New Zealand Business Roundtable

Accident Compensation: Options for Reform

September 1998

Credit Suisse First Boston NZ Limited has prepared this report for the New Zealand Business Roundtable.

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Table of contents

Figures and tables

Summary and recommendations

Summary

This report on the public policy issues surrounding New Zealand's Accident Rehabilitation Compensation and Insurance Scheme (the ACS) has been prepared for the New Zealand Business Roundtable (NZBR) by Credit Suisse First Boston NZ Limited.

The NZBR has long believed that the ACS is fundamentally flawed. Two decades of modifications to the scheme have failed to address its fundamental problems of statutory monopoly and lack of incentives to improve service. Nor has a configuration been found that satisfies public opinion. Much more promising is the announcement in the 1998 Budget of the government's intention to permit competition for some of the existing schemes. However, the benefits of such competition will be affected by many decisions still to be taken. These include the decisions that will determine the detailed regulatory environment for accident insurance, and the special advantages or disadvantages that will inevitably accompany the presence of a competing government-owned insurer. There are also wider questions of what should be done with schemes not covered by the Budget night announcement and what should be done in regard to regulation and liability rules more generally.

This report addresses the problem of determining a sound system of arrangements and rules in New Zealand relating to accidents that involve bodily injury. The problem divides naturally into two parts. One concerns the optimal arrangements for funding and regulating the treatment, rehabilitation and compensation of the injured. The other concerns the rules that will achieve optimal levels of deterrence of behaviour that puts others at risk. The first part encompasses the issues of social insurance and private first-party insurance. These involve the allocation, between the injured, the Crown and any private insurer, of responsibility for making good financial losses arising from bodily injury. The second part involves the achievement of optimal levels of deterrence. Penalties for behaviour that puts others at risk may arise simply from social and economic pressures, including the loss of professional reputation. Additional penalties could arise from private contract, common law or statute. They may take the form of a fine, imprisonment, or a requirement to compensate the victim.

The two parts of the problem can be discussed independently, but their interactions should also be considered in any full discussion of the optimal arrangements for New Zealand. Both aspects are addressed in this report.

In regard to the funding of treatment, rehabilitation and compensation of the injured, we recommend that the Accident Rehabilitation and Compensation Insurance Corporation (the Corporation) be fully exposed to competition from private insurers and be sold at the end of a transition period. This would eliminate the conflict between

the Crown's role as a regulator and as a provider and would also eliminate the problems that arise as a result of the current provider being a statutory monopoly. This recommendation is made independently of recommendations regarding the issues of liability.

With respect to the regulation of accident insurance, we recommend that the purchase of accident insurance be voluntary, rather than mandatory as at present, transitional arrangements aside. We also recommend that the provision of accident insurance be subject to the same regulations as currently apply to the provision of other forms of insurance, and no more. We note that a government guarantee of insurance benefits could undermine incentives to choose sound insurers and generate pressures for prudential regulation of dubious efficacy, as the debacle in the United States with Federal deposit insurance of savings and loans organisations illustrates. If, nonetheless, a mandatory scheme with government-guaranteed benefits is preferred, we consider that it could be desirable to minimise the mandatory elements and to impose a risk-related charge on those buying the government-guaranteed insurance, rather than regulating the provision of insurance. Similarly, rather than regulate companies to require them to provide an insurer-of-last-resort facility, the government should consider tendering for the provision of such a facility.

With respect to the liability issue, we conclude that the case for abolishing New Zealanders' rights to sue regardless of the situation, or of mandating the application of particular tort remedies (see glossary in Appendix C), would be very weak if it were not for concerns about capricious court decisions and judicial activism. But for these concerns, we would propose that consideration be given, wherever possible, to allowing contracting parties to determine what remedies will apply. Instead, we recommend the prohibition on the right to sue for losses from accidental injury remain in respect of accidents between consenting parties until convincing solutions are found to the problem of protecting the sanctity of contract. In the case of road accidents between strangers we propose that further consideration be given to moving to the limited form of liability proposed by Professor Richard Epstein.

In examining the two central issues of provision of accident insurance and liability, we use economic efficiency as the criterion for choosing between alternative reform options. We do not advocate the use of economic efficiency as the sole criterion for guiding government policy. For example, the government may be concerned about income inadequacy or distribution. However, in our view, the best methods to deal with these problems involve the tax and welfare systems, not industry specific regulation.

We summarise our analysis of the two issues below.

Competition in the market for accident insurance

The government has reviewed the ACS many times since it was introduced in 1972. These reviews have been prompted by problems of cost escalation, coverage, cross-subsidies within and between industries, and the large number of long-term claimants whose rehabilitation has been inadequate. In 1992, the government changed the focus of the ACS to reflect a number of insurance principles. However, it failed to move to a model of competitive provision of accident insurance. The changes did not go far enough.

Total expenditure on the ACS in the year to 30 June 1997 was $1 627 million. This is more than the government spends on law and order, or on the domestic purposes benefit, or on the unemployment benefit.[2] Efficiency gains in the ACS will have significant benefits for New Zealanders. Administrative costs are low, but overall costs have escalated, with expenditure exceeding projections from the inception of the ACS and rising since 1985 at an average annual real rate of 8 percent. Coverage levels are endlessly disputed, and there is growing pressure to reintroduce common law rights to sue negligent individuals and employers. The ACS has an unfunded liability of $7.5 billion.

The Corporation has provided accident insurance to all New Zealanders since 1972. The combination of the Corporation's position as the government-owned monopoly provider of insurance and the imposition of mandatory coverage under the ACS virtually ensures that New Zealand's accident insurance arrangements are inefficient. The Corporation is insulated from normal commercial pressures. It cannot discover individuals' preferences for risk or level of cover, because it is required to provide the same level of cover to everyone. The government cannot give the Corporation a single objective such as profit maximisation. Instead, the Corporation has a range of objectives, such as cost minimisation and accident prevention. Inevitably, these objectives conflict with one another, but the Corporation and its monitors cannot be expected to find a sound basis for determining the most efficient trade-off between the objectives.

We find no justification for the current monopolistic structure. Competition works well in other New Zealand insurance markets. We therefore commend the government for moving to open the accident insurance market to competition. A competitive market for accident insurance would achieve substantial efficiency gains.

Competition would allow individuals to buy insurance from the insurer of their choice. The proposed competitive insurance model would give insurers strong incentives to identify customer preferences and to meet those preferences at least cost. Policies would typically provide first-party insurance for disabilities caused by

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2 *Crown Statement of Financial Performance for year to 30 June 1997.*

accidents. In a competitive market, individuals would be able to choose policies that offer lump sum benefits and/or periodic benefits. They might choose to exclude cover for high risk activities.

The report recommends that the level of insurance coverage be voluntary, so individuals can decide what level of cover to purchase and from which insurer. Some individuals might prefer to be uninsured than to pay the insurance premiums for their work, especially in high risk occupations which have higher wages in recognition of the risk. Individuals should be permitted to make such choices. The government would continue to provide a safety net of a guaranteed level of income support for all. However, the disability benefits provided by the government as part of its safety net should be limited with a view to encouraging self-reliance.

If accident insurance remains compulsory in a competitive environment, the government will need to determine the level of cover, who should buy the insurance, and how the purchase of insurance will be enforced. Mandating the level of cover is likely to affect detrimentally the welfare of individuals who would prefer to self-insure or to buy policies that are not consistent with the mandated level of cover, for example policies with long stand-down periods. Individuals undertaking high risk activities may strenuously resist the high premia that private insurers would wish to charge and which the government would have made compulsory. This could result in pressure to regulate premia or for more cross-subsidies than are efficient. Empirical studies of workers' compensation in the United States conclude that such regulatory intervention leads to increased costs and instability in the workers' compensation market. The efficiency losses associated with compulsion are likely to decrease when the mandated level of cover is lower.

The lower the mandated level of cover the greater may be popular concern that employers would reduce expenditure on accident insurance without providing workers with benefits in the form of compensating wage differentials. However, there are strong *a priori* arguments for the view that the cost of current ACS levies falls largely, or even overwhelmingly, on workers (see Section 4.6.2) and there is robust empirical evidence that compensating wage differentials are paid without regulation (see Section 6.3.4).

Where the government is a service provider, eg in the case of roading, it should have a role in determining the terms of access to the service, including in regard to accident insurance issues. For example, the government might require drivers to have third-party insurance cover.

Another commonly expressed concern with the competitive approach to accident insurance is that an insurer might fail. This would cause problems for people whose existing injuries meant that they could not obtain similar benefits from other insurers at comparable cost. Those who had been permanently disabled by accident and were receiving income replacement payments would be particularly affected. These individuals would be protected by the government's welfare safety net. Prudential

risk is common to all insurance markets but insurer failure is rare. It is controlled by a number of market mechanisms, including the choices made by customers. A light-handed regulatory framework applies to insurance markets in New Zealand. It focuses on enabling customers and investors to monitor insurers' performance. We recommend that the same regulatory regime be applied to insurers of accidents.

A further concern with a competitive market for accident insurance is that access to insurance will be constrained in inequitable ways. Non-earners are the main group that may not be able to afford insurance. The government could address this directly through the social welfare system. One option would be to provide targeted assistance for low income individuals through an insurance voucher system. Another option would involve tendering the current ACS Non-Earners Account to private insurers. In either case, the government would continue to fund insurance for non-earners.

Introducing competition to the accident insurance market while retaining a government-owned insurance provider would require the government to place the Corporation on as competitively neutral a basis as possible. The report recommends that if the government wants to retain a government-owned provider, this should have a corporate, for-profit structure (the SOE model). This provider should be closely controlled and should not be permitted to expand into other insurance products. In addition, the option of separating new business from the management of past claims and the Corporation's unfunded liability is preferred to the alternative option of a fully funded, unseparated liability. Because of the difficulties in estimating the actuarial liability for past claims, there is a substantial risk that providing the Corporation with full funding for past accidents would distort competition in the market for future accident insurance business. Under a separated system, private insurers could take over liability for past claims, with the government paying them a fixed sum in return for managing claims. The private insurers could be selected by a competitive tender.

Overall, this report finds that government ownership of the Corporation is likely to be an inferior option. The SOE model could not completely insulate the corporatised insurer from politically motivated interference or from the perception that the government was underwriting the risk. These problems would be exacerbated because the reserves that would build up in a fully funded regime might weaken the accountability of a publicly owned insurer. For example, the Corporation might wittingly or unwittingly underprice its policies in response to competition. Such underpricing could not readily be detected in the short term. This would expose taxpayers to a significant risk that unfunded liabilities would recur, and would make it difficult for private insurers to establish themselves in the market. The Crown should either sell the Corporation or remove it from the market as soon as is practicable.

Liability

New Zealand's current prohibition of the right to sue is limited in that it denies the right to sue for recovery of losses as a result of accidental bodily injury yet permits actions for damages to property and violations of health and safety regulations. The prohibition represents a major break from New Zealand's past and from English common law traditions. The drive to prohibit the right to sue arose in part from the desire to allow employers to fund ACS payments out of monies that might otherwise be spent insuring themselves against tort actions. Concerns with the vagaries of legal determinations of liability were also a motivating factor in New Zealand's prohibition, although it does not appear to be the case that any excesses here set New Zealand apart from other countries with the same legal tradition. Nevertheless, concerns about the performance of New Zealand courts should the prohibition be removed deserve serious consideration.

In the absence of the prohibition, incentives to control risk would be determined by contractual risk assignments and the evolution of common law. Common law – the body of law based on judicial decisions and custom – is at the heart of English-based legal systems. Common law plays a critical role in enforcing contracts and protecting property rights and personal liberty in a market system. Starting from a basis of established property rights, common law addresses risk by providing for injunctions in cases of imminent peril from known persons, and tort actions for damages for civil wrongs or injuries. The law of tort is concerned with 'keep off' situations. The underlying principle is that people should be able to enjoy their property and person free from the imposition of someone else's will. The benefits are reciprocal and the obligations are mutual.

In a liability action a plaintiff must prove that an injury was caused by the defendant and establish that the defendant is obligated to pay damages under an applicable law of liability. There is a widespread concern, emanating from experience in the United States, that tort actions can have costly, capricious and excessive outcomes that impair efficiency and offend many notions of equity. This concern warrants the need for careful consideration of government measures to protect the sanctity of contract, to constrain the costs and delays of litigation, and to limit the sums that can be awarded.

The case in terms of economic efficiency for considering permitting the right to sue for losses from personal injury by accident arises because the current prohibition reduces the options available to society for finding the best mix of measures for preventing accidents. When the actions of one put another at risk the first person may take less care than if only they were put at risk. Tort rules that make the first person fully liable for any injuries they cause to others may minimise this potential bias.

A no-fault rule appears to be particularly inappropriate in so-called unilateral accident situations between strangers when only the injurer's behaviour can affect the probability of the accident. If the victim cannot sue the injurer, there must be

greater reliance on regulation, fines or imprisonment to discipline irresponsible behaviour.

However, improved incentives for care are not sufficient to ensure tort rules are efficient. If they are to be efficient, the benefits from tort rules must exceed the costs. *Mandating* an unfettered right to sue, regardless of circumstances, would be questionable, for the reasons summarised in the next three paragraphs.

First, there is a widespread concern, arising from the US experience, that the costs to society of a return of the right to sue could exceed the benefits. Adverse outcomes might occur if awards for damages were material and unpredictable to such a degree that potential defendants felt that their level of care did not materially affect their potential liability. Awards for damages can only assist in the prevention of accidents if all can see that their effect is to penalise unduly dangerous behaviour and modify their own future behaviour accordingly.

Second, there may be a large number of generic situations in which the costs and benefits of tort regimes may be unfavourable relative to those of other risk control techniques such as contractual remedies, injunctions, fines and regulations. For example, causation of accidents may be extremely difficult to determine, prevention may be deemed superior to a post-accident penalty, employees and consumers may prefer to bear the risk of accident in return for a higher wage or lower price for a purchased service, or the parties to a risky activity may be able to contract for superior risk control techniques.

Third, the case for mandating the right to sue is also weakened by empirical studies that commonly do not find that accident rates are reduced in jurisdictions in which tort actions are available. The strongest evidence for a deterrence effect from the availability of tort actions is found in the case of road accidents, although there is also some evidence of an effect in US medical malpractice cases.

In contrast, simply removing the prohibition on the right to sue should increase the range of options available to individuals when contracting for the optimal assignment of risk. Contractual solutions to the risk assignment problem are not available for many accidents between strangers but are available in many other circumstances. Examples include employee–employer accidents, many medical practitioner–patient misadventure situations, and supplier–customer situations. Mutually agreed assignments of liability may be possible in many of these situations. Parties that already contract directly with each other should not find it costly to incorporate rules that would define their obligations in the case of personal injury by accident. In the case of those supplying products for the retail market, the supplier's contractual liability for losses from personal injury by accident could be specified as part of the supplier's more general product warranty and therefore as a condition of supply.

The report reviews the scope for decentralised contractual solutions to the problem of the control of risk in consensual situations. As already mentioned, the review

would lead us to favour allowing contracting parties to determine the optimal remedies wherever possible, but for the concern that courts could overrule contractual assignments of risk. Were it not for this concern, we would suggest that the government should not mandate any liability rules, nor should it limit the rules that parties could negotiate. The implication is that in the case of workers' compensation, product liability, and medical malpractice and misadventure, individuals could contract for, or out of, the right to sue. This choice would apply not only to the right to sue in the case of personal injury due to accident but also to the right to sue in relation to other government-imposed regulations such as those affecting occupational health and safety. This is essentially the approach recommended by Professor Epstein in a 1996 New Zealand Business Roundtable publication, *Accident Compensation: The Faulty Basis of No-fault and State Provision*.

However, the gains from greater reliance on contract obviously depend on the courts' willingness to uphold contractual arrangements for the assignment of risk. The report sees this as a serious potential constraint and strongly recommends that there be no blanket removal of the prohibition of the right to sue until this constraint is satisfactorily addressed. The report discusses a number of mechanisms that could be considered. Legislation clarifying contractual rights is one option.

The report recommends that any return of the right to sue in cases of personal injury should therefore be subject to a work programme designed to address, accident category by accident category, the problems that could arise from capricious court decisions.

This work programme might initially focus on road accident situations. There are three reasons for this suggestion. One is that government must determine the rules governing the use of the road network since central and local government own it. A second is that the road code is well established and it is relatively easy to objectively determine whether any particular party to an accident was in violation of the road code. The third is that there is empirical evidence that tort liability does increase road safety.

Given these considerations, we favour further consideration of the liability rule for road accidents that has been proposed by Epstein. Under this rule the full losses from an accident might be divided equally amongst those who were found to have been at fault. Fault might be assigned to those who were in violation of the road code at the time. This simple rule could be limited further by a number of constraints that would reduce transaction costs. Regulation would continue to have a major role in road safety given the limitations of tort solutions when injurers have minimal net worth in relation to the damage caused.

The degree to which such a liability rule would be useful depends on whether the current no-fault regime increases the road accident rate by more than enough to warrant incurring the costs associated with determining liability. In considering this issue, those involved in road safety and the provision of road services might need to

address the issue of compulsory third-party insurance for categories of drivers who might be likely to otherwise default.

The issue of the optimal assignment of risk for accidents affecting strangers (ie non-contracting parties) cannot be determined by decentralised contracting processes. Common law and statutory legal remedies could variously apply in these cases. Particularly with regard to strangers, there is a deep-rooted premise that everyone owns his or her own person so that an uninvited violation of one's person is a trespass. Exceptions may apply where the injured person was trespassing on someone else's person or property or was assuming risk, for example by engaging in a body contact sport.

Even in the case of accidents to non-consenting strangers, there is a concern that court decisions may be so erratic and unpredictable as to deter few potential injurers. A further issue to be addressed in these cases is that of the optimal privity limitation (see glossary, Appendix C) to the liability of a firm when a stranger is injured as a result of a customer's use of the firm's product.

Recommendations

In regard to insurance arrangements the report recommends that:

1. The Corporation's statutory monopoly be terminated. Individuals should be permitted to choose their own insurer.
2. The Crown should cease to provide accident insurance, either by privatising or terminating this activity – this cessation should perhaps be subject to a transition period.
3. The liability for meeting and managing existing claims should also be privatised.
4. If the Corporation is to continue to write insurance cover for a significant period, this should be done on a basis that is as competitively neutral as possible. In particular, a state-owned enterprise (SOE) structure should be adopted and the insurance activity should be separated from that of managing claims from earlier accidents.
5. There should be minimal prudential regulation of competing insurers, consistent with the regulatory framework that applies to other New Zealand insurance markets.
6. In general, the Crown should not mandate accident insurance coverage. Insurers' premiums, benefit structures and other contract details should not be regulated.
7. Where the Crown is a provider of a risky facility (such as the road network) or is an employer, the Crown's accident insurance provider should have the same freedom as would a private sector provider to specify the conditions under which people can access that facility or take employment.

8. The Crown should provide the same safety net to those who self-insure, suffer a serious accident and become a hardship case, as that provided to invalids or sickness beneficiaries.

9. To the extent that the government is concerned about the ability of low income individuals to pay accident insurance premiums, it should review the basic level of benefits or consider targeted assistance. Targeted assistance would be preferable as it would not discriminate between losses from accidents and losses from illnesses.

In regard to liability rules, the report recommends that:

10. There be no blanket removal of the prohibition of the right to sue for losses from personal injury by accident in consensual situations until there is widespread agreement that sanctity of contract will prevail.

11. Any return of the right to sue should not be undertaken without a deliberative work programme to ascertain which arrangements might best protect sanctity of contract and protect the community from unduly capricious and unpredictable tort actions (see glossary in Appendix C).

12. This work programme should initially focus on Professor Epstein's proposal for extending, in a controlled manner, motorists' liability for the damages they cause.

13. Additional work could explore the issue of permitting the return of the right to sue when non-consenting strangers are injured. In regard to situations where harm to a stranger arises from a customer's use of a firm's product, the issue of what privity limitation (see glossary in Appendix C) should protect the firm needs to be assessed.

14. Regardless of whether the above recommendations are adopted, greater consideration be given to enhancing contractual remedies to the problem of the optimal assignment of risk, by allowing contracting parties greater opportunities to contract out of detailed regulations affecting medical, workplace, and product safety.

1 Introduction

This report on the public policy issues surrounding New Zealand's Accident Rehabilitation Compensation and Insurance Scheme (the ACS) has been prepared for the New Zealand Business Roundtable (NZBR) by Credit Suisse First Boston NZ Limited.

