players believe that they can recover losses by continuing to play ('chasing losses') and that machines run 'hot' or 'cold', neither which is true and which, in any case, are inconsistent beliefs. Receipts are not

issued, so losers do not know how much they have lost and tend to underestimate losses.

EGMs in particular are associated with significant social costs (negative externalities), information failure and bounded rationality. Notwithstanding the pleasure that many people obtain from gambling, a significant number are causing self-harm. To deal with the variety of problems, the Productivity Commission recommended that:

- The cash that can be fed into EGMs at any one time should be limited to \$20 (now \$1000)
- The bet limit per button push should be \$1 instead of \$5-\$10
- There should be longer and more time-effective shutdown periods for gaming in hotels and clubs
- Players should be allowed to set binding pre-commitment levels on their losses
- There should be improved information and warnings in EGM venues
- On-line gambling, including offshore sites, requires careful regulation
- There should be more gambling counselling services
- There needs to be ongoing research into gambling issues.

¹³ In Australia most state governments prohibit euthanasia. This ruling seems to reflect the moral beliefs of most politicians rather than a merit good view that those who would choose euthanasia to end suffering would be better off if they could not choose this course of action.

¹⁴ For example, in New South Wales, the Office of the Protective Commissioner has this function.

Box 15.4 Obesity and public policy

Crowle and Turner (2010) discuss the costs of obesity, especially in the young, and various possible policy responses.

The weight of Australian children has increased significantly and over 8 per cent are now defined as obese (based on Body Mass Index) and 17 per cent as overweight.

Access Economics (2008) estimated that the total (all age) cost of obesity in Australia in 2008 was \$58 billion, with \$50 billion being lost health and well-being and \$8 billion being financial costs (productivity losses, public health care costs, carers and transfers). Thus a high proportion of costs in this case are personal. There is a correlation between obesity when young and later in life.

However these estimates make no allowance for the pleasures of eating or the pain of dieting. Thus they may overestimate the welfare costs of obesity.

While the basic cause of obesity is an imbalance between

energy consumed and expended, the contributions of physical, home, environmental and social factors are hard to determine.

International evidence to date indicates that consumers have limited responsiveness to food taxes, that the link between television viewing and childhood obesity is small in magnitude and that mandatory posting of calorie content in restaurant menus has led to only a small reduction in energy intake. Australian experience suggests that the most encouraging interventions appear to be community-based programs to encourage healthy eating and physical activity. But these interventions could be resource intensive and costly.

Crowle and Turner conclude that there is a lack of clear evidence on both causal factors and cost-effective policy responses and that more research will be needed to improve policies to reduce obesity.

In these circumstances, what advice can an economist contribute? In Boxes 15.3 and 15.4 we describe analyses of the problems associated with gambling and obesity and policies to deal with them. Here we outline a general approach to policy making.

The first task is to identify the nature of the problem(s). Are the problems externalities, information failures or problems of bounded willpower or rationality? Often, as with gambling and obesity, there is a combination of all these factors.

The policy response(s) depend on the problem(s). If the problem arises from a lack of information more information should be provided. The provision of information maximises the exercise of personal preferences and minimises coercion. If the problem is one of negative externalities, fiscal incentives (taxes or subsidies) may be appropriate (see Chapter 13). This approach internalises the impacts and allows individuals to continue to exercise personal preferences. Fiscal incentives may also be an efficient way to encourage a marginal increase or decrease in consumption of a merit or demerit good respectively, although they may have limited impacts on addictive behaviour (including over-eating).

Regulations provide another strategy especially when people face discrete choices about whether to consume a good or not. For example, government may require all persons up to a certain age (say 16 years) to attend school. On the other hand, it may prohibit the consumption of specified drugs, ban young persons from purchasing alcohol or tobacco and restrict places of gambling. Indeed, regulations can be found for most problems. An advantage of regulations is that they can tackle problems directly.

However, regulations usually restrict choices and impose various costs on people. Regulations also have transaction costs associated with administering, monitoring and enforcing the regulations and compliance costs for firms and households. To ensure that the expected benefits exceed the costs, regulations should be subject to cost-benefit tests. However, as can be seen from the studies of gambling and obesity, policy makers are still dealing with many uncertainties.

Summary

- Information failures may occur because of the public good nature of information, misleading information, information asymmetries or bounded willpower or rationality.
- Asymmetric information (when some people are better informed than others) occurs often in product and factor (labour and capital) markets. It causes resources to be misallocated and the less informed party bears unexpected and sometimes high costs.
- Markets provide incentives for product and workplace quality and safety. Firms can charge more for known quality products and pay lower wages for providing safe working conditions. Nevertheless, these incentives are not always sufficient to ensure efficient and fair outcomes.
- Policies for achieving efficient product quality and safety include prohibition of misleading or deceptive conduct, product liability policies, regulation of information, product or process regulation and taxation of unsafe products.
- The main public policies for achieving an efficient level of workplace safety are regulation of information, workers' compensation policies and workplace regulation.
- Government may also regulate occupations to ensure quality of service, but this may reduce levels of service and increase prices.
- Insurance markets may be inefficient because of adverse selection and moral hazard. However, government faces similar problems. Governments may regulate or provide insurance to further social justice objectives but there is a limited efficiency case for substituting social insurance for private insurance.
- Government may promote consumption of merit goods and discourage demerit goods because individuals cannot make informed and rational choices. However, there is a risk that government may impose its own moral values on citizens.
- Fiscal incentives can address some information failures, but regulations address them more directly and are used more often than fiscal instruments.
- Most regulations have costs as well as benefits. They can restrict services and raise prices. Cost-benefit analysis aims to ensure that regulations meet a public benefit test.
- As a practical matter, regulations need to be well-informed, enforceable and not subject to regulatory capture.

Questions

1. Is insider trading simply an equity issue? Does insider trading have a deadweight loss?
2. Can legally imposed damage costs result in inefficient outcomes?
3. Government policy towards insurance:
 - i. Should house insurance be made compulsory?
 - ii. If a household is uninsured and their house is flooded or burned down in a bush fire, should government provide any compensation?
4. Government regulation of health products:
 - i. What kinds of factors should a drug regulator like the Therapeutic Goods Administration in Australia take into account when deciding what medicines should be allowed for public sale?
 - ii. Should complementary health products that make therapeutic claims also be regulated? If so, how?
5. What problems arise with determining workplace safety standards by an affordability criterion?
6. What are the costs and benefits of food safety regulation? Can these costs and benefits be quantified?
7. What is the appropriate policy for goods such as cigarettes? Is it to ban false advertising, to tax the product, to regulate where smoking can occur or to produce government advertisements with an alternative point of view? How would a balance between these policies be struck?
8. If workers are fully informed on the risks associated with their workplace, should government also impose conditions on workplace activities and methods?
9. What would constitute an efficient system of workers' compensation insurance?
10. Is it necessary to regulate entry into the hairdressing trade?
11. What is regulatory capture? Is it a general problem? When is it most likely to occur?
12. When and how should government intervene to reduce private self-harm behaviour as distinct from reducing social costs? Discuss in relation to (i) gambling and (ii) obesity. Should an individual's enjoyment of gambling or eating affect public policy?

Further Reading

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