The NZBR's interest in the ACS legislation goes back to the mid 1980s.[2] The NZBR has long believed that the original ACS legislation is so fundamentally flawed that any amendments that leave its key elements in place would necessarily prove unsatisfactory. The NZBR has argued that, at a minimum, the Accident Rehabilitation and Compensation Insurance Corporation's statutory monopoly must be removed. To date, the NZBR has not opposed or supported the return of the right to sue, since it believes decisions on liability rules would be premature in the absence of further analysis. The purpose of this report is to re-examine the problems created by current arrangements and to review the options for further reform.

Accident compensation arrangements in New Zealand have long been contentious. Two decades of modifications to the founding legislation that took effect on 1 April, 1974 have failed to find a configuration that satisfies public opinion. A strong case can be made that further rounds of modifications would also produce unsatisfactory results. The problems with the ACS should not be blamed on the managers of the Accident Rehabilitation and Compensation Insurance Corporation (the Corporation). Rather, they result from the unsatisfactory nature of the scheme. The poor performance of the Corporation results from the Corporation's statutory monopoly and confused objectives. The Corporation's statutory privileges insulate it from normal commercial pressures. The Corporation lacks the incentives that influence a competitive insurer to provide the range of services demanded by customers at the lowest prices. When the government exposed its other trading businesses to full competition during the last decade, significant productivity gains resulted.[3] Similar gains would be likely to flow from the introduction of competition into accident insurance.

Recent moves to establish an insurance framework have been a welcome step towards clarifying the Corporation's objectives, but only far-reaching reform is likely to lead to cost-effective, accessible and responsive accident insurance arrangements. Options for further reform are assessed in this report.

Section 2 of the report discusses the criteria used for identifying and comparing the reform options. Section 3 describes the ACS, and discusses the main problems inherent

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2 See, for example, I McEwin (1987) *Review of Accident Compensation: A Submission to the Law Commission*, New Zealand Business Roundtable: Wellington.

3 For examples, see L Evans, A Grimes and B Wilkinson, with D Teece (1996) "Economic Reform in New Zealand 1984–95: The Pursuit of Efficiency", *Journal of Economic Literature*, 34, pp 1856–1902.

in the current arrangements. Section 4 considers options for reform, analyses the competitive insurance model, and summarises common criticisms of it. Section 5 discusses issues that would need to be addressed in implementing the proposed reforms. Section 6 considers options for improving the incentives for individuals to take care, and focuses on the role of tort and regulation.

2 Framework for evaluation[4]

2.1 Introduction

The selection of a preferred reform option for the ACS requires the identification and application of a clear criterion. Commonly, the argument over what is the most appropriate criterion is between the objectives of efficiency and fairness. The efficiency objective is discussed in Section 2.2. One factor critical for efficiency is the quality of institutional arrangements which shape behaviour by determining and constraining individuals' rights, incentives, opportunities and costs of transacting. Fairness is discussed in Section 2.3. A summary is presented in Section 2.4.

2.2 Efficiency

2.2.1 Definition of economic efficiency

Economic efficiency can be defined as obtaining the greatest possible benefit from scarce resources. Economists use the concept of efficiency to evaluate the success with which an economic system combines scarce resources to satisfy competing wants. Efficient arrangements enable individuals to attain any end or ends they value at the least possible cost. It does not matter what those ends may be. They could be the pursuit of materialistic goals, leisure, cultural benefits or environmental amenities. The selection of ends depends on individual preferences based on what is available. In principle, an economic system will be efficient if the following conditions hold:

- It is not possible to produce more of any one commodity that contributes positively to an individual's welfare without having to sacrifice production of another commodity. Economists call this *productive efficiency*. At the level of the firm, productive efficiency exists when a firm has adopted the least cost methods of production, including the most efficient internal organisation, for producing a given set of goods and services.
- No alternative combination of outputs in the economy would enhance the welfare of any one individual, except at the expense of someone else. Economists call this *allocative efficiency*. At the enterprise level, allocative efficiency requires that the quantity of each good or service produced is such that the incremental or marginal cost of producing an extra unit of output just matches consumers' willingness to pay for it.

[4] This section is based on Appendix A of CS First Boston New Zealand Limited's 1995 report for the New Zealand Business Roundtable, *Reform of the Water Industry*.

- Changing the pattern of consumption, savings or investment over time would not improve any individual's welfare except at the expense of someone else. Economists say that *dynamic efficiency* has been achieved when it is not possible to increase anyone's welfare without reducing that of someone else by altering savings and investment decisions.

If considered over a sufficiently long time period, productive and allocative efficiency would ensure dynamic efficiency. However, productive and allocative efficiency are often thought of in a static context and so, to avoid overlooking the inter-temporal aspect of efficiency, we include dynamic efficiency as a third category for consideration.

2.2.2 Importance of institutional arrangements

High quality institutional arrangements are necessary if superior economic outcomes are to be sustained. All institutional arrangements mould behaviour for better or for worse by determining and constraining individuals' rights, incentives, opportunities and costs of transacting. Well-designed arrangements facilitate and motivate individuals to identify evolving consumer needs and to find ever cheaper ways of meeting them. Arrangements that unnecessarily impede individuals impair efficiency.

The design of a framework that serves efficiency involves devising a set of rules, procedures and conventions that minimise the costs of the interactions that occur between individuals as each seeks to improve his or her welfare. Economists refer to the costs associated with these interactions as *transaction costs*.

An efficient institutional structure must accommodate the reality that information is scarce and costly to obtain and that individuals have a limited ability to collect and process information. As a result of the difficulty and cost of obtaining information, there are costs in negotiating, monitoring and enforcing agreements, and in resolving interdependencies.

An institutional framework is efficient if there is no achievable alternative that would better satisfy all community wants, ie there is no other framework that would allow some members of the community to be better off even after everyone who would otherwise be disadvantaged by the change was compensated.

Public policies oriented towards efficiency must focus closely on the institutional environment that is created by government action. Developments in economic thinking in recent decades have greatly clarified for policy makers the principles that should govern the search for the most efficient institutional arrangements. In particular, arrangements are likely to be more efficient the more closely they conform with the following guiding principles:

- arrangements enhance rather than impair individuals' ability to transact;
- individuals respect property rights and bear full responsibility for their own decisions;
- precise limits to actions that involve property rights are specified, and a high degree of precision reduces the costs of determining how resources can be used;
- the owners of an asset enjoy a high degree of exclusivity in their ability to decide how to use their property, to retain income derived from that property, and to transfer the rights to that property to others;
- coercive regulations are avoided except where they are an efficient response to an uncontracted-for harm that one individual may cause to another, or where a compensated-for taking is justified in order to avoid hold-up; and
- where it is efficient to regulate, efficient safeguards are put in place to preserve the domain for individual action and therefore the efficiency focus for any regulatory decisions.

Even with the help of such principles, the task of determining the optimal institutional arrangements in complex situations can be extremely demanding. The scope for market and political failures must be carefully assessed and action taken to deal with them. Difficulties that may need to be considered include: those difficulties associated with uncontracted-for third-party effects (for example, it may be hard to stop people benefiting from activities for which they have not paid, or it may be hard to ensure that people are adequately compensated for violations by others of their property rights); possible abuse of market and/or government power; the scope for opportunism and gaming; the possibility of regulatory and bureaucratic capture; and disputes arising over historical property rights.

2.2.3 Market processes

In most circumstances, information about consumer preferences and production opportunities is so widely dispersed and costly to accumulate that efficient economic outcomes can only be achieved through heavy reliance on market arrangements. A market provides a powerful means of aggregating and disseminating information and coordinating economic activity. It produces, uses and processes information without the conscious effort of any information collection agency and without individual participants needing to have a great deal of knowledge beyond their own firm's production possibilities, the value of their own labour, or their own consumption preferences.

Prices that emerge from the interactions between supply and demand are the by-product of the many exchanges that take place in the economy. Prices discovered by the market mechanism are thus vastly superior to any other mechanism in disseminating information about relative scarcities and wants at the margin. The price mechanism coordinates individual actions and resolves many problems of interdependence.

A market process makes individuals accountable for their stated value judgments and degrees of preference. It typically eliminates the opportunity for someone to profit by overstating his or her preference for a particular outcome. Markets tend to allocate resources to those users who can best devote the resources to their highest value use. This might be measured by the successful buyer's willingness to pay or by the unsuccessful seller's reservation price. The market process gives individuals an incentive to discover what customers want and, if possible, to find better ways to meet consumer needs.

In the absence of a market, a public decision maker must trade off conflicts between different uses and users, without accurate information obtained from prices on the relative value of uses or the preferences of users. This is particularly so at the margin. Worse, much information used to lobby politicians will be deliberately biased. The lack of critical information forces the public decision maker to resort to political criteria that at best provide a distorted measure of value. These problems are exacerbated by incentive problems in the public sector, where the rewards for the decision maker are often not dependent on maximising the value of resources at the decision maker's disposal.[5]

All decisions are made under conditions of uncertainty and incomplete information. People make their decisions on the expectation of achieving a particular outcome, and sometimes they will be mistaken and decisions *ex post* may not appear to be efficient. The existence of uncertainty and mistakes does not imply that government intervention is efficient.

2.3 Fairness

In a society in which resources are scarce and one person's use of a scarce resource affects its use by another person, the equity or fairness of public and private arrangements is often a major concern. Equity is a subjective concept that means different things to different people. However, concepts of non-discriminatory treatment among like cases and fairness in contracting commonly command support. Much of the concern about fairness in relation to uncontracted-for, and sometimes illicit, transfers of wealth can also be considered an issue of efficiency.

Indeed, many concepts of fairness are highly compatible with an efficiency objective. For example, the equity concept that people should pay for the cost to society of the resources they consume is highly compatible with marginal (social) cost pricing. Contractual fairness may be consistent with sanctity of contract. Sanctity of contract is likely to be desirable for efficiency reasons. Often the most efficient solution to a problem will promote healthy cooperation and competition and reduce the likelihood of subsequent costly disputes over fairness.

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[5] Incentive issues in the public sector are intensively discussed, in a transactions cost framework, in M Horn (1995) *The Political Economy of Public Administration: Institutional Choice in the Public Sector*, Cambridge University Press: New York, pp ix–263.

Many equity issues arise with regard to the ACS. For example, many may regard it as unfair if:

- the criminal injured when committing a crime is eligible for the same benefits as the victim;
- those who take precautions and act safely subsidise those, such as the drunk driver, whose actions endanger others;
- those who avoid hardship by working hard and buying insurance subsidise those who choose otherwise;
- those prepared to make unreasonable and/or unprovable claims gain at the expense of less aggressive accident victims;
- different benefits are paid for injury from accident than for sickness;
- negligent injurers cannot be sued;
- some can afford better care than others;
- some low income people cannot afford care; or
- benefits paid fall well short of damage incurred.

Many such concerns are entirely consistent with efficiency concerns. Concerns about the mispricing of risk, undesired cross-subsidies and opportunistic behaviour illustrate this point. Concerns about inadequate income extend to inadequacy of food, shelter, clothing, heating and access to education and health services. A piecemeal approach to income inadequacy by central government is likely to create inequities and inefficiencies. In our view the tax and welfare systems are more efficient instruments for the government to use in order to address the problems associated with income inadequacy than are industry specific regulations.

Applying multiple objectives to ACS reform would be likely to lead to poor outcomes. Unless trade-offs among conflicting objectives are clearly specified and agreed to, multiple objectives provide no workable criteria for making well-focused decisions or monitoring their success.

2.4 Summary

In this report we use the efficiency criterion to choose between alternative reform options.

Efficiency is not advocated as the sole criterion for guiding government policy. However, in our view the tax and welfare systems are more efficient instruments for the government to use in order to address the problems associated with income inadequacy than are industry specific regulations.

Efficiency does not imply the absence of regulation. Regulation may be efficient in some circumstances and inefficient in others.

3 Accident compensation in New Zealand

3.1 Introduction

At its introduction, the ACS was promoted as a comprehensive programme to protect New Zealanders from losses incurred due to personal injury by accident. It was meant to establish a model of effective accident compensation that would be emulated by other countries seeking to avoid the problems associated with schemes based on common law. It was claimed the centralised monopoly structure would reduce costs to society of accidents, encourage rehabilitation, and facilitate collection of detailed information for research. The proponents of the ACS were so convinced of the merits of the social insurance approach that they sought to extend it to all forms of incapacity.

The consensus 25 years later is that the ACS has failed to meet expectations. Rehabilitation has not been a priority. Claims have largely been rubber-stamped to minimise administrative costs, yet total ACS costs have escalated well beyond projections since the scheme began.[6] The Corporation has failed to develop a useful information database. Coverage levels have been a never-ending source of dispute and political pressure. The Corporation itself is perceived as failing to meet basic standards of professionalism. Media reports suggest a great deal of successful rent-seeking by professionals associated with the scheme and by opportunistic claimants. Cross-subsidies within and between industries distort incentives. Total ACS expenditure has increased at an annual average real growth rate of 8 percent since 1985. A significant tail of long-term claimants and a massive unfunded liability of $7.5 billion complete the picture. Further statistics on cost growth and other aspects of the ACS are provided in Appendix A.

In this section we summarise the principles of the ACS, the principal changes in its operation since 1974, and problems with the scheme.

3.2 The Accident Compensation Scheme

The current ACS dates back to the Accident Compensation Act 1972 (the 1972 Act). Prior to this legislation, workers' compensation was based on the Workers' Compensation for Accidents Act 1908 and subsequent amendments. This latter Act provided for a no-fault scheme with a prescribed schedule for maximum payments and a proportional scale of compensation for incapacity. In 1947 it became compulsory for employers to insure

[6] In announcing a new case management system the Corporation's 1995 Annual Report conceded on pages 12–13 that "Until [1994] Corporation staff had not taken individual responsibility for managing the recovery of claimants. With around 1.3 million new claims being received each year and around 140,000 claims still being managed from previous years, staff had little option but to function as office-bound information processors."

against accident liability. At the same time a Workers' Compensation Board was set up to cover workers whose employers had failed to insure, recover those payments from the employer and set maximum rates that state or private insurers could charge employers. Common law remedies for personal injury or property damage were also available for work and non-work accidents. Workers could take common law actions on the grounds of employer negligence. Amounts payable were likely to be reduced on the basis of amounts already received.

The 1908 Act, in turn, had replaced the Workers' Compensation for Accidents Act 1900 that made employers liable for all accidents except those caused by serious misconduct by employees. Prior to the 1900 Act, workers in New Zealand, as in other Commonwealth countries, were reliant on the common law (and presumably on voluntary employer compensation schemes and insurance) for compensation.[7]

The ACS began operating on 1 April, 1974. It marked a radical departure from New Zealand's existing scheme of workers' compensation and liability for negligence. It replaced a statutory workers' compensation scheme, compulsory third-party motor vehicle accident insurance cover and a criminal injuries compensation scheme. The government abolished New Zealanders' rights to sue for personal injury caused by accident, except for exemplary damages, and provided no-fault coverage for all accidents through a government-owned monopoly, the Corporation.

The ACS was based on the recommendations of the 1967 Royal Commission of Inquiry into Compensation for Personal Injury in New Zealand, chaired by Sir Owen Woodhouse. The Royal Commission set out five principles for an accident compensation scheme:

- community responsibility;
- comprehensive entitlement;
- complete rehabilitation;
- real compensation; and
- administrative efficiency.

The Royal Commission regarded accidents as acts of God, with individuals having no ability to influence their incidence.[8] The principle of 'comprehensive entitlement' meant that the focus of the approach was on the outcome of an accident, not on its cause. In addition, the Royal Commission ruled out private insurance:

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7 The historical information in the last two paragraphs is based on section 1 in the New Zealand Employers Federation report, *A New Prescription for Accident Compensation*, September 1995, pp 1–69.

8 This contrasts with the findings of a number of studies which show a significant and positive response of accident rates and injury duration to increases in workers' compensation benefits. See, for example, B Meyer, W Viscusi and D Durbin (1995) "Workers' Compensation and Injury Duration: Evidence from a Natural Experiment", *American Economic Review*, 85(3), pp 322–340, or R Butler (1994) "Economic Determinants of Workers' Compensation Trends", *Journal of Risk and Insurance*, 61(3), pp 383–401.

> We have made recommendations that recognise the inevitability of two fundamental principles. First, no satisfactory system of injury insurance can be organised except on the basis of community responsibility. Second, wisdom, logic and justice all require that every citizen who is injured must be included, and equal losses must be given equal treatment.[9]

Sir Geoffrey Palmer, one of the architects of the ACS, commented on the motivation for the new scheme:

> Strategically it was essential to the Woodhouse style of reform that a compelling case be developed against the common law. If the common law survived, a comprehensive system for injury was unattainable. If the common law remained, the financial logic of the reform was destroyed – new sources of revenue would be needed rather than making better use of the existing money.[10]

Reformers argued that under the existing framework, accident victims had little idea of how much (if any) compensation they could expect from lawsuits. Accident victims had to prove fault, and were subject to strict rules of evidence and uncertainty. Reformers argued that the court system involved significant delays that were costly for victims and that insurance companies coerced victims into accepting inadequate lump sum compensation in order to avoid such delays.

However, Sir Geoffrey has since put these issues into perspective in a 1993 paper:

> While the right to sue existed in New Zealand, it was not availed of with nearly the same vigor or with the same determination that it has been in the United States. Contingent fees, of course, were unlawful in New Zealand. There were a number of factors which tended to make this a moderate system. The judges controlled it. Even though the juries made the findings of liability and the awards of damages, the judges controlled it much more than is possible in the United States because they were allowed to comment on the evidence. When judges comment on the evidence in New Zealand, the juries tend to take notice of them.
>
> You cannot find, therefore, in the legal system of New Zealand or in the jurisprudence relating to the tort system anything that has any explanatory power in relation to the accident compensation scheme. There was little in the way of abuse or excess. It was a most mild-mannered little tort system.[11]

Employees were not given the option of receiving, through higher wages, the cost savings associated with abolition of the right to sue – to spend on insurance premiums, or otherwise, as they individually saw fit. Instead, the state put the savings towards the funding of a one-size-fits-all monopoly scheme.

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9 Royal Commission of Inquiry, *Compensation for Personal Injury in New Zealand* (the Woodhouse Report), Government Printer: Wellington, December 1967, pp 1–253.

10 Sir Geoffrey Palmer (1979) *Compensation for Incapacity*, Oxford University Press: Oxford, p 25.

11 Sir Geoffrey Palmer (1993) "The New Zealand Experience", *University of Hawaii Law Review*, 15(2), pp 604–620, at p 612.

The 1972 Act established two schemes, the Earners' Scheme and the Motor Vehicle Scheme. The first covered accidents involving the self-employed and earners (whether at work or away from work). The second covered motor vehicle accidents. ACS costs were funded by a payroll tax on employers, car registration fees, and general tax revenue. Five types of compensation were available:[12]

- earnings-related compensation (ERC);
- survivors' benefits;
- medical expenses;
- payments for non-economic losses; and
- rehabilitation benefits.

Earnings-related compensation was initially set at 80 percent of "lost earning capacity", defined as average pre-accident earnings less any earnings while incapacitated. Employers were required to cover earnings for the first week after the accident, for 100 percent of the pre-accident level. A maximum benefit was set. Surviving dependents of victims of fatal accidents received ERC. Medical benefits covered by the ACS included full payment for doctors' visits, and treatment of accident victims in private hospitals.

Under the original legislation, lump sum payments could be made for two reasons. Permanent loss or impairment of bodily function was compensated according to a schedule to the Act based on injury severity. The maximum payment was $17 000. Loss of enjoyment of life was also compensated by lump sum, to a maximum of $10 000. The lump sum payments were not indexed to inflation. As their real value eroded, the gap between compensation to earners (who received ERC) and non-earners (who could receive only a lump sum) increased.[13]

In keeping with its emphasis on compensating accident victims rather than providing incentives to employers and individuals to prevent accidents, the Royal Commission recommended that employers be charged a flat rate for accident compensation, regardless of their activity, arguing that charging different rates did not "recognise that all industrial activity is interdependent".[14] This recommendation was not implemented. However, the small number of premium classes resulted in comparatively safe industries subsidising unsafe industries. Safety records of individual employers were ignored in setting premia, removing one of the most important incentives for employers to take account of workplace safety.[15]

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12 This summary is based on P Danzon (1990) "The New Zealand Accident Compensation Scheme: Lessons on No-fault Compensation for Medical and Other Injuries", unpublished working paper, Wharton School, University of Pennsylvania.

13 *op cit*.

14 *loc cit*.

15 From 1978, the Corporation was able to charge penalties and award bonuses to employers on the basis of workplace safety records, but it did so very rarely.

Supporters of the ACS often claim that current arrangements are cost-effective. The most commonly quoted statistic is the percentage of total ACS expenditure that goes on administrative costs, which is lower than in overseas workers' compensation schemes. There are two main problems with this claim. The first is that the level of administrative costs is not a useful indication of the efficiency of the ACS. It provides no information about how effectively the ACS is satisfying the demand for accident insurance. The second problem is that it is very difficult to account for differences between accident insurance schemes. Differences in loss ratios can be due to a number of factors, including:

- the intensity with which claims are investigated;
- differences in the risk profile of New Zealand industries compared to other countries;
- treatment of public health costs;
- coverage of accidents (eg motor vehicle accidents at work are not covered by the New Zealand Employers or Earners Accounts, but in the United States they are included in workers' compensation schemes);
- differences in liability arrangements, leading to differences in incentives to take care;
- differences in the speed of claims processing and case management techniques;
- differences in the level of insurance benefits, which can affect accident rates and the duration of incapacity;
- the method of funding; and
- the degree of experience rating.

Some of these factors are likely to reduce New Zealand's administrative cost ratio relative to other countries, while others will increase it. The point is that comparing administrative costs across countries is a meaningless exercise that provides no evidence on which scheme leads to more efficient resource allocation.

Studies that have tried to take account of scheme differences in estimating cost differences between private and public insurers have drawn only tentative conclusions. In a 1986 study of workers' compensation in the United States, Butler and Worrall concluded that "The largest gains that public carriers are making … are in those categories where the 'true' (or economic) costs are most readily concealed … . At this point, however, it seems premature to claim (and certainly unwarranted by our study) that the state or private carriers are more efficient".[16] States covered by Butler and Worrall's study included those with monopoly state funds and states where public insurers were competing with private insurers.

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[16] R Butler and J Worrall (1986) "The Costs of Workers' Compensation Insurance: Private versus Public", *Journal of Law and Economics*, 28, pp 329–356.

A 1995 study by Liberty International Canada[17] examined institutional arrangements of workers' compensation schemes worldwide. It found substantially higher losses per worker in US states with monopolistic funds than in those with private insurers (with or without a competitive state fund). The authors report, using 1993 data, that the five-year average loss ratio (claims dollars divided by premium dollars collected) was: 125.0 for three (of six) monopolistic state fund systems; 86.6 in the 23 states with private insurance; and 83.1 in the 10 (of 21) states with competitive state insurance. They report that the loss per worker was $526 in the monopolistic state fund systems, $333 in the competitive state insurance systems, and $270 in the private insurance systems. Like all studies in this area, the results are not necessarily definitive because of the difficulties of controlling for other relevant factors that may differ across schemes.

The costs of New Zealand's current inefficient accident insurance arrangements are in the long run borne by workers. ACS premia paid by employers represent labour costs. These are reflected in overall remuneration packages. A fall in the level of premia paid by employers will be reflected in higher wages and benefits to employees or in additional hiring of labour.

3.3 Changes to the ACS

3.3.1 Chronology

The ACS has been reviewed many times since 1972.[18] The reviews reflected serious concerns about escalating costs and endless disputes about coverage and adequacy of compensation. This section summarises some of the more significant changes.

Although the government initially intended the ACS to be fully funded, it set the levies at a level below that required for full funding, but above the level required for pay-as-you-go funding. Significant reserves built up. Staffing levels and costs rose as the scheme matured. Earners' Scheme levies were increased by 50 percent in 1975.[19]

The Accident Compensation Act 1982 reduced the employers' payment in the first week after an accident from 100 percent to 80 percent of pre-accident wages. It also increased lump sum payments.

In 1984 the ACS changed from being fully funded to being funded on a pay-as-you-go basis. This was to have a huge impact on the ACS's financial viability and on the ability to give employers incentives to promote safety and manage risk. However, the significance of the decision was given little emphasis at the time.

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17 Liberty International (1995) *Volume Four: Workers' Compensation in Canada – Survey of Foreign Workers' Compensation Systems and Reforms*.

18 Section 3 in New Zealand Employers Federation (1995) tabulates these reviews.

19 Danzon (1990), p 10.

In 1989 the Labour government announced that it would extend the ACS to cover all forms of incapacity, in response to concerns that accident victims received substantially higher payments than invalids. The change was consistent with the confidence of the authors of the Woodhouse Report in the efficiency of social insurance. A Rehabilitation and Incapacity Bill was introduced, but was not passed before the general election. Had the bill been passed, ERC payments would have been reduced to 75 percent of pre-accident earnings, and lump sum payments would have been replaced with a weekly allowance.

In 1990 the government appointed a ministerial working party to "identify and investigate options for defining the roles of the government, motorists, employers, and individuals in the funding of income support and health care costs arising from incapacity."[20] The working party's 1991 report (the 1991 review) concluded that:

> [the] provision of compensation in the event of an injury is essentially an insurance, rather than a welfare, matter. The major benefits from adopting an insurance-based approach are that it will result in the reduction, or elimination, of cross-subsidisation of levy rates between industries, and it will result in the costs of injuries being sheeted home to those who can influence them.[21]

The 1991 review recommended that all employers be required to take out insurance for their employees for work-related injuries. Individuals would be required to have first-party insurance cover for all other injuries. The review recommended that private insurers be allowed to offer accident insurance. The government's role was to be limited to providing assistance to those who could not afford to take out the mandated level of cover under the general scheme.[22]

The 1991 review resulted in the repeal of the Accident Compensation Act 1982 and the passing of the Accident Rehabilitation and Compensation Insurance Act 1992 (the 1992 Act). The government did not implement the 1991 review's recommendations that accident insurance be provided by competitive insurers. However, the 1992 Act did represent a move towards an insurance-based approach, as illustrated by the Act's long title:

> An Act to establish an insurance-based scheme to rehabilitate and compensate in an equitable and financially affordable manner those persons who suffer personal injury.[23]

Changes in the 1992 Act included:

- the replacement of the three Schemes in the earlier legislation with six accounts: the Employers' Account, the Earners' Account, the Non-Earners' Account, the Motor Vehicle Account, the Medical Misadventure Account, and the Subsequent Work Injury Account;

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20 *Report of the Ministerial Working Party on the Accident Compensation Corporation and Incapacity*, July 1991.
21 *ibid*, p 2.
22 *ibid*, p 5.
23 Accident Rehabilitation and Compensation Insurance Act 1992.

- provision for work capacity testing;
- the establishment of an accredited employer programme;
- limited experience rating; and
- the abolition of lump sum payments for new injuries and payment of a weekly independence allowance for permanent impairment.

Further detail on the six accounts is set out in Appendix A.

The 1992 Act was reviewed in 1995 (the 1995 review) in the light of yet more concern about mounting costs and an expensive tail of long-term claimants. This led to the Accident Rehabilitation and Compensation Insurance Amendment Act 1996 (No. 2), that:

- provided for increased use of cost containment measures;
- incorporated a mechanism to allow the introduction of additional discretion to ACC services;
- increased the number of premium categories in the Employers' Account; and
- provided for an annual service agreement between the board of the Corporation and the minister.

The introduction of insurance principles to the ACS has led to improvements in the scheme's operation. The Corporation now focuses less on administrative costs and more on resource allocation issues.

On 2 December, 1997 the government announced its intention to move to fully funding the Employers' and Earners' Accounts and to introduce more competition by expanding the accredited employers programme and investigating other options, for example allowing the self-employed to purchase private income insurance instead of making payments to the Corporation. The proposed measures would also separate the financial accounts for monies collected to cover the unfunded liability from monies collected to fund current accident costs. The measures foreshadow consideration of the regulatory issues and options associated with additional moves to introduce competition. Full-scale privatisation was ruled out.

On 14 May 1998, the government announced that it would be removing the state monopoly for the provision of cover for employers and the self-employed on 1 July 1999. This is about one half of the current state monopoly provider's business. Employers and self-employed people currently paying for ACS coverage will be able to shop around for their accident insurance from 1 July 1999. Choice will continue to be constrained by requirements for minimum insurance benefits based on currently mandated levels.

We discuss the changes introduced in the 1992 Act and subsequent reviews below.

3.3.2 Accredited employer programme

The 1992 Act introduced the accredited employer programme that offers large employers a limited form of self-insurance.[24] Accredited employers manage their ACS claims for the first year from the date of injury, after which time the Corporation resumes responsibility for case management and payments. In return, accredited employers pay reduced premia. There are currently 39 accredited employers, covering 90 000 employees with total earnings of $3 024 million.[25] The Corporation is responsible for approving employers' applications for accreditation.

The conditions for accreditation are stringent. Candidates for accreditation must carry out a detailed self-assessment of their performance against 19 'critical elements'. Employers rate their performance on each element on a sliding scale. For example, the second critical element has a requirement that "the employer will develop and implement a method to systematically identify and control existing and potential hazards in the workplace, with the involvement of employees". This is assessed by examining three processes and 11 outcomes (for this element alone). Recommended documentation includes:

- copies of signage and labelling used on hazards;
- training records for those employees in high risk categories;
- information bulletins addressing any existing or new potential hazards in the workplace;
- information encouraging employee participation;
- a register identifying any potential hazards in the workplace;
- a corresponding record of all incidents arising from hazards identified;
- employee consent forms for health monitoring;
- individual health monitoring reports in individual employee files;
- minutes of meetings held by a committee of appropriate staff and management responsible for review of health and safety issues;
- documented consultation process for health and safety issues when workplace changes occur;
- engagement, correspondence and reports of professional health and safety experts engaged to identify industry standards and health and safety issues; and
- reports on accident frequency.[26]

When deciding whether to approve an application for accreditation, the Corporation considers information from an on-site audit by independent evaluators of the self-

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24 ARCI Act 1992, ss 105–107.

25 Accident Rehabilitation and Compensation Insurance Corporation (1997) *Statement of Intent and Service Agreement for 1997/8*, Appendix C, p 12.

26 The Corporation's application form for the Accredited Employer Programme, November 1996.

assessment, ACS claims history, experience rating, financial assessment, occupational health and safety performance, and submissions received from interested parties.

The accredited employer scheme has increased the ability of very large firms to manage claims, if they choose to undergo the Corporation's approval process. However, compliance costs are high, and the employer bears the full cost of accidents for a short period.

3.3.3 Experience rating

The 1992 Act allowed the Corporation to use experience rating for workplace accidents.[27] Private insurers use experience rating extensively. Use of the rating provides strong incentives for employers and employees to avoid accidents and take care in the workplace, as premia reflect the costs of accidents.

All employers are eligible for a no-claims discount on their ACS premia. Employers who pay more than $10 000 in premia receive premium increases ('loadings') for poor claims records, and discounts for good claims records. A firm's actual claims costs are compared with its expected claims costs. The difference is scaled by two factors: a size factor, so that large firms are more exposed than small firms to experience rating, and a multiplier of 2.5 to increase the impact of experience rating. The last five years of the firm's claims history are used for experience rating.

There is currently no experience rating of the Earners' Account, the Motor Vehicle Account, and the Non-Earners' Account. The 1992 Act enabled the government to pass experience rating regulations for accidents in these accounts.[28] The Motor Vehicle Account premium is currently being reviewed, and a number of options are being considered to relate premia more closely to risk.[29]

3.3.4 Rehabilitation and work capacity testing

Rehabilitation has been less successful than the authors of the Woodhouse Report anticipated. Initially, Corporation managers focused on developing teams of liaison officers to coordinate the rehabilitation of accident victims. Case management was not accorded a high priority. The Corporation now acknowledges that a number of people in the remaining 'tail' of claimants are capable of returning to work, and should be transferred to the unemployment benefit if they cannot find work. For higher income earners, ACS payments of 80 percent of pre-accident income are higher than the weekly unemployment benefit.

The 1992 Act sought to introduce a procedure for assessing the ability of long-term claimants to return to the workforce.[30] Section 49(1) provided that:

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27 ARCI Act 1992, s 104.
28 ARCI Act 1992, s 110.
29 Accident Rehabilitation and Compensation Insurance Corporation (1997) *Motor Vehicle Accident Premium Structure Options Summary*.
30 ARCI Act 1992, s 51.

> Where 12 months have elapsed since the incapacity of a person first commenced, and that person has a capacity for work of 85 percent or more as determined under section 51 of this Act, that person shall cease to be eligible to receive compensation for loss of earnings or loss of potential earnings capacity in respect of any further incapacity arising from the same personal injury irrespective of whether or not there are any employment opportunities existing in any employment for which the person is suited.

This was not implemented. The main problem was the development of a test that could determine a percentage capacity for work.[31] The Act was amended in 1996 to allow for work capacity assessment based on the claimant's capacity to engage in work for which he or she is suited by reason of experience, education or training, or any combination thereof.

The Corporation's work capacity assessment procedure (WCAP) programme was introduced in November 1997, after a pilot programme and two rounds of public consultation. Under the work capacity test, recipients of earnings-related compensation who have completed a rehabilitation programme and are assessed as capable of working at least 30 hours a week will lose ACS payments after three months. If they do not find work in the three month transition period, they must apply for social welfare benefits. The Department of Labour estimates[32] that about 9 000 of the 29 500 ACS claimants who have been receiving earnings-related compensation for over a year had sufficient capacity to return to work. The service agreement[33] states that the procedure is to be used "only when appropriate rehabilitation initiatives are complete and the claimant still seeks weekly compensation".

3.3.5 Fraud prevention

The Corporation has recently increased its focus on fraud prevention and has prosecuted a number of cases through its Fraud Prevention and Investigations Unit. The unit has eight regional examining officers, a number of systems investigators and a fraud analyst to carry out surveillance work and investigate information. In 1996, the unit undertook 1 294 investigations and prosecuted over 136 fraud cases, leading to 109 convictions. It recovered $1 million in overpayments to treatment providers. The Corporation estimates that $100 million of its 1996 expenditure of $1.4 billion was spent on fraudulent claimants and providers.[34]

3.3.6 Co-payments and deductibles

ACS payments for physiotherapy and general practitioner (GP) visits are set out in regulations. The ACS currently pays $26.00 for each GP consultation if the claimant is over six years old, and $32.50 if he or she is under six years old. The minister for

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31 Pers comm, Garry Wilson, 6 October, 1997.
32 *The Dominion*, 23 October, 1997, p 2.
33 The Corporation's Statement of Intent and Service Agreement for 1997/8, August 1997, p 7.
34 The Corporation's Fraud Prevention and Investigations Unit web site http://www.acc.org.nz/

accident rehabilitation and compensation insurance has indicated that the government is considering requiring a payment of $200 for minor claims. A number of organisations have criticised this proposal and called it a further breach of the principles of the original ACS. However, it is consistent with the approach in the 1992 Act.

3.3.7 Service agreement

The Corporation's objectives are set out in the Annual Statement of Intent and Service Agreement (the service agreement). The document is required under s 159AA of the Accident Rehabilitation and Compensation Insurance Amendment Act 1996 (No. 2). It is tabled annually in the House of Representatives.

The service agreement states that the Corporation's primary objective is to secure prompt, sustainable and cost-effective return to independent living and employment to the maximum degree practicable, for people who have been injured by accident.[35] The Corporation's "mission for the year 2000", described in the service agreement, comprises four goals:[36]

- to be a world leader in injury prevention and accident insurance and rehabilitation;
- to create value through claimant satisfaction and managed scheme costs;
- to provide fair, equitable and affordable premiums; and
- to achieve fast and lasting return to work or independence.

This mission is developed in the Corporation's *Strategic Directions 1997–2000* document. The document identifies four areas on which the Corporation is to focus its efforts:[37]

- *stakeholders* – building sustainable stakeholder support for the scheme, real partnerships, consultation and participation in decision making, and individual responsibility;
- *service delivery* – businesslike service at minimised delivery cost, partnerships with providers, agreed quality outcomes, and meeting different ethnic needs;
- *scheme cost* – people on the scheme for the right time at the right price, significant reduction in the future costs of current claims and significant reductions in premium rates; and
- *management and support functions* – achieve a low-cost effective Corporation through the use of best corporate practice.

These four areas are developed into a set of key result areas (KRAs) and key performance indicators (KPIs).

The service agreement is discussed in greater detail in Section 3.5.

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35 The Corporation's Statement of Intent and Service Agreement for 1997/8, August 1997.
36 *ibid*, p 9.
37 *idem*.

3.4 Problems with the ACS

3.4.1 Introduction

The problems with the ACS fall into four areas:

- In contrast to the objective in the 1992 Act, the ACS represents only a partial shift to an insurance scheme.
- The level of insurance cover is mandated.
- There is no competition for accident insurance.
- The Corporation's institutional framework is fundamentally flawed.

We discuss these four problems in turn below.

3.4.2 Partial implementation of insurance model

Although the ACS has moved towards an insurance framework, many of its elements are inconsistent with insurance principles. In this section we discuss aspects of the ACS that continue to reflect the earlier welfare-based approach to accident compensation.

Funding

The ACS is funded on a pay-as-you-go basis. The ACS has an unfunded liability of $7.5 billion. A privately owned insurer in the Corporation's position would have been bankrupt many years ago, given open competition in the insurance market. Private insurers fully fund the expected costs of accidents, so that premia in one year are calculated to cover the costs over time of all accidents occurring in that year. Under a pay-as-you-go scheme, current premia pay for the costs of past accidents. This severely weakens the effect of insurance-based measures such as experience rating. The unfunded liability has been exacerbated by ineffective rehabilitation leading to the significant tail of long-term claimants. Bill Falconer, chairman of the Corporation, has acknowledged the delay in adopting case management methods:

> I suspect the reason we have so many people on the tail is that we have tended to rely on time to heal them rather than proactive management of people on the scheme. We're now actively managing them back to independence.[38]

An accident insurance scheme funded on a pay-as-you-go basis may reduce employers' incentives to avoid accidents and to assist in rehabilitation of injured workers, compared to a fully funded scheme. Instead of being experience rated on the full premium, the company faces a high fixed premium component. A pay-as-you-go scheme shifts current risks on to future employees of surviving businesses.

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[38] *National Business Review*, 20 June, 1997.

Premia setting

Premia setting is politicised. The Corporation has introduced experience rating and increased the number of premium classes since 1992. The changes have moved premia in the direction of competitive insurance premia, but it is impossible to measure whether the differentiation is optimal. Where industry groups are not differentiated at the optimum point, low risk industries cross-subsidise high risk industries. These cross-subsidies reduce the link between a firm's safety record and its insurance premia. They reduce firms' incentives to take care, and result in relatively dangerous pursuits being subsidised by relatively safe pursuits. This lowers the cost of operating for less safe employers and increases their market share at the expense of safer employers.

Given the Corporation's inability to discover expected claims costs through the market process, its premium differentials are bound to be mispriced. Competition would eliminate inefficient cross-subsidies. If the Corporation cross-subsidised some firms, competing insurers would offer lower insurance rates to those firms facing excessive premia. Experience rating would be used extensively to help match rates and costs in a competitive accident insurance market. Competitive insurers would collect the information needed to match premia and accident costs.

3.4.3 Mandated level of cover

Under the ACS, all New Zealanders receive the same level of insurance cover for accidents. As long as the level of cover is mandated at a high level, a provider cannot identify individuals' preferences for accident insurance. For example, if benefits were not mandated, some people might choose higher levels of co-payment and deductibles than the current scheme requires, in return for lower premia. (An individual might receive benefits of only 90 percent of treatment costs, or might agree to pay the first $200 of claim-related costs.)

The problem of the lack of choice of cover would not be solved even if competing insurers could provide the mandatory level of cover. However, with competition, individuals would be able to choose insurers based on their cost-effectiveness. Insurers could compete to supply the mandated level of cover at minimum cost, or they could compete in terms of the quality of service offered. Competing insurers would be able to offer individuals a fixed level of payment for doctor's visits, for example, but could vary the insurance premium. However, the overall level of cover, although provided at lower cost than by a government monopoly, would be subject to change only via the political process.

The negative publicity over the introduction of co-payments by claimants and work capacity testing illustrates the problems that arise when people cannot choose their preferred coverage. Some people would be prepared to pay for a high level of coverage and regard any decrease in payout levels as an erosion of the ACS. Others would prefer lower premiums and lower coverage. For these people, any increase in benefits that leads to increased costs would not meet their preferences. In a non-

mandated insurance market, some claimants would choose to pay for more of their treatment costs than other claimants, in return for cheaper premia. Such options are standard in insurance contracts for all types of health, trauma, and income replacement policies, and are described in more detail in Section 4.3.

Another common feature of insurance policies for income replacement and health care is payment of a lump sum. Lump sum payments to ACS claimants were abolished in the Accident Rehabilitation and Compensation Insurance Act 1992. Lump sum awards may be efficient in a range of circumstances. They increase claimants' incentives to recover and return to work, since they are not eligible for a regular payment that depends on a persistent injury. In addition, they provide insurers with certainty about the size of their liability.

There is no objective way for the Corporation to determine whether a change in benefit levels increases or decreases overall welfare. Individuals cannot express their preferred mix of premia and services through the usual commercial methods developed by insurance markets. Instead, political pressure determines the level of benefits.

3.4.4 Lack of competition

The Corporation is a monopoly insurer for the work, non-work and motor vehicle insurance covered by the 1992 Act.[39] Regardless of how it performs, the Corporation is protected from competition from existing insurers, and from the threat that they might enter the market if it fails to act in the interest of its customers. Poor cost management results in increased levies, rather than causing managers to lose their jobs.

Because of government ownership the Corporation is not exposed to competition in capital markets. The Corporation is not at risk of being taken over by a more efficient insurer. New Zealanders own the Corporation through the government, and have limited means of monitoring it. Even if they could monitor the Corporation's performance accurately, they could not sell their share of the Corporation to invest in better performing companies.

The absence of competition in insurance and capital markets has important implications for the Corporation's incentives to use its resources efficiently. It reduces the Corporation's incentives to:

- allocate the costs of insurance according to expected losses;
- collect the data needed to operate an efficient insurance scheme;
- be innovative in minimising costs; and
- introduce initiatives that would encourage people to pay more attention to the risks of accidents.

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[39] The accredited employer scheme provides a very limited exception to this monopoly cover, but, as discussed in Section 3.3.2, the scheme's emphasis is on giving large corporations the right to manage short-term claims and receive a partial rebate for efficiency gains.

Competition will provide the Corporation with strong incentives to improve its performance if it is re-established on a competitively neutral basis. We discuss these issues in more detail in Section 4.

Allocation of insurance costs

Government ownership allows the Corporation to ignore its unfunded liability. The Corporation can continue in business even if it incurs ongoing losses. Competition would force the Corporation to eliminate cross-subsidies within its schemes. If the Corporation charged more than a competing insurer was prepared to charge, it would be likely to lose business. However, as long as the Corporation remains in government ownership there is a risk that it will be bailed out if it performs poorly. Thus, its incentives to price its insurance policies correctly are weaker than those of privately owned insurers.

We discuss these issues in more depth in Section 4.

Collection of information

When the ACS was established, its supporters expected that the centralised structure would facilitate collection of data for research purposes. It soon become apparent that even basic statistics were not collected or analysed:

> The Commission has found that its accident statistics for the first 2 years of operations have been inadequate, due to a variety of factors, including inaccuracy of information supplied by claimants and employers, coupled with some of the problems that frequently accompany the setting up of new computer operations.[40]

The Corporation is beginning to focus on its information requirements and is investing $18 million on the first phase of a system, 'Pathway', designed to improve corporate management information and provide support to case and claims managers. The Corporation expects to spend $45 million on information technology in the next three years.[41] Private insurers devote significant energy to analysing data such as the duration of claims. The ability to forecast claims costs is a key determinant of success. Insurers who consistently underestimate costs will go bankrupt, whereas insurers who consistently overestimate costs will be undercut by competitors.

Cost minimisation

Ongoing political pressures to expand coverage and costs are created by cross-subsidies, the low premia in the early years of a pay-as-you-go scheme, perceptions that employers, not employees bear the costs of the ACS, and the ready publicity given to those seeking to expand coverage. The report of the 1967 Royal Commission of Inquiry into Compensation for Personal Injury in New Zealand considered that the scheme it proposed could function on about $38 million per annum, inclusive of

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40 Annual Report of the Corporation (1976), p 8.
41 *The New Zealand Herald*, 4 November, 1997.

the costs of prevention and specialist rehabilitation.[42] Based on the consumers price index movement between 1967 and 1997, this would be equivalent to $454 million per annum in 1997 dollars. Adjusted for the rise in population to 1997 it would be $622 million. The Corporation's actual expenditure in its 1997 financial year was 2.6 times higher at $1 626 million. The higher expenditures cannot be attributed to a higher-than-expected rate of injury. In October 1969 a White Paper produced by an officials committee estimated that the scheme would cost $43 million a year based on an estimated 200 000 qualifying injury accidents for 1969.[43] This estimate appears to have been too high by about 100 percent.[44] In 1975 estimated ultimate entitlement claims from injuries were 97 900. Even in 1997 when the population was 35 percent higher than in 1969 estimated ultimate claims from injuries were only 154 343.[45]

Activist court decisions, based on the perception that the government has a 'deep-pocket' and is putting too much emphasis on cost control, could compound this tendency. The Corporation faces limited incentives to minimise costs compared to private insurers. For example, private insurers must monitor case management carefully to estimate the future cost of claims. They have strong incentives to spend money on risk reduction programmes and rehabilitation so that claimants can return to work. The Corporation is beginning to deal with the dependency issues arising from the tail of 30 000 people who have received ACS benefits for a year or more, following political pressure over the size of the unfunded liability.

Appendix A provides more detail on cost growth in the ACS and the distribution of claims across accounts and by year of injury. The implementation of a formal service agreement, monitoring by the Department of Labour, and a more commercially focused board have increased the pressure for the Corporation to focus on cost drivers such as return to work statistics. However, as we discuss below, it is difficult for Corporation managers or monitors to know when resources have been allocated optimally. If the Corporation was exposed to competition and re-established on a competitively neutral basis its incentives to minimise costs would be much greater.

Initiatives to encourage consideration of risks

The Corporation's premia setting procedures and their effect on incentives to take care were discussed in Section 3.4.2. Exposure to competition would force the Corporation to move more quickly to the efficient level of experience rating.

3.4.5 Institutional framework

In this section we examine some of the problems caused by the Corporation's particular institutional arrangements. Problems include:

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42 See p 129 Royal Commission of Inquiry (1967). Refer also to p 8 New Zealand Employers Federation (1995). Funding was projected at $41.8 million.

43 Refer to p 10 New Zealand Employers Federation (1995). $43 million in 1969 is actually worth less than $38 million in 1967 in terms of the consumers price index, but it is not clear in which year's dollars either of these estimates is being reported.

44 *ibid*, p 10.

45 Accident Rehabilitation and Compensation Insurance Corporation, Injury Statistics, 1997, p 11. The figure was in the 120 100–120 850 range during the next three years. This suggests that the 1995 figure, the first year for which this data is available, was abnormally low.

- the constraints imposed on efficient performance by the myriad of regulations to which the Corporation is exposed;
- difficulty in monitoring the Corporation's performance; and
- establishing performance measures for the Corporation.

Regulatory constraints on efficient performance

The Corporation has developed a reputation for being inflexible and inaccessible to accident victims. Until recently, its approach has been to minimise staff discretion in order to simplify decision making and reduce arguments between claimants and the Corporation. Numerous anomalies have been publicised. The report of the ACC Regulations Review Panel (the review panel) in 1994[46] noted that there were 41 sets of Regulations, and 42 amendments and revocation orders, totalling 476 pages.

The review panel gives some examples of perverse incentives arising from the regulations:[47]

> The ACC may pay claimants for aids and appliances only if the cost is at least $100, according to the Aids and Appliances Regulations. Examples were provided to the review panel of cases in which extra items were bought to make the cost exceed $100.
>
> According to the Home Help Regulations, the minimum payment for home help is $80 per week. Claimants increase the amount of help received in order to qualify for the payment, or artificially inflate the cost per hour.

The review panel noted that:

> As well as creating anomalies and hardship, and at times increasing costs, the prescriptive nature of the Regulations has a number of further undesirable consequences. The Regulations do not permit the effective management of ordinary cases, they form a barrier to service co-ordination both within and outside the Corporation, they require the staff of the Corporation to rely on the 'rule book' instead of looking for innovative solutions, and they result in unnecessary delays while excessive assessments are undertaken even when only a low level of assistance is required for a limited period.[48]

In 1994, *Consumer* magazine identified three problems with the ACS and the Corporation:

> First, the regulations are extraordinarily tough. Second, there is bureaucratic delay. Third, in a large number of cases ACC does not accept liability, or pays out less than expected, unless the consumer makes a fuss … . Far too often ordinary claimants also feel thwarted rather than supported by ACC. If this was an insurance company competing for customer business, we do not believe consumers would get such poor service.[49]

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46 *Report of the* ACC *Regulations Review Panel to Hon Bruce Cliffe, Minister for* ARCI, 11 August, 1994.
47 *ibid*, p 5.
48 *ibid*, p 6.
49 *Consumer*, May 1994, pp 6–9, at p 8.

The poor service to claimants stems from the incentives and constraints imposed on managers by the Corporation's institutional arrangements. A spokesman for the Corporation noted in the *Consumer* article that:

> ACC's response to claims made is governed by the legislation and regulations. These give ACC no discretion in determining its decisions. ACC's attitude is to give claimants all the assistance and entitlements they are eligible for under the law and the regulations.[50]

The examples provided above illustrate the difference in focus between the Corporation's approach and an insurance company's approach. In contrast to the Corporation's inflexibility, private insurers try to manage claims in the most cost-effective manner. They develop reputations for customer service and accessibility. Consumers take such reputations into account when they decide whether to buy an insurance policy.

Performance monitoring

Since the Corporation was established in 1974, the government has struggled to set sensible performance targets or to monitor its performance in any meaningful way. The Corporation is subject to very limited formal monitoring. Like all government-owned businesses, it is not subject to capital market disciplines. It is not a state-owned enterprise with a commercially appointed board of directors, nor is it monitored by the Crown Company Monitoring Advisory Unit. The government's usual monitoring difficulties are compounded in the Corporation's case because the Corporation is a monopoly.

The Department of Labour is responsible for:

> … monitoring the [ACS's] performance, advising on an annual Service Agreement between the Minister and the Corporation Board, and researching, developing, and providing policy advice to the Minister for ARCI on:
> - statutory cover and entitlements,
> - funding,
> - regulatory issues,
> - boundary issues with other social policy interventions, and
> - other issues the Minister may direct from time to time.[51]

The Department of Labour's Policy and Monitoring Unit receives monthly consolidated accounts, six monthly individual scheme accounts and performance measures, quarterly commentaries on emerging trends, and the annual report. It has input into the business plan and the service agreement.

The Corporation now has a board of directors appointed on the basis of commercial expertise, with experienced members of the insurance, medical and financial

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50 *idem*.
51 Department of Labour, *1996 Post-Election Briefing*, p 63.

professions. However, the board's incentives and ability to monitor the Corporation in the manner of a commercial insurer's board are constrained. External parties also have limited ability to monitor the performance of the Corporation and its board.

The problems in monitoring the Corporation's performance all relate to the absence of capital market pressures on the Corporation.[52] In particular, there is:

- no market for trading shares;
- no monitoring by debt holders;
- a constrained managerial labour market and no threat of takeovers; and
- no threat of bankruptcy.

Share prices of listed companies tend to reflect all information held by market participants on the current performance and future earnings of the company. Share market participants can make profits from analysing the performance of firms quickly and accurately. This gives them strong incentives to study management performance closely. This in turn increases the pressure on managers to perform.

The Corporation has reserves, but no shares. Taxpayers cannot trade their equity exposure in the Corporation and have little to gain from investing resources in monitoring the Corporation. Corporation managers do not receive information on how market analysts perceive their performance through relative share prices. The board cannot draw on share price information in monitoring the Corporation.

Debt holders provide additional scrutiny of privately owned companies. For example, if lenders are concerned with management performance, they may limit the volume of debt or increase the cost of debt financing. Credit rating agencies seek extensive information on management and forecasts of future performance. Bond holder trustees receive regular financial reports. Reflecting its nature, the Corporation does not issue bonds.

If the Corporation were set up as a listed, for-profit, private insurer, conventional monitoring mechanisms would apply. The share market aggregates information about the performance of individual managers. Changes in the share price of a company reflect in part the value of managerial decisions. Analysts can compare the performance of different companies in the same market by looking at relative share price performance. Managers' reputations (and future employment opportunities) are partly determined by such share price information. This provides a powerful mechanism to keep managers' interests aligned with shareholders' interests.

If a team of managers in a listed company is perceived to be underperforming, investors can buy control in the company and replace the underperforming team with new managers. The threat of takeover provides a strong incentive for managers

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[52] New Zealand Business Roundtable (1988) *State Owned Enterprise Policy: Issues in Ownership and Regulation*, New Zealand Business Roundtable: Wellington, Chapter 3.

to act to maximise profits, since managers displaced by takeovers tend to have reduced employment opportunities.

In the case of the Corporation, the government cannot use share price information to assess management performance. Instead, it has to rely on the assessment of directors and other monitors (eg the Department of Labour). Directors and advisers, while often capable of analysing performance with the information available, do not have the same information that would flow from capital markets. In addition, they do not have to back up their advice with their own money. Unless performance is obviously inadequate, the government may find it difficult to implement their suggestions.

Directors and the Department of Labour lack the information and the incentives to evaluate thoroughly the Corporation managers' claims that its premia are fair, particularly in the current situation where the Corporation has been increasing the degree of differentiation across and within industries. Managers can, with justification, claim that premia have become 'fairer' since the Corporation introduced experience rating. Monitors could argue that the shift has been in the right direction, but not far enough, but they would have little information on which to base this assertion. In contrast, in a competitive insurance market capital markets would monitor premium setting processes more closely. Listed insurance companies have strong incentives to share information with research analysts and mutual funds. Under the current structure, nobody benefits directly from identifying the Corporation's mistakes.

Owners of privately owned corporations face the threat of bankruptcy. This limits the amount of value that can be destroyed through poor management performance. As the risk of insolvency increases, the cost of debt increases, signalling the poor performance of the company's management relative to other firms in the market. Where there is no debt, anxieties about solvency are expressed as doubts as to the agency's ability to honour future claims. In mutual companies, such doubts can cause attrition of members, possibly exacerbating the problem. Such events signal the need for corrective action. For example, the board might replace the management team, or the company might be taken over. The risk of financial failure improves the incentives for directors and managers to maximise the value of the firm.

The Corporation is a prime example of the effect of the absence of a bankruptcy constraint on government-owned enterprises. Taxpayers face unlimited liability for the Corporation's underfunding, currently estimated to be worth $7.5 billion. Although the liability has been building up for years, managing it has only recently become a priority for the Corporation.

The government, as owner, interacts directly with Corporation managers and is involved with critical policy decisions that would usually be made by the board on the recommendation of management. For example, the government can override the Corporation's recommendations on pricing policy and premium increases. The

Corporation is involved in working on the content and drafting of legislative amendments.[53] It also drafts replies to parliamentary questions and answers correspondence. This is in marked contrast to the arms' length relationship between ministers and the managers of state-owned enterprises. Most advice to the government on accident insurance comes from the Corporation. This creates a conflict of interest for managers between their role as providers of services and their role as policy advisers.

Government intervention means that poor performance by the Corporation cannot necessarily be attributed to poor management. The need to separate out the effect of political interventions from management actions exacerbates the difficulty for the board in monitoring the Corporation's performance.

The 1994 ACC Regulations Review Panel recognised that the Corporation's dual functions of providing accident insurance and regulating alternative insurers created a conflict of interest:

> In view of the difficult position in which the Corporation is placed in considering an application for participation by an employer, which if successful will deprive it of business, we suggest that an independent board should be established to consider such applications.[54]

Its recommendation of an independent board was not implemented. The Corporation stated that it:

> … is confident that there is no conflict of interest created by it considering applications from employers to join the scheme.[55]

Establishing performance measures

The annual service agreement between the minister for accident rehabilitation and compensation insurance and the board is the main mechanism used to establish performance measures by which to monitor the Corporation.

The use of a service agreement to control the performance of the Corporation is fraught with difficulties. In the absence of competition, it is very difficult to establish a satisfactory overall objective. The standard commercial objective of profit maximisation is regarded as unacceptable for the Corporation, given its position as a state monopoly. If the Corporation was exposed to competition and privatised, a profit maximising objective would provide it with strong incentives to find the right balance between revenue maximisation and cost minimisation. While it remains a monopoly providing a mandated product, the Corporation does not have strong incentives to minimise costs. Whereas a profit maximising monopolist sees returns from innovation, one with no profit motive has little incentive to experiment or take

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53 Annual Report of the Corporation 1996, p 33.
54 ACC Regulations Review Panel (1994), p 32.
55 Pers comm, Garry Wilson, 6 October, 1997.

risks, since it is guaranteed the entire market regardless of its behaviour. Failure could be embarrassing, and success unrewarding.

In the absence of a profit maximisation objective, the government must specify other objectives and performance measures for the Corporation.

In a competitive market a profit maximising firm experiments with different policies until it finds those that balance the extra costs of a policy change with the extra benefits to consumers. Consumers switch to insurers who best meet their requirements. The most sophisticated measures of customer satisfaction and claims management cannot substitute for the process of discovering the trade-off that customers are prepared to make between risk and the costs of insurance. Setting objectives for a monopoly with a mandated level of insurance cover that must be bought by all New Zealanders is necessarily an arbitrary exercise. Although the Corporation's objectives have been clarified, the objectives that are set out in the service agreement would not be those chosen by private insurance companies in a competitive market.

For example, if the government decides that fraud prevention is important, it might include a target for fraud reduction in the service agreement. Two problems arise. The Corporation must devote resources to fraud prevention even if spending that money on other activities, such as improving claims management, would be more cost-effective. In addition, the Corporation would have limited incentives to optimise the cost of a fraud prevention programme, since its objective would be to reduce fraud. Those writing the agreement would not know the optimal level of expenditure on fraud.

As discussed in Section 3.3.7, the service agreement establishes four mission goals for the Corporation. There are a number of problems with the goals. The first mission goal, "to be a world leader in injury prevention and accident insurance and rehabilitation" lacks balance. For example, one way to reduce motor vehicle accidents would be to restrict driving to a maximum speed of 20 km per hour. Sports accidents could be reduced by banning rugby and hang-gliding. This would prevent injuries and help achieve the Corporation's goal of world leadership. However, such policies would be unlikely to increase welfare. The Corporation has not provided a sound basis for presuming that New Zealanders want to pay enough to have the world's lowest accident rates.

The second mission goal, "to create value through claimant satisfaction and managed scheme costs", is imprecise and near immeasurable. Why should claimant satisfaction be emphasised relative to the satisfaction of non-claimants who are funding the services provided to claimants? In the absence of price discovery, there is no adequate measure of value creation. Value should relate to 'value for money', but claimants are not the ones paying for the services they receive once injured. Claimant satisfaction depends on expectations as well as service. Whereas claimant expectations would be guided by contractual obligations in a competitive market,

expectations may be much less controllable when there is no clear contract. Furthermore, current claimants' satisfaction could be increased cheaply at a significantly higher future cost.

The third mission goal, provision of "fair, equitable, and affordable premiums" is also problematic. It is unclear how affordability is to be measured, or what premia might be considered fair and equitable. Fairness and equity may be highly subjective. Individual claimants may regard as highly unfair something that taxpayers generally regard as fair. A more useful goal would be to have actuarially fair premia, in which the premium reflects the expected cost of future losses. Either goal will be difficult to monitor in the current environment.

The fourth mission goal is "to achieve fast and lasting return to work or independence". Again, this needs to be balanced by value-for-money considerations. The goal should be to find the optimal use of resources, not to pursue any given goal regardless of cost. Recent developments such as the work capacity assessment procedure will assist in fulfilling this goal. However, directors of the Corporation have no benchmarks against which to measure performance, except against past Corporation performance. There is no market for accident insurance in New Zealand, so they cannot compare measures such as claim reactivation rates and return to work statistics with those of other insurers. The Corporation is tightly constrained in this area by legislation specifying the criteria for work capacity assessment.

It is not clear from the service agreement how the Key Performance Indicators (KPIs) were developed, nor which measures will be most challenging. In the absence of a market, the KPIs no doubt reflect a process of bureaucratic negotiation based on limited information and a need to reach agreement with a board that believes that more aggressive targets are unrealistic. It is hard to know whether the targets have been set aggressively or whether management are comfortable that they will achieve them without a great deal of exertion and innovation.

According to its 1997 Annual Report the Corporation failed to meet a number of its own targets in 1996/97. Missed targets included those for numbers entering and exiting from long-term weekly compensation, those whose weekly compensation continued beyond the first three months and those whose weekly compensation continued beyond the first 12 months. The Corporation describes cases continuing beyond the first 12 months as being a major cost driver. It also failed to reduce the rate of claim reactivations down to its target level.

Corporation managers respond to the performance measures against which they are judged, and their perception of those performance measures. New performance measures implemented over the years have in effect replaced poor objectives with other flawed objectives. The problems here are not due to incompetence by those responsible for proposing the goals. They arise because the problem is intractable under the current structure. If the organisation is focused on cost minimisation,

quality will be ignored. If the organisation is focused on claimant satisfaction, costs will increase rapidly. There must be a balance, but the Corporation's only way of finding that balance is political. Political balances are likely to be unsatisfactory and unstable.

For example, the Corporation has historically focused on minimising administrative costs. Claims officers were encouraged to rubber-stamp claims to keep direct costs low. The basic philosophy is illustrated by the following comment by the managing director in the Corporation's 1995 Annual Report:

> For much of its existence ACC adopted an essentially clerical function as a processor of compensation payments.[56]

Berkowitz and Burton (1987) term such a focus 'myopic efficiency'. The 1994 report on workers' compensation by Australia's Industry Commission commented that:

> 'Myopic efficiency' is only concerned with lowering administrative costs, without concern for the quality of the service provided. 'Panoramic efficiency', on the other hand, is concerned both with the service provided and with the administration costs associated with this service.[57]

Insurance companies do not focus primarily on their levels of direct administration costs. Controlling direct administration costs is regarded as the straightforward part of the insurance business. The skill is in the design and enforcement of innovative policies that promote an efficient level of accident prevention and efficient treatment and rehabilitation of accident victims.

Fraud has been given little attention until recently. Bill Falconer, chairman of the Corporation, notes that:

> Every insurance company has a fraud problem, and most would assume about 15 percent of claims are fraudulent. We shouldn't regard ACC as different from any insurer in that regard but we have probably until recently not taken the preventative action that you would expect of a good insurer. You may wonder why we didn't do it years ago but the important thing is we are doing it now.[58]

The Corporation has difficulty monitoring the level of costs claimed from medical providers. A significant portion of ACS fraud stems from doctors billing the Corporation for excessive numbers of visits, for example. Apart from outright fraudulent behaviour, some doctors hold the view that the ACS is a welfare programme, and load costs into it accordingly.

In 1990 the Corporation required patients to sign a declaration that they had suffered an accident when they filed an ACS claim. In the first year following the policy change, the number of ACS claims from general practitioners' offices dropped by

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56 The Corporation's Annual Report 1995, p 10.
57 Industry Commission (1994) *Workers' Compensation in Australia*, Report No 36, p E23.
58 *National Business Review*, 20 June, 1997.

almost 12 percent, from 2.98 million claims to 2.63 million.[59] In 1993, estimated savings from the policy were $15 million.

Similar problems exist with doctors diagnosing claimants seeking earnings-related compensation. One doctor stated in the *Consumer* article referred to above that:

> You know your patients have no prospect of finding a job so you help them out. You can always find a specialist who will say your patient is not able to work. Many doctors are acting like a social agency, finding funds for people down on their luck.[60]

An organisation's performance depends to a great extent on the regulatory framework within which it operates. The regulations governing the organisation's actions and the political environment affect the ability of its managers to use resources efficiently, and the incentives for managers to do so. In the case of the Corporation, managers have responded to the changing objectives of the legislation and successive government policies. No satisfactory objectives appear to be discoverable for the Corporation under the current arrangements that obstruct normal processes for discovering the right balance between costs and benefits. Only competition can give Corporation managers the incentives to operate an efficient insurance scheme.

3.5 Conclusion

In 1974 the ACS replaced New Zealand's limited workers' compensation scheme, compulsory third-party insurance for motor vehicle accidents, and access to tort liability for personal injury with a comprehensive no-fault compensation regime, funded through general taxation and levies on employers and motor vehicle owners. Since the ACS began, it has been reviewed and changed many times, usually in response to concerns about escalating costs. This instability reflects the unsatisfactory nature of current arrangements. The ACS has an unfunded liability of $7.5 billion. Despite its high costs, it has failed to meet expectations. Rehabilitation of accident victims has, until recently, been accorded a low priority. Lump sum payments have been abolished, leading to calls for a return to the right to sue. The Corporation is viewed by many New Zealanders as an inaccessible organisation that seeks to avoid paying accident victims by using inflexible, arbitrary regulations.

In 1991 the recommendations of the Ministerial Working Party on the Accident Compensation Corporation and Incapacity to move the ACS to an insurance framework were partially implemented with the Accident Rehabilitation and Compensation Insurance Act 1992. The Corporation has introduced a number of features used by insurance companies to control costs and link premia to expected claims. Cross-subsidies from low risk to high risk employers have decreased.

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59 *Consumer*, May 1994, p 9.
60 *idem*.

Efficiency has improved, relative to the ACS as it was before 1992. However, fundamental problems remain.

The combination of the Corporation's structure as a government-owned monopolist without a clear objective and the requirement for all to be covered under the ACS essentially guarantees inefficient accident insurance arrangements in New Zealand. The Corporation cannot discover individuals' preferences for different mixes of insurance cover and price because it provides the same level of cover to everyone. As long as the Corporation continues to be a monopolist provider of a set level of services, inefficiency will persist relative to a market-based alternative. Higher than necessary costs of accident insurance waste resources.

The authors of this report endorse the government's stated intention to treat the ACS as an insurance scheme instead of a welfare scheme, and agree with its attempts to reflect some standard insurance principles in the structure and running of the ACS. However, the reforms so far have failed to move the ACS to a full insurance model. To do so requires opening the Corporation to competition from privately owned insurers and privatising it to enable a high standard of commercial monitoring. The process of discovering consumers' preferences for accident insurance through the operation of a competitive market cannot be replicated by the managers of a statutory monopoly when the level of insurance cover is mandated, regardless of how well motivated the managers are to improve the scheme's performance.

4 Options for reform

4.1 Introduction

This Section considers the options for reform of the ACS. These are initially summarised in Section 4.2, and then discussed in more detail in Sections 4.3–4.5. In Section 4.3 we examine the benefits of moving to a competitive insurance market. Section 4.4 discusses the effects of mandating a level of cover in a competitive market. Section 4.5 discusses competitive tendering of some of the Corporation's activities. Criticisms of competition and insurance methods are discussed in Sections 4.6 and 4.7 respectively. In Section 4.8 we consider whether accident insurance should be compulsory or voluntary. Section 4.9 concludes.

4.2 Options for reform

There are three main longer-term options for reforming the ACS, as set out below:

Option one: Removing the state from any role as an insurer by privatising the Corporation (or closing it and selling its activities) and removing mandatory coverage for some parts of the insurance market. Insurers would compete to offer a range of policies at different prices. Individuals could choose the level of insurance cover they preferred.

Option two: Privatising the Corporation and exposing it to competition, but mandating a minimum level of accident insurance cover. Insurers would compete to minimise costs for the given level of benefits they were required to provide. In addition, insurers could compete over non-mandated dimensions of insurance, such as speed of settling claims and the provision of top-up cover.

Option three: Tendering some or all of the activities of the Corporation, while leaving the statutory monopoly structure in place. This may reduce the cost of providing insurance outputs but is likely to fall short of achieving the full potential efficiency gains. Tendering is a useful option when competition cannot be introduced into a market because the industry is a natural monopoly, but even in those circumstances it carries significant risks of inefficient outcomes because of contracting difficulties. Tendering is unnecessary and undesirable in the accident insurance market.

These reforms could be undertaken independently of any changes to the 'no-fault' basis of the regime. The issues surrounding the transition to competition and the need to privatise the Corporation are discussed in Section 5. This discussion considers the merits of corporatising, but not privatising, the Corporation. For the reasons set out in Section 5.4, we do not see the SOE model as sufficiently stable to make it a viable longer-term option. Options for reforming liability arrangements are discussed separately in Section 6.

4.3 Option one: Privatising the Corporation, removing mandatory first-party insurance and opening the market to competition

The accident insurance market will operate in a truly competitive manner only if the Corporation can be established on a competitively neutral basis. If the Corporation can sustain loss-making prices, private insurers will not be able to enter profitably. If competitive neutrality is not possible, the government may have to exit from the insurance market to enable competition to develop. Our preliminary conclusion is that it will be extremely difficult to achieve competitive neutrality for the Corporation because of the nature of the insurance market and the potential for mispricing to remain undetected for a significant period. We discuss these issues in more detail in Section 5.4. In this section we focus on the other two aspects of Option one – opening the market to competition and removing the mandated level of cover.

Competition in the market for accident insurance improves efficiency in three ways. The first is the incentive it gives insurers to produce the quality and quantity of insurance demanded by consumers as cheaply as possible at any moment in time. This helps ensure that consumers get the best value for money.

The second benefit of competition is a dynamic one. Over time, insurers facing competition have strong incentives to search for new products to offer consumers, new ways to manage their business, and better ways of managing claims, of rehabilitating clients, and of marketing. In the long run, customers can buy improved services at lower cost, and companies that fail to innovate or which make bad investment decisions lose customers. Private companies seeking to increase market share and profits pursue efficiency gains aggressively.

Thirdly, in a competitive market, insurers have little scope to set their premia above the cost of producing the last unit of insurance. Other firms will enter the market to erode any excessive profits. If consumers are willing to pay for the marginal cost of a product, an insurer will generally supply it.

Insurance companies in a competitive market have incentives to meet individuals' diverse preferences for accident insurance at minimum cost. They will offer a range of different policies tailored to individuals' different preferences and circumstances.

Individuals are likely to differ in their demands for accident insurance, just as their preferences for other types of insurance differ. Individuals face different risks of accident, they estimate these risks differently, and they have different attitudes to these risks. Individuals differ in their willingness to put themselves at risk. Some smoke, some put on too much weight, some drink to excess and drive, some engage in dangerous sports, and some are employed in dangerous jobs.

Abilities to reduce the probability of a loss ('self-protection')[61] or to redistribute income in favour of states in which a loss occurs ('self-insurance') differ across

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[61] I Ehrlich and G Becker (1972) "Market Insurance, Self-insurance, and Self-protection", *Journal of Political Economy*, pp 623–648.

individuals. Full self-insurance is common for events with high probability and relatively low cost (such as visits to a general practitioner), or where costs are borne for relatively short periods. Self-insurance provides strong incentives for individuals to take care. It involves choosing to protect against income reduction through saving and borrowing using financial intermediaries such as banks rather than through specialist intermediaries such as insurance companies. This has relatively low transaction costs, and has the advantage that savings are not bound to be used for a given purpose. For example, high income individuals with private health insurance may not insure against the costs of visits to general practitioners, whereas low income individuals might regard these costs as significant and insure against them.

For low probability, high loss events, insurance contracts may be more attractive despite the higher transaction costs, since insurance companies can pool risk more effectively than individuals. Many insurance policies involve elements of self-insurance such as stand-down periods, deductibles, and co-payments. Some have clauses that deny a benefit where the insured has not taken due care – such as leaving a home unlocked or driving after drinking.

Individuals are likely to choose different mixes of market insurance, self-insurance and self-protection. The mixes that they choose might differ across types of insurance. For example, somebody who works in a relatively safe occupation and does not play high risk sport might choose to self-insure for all accidents except road accidents, but would have comprehensive health insurance. On the other hand, a healthy young person might not buy health insurance, but might buy insurance against loss of earnings and seek a premium discount for his or her good health. Where different types of insurance have common characteristics, they might be bundled together. For example, sickness and injury are often treated by the same providers, and the boundary between the two categories can be a fine one. Bundling the two forms of insurance might lead to cost savings.

In a competitive market, insurers will not survive if they do not offer policies that meet individuals' preferences and do not price them according to the risk associated with particular groups of clients. There will be strong incentives to identify risk and control it as long as the returns from monitoring exceed the costs. Clients have enhanced incentives to be 'good customers', to the extent that this results in lower premia.

The extent to which insurance policies and premia reflect different risks will depend on the costs to insurers of:

- differentiating risks;
- monitoring the activities of their clients;
- monitoring the activities of providers of services such as rehabilitation and health care; and
- providing incentives to prevent or avoid accidents.

Some cross-subsidisation will always occur in insurance markets, because it is too costly to assess people's risk profiles precisely. However, the degree of cross-

subsidisation of high risk activities or people in a competitive market would be limited. A private insurer that engaged in 'excessive cross-subsidisation' would be undercut by competitors offering low risk customers the same benefits at lower prices. Although this process is sometimes pejoratively called 'cream skimming', it is exactly what is necessary to ensure that prices track costs.

The New Zealand market for income replacement insurance illustrates how competitive insurers in a lightly regulated insurance market offer choices to customers. This market is well developed. Income replacement policies offer regular payments to compensate policy holders for events that severely affect their ability to work. Alternatively, individuals can choose to receive a lump sum if a particular event occurs (eg through disability or trauma insurance). Most insurers offer combinations of income replacement and lump sum cover. When we refer to income replacement insurance below, we mean either of these payment structures.

At December 1997, life offices alone had a total of 163 511 individual income replacement, accident, medical or trauma policies outstanding. This represented one policy for every 7.8 households, as recorded in the 1996 census of households. The popularity of this type of insurance has increased rapidly. Both the total number of such policies in force and annual premium income has tripled since 1991. One of the most marked increases took place in the December quarter 1991 which coincided with the removal of the lump sum ACS benefit. In that quarter, the number of policies increased by 77 percent, from 26 095 to 46 222. In addition to these policies held by individuals, group schemes were worth $40 million of annual premia in 1996.[62]

We summarise below common features of insurance policies written against events that leave the policy holder unable to work, in order to illustrate the range of premium structures:

- Insurers use a range of definitions of 'total disability' for the purposes of income replacement insurance. Some define total disability as the inability to work at all. Others define it as being unable to work in the policy holder's usual occupation for more than 10 hours per week.
- The amount of cover can be fixed when the policy is brought or it can be based on the pre-disability income.
- The proportion of income paid out by income replacement policies can vary, but is usually around 75 percent of pre-disability income.
- Insurers offer a choice of qualifying period, ie the time between the event causing disability and benefit payments. Premia are lower, the longer the qualifying period. Qualifying periods typically range from two weeks to one year.
- Policy holders can choose the duration of benefit payments. Usually, they can receive benefits for five years, or to age 65, or for life. Premia are lower, the shorter the benefit payment period.

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62 *National Business Review*, 4 April, 1997 and the Insurance Institute of New Zealand.

- Some insurers offer a choice of stepped or level premia. Under a stepped premia policy, premia vary according to the policy holder's age. The maximum benefit is constant, or increases with inflation. Under a level premia policy, the only change in premia will be due to inflation or a general review of premium rates.
- Smokers generally pay higher premia.
- Discounts are sometimes offered for high benefit policies.

Income replacement insurance policies often include a range of benefits in addition to earnings-related compensation for disability. Some of these are included in a standard policy. Others can be added at extra cost. Not all the options are available to all policy holders. Common benefits include:

- a recovery benefit in proportion to income loss when a claimant returns to work part time;
- a recurring disability benefit if the claimant suffers a relapse within a defined period, say 26 weeks, of returning to work and is again totally disabled;
- payment of nursing care and hospitalisation costs;
- payment of costs of equipment or other expenses for vocational retraining and rehabilitation;
- a specified sickness benefit, according to which the claimant receives the total disability benefit for a specified period (less the qualifying period) even if he or she returns to work within that period – the sicknesses covered typically include heart attack, cancer, stroke, paraplegia, quadriplegia, chronic kidney failure, and multiple sclerosis;
- a lump sum death benefit if the claimant dies while receiving the total disability benefit, specified sickness benefit or recovery benefit;
- a childcare benefit to pay for the costs of looking after a child who has been sick more than a specified length of time;
- payment for a return to New Zealand under some circumstances if the policy holder becomes totally disabled while overseas;
- payment for a family member's accommodation costs under some circumstances;
- inflation-adjusted replacement of earnings;
- coverage arrangements that extend beyond New Zealand;
- lump sum payments for specified injuries such as total loss of sight; and
- an option to increase the weekly benefit (with premium increases) a certain number of times, without further health evidence.

Some insurers offer some clients income replacement policies that are guaranteed renewable at the end of the policy period, regardless of the policy holder's claims history or changes in health or occupational status. Policy suspension is sometimes possible. Premium discount plans are offered to longstanding policy holders.

The tables below give an example of the annual premia payable under different choices of plan and qualifying period.[63] These examples do not provide useful comparisons of income protection insurance premia with ACS premia, as the risks insured are different. The premia in the tables are for policies that would top up, not replace, what would be paid under the ACS in the case of injury from accident but, unlike the ACS, would also cover loss of earnings from sickness or disability. It is interesting to note the changing structure of premia as the qualifying period increases. Small increases in self-insurance have large effects on premia. It is likely that similar premium structures would develop in a competitive market for accident insurance, particularly the significant premium reduction as the qualifying period increases.

Table 4.1: Example of income protection insurance premia – benefit period: to age 65

National Mutual Income Protection
Policy holder: 36 year old male non-smoker plumber (occupational group B).
Annual income: $40 000, weekly benefit: 75% x ($40 000/52) = $580.00

Qualifying period	*Basic premium (Essential)*	*Basic premium (Deluxe)*	*Accident lump sum premium*	*Annual premium (Essential)*	*Annual premium (Deluxe)*
2 weeks	$1 595.26	$1 876.56	$159.50	$1 754.76	$2 036.06
4 weeks	$804.14	$930.00	$159.50	$963.64	$1 089.50
8 weeks	$673.06	$776.88	$159.50	$832.56	$936.38
13 weeks	$493.84	$567.50	$159.50	$653.34	$727.00
26 weeks	$461.36	$529.22	$159.50	$620.86	$688.72
52 weeks	$427.72	$489.78	$159.50	$587.22	$649.28

Table 4.2: Example of income protection insurance premia – benefit period: 5 years (to age 65)

National Mutual Income Protection
Policy holder: 36 year old male non-smoker plumber (occupational group B).
Annual income: $40 000. Weekly benefit: 75% x ($40 000/52) = $580.00

Qualifying period	*Basic premium (Essential)*	*Basic premium (Deluxe)*	*Accident lump sum premium*	*Annual premium (Essential)*	*Annual premium (Deluxe)*
2 weeks	$1 064.56	$1 234.50	$159.50	$1 224.06	$1 394.00
4 weeks	$627.82	$724.10	$159.50	$787.32	$883.60
8 weeks	$517.04	$594.76	$159.50	$676.54	$754.26
13 weeks	$372.04	$424.82	$159.50	$531.54	$584.32

[63] These premia were current in September 1997.

4.4 Option two: Privatising the Corporation and opening the market to competition but retaining mandatory first-party insurance

If the government mandated a minimum level of accident insurance cover but exposed the Corporation to competition, many of the advantages of Option one, discussed above in Section 4.3, would remain. Much would depend on the degree to which choice was constrained by the mandated cover. If individuals were required to purchase a level of accident insurance benefits below that which they would choose in a non-mandated market, insurers would be likely to compete to provide 'top-up' insurance, as they currently do. Consumers would choose from a range of packages offering different combinations of benefits and premiums. Alternatively, the 'top-up' insurance could absorb the mandatory cover, so that individuals held one policy for income replacement insurance.

Where individuals wanted to purchase the mandated level of cover, or less than the mandated level but were not permitted to do so, insurers would compete by offering a range of cost and service quality options. For example, firms might build up reputations for efficient claim settlement. If the costs of speeding up claims settlement procedures exceeded the willingness of policy holders to pay for the higher quality of service, another insurer could attract their business by offering a lower quality, cheaper service. The incentives to minimise costs would be strong. Techniques such as experience rating would be likely to be used widely. Inefficient cross-subsidies would not persist, as competing insurers would have strong incentives to find ways to make profits by offering a reduction in premium to those policy holders being charged more than actuarially fair rates.

Setting a mandated benefit level higher than the level that a significant proportion of the population would choose to purchase is likely to lead to a lower level of welfare than setting a low mandated benefit level. Such policy holders would prefer to be spending their income on goods or services other than accident insurance. However, one of the main advantages of opening the market to competition would remain: insurers would face strong incentives to provide benefits at minimum cost.

4.5 Option three: Competitive tendering

This option involves tendering some or all of the activities of the existing Corporation, while leaving the statutory monopoly structure in place. The government could, for example, tender claims management, rehabilitation services, or fraud prevention. It would award the contract to supply specified services to the company that bid the lowest price.

In some circumstances, competitive tendering can lead to significant welfare gains. However, tendering is not suited to replace a fully competitive market where one can be established. If competition is possible, it should be encouraged. Tendering was originally proposed by Demsetz as an alternative to rate regulation for natural

monopolies.[64] Insurance markets have none of the features of natural monopolies, and competitive tendering would be likely to add a further layer of regulation with few benefits.

Even in naturally monopolistic industries where tendering might be beneficial, a number of problems must be addressed as outlined below:

- Early proponents of franchise bidding argued that by repeating the tender process over time, changes in circumstances could be taken into account, so that the regulator could choose the most efficient supplier.[65] However, the incumbent firm may have an advantage over its competitors when the contract is up for renewal, because of the knowledge it has gained from holding the contract and operating the business. This is more likely to be a problem in cases where it is more difficult to transfer skills and experience, and physical capital, from one firm to another.
- The contract would be written under conditions of uncertainty, and would need to take account of possible changes in health care technology, case management techniques, other demand and supply conditions, inflation and so on. The tenderer may be required to specify prices at which services would be supplied in the initial period and in the future. Once the tender was awarded, the successful tenderer may argue that price increases are needed because of subsequent unexpected developments, eg real wage shocks.
- It is difficult to give franchisees incentives to invest optimally in some circumstances, eg if it is difficult to detect asset quality. If the investment can be transferred to a different operator, for example if the network is expanded, the incumbent is likely, when it calculates the returns from its investment, to take into account the chance that it will be replaced at some later date. This is likely to reduce investment below the socially optimal level if operators are not paid for their investment. On the other hand, if investment is not transferable (eg managerial skills), the incumbent may be able to increase its cost advantage and asymmetry over other bidders. This is likely to increase investment above the socially optimal level.
- Where the agreement is to supply a certain quality of service, problems may arise in defining and subsequently enforcing the quality standard relative to the tendered price path. The successful tenderer could increase its profits by reducing quality, so it would have strong incentives to do so. The government agency monitoring the contract may have difficulty detecting deviations from the agreed quality standards.
- Applicants may make unrealistically low bids for a specified quality of service given the expected scope to renegotiate the terms of the franchise once the

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64 H Demsetz (1968) "Why Regulate Utilities?", *Journal of Law and Economics*, 11, pp 55–66.

65 See J-J Laffont and J Tirole (1993) *A Theory of Incentives in Procurement and Regulation*, MIT Press: Cambridge MA, particularly Chapter 8, "Repeated Auctions of Incentive Contracts, Investment and Bidding Parity", pp 341–371.

franchise has been awarded. The government would face considerable political embarrassment if the franchisee supplying accident insurance services faced bankruptcy.

- The industry is likely to remain politicised. Franchisees may bear additional risks of opportunistic government actions and of contractual disputes.

In the case of accident insurance, the contract specifying the tenderer's and the Crown's obligations would amount to further regulation of accident insurance. Some unintended distortions and loss of flexibility would be inevitable, while they would be less likely if a more competitive structure was put in place.

In summary, tendering out some or all of the services provided by the Corporation may reduce the costs of supplying the mandated services. However, the process is likely to require significant administrative input and to create monitoring difficulties. The possibility of creating windfall gains or losses for the successful bidder might also impair the government's future policy flexibility. The benefits of lower costs for future insurance cover can be achieved without the administrative costs of a franchise approach by allowing competing insurers to enter the market.

Tendering out the Corporation's core functions is an unattractive option. However, there are two limited areas of the Corporation's activities for which competitive tendering could be a useful way to reduce costs without reducing the level of service. These are the management of the ACS's unfunded liabilities and the provision of insurance to non-earners. We discuss the first of these possibilities (that the government could tender the administration and rehabilitation of the tail of long-term claimants on an annual or longer-term basis) in detail in Section 5. In this section we focus on the second option, ie tendering the provision of insurance for non-earners.

The contract for tender for ongoing Non-Earners' Account business would not include income-related compensation but would include treatment and rehabilitation costs. The contract would need to specify clearly the quality of treatment to which accident victims were entitled. As noted above, codifying and verifying that the successful bidder was providing this level of care could be difficult. However, since the Non-Earners' Account covers only a small proportion of accidents, the successful bidder would be unlikely to gain an informational advantage over potential entrants sufficient to prevent future competitive bidding, since other insurers would be involved in treatment and rehabilitation in the competitive part of the market.

Tendering the Non-Earners' Account would impose one level of insurance cover on all non-earners. Some non-earners would prefer to self-insure and/or self-protect, ie to save or spend the money spent on their behalf by the government. This would be possible with a voucher system, if voucher holders could trade their vouchers for cash. The incentives for non-earners to find the optimal balance among their risky activities and optimise their level of care would be stronger in a voucher system than

under a competitive tender approach. Vouchers would allow greater use of stand-down periods and experience rating, and non-earners could buy insurance jointly with other family members.

Transaction costs would be higher with a voucher scheme for non-earners than with competitive tendering of the Non-Earners' Account. Many common difficulties with competitive tendering would be mitigated as long as the rest of the accident insurance market was competitive. Vouchers would have greater value to individuals if coverage were optional than if the level of cover were mandated. The costs of ensuring compliance in a mandatory scheme that used vouchers might exceed any efficiency gains relative to tendering the mandatory insurance cover for non-earners.

4.6 Criticisms of competition

In this section we address the common criticisms made of competition in insurance markets. There are two commonly raised concerns: that policy holders will suffer when insurers fail, and that individuals will not be able to afford to pay the premia charged by competing insurers. We discuss each of these below.

4.6.1 Prudential risk

One of the most common arguments against private provision of accident insurance is that individual accident victims will be exposed to the risk of failure of their insurer.

Insurance failures are rare. When they occur, most individuals will be able to change insurers, at a cost of up to a year's premium. Sometimes the failing company will be taken over by another insurer and coverage will continue. For policy holders who are receiving payments from an insurance company that becomes bankrupt, the consequences may be more serious. One way to protect against insurance company failure is to choose a lump sum component, so that a significant portion of the insurer's payout is due when the claim is approved. Another option is to take policies with more than one company, where this is feasible.

Customers and investors have strong incentives to monitor the performance of their insurance companies. In the case of accident insurance, a large amount of cover is likely to be taken out by employers or unions, who would be able to monitor insurer performance. If insurance companies are concerned about how they are perceived by investors and potential policy holders, they might choose to re-insure. Re-insurance of insurers' liabilities in the international market should give customers comfort that their policy benefits would survive insurer failure. Rating agencies face strong commercial incentives to watch for changes in an insurer's ability to meet claims. Even individual policy holders can gain some indication of the risk of insurer bankruptcy from basic information such as the age of the firm, its market share, its

share market valuation, and its reputation in the market. If they were really concerned, they could ask a qualified person to provide them with such information.

The New Zealand insurance industry operates within a light-handed regulatory framework. The main prudential requirement for insurers is that they must obtain an independent claims-paying rating, in accordance with the Insurance Companies (Ratings and Inspections) Act 1994. This rating must be disclosed prominently on promotional literature, policies and premium notices for general insurance. Failure to have a current claims-paying rating may lead to a penalty of up to $100 000. In addition, insurers must place a deposit of $500 000 with the Public Trustee, in accordance with the Insurance Companies' Deposits Act 1953. The fund created by these deposits is used to meet obligations of failed general insurance companies.

One argument used to support specific government regulation of the insurance industry is that individual policy holders do not know how to interpret information about the soundness of different insurers and their management practices, and failure could affect people in a vulnerable position. However, the threat of failure is an important incentive for managers to act prudently and to serve the interests of customers. Bankruptcy, or the takeover of companies at risk of failure, are mechanisms by which the market corrects for severe underpricing of risk. Underpricing can be identified only by trial and error. The risk of bankruptcy prevents competition from driving prices too low. Without that risk, the market's price discovery process will be impaired. As described above, there are a variety of ways to monitor insurers, many of which do not require detailed analysis by individual policy holders.

A government guarantee of benefits could undermine incentives to be prudent by removing customers' incentives to reward sound insurance companies with their business, as is illustrated by the savings and loans deposit insurance case in the United States. Prudential regulation may not solve this problem. Another option would be for the government to charge customers for the value of the guarantee. Periodic tenders of the government's liability could assist in determining how much to charge.

In the United States, the fear of lack of information has led to extensive regulation of insurance markets. For example, in some states, insurers face constraints on investing, must set minimum rates, and must re-insure. Company affiliations and product mix are restricted. There are high costs of monitoring and enforcing these regulations. They also create significant distortions in the insurance market. Direct regulation is likely to increase the perception that accident insurance is government guaranteed, which in turn gives the insurers incentives to take greater risks. Customers reduce their monitoring of insurers because they assume the government has taken responsibility.

A related regulatory issue is whether governments should regulate insurance rates. This is discussed below in Section 4.6.2.

4.6.2 Equity, affordability and cream skimming

A frequently expressed concern about the introduction of competition to accident insurance is that access to insurance will be constrained in inequitable ways. The main concern is that people with low incomes and/or adverse risk characteristics will not be able to pay the price charged for income replacement insurance and coverage of treatment costs. This is a problem of inadequate income, not of market failure.

The main category of people for whom income may be inadequate is that of non-earners. One solution for this group would be for the government to continue to fund the Non-Earners' Account by purchasing accident insurance from competitive insurers, with cover for rehabilitation costs as discussed in Section 4.5. Unless the government changed the welfare regime, this would be all the cover non-earners required. Alternatively, the government could provide non-earners with vouchers up to a certain value, and let individuals buy the policy that matched their preferences most closely. In either case, access to insurance for non-earners would be guaranteed without government intervention in insurance provision.

The second category for whom the purchase of accident insurance in a competitive market may cause financial hardship is that of earners with low income but high risk characteristics. In general, in deregulated labour markets, the wage level reflects the level of job risk, or the employer pays for insurance. However, for low income people who are involved in, for example, high risk sporting activities, the premia for accident insurance in a competitive market may be higher than they can afford. Some of these individuals may simply prefer self-insurance to missing out on the activity. While the government could subsidise such individuals, by, for example, paying for the insurance of sports teams, governments are already subsidising risky sports quite heavily through lottery arrangements, medical benefits and social welfare. The case for treating those disabled from sport more generously than those disabled from sickness is not obvious.

Concern is sometimes expressed that in a competitive market for accident insurance, insurers will compete only for 'attractive risks', ie low risk individuals or market segments. This is known as 'cream skimming'. However, the more competitive the market, the less likely cream skimming is to occur. If restrictions are imposed on insurers, eg rates are capped, normal competitive processes will not operate to find efficient premia for different risks. Without such restrictions, insurers will have strong incentives to identify mispricing in the market and offer more attractive policies to individuals who are being overcharged.

Rate regulation of workers' compensation premia has occurred in a number of US states. A recent empirical study of regulation in the US workers' compensation insurance market by Patricia Danzon and Scott Harrington concludes:

> A major implication of our findings is that insurance rate regulatory systems that suppress rates have the undesirable and self-defeating side effect of increasing growth

> in claim costs. This effect increases the costs of insurance for employers and employees and raises the cost of work-related injuries that the workers' compensation system is intended to prevent.[66]

Ian McEwin made a similar observation in the New Zealand Business Roundtable's 1987 submission cited earlier. He reported that:

> Research in the United States (see Joskow (1973), Hill (1979)) confirms that insurance regulation results in higher premiums, reduced policy choice and, perhaps surprisingly, greater instability. MacAvoy (1977) found that: "… the elimination of the artificial restraints on the risk assessment process and the pricing mechanism would produce greater operating stability and predictability, which may in turn serve to minimise the (insurance) availability problem" [67]

If insurance markets are allowed to operate without distortion, individuals will face the full costs to society of their risky activities.

Individuals will have to consider whether they value the risky activity sufficiently highly to pay the insurance premium. In some cases, they will change their behaviour or stop engaging in the activity. If enough people believe that the benefits of the activity to society exceed the benefits to the individual by a large enough margin, they might subsidise the activity.

Another concern that might arise from any proposal that permits workers to purchase first-party insurance using monies received as compensating wage differentials arises from the popular belief that the incidence of the employer levy falls on employers rather than on employees. However, from an employer's point of view, the ACC levy, tied as it is to the worker's wage, is part of the total cost of hiring labour. Employers will seek to hire workers until the total cost of a worker equals the productivity of the marginal worker. Given that the marginal worker's productivity is not affected by any change in a payroll tax or an ACC levy, employers will hire the same amount of labour as before the change to the ACC levy, and will alter the marginal worker's wage by an equal and offsetting amount. This wage change will apply to all workers of the same productivity level if the marginal worker is still to receive the job. By this argument, an increase or decrease in the ACC levy cannot be expected to materially alter, in the long run, the total cost to the employer of the marginal worker. Instead it will change the composition of that total cost, with employee wages being the normal balancing factor. The argument is strengthened by the fact that New Zealand's capital markets are open to world markets and New Zealand is too small for it to be credible that any change in its payroll tax or the ACC levy could alter the world cost of capital. Risk-adjusted returns to investors will therefore be unaffected by any such change, once markets have fully adjusted.

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66 P Danzon and S Harrington (1998) *Rate Regulation of Workers' Compensation Insurance – How Price Controls Increase Costs,* AEI Press: Washington DC, pp xii–160, at p 1.

67 I McEwin (1987) *op cit*, p 38.

The above argument suggests that the longer-term burden of the ACC levy is likely to be borne primarily by workers. Another way of illustrating the same point is to note that, in a voluntary system, employers and employees would be able to negotiate a higher wage with no employer-provided insurance against workplace accidents attached, or a lower wage plus an employer-funded policy. Risk averse workers are likely to be largely indifferent to these alternatives – as long as the wage differential largely reflects the insurance premium that they would have to pay if the employer did not pay it on their behalf, and the Corporation is providing the insurance cover they would wish to buy if they were given a choice about the matter.

None of this is to argue that there would be no short-term effects from a variation in the ACS levy on numbers employed or on employers' costs and profits. But a case would have to be made that these were sufficiently material to warrant special consideration in some way. Nor does the above argument seek to establish that there would be no long-term effects. The long-term burden of a payroll tax presumably falls on labour and capital in some proportion. Theory suggests that any burden would fall more heavily on the factor that is most inelastic in supply. If so, it would be expected to fall least heavily on internationally mobile capital and labour. But a tax that is used to provide a benefit that the worker would otherwise wish to purchase is not a burden on the worker. Hence, even in the case of internationally mobile labour, it seems likely that the ACS employer's levy might only affect the total cost of internationally mobile labour to the employer to the degree that the Corporation's cover did not provide value for money to the employee.

In reality, the distribution of the burden of a tax cannot be determined precisely (for example it seems unlikely that workers would wish to buy exactly the insurance cover provided by the Corporation if they were given a choice about the matter). However, the effects of any redistribution arising from a change in the rate of a levy are likely to be difficult to assess. Given the above arguments and the relative magnitudes of the sums involved, any effects seem likely to have a much less significant influence on the distribution of income than social welfare, health and education policies.

4.7 Criticisms of the insurance approach

Criticisms of an insurance approach to accident compensation commonly focus on 'inefficiencies' in insurance markets, arising from adverse selection, misperception of risks or moral hazard. In general, these 'inefficiencies' reflect the costs of information. The real issue is to determine which framework minimises the impact of such costs. As governments often face the same information problems as individuals and firms, it may be that the market's inefficiencies are more perceived than real.

Another criticism of insurance approaches is that they lead to under-insurance of low income, high risk individuals. This problem is not in itself a reason to reject the insurance approach. The problem of possible under-insurance can be handled by a range of mechanisms, such as direct income transfers, health cards, and special funds

for insuring such cases, financed by general tax revenue. Similarly, the problems stemming from the incentives for people to free-ride on social welfare rather than buying insurance are better handled by specific mechanisms than by a welfare scheme set up to cover all accident insurance.

In the remainder of this section we discuss criticisms made of the insurance approach in more detail.

4.7.1 Moral hazard

Moral hazard results from the insurer's inability to monitor the policy holder's behaviour perfectly, given the costs of doing so. It refers to the tendency of individuals to change their behaviour in response to changed incentives from insurance. When it is too costly to monitor behaviour perfectly, insurers cannot ensure that the premium on each policy accurately reflects the policy holder's behaviour. In these circumstances, the availability of insurance may induce some policy holders to take less care, raising the probability of an accident, and to be less cost conscious once an accident has occurred. For example, individuals may choose relatively expensive treatment methods after an accident, or opt for a prolonged rehabilitation period if they do not bear the costs directly. In turn, the impact of these incentives affects the costs of providing insurance. Moral hazard is a potential problem inherent in the provision of all state or private insurance. It is likely to be exacerbated when benefits are government guaranteed and premiums do not incorporate the expected losses arising from the guarantee.

Insurers can use many techniques to reduce the impact of moral hazard. They can monitor risks directly (for example by inspecting workplaces), require prior approval of various expenses, become involved in the rehabilitation process, and/or use experience rating when setting premiums. In addition, they can structure insurance contracts to give policy holders incentives for self-protection, for example by including deductibles and co-insurance payments if a claim is made, or making payouts contingent on certain behaviour by the policy holder, such as being sober in the case of a driver involved in a road accident.

Moral hazard creates a problem for all insurers to the extent that they are unable to set premia to reflect the cost of accidents and their probability of occurrence, given the incentives in the insurance contract for policy holders to act opportunistically. Moral hazard increases the cost of market insurance relative to self-insurance, because premia that take account of the altered incentives are higher than they would be if it were possible to have no monitoring costs. Insurers and policy holders have strong incentives to negotiate contracts that reduce the impact of moral hazard. Competition is likely to further strengthen such incentives.

The Corporation has recently attempted to deal with moral hazard through experience rating and greater use of co-payments and deductibles. However, without the pressure imposed by competing insurers, such measures are unlikely to be pursued with the intensity that would prevail in private insurance markets. The

Corporation's targets relating to moral hazard are set administratively through the service agreement, and are subject to politicisation. The Corporation's managers face few incentives to keep costs under control, and bear the brunt of adverse publicity over measures designed to counter moral hazard. In addition, the pay-as-you-go nature of the current scheme means that the impact of experience rating is limited. There is no market context in which the Corporation can discover the optimal level of monitoring, or the optimal premia to take account of moral hazard. The Corporation does not face satisfactory incentives to find the right prices.

4.7.2 Adverse selection

Private and state insurers cannot observe all the risk characteristics of potential customers. This leads to an efficiency loss, relative to the ideal. If insurers had perfect information about risk, they could design policies to take into account the expected costs of the different risk groups.

Adverse selection refers to the tendency of higher risk individuals to buy a higher level of cover at a given premium level than lower risk individuals would at the same premium level. For example, if a smoker and a non-smoker are both considering buying a life insurance policy, and the insurance company cannot discover if either person smokes, the two individuals would be offered the same policy. The non-smoker may realise that he or she has a higher life expectancy than a smoker, and that he or she is subsidising the smoker if they pay the same premium, and so choose not to buy the policy. Similarly, the smoker may realise that he or she is paying a lower than actuarially fair premium and so, given the good deal, opt for the policy. These tendencies are likely to mean that the population of people choosing to buy insurance has higher than average risk than the overall population.

Insurers respond to the problem of adverse selection by spending money on classifying risk classes until the extra cost of doing so outweighs the extra benefit. They offer contracts designed to make customers identify their risk type by their choice of contract. Customers are often grouped on the basis of observable characteristics that are correlated with risk. For example, young male drivers pay higher motor vehicle insurance premia than other drivers. Most health-related policies ask whether policy holders smoke. The incentives for accurate information disclosure are strong, since the insurance company can refuse to pay out in the event of a claim if the policy holder has made a false declaration.

Another technique used to reduce adverse selection is to offer potential customers a range of policies with different payout structures and premia. Low risk customers will tend to favour lower coverage and lower premium options, and high risk customers will tend to pay higher premia for higher cover. Some cross-subsidisation is not necessarily inefficient, because of the existence of transaction costs.[68]

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[68] See M Spence (1978) "Product Differentiation and Performance in Insurance Markets", *Journal of Public Economics*, 10, pp 427–447; M Rothschild and J Stiglitz (1976) "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information", *Quarterly Journal of Economics*, pp 629–649; and C Wilson (1977) "A Model of Insurance Markets with Incomplete Information", *Journal of Economic Theory*, 16, pp 167–207.

The adverse selection problem arises because separating potential customers into risk categories and operating separate policies for each category is expensive. Insurance companies have found a number of ways to reduce these costs, but they force premia for low risk customers to be higher than would otherwise be the case.

When insurance is compulsory, the insurer has a guarantee that the whole population will take out insurance. This removes the adverse selection problem. However, there is likely to be substantial cross-subsidisation of high risk customers by low risk customers, since the requirement to take a certain level of insurance restricts the ability of insurers to induce customers to identify their risk characteristics. This cross-subsidisation is likely to be compounded when there is no competition between insurers, since a monopolist with a mandated level of insurance cover and no requirement to make profits will not face the incentives of private insurers to minimise costs.

4.7.3 Risk misperception

In this section we summarise the empirical evidence on risk misperception, then consider the optimal government response to the issue in the context of the five main ACS accounts.

There are two parts to the argument that competitive markets will not deliver the optimal level of insurance because of consumers' difficulties in assessing risk. The first is that individuals have limited ability to process information about the probabilities of different events and they do not act according to the standard economic models based on expected utility theory. The second is based on the existence of 'cognitive dissonance'.[69]

Kunreuther *et al*[70] suggest that individuals use rules of thumb to make decisions about risk, to reduce the amount of information they need to gather and the time spent making such decisions. This is rational, particularly in repeated situations, since there are monetary and time costs of gathering information.

Risk misperceptions may lead to either over- or under-insurance. Research by Fischhoff *et al*[71] suggest that individuals tend to overestimate the number of deaths per year from events which actually have very low statistical probabilities of deaths, such as botulism, tornadoes, floods, smallpox vaccinations, and pregnancy. The individuals in their sample underestimated the number of deaths per year from more common causes such as electrocution, asthma, tuberculosis, diabetes, stroke,

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[69] This discussion is based on Appendix 3 of the New Zealand Business Roundtable's 1987 submission to the Law Commission, *Review of Accident Compensation.*

[70] H Kunreuther *et al* (1978) *Disaster Insurance Protection: Public Policy Lessons,* Wiley: New York, pp xxv–400.

[71] B Fischhoff *et al* (1981) *Acceptable Risk*, Cambridge University Press: Cambridge, pp xv–185, at p 29. Cited in W Viscusi, J Vernon and J Harrington Jr (1995) *Economics of Regulation and Antitrust,* 2nd ed, MIT Press: Cambridge, Massachusetts, p 662.

stomach cancer, and heart disease. The perception of the number of deaths from motor vehicle accidents and accidents overall was close to correct. Viscusi *et al* comment on this research:[72]

> This pattern of overreaction and underreaction suggests that market decisions will seldom be optimal. However, additional regulation will not be required in all cases. If risk perceptions are already excessive, then the market-provided risk will be too great, as the safety provided will be responding to exaggerated risk perceptions … . The overestimation of low-probability events also has substantial implications for government policy. To the extent that there is an alarmist reaction to small risks that are called to our attention, and if these pressures in turn are exerted on the policymakers responsible for risk regulation, society may end up devoting too many resources to small risks that are not of great consequence.

'Cognitive dissonance' occurs when people do not change their behaviour if their beliefs about themselves are contradicted by evidence. Akerlof and Dickens[73] argue that cognitive dissonance "stem[s] from people's view of themselves as 'smart, nice people'. Information that conflicts with this image tends to be ignored, rejected, or accommodated by changes in other beliefs." Individuals choose to believe, for example, that their job is safe or that an event against which insurance is not bought will not happen. Once the cost to an individual of continuing to hold a particular belief becomes too high, that person is unlikely to continue that activity without insurance.

The Employers' Account provides insurance for workplace injuries. One of the main arguments for compulsory workers' compensation insurance is that workers will not be 'adequately' informed or may be misinformed about the risks of workplace accidents. Viscusi[74] cites a range of empirical evidence that, in general, workers assess the risk of workplace hazards quite accurately. In a study of four chemical plants, workers were found to believe that their jobs were nearly twice as dangerous as published statistics suggested. After accounting for health risks such as cancer, the workers' assessment of risk equalled the accident rate.[75] Viscusi, Vernon and Harrington conclude that there is evidence of some reasonable perception of job risks by workers, and that safety risks tend to be better understood than health risks. Estimates of risk premia for different types of work suggest that "although market behaviour may not be ideal, the substantial magnitude of compensation per unit risk does suggest that there is substantial awareness of risks and their implications."[76] Viscusi's study of risk premia in US manufacturing industries[77] found that

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72 Viscusi, Vernon and Harrington, *op cit*, p 663.

73 G Akerlof and W Dickens (1984) "The Economic Consequences of Cognitive Dissonance", in *An Economic Theorist's Book of Tales*, Cambridge University Press: Cambridge, p 126.

74 W Viscusi (1992) *Fatal Tradeoffs: Public and Private Responsibilities for Risk*, Oxford University Press: New York, p 102. See also Viscusi, Vernon and Harrington, *op cit*, p 798. Chapter 6 provides an excellent overview of models and tests of biases in risk misperception.

75 Viscusi, Vernon and Harrington, *op cit*, p 798.

76 *idem*.

77 W Viscusi (1985) "Market Incentives for Safety", *Harvard Business Review* 63(4).

12–15 percent of total earnings in the food and allied products, furniture and fixtures, and lumber and wood products industries represents compensation for risk.

Problems are more likely to occur with individual assessment of the risk of very low probability workplace accidents, and with assessment of risk of new activities. Employees appear to estimate the risks of workplace accidents more accurately than they estimate the risks of occupational diseases. In such cases, the cause of the illness is often difficult to observe, and can take many years to be discovered. Such 'long latency' diseases are one type of risk where there is potential for market failure. There might be a problem if the disease is diagnosed when the employer no longer operates the business, or its insurance policy limits the claims period. However, mandating a level of workers' compensation insurance cover does not solve this problem. A better form of government intervention would be to establish a special fund to cover long latency diseases, or to fund research into such diseases.

It seems unlikely that problems of risk misperception will persist in employment situations, since employees who underestimate job risk initially can reassess their insurance requirement once they gain experience and learn the risks. Employee unions usually take a keen interest in workplace safety, especially in more dangerous trades such as mining, and have incentives to inform their members of safety risks.

For most occupations and workplaces, nobody knows the exact risks of injury, disease or death. The extent of knowledge varies by industry, because of the transaction costs of obtaining information. Insurance companies have strong incentives to undertake research into occupational risk if the potential benefits from such research exceed the costs. Accurate information about risk enables insurers to offer the lowest cost policies to individuals, given the risks. In a competitive market, private insurers have incentives to detect misperceptions of risk and persuade individuals to change their coverage.

Government intervention in the provision of insurance is unlikely to have a great effect on this problem. Mandatory insurance may replace possible under-insurance with over-insurance.

It is possible that individual insurers will be unwilling to fund research into occupational risk because they believe that all insurers will benefit from dissemination of the information. This is not related to risk misperception, however. It is a standard concern held by private firms engaged in research and development, and is not a justification for government intervention into insurance markets. Imperfect knowledge exists when the government acts as insurer, and is likely to cause greater problems than in the private model because of the lack of incentives to price accurately.

4.8 Should accident insurance be compulsory or voluntary?

Under a voluntary accident insurance scheme, individuals would choose the level of cover they wanted. They could also choose other methods of reducing the probability of an accident and of reducing the impact of loss. In other insurance markets, insurers offer customers a range of options to fit different preferences for self-insurance and self-protection. For example, as described in Section 4.4, income replacement insurance policy holders can choose from a number of stand-down periods before replacement income is paid.

If the market for accident insurance were voluntary, it would be likely that some employers would choose to provide their employees with cover through a work-based scheme, while others would leave accident insurance up to the employees, based in part on who had the greater ability to reduce the risk of accidents. Where employees did not have employer-funded accident insurance, in a well-functioning labour market their wages would be higher to reflect the increased risk they faced. This is discussed in further detail in Section 6.2.4. Irrespective of whether accident insurance is voluntary or compulsory, workers bear the cost of insurance for workplace accidents:

> If competitive and efficient disability insurance is available to workers either through group policies or employer policies, then different groups, firms, and perhaps industries will opt for different liability arrangements … . Informed workers will demand extra remuneration to work in jobs with higher risk of personal injury … . If employers are obliged to compensate injured workers in an artificial or non-competitive manner through arbitrary … rules, which involve extra costs, this will be regarded as part of the risk-remuneration package and so wages often will have to be correspondingly lower, compared to a competitive insurance situation.[78]

Individuals' incentives to buy accident insurance in a voluntary market would be affected by the level of government-provided support available if they chose not to insure. There would be two main elements to such support. First, the social welfare system would guarantee a minimum payment – through the sickness or invalid's benefit – to an accident victim if he or she was incapacitated. Some 'free-riding' is likely to occur if such a benefit exists, but its incidence is likely to be higher the greater the benefit level.

Second, all individuals would have access to acute hospital services. As discussed below in Section 5.8, one option with the introduction of voluntary competitive accident insurance would be for the Crown to act as funder of last resort for acute care. The accident victim's insurer could be billed for the costs of acute accident-related care. If the victim was not insured, the government could try to recoup some of its expenses from the future earnings of the accident victim. This would alleviate the free-rider problem.

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[78] I McEwin (1988) "Compulsory Workers' Compensation: Worker Right or Unnecessary Restriction?", conference proceedings, HR Nicholls Society.

In voluntary markets, there are two reasons why people do not take out insurance:

- coverage is available, but people are unwilling to pay the price (the 'affordability' issue); or
- coverage is unavailable, ie coverage is denied at any price (the 'availability' issue).

The first of these issues was addressed in Section 4.6.2.

Unavailability is unlikely to be an issue unless rates are capped.[79] In a competitive market for accident insurance, insurers would have incentives to undercut one another until premiums reflected the actuarially fair price plus transaction costs. The desire for profits and the threat of bankruptcy would be likely to stop an insurer from sustaining a lower price than this. Problems of availability of coverage have arisen in the US states where workers' compensation benefits are mandated and rates are capped, so that insurers are prevented from charging the actuarially fair premium. In almost every US state that has mandated workers' compensation benefits, the state has made arrangements for employers who cannot obtain insurance, usually by establishing an assigned risk pool. In most states, all accident insurers cover the residual risks through a risk pool. These pools usually operate at a loss, and the proportion of risks covered by them tends to increase over time. Sometimes, the state covers residual risks through its own state insurance fund. States in which rates are capped tend to have larger risk pools than states in which rates are not capped.

Mandatory risk pools in workers' compensation markets operate as a form of compulsory community rating of high risk employers. Instead of giving employers strong incentives to find ways to reduce their risk so that they can afford the efficient insurance premium, or encouraging firms to exit from industries with very high workplace risks if they cannot afford to cover those risks, risk pools force low risk employers to cross-subsidise high risk employers. Risk pool insurers have few incentives to monitor treatment costs and rehabilitative expenditure by high risk employers, since all pool insurers would share the benefits but not the costs of such monitoring.

The Ministerial Working Party considered the issue of unavailability of insurance. It drew the following conclusions:[80]

> We have concluded that even if an employer was operating such a business that he or she could not obtain cover for that business, or could only obtain cover by paying an extremely large premium, then that employer should not be allowed access to an

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[79] Some people in the highest risk activities, such as professional diving or car racing, may prefer to self-insure rather than pay insurance premiums. In the extreme, the number of people in such risky activities wanting to insure may be so small as to make insurance companies reluctant to offer a policy, because the pool would be too small to enable adequate risk spreading. On the other hand, such individuals might be efficiently cross-subsidised by lower risk cases in the same pool, because of transaction costs.

[80] Ministerial Working Party, p 71.

> assigned risk pool or to an insurer of last resort. We concluded this for two reasons. First, the fact that such a business is being sent this kind of signal by the insurance market demonstrates that it is viewed as highly dangerous. If employers are unable to afford adequate cover, then this demonstrates that the true costs of operating such a business are being understated, and it may be that the business should not be carried out. If the Government thought that the carrying out of such a business was in the public interest, then it should offer to subsidise the employer to carry out that business. Second, most employers, including those engaged in dangerous activities, should be able to purchase insurance (through, for example, Lloyds), even if it was at high cost.

If accident insurance cover is compulsory in a competitive insurance market, a number of issues arise. By setting required benefit levels for insurance policies, some individuals would have to pay higher premia than in a voluntary insurance market (eg those individuals who would have preferred to take out a lower level of cover, or who would rather pay a higher proportion of medical costs than the state-mandated proportion). Such individuals are likely to be low risk. The government may mandate minimum benefit levels with competition, as occurs in 47 of the US states. Although competition in the US workers' compensation insurance market is fierce, it relates only to the premia charged for given benefits. Government involvement in setting benefit levels and monitoring compliance would increase the government's difficulty in distancing itself from failed insurers in the market for accident insurance.

Problems of availability of coverage in unregulated markets signal high risk behaviour. As the Ministerial Working Party concluded, charging commensurately high premia to employers providing dangerous jobs would force those employers to consider the true costs of their operations. Making such premia mandatory could eliminate some activities. Rate capping would be an imperfect solution as it significantly reduces incentives to control risk and imposes the costs of dangerous activities on all other policy holders. Similar principles apply to first-party motor vehicle insurance. In a competitive market with compulsory first-party motor vehicle insurance, some drivers with particularly bad driving records might be refused insurance by private insurers. In a voluntary market, the knowledge that insurance could not be obtained if behaviour was sufficiently dangerous might have a deterrent effect. In practice, with either mandatory or voluntary insurance there could be substantial political pressure for a risk pool to operate among insurers to provide cover to drivers who were turned down by private insurers.

The same problems exist with mandatory residual risk pools for first-party motor vehicle insurance as for pools for dangerous work. If the rates for the assigned risk pool are not kept at a much higher level than private insurers' rates, the risk pool tends to grow. Drivers may try to get assigned to the risk pool because its rates are lower than the actuarially fair rates. Risk pools usually run deficits. These are funded by insurers, who pass the costs back to safer drivers, or by governments who fund the costs through taxation. In either case, dangerous drivers are subsidised by safer

drivers and the general population. The pressure for a motor vehicle residual risk pool is likely to be greater if first-party motor vehicle insurance is compulsory.

Where the government is a service provider, eg in the case of roading, it should play a role in determining the terms of the contract for access to roads. In particular, it could consider requiring third-party insurance as a condition of using the road network. The government might stipulate that cover for vehicle insurance be reduced if the injured party was driving while drunk, or did not have a driver's licence, or was deliberately using the vehicle to inflict injury on him/herself or others.[81] Benefits could be reduced where individuals did not, for example, wear seat belts or motorcycle helmets. Exclusions such as these would be common in voluntary insurance contracts.

Where the government is not a service provider, arguments for mandating the level of cover for accidents are weak, except for non-earners for transaction cost reasons (as discussed in Section 4.5).

4.9 Conclusion

There are a number of options for reform of the ACS. To achieve maximum efficiency gains, the Corporation's current statutory monopoly must be removed. The government's May 1998 announcements are encouraging in this respect. It is critical that the Corporation be established on a basis that is as competitively neutral as possible. This favours privatisation as in options one and two. The greater the degree to which departures from competitive neutrality favour the state provider, the smaller the potential efficiency gains from competition. This favours limiting the domain in which the state provider can compete – through time and across products.

Competition offers a number of efficiency gains. The benefits are greatest when the level of insurance cover is not mandated; however, a number of gains from competition would remain if accident insurance cover were mandated. Removing the mandatory level of cover would give individuals scope to self-insure or self-protect against accidents. Mandatory cover would limit competition in insurance markets to provision of top-up cover for those who desire it, to minimising costs for the mandated level of cover and to competition for quality of services such as claims settlement.

Arguments for mandating the level of accident insurance cover where the government is not a provider of the service are weak. Individuals are likely to have different preferences for risk and different demands for accident insurance, just as they choose to spend different proportions of income on other goods and services. If insurance were compulsory, some individuals would be required to spend money on insurance that they would prefer to spend on other goods or services, or to save.

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[81] Ministerial Working Party, p 8.

Mandating the level of accident insurance would be likely to reduce the level of welfare to below the level that could be attained in a voluntary market.

Under a voluntary accident insurance scheme, individuals could choose the level of cover they wanted. Insurers would enter into contracts with hospitals for the provision of acute care and elective surgery to policy holders. Insurance would cover the costs of acute and non-acute medical treatment, rehabilitation and income maintenance.

Private insurers in a competitive market have incentives to meet individuals' preferences for risk at minimum cost. In a competitive market, insurers that do not price policies according to the associated risks will lose business. The competitive market provides the mechanism by which insurers and policy holders can find a balance between the cost and the quality of insurance. As discussed in Section 3, this balance cannot be found under the current framework. A light-handed regulatory framework similar to that applying to the rest of the New Zealand insurance industry should apply.

Direct prudential regulation of accident insurance should be avoided. Regulation of insurance markets increases the perception that the government is guaranteeing insurance. This reduces the incentives to monitor companies, and increases companies' incentives to take risk. In competitive insurance markets there are a number of mechanisms by which consumers can readily monitor insurers' performance. Insurers often choose to reinsure their liabilities in the private reinsurance market to signal their creditworthiness to customers. Without regulation, or an unpriced government guarantee, investors and customers have strong incentives to monitor performance. The threat of financial failure gives managers of insurance companies incentives to act prudently and provide customers with good service.

Concerns about the affordability of accident insurance are best handled through the social welfare system. If income were considered insufficient to purchase insurance, the government could either provide income supplements or targeted funding for such individuals. Assistance in the form of income supplements would enable recipients to choose whether to buy an accident insurance policy or to self-insure. Two forms of targeted funding could be considered. The government could continue to fund the Non-Earners' Account, as described in Section 4.5. Alternatively, it could provide vouchers for non-earners to fund the purchase of insurance from an insurer of their choice. In either case, insurance should not be provided by the Corporation, but by private insurers. The government's role should be restricted to providing income assistance to those whose income is inadequate.

Criticisms made of insurance markets relate to the costs of obtaining and interpreting information. Private insurance markets have developed a range of ways to handle information costs optimally. For example, by structuring insurance contracts to include deductibles, policy holders face greater incentives to reduce the probability

of loss than if the insurer paid the full amount of loss. Governments face similar information costs, but cannot develop methods to deal with the costs as efficiently as private insurers do, disciplined as they are by competition. Empirical studies suggest that risk misperception is unlikely to be a significant problem in most areas. Where it is of concern, there might be a case for an information campaign.

Insurance premia should not be regulated. Rate regulation means that dangerous activities and employers are subsidised by the rest of those insured and, in some cases, the general population. Studies of the US workers' compensation market conclude that rate regulation increases the cost of accidents to society.

5 Implementation issues

5.1 Introduction

The analysis contained in the first four sections of this report has demonstrated that efficiency gains could be achieved by moving to a fully funded insurance scheme and opening the accident insurance market to competition from private sector insurers.

The introduction of competition would be facilitated by ensuring all insurers operate on a competitively neutral basis. The establishment of competitive neutrality requires removing the Corporation's advantages and disadvantages. A major disadvantage facing the Corporation is the unfunded liability that has resulted from the pay-as-you-go nature of the ACS. Options for treating the unfunded liability are considered in Section 5.2. Options for establishing the Corporation on a more commercial basis or managing the Corporation's exit from the market are discussed in Sections 5.3–5.6.

Section 5.7 considers how different insurance schemes could be handled in a competitive market given the possible different conditions of voluntary or mandatory coverage.

The interface between reform of the accident insurance market and the rest of the health system is examined in Section 5.8.

Section 5.9 briefly canvasses issues relating to tort reform even though the implementation of competitive insurance arrangements does not require changes to liability rules.

Concluding comments are provided in Section 5.10.

5.2 Treatment of the unfunded liability

5.2.1 Institutional arrangements

The operation of the ACS on a pay-as-you-go basis has resulted in an actuarial deficit of around $7.5 billion in present value terms.[82] The total present value of the future costs of claims and operating costs is $8.3 billion. Account reserves stand at $0.8 billion. Around $0.7 billion of premiums have been paid in advance. Expected income maintenance and independent allowance payments comprise $6.3 billion in present value terms (ie around 80 percent of the total present value of future costs). Medical treatment costs have a present value of $0.3 billion. Social and vocational rehabilitation and miscellaneous costs are around $1.2 billion.

[82] Annual Report of the Corporation 1997, p 83. This is calculated as the total present value of the future cost of claims of $8 267 million incurred, less account reserves of $788 million.

In the institution of a competitive market for accident insurance the unfunded liability must be handled so that the distortions to competition for new accident insurance cover are minimised. If the Corporation continues to be responsible for the liability, it will require ongoing government funding to remain solvent, making the achievement of competitive neutrality difficult. The Corporation's performance in writing new insurance will be very difficult to monitor if the government continues to fund the liability on a pay-as-you-go basis.

The Corporation could be placed on a competitively neutral basis (in terms of the unfunded liability) either by separating the liability from the provision of new insurance or else by the government fully funding it. Possible institutional arrangements include the following:

- The Corporation could be assigned responsibility for the unfunded liability. It would not be permitted to compete for new business (possibly after a transitional period). The Corporation would continue to be responsible for managing past ACS beneficiaries. The government could inject capital to fully fund the liability or provide funding as obligations must be met (including funding to meet case management and administration costs). The Corporation would be wound down as the liabilities mature.
- The Corporation could continue to manage claims from past accidents and write new business on a fully funded basis. The government would inject capital to fully fund the unfunded liability.
- The government could pay a private sector organisation to take over the Corporation and the unfunded liabilities. The new owner would determine whether the Corporation continued to write new business.
- The government could separate the liability for past accidents from the Corporation. Responsibility for past accident claims would be managed by another party. The Corporation could compete for new business or the government could manage the Corporation's exit from the market.

We prefer the third or last options. The government's May 1998 announcement is in line with the last option. As discussed below, offering the obligations for tender to the private sector could reduce the cost of the unfunded liability to the government and facilitate monitoring of the Corporation if it remains in government ownership. Sale of the Corporation along with the obligations would achieve similar benefits and has the advantage of allowing the government to restrict its involvement in the accident insurance market to that of regulation.

5.2.2 Minimising the size of the unfunded liability

The size of the unfunded liability depends on the duration and profile of claims as well as the rate of return earned on any funds invested to meet future obligations. The liability could be reduced by better management of claims. It could also be reduced by the government raising debt to fully fund the liability, and this funding

being used by the Corporation to earn a higher rate of return. These options are considered below.

Better management of claims

It may be possible to reduce the unfunded liability by reducing the costs of administering claims, improving rehabilitation and ensuring that only those who are not capable of working remain on benefits. These cost savings could be achieved within the constraints of existing implicit contracts.

The Corporation's track record in managing claimants is poor, although it is now focusing more resources on this activity. It reported in its 1997 Annual Report that:

> … for the first time in the Corporation's history, our case managers were equipped with a comprehensive range of rehabilitation tools.[83]

Government ownership combined with a mandatory monopoly structure reduces the Corporation's incentives to minimise the costs imposed by claimants. The Corporation is able to pass increased costs on to the government or its captive premium payers. Its close association with the government has constrained the Corporation's attempts to tighten up on eligibility. Political sensitivities have discouraged active management of claims. The political reaction to the proposed work capacity assessment procedure and the delay in introducing such testing illustrate the problem. The Corporation has been constrained in its use of standard insurance methods for managing claimants' recovery. For example, the Corporation's inability to pay lump sums since the 1992 Act took effect may have given claimants incentives to remain on the ACS in order to qualify for weekly compensation.

Applying the SOE model to the Corporation might improve its incentives to manage past claims more efficiently. The SOE model aims to improve managers' incentives by clarifying objectives, improving monitoring, and rewarding and sanctioning performance. Implementation of the SOE model has led a number of government-owned enterprises to substantially reduce their costs. However, the incentives for SOEs to perform remain weak compared with those of private organisations. For example, as explained in Section 3.4, managers of SOEs are not exposed to capital market disciplines such as the threat of takeover. The risk of political interference in the Corporation's management decisions is likely to remain high. Politicians may not be willing to accept the political backlash likely to arise from a more rigorous enforcement of existing contractual arrangements.

An option would be for government to pay a private party with a high credit rating to assume responsibility for meeting the government's obligations to those receiving ACS benefits. The government would pay the successful purchaser to take over the liabilities. By conducting a competitive tender the government would capture the anticipated cost savings that the highest unsuccessful bidder would expect to

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[83] *ibid*, p 5.

achieve. Other things being equal, the higher the rating of any private company that takes over the obligations the lower the risk that it becomes bankrupt, which would force the government to resume responsibility for beneficiaries.

The liabilities could possibly be split up if different insurers had different abilities and/or incentives to handle different parts of them. It should be possible to design a tender process that allowed for this possibility. A variation on this option would involve the government offering the Corporation and its existing obligations for sale by tender.

The successful tenderer would have strong incentives to minimise the costs of managing the claims since this would directly improve its returns.

Given the incentives for private operators to minimise costs, the government may have to specify carefully the obligations to current beneficiaries. The government may need to monitor the private provider to ensure that the contractual obligations are met. If the contractual obligations can be clearly specified, the government could leave beneficiaries to enforce contracts using normal legal remedies. The latter option would reduce the government's ongoing involvement in the provision of accident insurance services. However, the government might find it difficult to make a credible commitment not to intervene in disputes over benefits. A private insurer would be reluctant to contract with the government unless it was confident that its obligations would not be extended without compensation.

The incentive for a private insurer to 'cheat' on its obligations to beneficiaries would depend in part on the importance of its reputation for treating beneficiaries fairly. If it were also in the market writing new business, its incentives to provide fair treatment would be stronger than if its only business was handling the past claims. These factors could be considered when the government tendered the claims obligations.

Estimating the future costs of managing claims from past accidents is very difficult, but some private sector organisations are expert in making such assessments. Access to the Corporation's database would assist bidders to make a more informed bid for the liabilities. Bidders could be expected to require a lower payment the lower the uncertainty about these future costs.

The cooperation of the Corporation would be required in separating out and tendering the unfunded liabilities.

Privatisation of the liabilities would enable government to terminate its involvement in the provision of accident insurance if it so chose. Its ongoing involvement as a regulator is a separate issue.

Fully funding the liabilities and investing in equities

Another option for reducing the size of the unfunded liability involves the government fully funding the deficit in the ACS and allowing the Corporation to invest the funds to maximise returns.

The government might issue the Corporation with sufficient government stock to eliminate the actuarial deficit. The Corporation could then trade the government stock to achieve a more conventional portfolio for a fully funded accident insurance scheme. A conventional portfolio would have a high weighting in equities and could be expected to generate a higher return than government debt. By investing in equities the Corporation could trade the expectation of higher future profits for the greater risk of future outcomes.

In principle, the government could achieve the same outcome by investing the proceeds of debt sales in higher returning assets independently of its treatment of the ACS's unfunded liability. The investment in equities should reduce expected future tax burdens. In the extreme, all taxes might eventually be eliminated by such a strategy (if actual returns reflect expected returns).

There are good reasons why governments around the world do not generally adopt such a high risk strategy. Problems associated with voting, principal-agent issues and capture by interest groups are likely to lead to governments squandering surplus income and/or assets.

These public choice arguments against a strategy of reducing future taxes by investing in relatively risky assets may have somewhat less weight in the context of the disciplines inherent in a professionally structured accident insurance company. Therefore, the possibility that investment in a diversified portfolio of assets by the Corporation could improve national welfare cannot be ruled out. The most powerful argument is that private insurance companies tend to invest their funds in balanced portfolios. The Corporation itself currently maintains $0.8 billion of reserves. It invests the reserves in a range of assets including equities, options and overseas assets.[84]

In the private sector, investing in riskier assets to increase expected returns does not in itself create any value. Such an activity improves outcomes only if the riskier portfolio satisfies individuals' risk preferences and if they have no more efficient way of satisfying these preferences.

Where taxpayers share in the risks, as is the case with the ACS's unfunded liabilities, the portfolio decision could affect the deadweight costs of taxation. If the assets are invested in securities with higher risk and higher returns, future expected taxes would be reduced, reducing the deadweight cost of taxation. This factor might favour higher weightings in riskier investments than might otherwise be warranted.

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[84] *ibid*, p 68.

In addition, it is conceivable that some asset mixes might hedge the taxpayer against unexpected changes in the ACS's liabilities. A shock that increases the actuarial liability will be less costly for the taxpayer if it also raises the value of the Crown's assets, of which the Corporation's assets would effectively be a part.

An offsetting factor is that the greater the uncertainty about future returns, the greater the uncertainty about likely future tax rates. Public finance theory suggests that it is plausible that volatility in tax rates through time and across states of nature could reduce national welfare, other things being equal. The optimal equity weighting would not necessarily be 100 percent even if it were greater than zero as equities tend to have more volatile returns than bonds.[85]

Of course, a one-off payment of around $7.5 billion to the Corporation to fully fund the government's obligations would involve substantial risks to the government. The difficulty of monitoring an SOE combined with the fact that the funding is not required in the short term results in a substantial risk that the reserves would be squandered. In the short term, the reserves might reduce the incentives of the Corporation to minimise costs. As long as the Corporation remains in government ownership there is likely to be pressure to use accumulated funds for political reasons. If the Corporation were to be fully funded then it is particularly important that good governance structures are put in place. Because of the risks of poor performance if the Corporation is fully funded, this option is not recommended.

A one-off payment to a private operator decided by competitive tender would factor in the benefits that the private operator could generate through investing the funds in the optimal portfolio.

A one-off payment to a private operator would also involve substantial risks. If a private sector operator was paid to take over the obligations and subsequently was not able to meet those obligations, there is a strong likelihood that the government would be obliged to make up the difference. This would reduce the private company's incentives to ensure that it bid the correct price or carefully managed the invested funds.

If the government made periodic payments conditional on performance, this would reduce the prospect of the private party mismanaging its funds and becoming insolvent in the future. However, this option would require ongoing involvement by the government.

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[85] The option of fully funding the government's liability is discussed in relation to the Government Superannuation Fund in B Wilkinson & S Begg (1997) *Government-guaranteed Financial Institutions: Policy Issues Relating to the National Provident Fund, Government Superannuation Fund and Public Trust Office*, New Zealand Business Roundtable: Wellington, pp 19–22.

5.2.3 Who should fund the liability?

Whether or not the ACS's past obligations are contracted out to the private sector, an issue remains as to who should pay and over what period. The main options are levying those who benefited from underfunding in the past; imposing a levy on insurance premia into the future; levying earners; or funding from general taxation.

If those who contributed less than the actuarially fair level had anticipated that they would have to make up the difference at a subsequent stage, a case could possibly be made on efficiency grounds for levying them. The suggestion is that there would be little difference between, on the one hand, individuals investing the difference between the pay-as-you-go premium and the actuarially fair premium, and, on the other, a fully funded regime in which insurance companies invest the premia on behalf of their clients. If the insured had anticipated having to make up the difference, then arguably levying them for the difference would involve relatively small distortions.

However, it seems unlikely that people anticipated paying for the underfunding. Many of the past beneficiaries – firms and individuals – have ceased operation or emigrated or died and could not be levied. Even if individuals had anticipated paying for the underfunding, there would be high transaction costs in identifying individuals who had received benefits and levying them in proportion to the actuarial shortfall for each individual.

The costs of the past liabilities should therefore be considered as sunk. The accidents generating the liability have already happened. Recovering the full costs from those that were insured cannot change those accidents. Where costs are sunk, an efficiency criterion suggests that funding should be raised in a way that least distorts decision making. Generally broad-based taxation funding is likely to minimise deadweight costs. Thus, on efficiency grounds funding should be raised from general taxation rather than a tax on employers and earners alone; a levy on current and future insurance premia; or on past beneficiaries of underfunding. Of course, if the insurance funds were in surplus, a symmetric argument would suggest that the government take the surplus funds. This is in contrast to the premium changes announced in December. The government has announced that it intends to move ACS funding to a fully funded basis over the next 15 years by imposing a reserves surcharge on earners and employers. The efficiency case for levying current earners for the costs of past accidents is not obvious as long as the premiums current earners are paying to guard against future accidents to themselves are actuarially fair. Charging current earners an additional amount to cover the costs of past accidents to others is discriminatory compared to an income tax or a goods and services tax in that it imposes the burden on a narrower base. Arguably, it would be more efficient to fund the costs of past accidents from general taxation while ensuring that premiums for accidents yet to occur are actuarially based.

Whether or not funds are raised from those who purchase insurance or from general taxation, levies could be structured to be increasing, flat or reducing through time.

Deadweight losses would generally be lower the longer the period during which the deficit was funded. A flat tax rate would also minimise deadweight losses.

5.2.4 Treatment of the unfunded liability in the Crown Financial Statements

The Corporation is a Crown entity. As such, its accounts are incorporated in the Crown Financial Statements (the CFS) using a modified equity method of combination. This method records the Crown's share of each Crown entity's net assets, including any changes in the values of these assets, and its surpluses and deficits. Commitments and contingent liabilities of Crown entities are recorded in the corresponding statements in the CFS.

Under this accounting treatment, the Crown's *operating balance* incorporates the effects of Crown payments for the Corporation's services (primarily the Crown's payments to fund the Corporation's Non-Earners' Account), Crown recoveries from the Corporation, and the Corporation's 'attributable' surplus. The attributable surplus is calculated as the Corporation's operating balance and includes asset revaluations to the extent that they reverse previous downwards revaluations included in earlier years' accounts. The Crown's *balance sheet*, ie the Statement of Financial Position in the CFS, incorporates the Crown's share of the Corporation's net assets.

Currently the Corporation and the CFS report the unfunded liability in notes to their accounts, but not as a liability in their statements of financial position. Doubts about the validity of this treatment have persisted. We understand that the Auditor-General recently reviewed the accounting issue and determined that the unfunded liability should be recorded as a liability. The government announced in its 1998 Budget that this change will take effect from 1 July 1999. This means that it will be recognised in the next published forecasts for the 1999/2000 year.

The change is logical. The Corporation is legally obliged to meet its obligations to its injured clients, but funders of the ACS have no explicit contractual commitment to make future payments to the Corporation. How the ACS's future obligations are funded is fundamentally for the government to determine. It may fund them from future taxes, charges or levies. Under current conventions, future taxes are not shown as an asset in the Crown Financial Statements but contractual obligations are recorded as a liability. The change will ensure that Crown net worth is more accurately recorded.

Recording the present value of the future costs of existing claims as a liability will reduce reported Crown net worth. The Corporation's 1997 Annual Report put this value at $8.3 billion at 30 June 1997. This is sizable in relation to Crown net worth which was forecast in the May 1998 Budget Economic and Fiscal Update to be $13.7 billion on 30 June 2000. This is a one-off effect, although future fluctuations in the value of the Corporation's accrued liabilities have the potential to alter Crown net worth, the Corporation's 'attributable' surplus, and thereby the Crown's operating balance.

We understand that the Corporation will report as a current expense the payments to be made in respect of these obligations as they full due. If the Corporation funds these commitments from a special levy on payrolls its net worth will increase as the liabilities are paid off. The changes in the Corporation's net worth will be incorporated into the CFS's operating balance, as described above.

5.3 Establishing the Corporation as an SOE

If the accident insurance market is opened to competition then the Corporation should be established as an SOE, privatised, or its exit from the market managed to minimise competitive distortions. In this section we consider the option of corporatisation. In the absence of competition, corporatisation would offer few benefits. Key elements of the corporatisation framework are discussed below.

Clear non-conflicting objectives

Corporatisation requires that managers of an SOE be set clear and non-conflicting objectives. Generally, a single key objective of operating the enterprise as a commercial business is established.[86]

Accident insurance is a private good that can be supplied on a commercial basis. Thus, under the SOE model the Corporation would be established as an insurance company with the single objective of profit maximisation. The Corporation would be given the flexibility to achieve this in the way that it thought best.

A commercial objective would not necessarily conflict with many of the objectives currently pursued by the Corporation. An efficient insurance company would typically meet consumers' demand for income protection, encourage an efficient level of accident protection, and seek to ensure expeditious rehabilitation.

Currently, the Corporation provides a single 'one-size-fits-all' insurance package in each of the funds. In a competitive market, the Corporation would need to develop a range of insurance packages designed to meet its clients' needs. Its scope to develop different options would depend on whether the government continues to mandate comprehensive coverage levels.

The Corporation does not have explicit insurance contracts with its clients – the cover is instead defined in legislation and a large number of regulations. In a competitive market, the Corporation would need to contract directly with its clients.

The Corporation does not receive premium payments directly from its clients. Instead, vehicle cover is collected at the time of car registration and from a petrol tax, and fees for non-work accidents and levies on employers' payrolls and the self-employed are collected through the income tax system. The government pays directly for non-earners.

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86 State-Owned Enterprises Act 1986, s 4.

These special payment options could not continue. The Corporation and private insurers could choose to contract with other agencies for the recovery of premia, but taxes could not be used to fund the Corporation.

Annual statement of corporate intent

The objectives of an SOE must be set out in detail in an annual statement of corporate intent that is subject to the approval of the shareholder. Managers are held accountable for achieving the objectives contained in the statement of corporate intent.

The Corporation is currently governed by an Annual Statement of Intent and Service Agreement. The current statement reflects the Corporation's monopoly position and its lack of incentives to minimise costs and undertake effective rehabilitation. A more straightforward document would be possible if the Corporation had a profit-maximising objective in a competitive insurance market.

Non-commercial services

Where the government requires a social service from an enterprise (in conflict with its commercial objectives) the service required must be explicitly contracted for.

The government needs to clearly define its social welfare objectives and devise options for achieving them that do not compromise the establishment of the Corporation on a competitively neutral basis. Currently a number of social welfare objectives are pursued non-transparently through the ACS. Options for handling these social outputs were discussed in Section 4.

If insurance cover is compulsory, there is likely to be pressure to retain the Corporation as the insurer of last resort during a transitional period. If so, the government should explicitly contract for the services it requires from the Corporation for a defined period. A better option would be for the government to pay for this service at a price determined by competitive tender. The option of regulating insurers so as to oblige them to quote a price is a non-transparent way of funding a lender-of-last-resort service that is likely to raise insurers' costs generally. In the longer run, there should be no need for special arrangements. As long as the government does not impose price controls on premia, insurance should be available to most at a price in a competitive market. If some individuals cannot afford the insurance, the government could provide them with an income subsidy. If insurers are not prepared to incur the costs of writing an insurance policy for small numbers of high risk individuals, the government could explicitly contract with private insurers for these services on a competitive basis. These issues were discussed in more detail in Section 4.

Managerial autonomy

In the corporatisation model, managers are given a high degree of autonomy over day-to-day operational decisions, as in private sector corporations.

The relationship between the Corporation and the minister should be put on to an arm's length basis to avoid possible conflicts of interest, and to provide an operational focus for managers and facilitate measurement of performance.

Commercial board of directors

Managers are answerable to owners via a board of directors appointed on the basis of commercial expertise. The board is responsible for strategic decision making.

The Corporation has a board that has been appointed on the basis of commercial expertise. Currently the government's involvement in strategic decision making in relation to the Corporation is much greater than would be appropriate for an SOE. The government should restrict itself to directing the Corporation through the annual statement of corporate intent and then monitoring performance against this agreement. It should not be involved in setting premia.

Reporting requirements

SOEs are generally required to provide half-yearly and annual accounts. The Corporation already provides these accounts.

Monitoring arrangements

SOEs are subjected to a formal monitoring regime. The Crown Company Monitoring Advisory Unit is the principal monitoring agency.

Currently the Corporation is monitored by the Department of Labour. It monitors the Corporation's performance and advises on the annual service agreement. The Corporation should be subject to the formal monitoring regime that applies to other SOEs. Exposing the Corporation to competition and giving it the principal objective of profit maximisation would facilitate monitoring.

Separating the unfunded liabilities from the Corporation would also make monitoring of performance more straightforward.

Removing advantages and disadvantages

The SOE model requires that regulatory and other government-conferred advantages and disadvantages be removed.

The Corporation's regulatory responsibilities, such as its accreditation of employers for self-insurance, need to be passed to an independent government agency or the regulation dispensed with. As discussed earlier, the unfunded liabilities should be either fully funded or separated from the Corporation. The Corporation would need to levy its clients directly for premia.

The Corporation's database provides it with a competitive advantage vis-à-vis new entrants to the market. The database should be made available to all those tenderers short-listed for taking over past liabilities and to private insurers wishing to enter the market subsequently. Although the ACS's histories are somewhat distorted by poor

case management by the Corporation, the information would still be valuable for new insurers writing accident insurance business in New Zealand.

Establishing a commercial balance sheet

Corporatisation requires the Corporation to be established with a balance sheet and corporate structure comparable to private accident insurers.

Because the Corporation has insufficient funds to meet its liabilities its net value as a business is negative. The actuarial underfunding of the ACS is currently estimated at around $7.5 billion.

The Corporation would require a capital injection from the government to establish it on a commercial basis. As discussed above, there are two major options here. The first would involve the government injecting sufficient capital to allow the Corporation to fully fund its existing liabilities. The second option involves separating out the past liabilities and injecting sufficient capital to allow the Corporation to continue to write business into the future, but on a fully funded basis. Separation of the liabilities would allow them to be tendered out. It would simplify monitoring of the Corporation's performance.

Corporate form

Private insurance companies comparable to the Corporation are generally organised either as mutuals or private companies. The main distinguishing feature of mutuals is that the owners are the customers or policy holders. Mutuals may remove conflicts between shareholders and policy holders. Mutuals remove the risk that reserves needed to fund future accidents will be paid to shareholders as dividends. Given the difficulty of valuing the actuarial liability for future insurance cover, assuming the past liabilities were separated from the Corporation, conflicts of interest might be a significant consideration in the design of corporate form. On the other hand, the incentives for managers to perform are generally weaker in mutuals, and mutuals have greater difficulty obtaining capital for growth compared with investor-owned insurers.

In recent years, a number of large mutual insurers have demutualised or are considering doing so. It appears that the balance of costs and benefits has shifted in favour of investor-owned insurance companies. Mutual structures are less common for disability and casualty insurance than for life insurance. Many of the Corporation's activities relate to the former category. Because of this, a normal company structure appears preferable if the Corporation is established as an SOE.

This conclusion is reinforced by the fact that the Corporation has no residual claimants as such, because of the pay-as-you-go nature of the ACS. Its past clients cannot legitimately claim to have any implicit ownership rights to the Corporation.

If the Corporation is established as a firm in a competitive market, clients can choose whether to insure with it or with competing mutual or non-mutual insurers.

Establishing the Corporation as an investor-owned (ie by government) corporate would not preclude it being bought by a mutual if it were offered for sale.

5.4 Difficulties in applying the SOE model

A number of deficiencies in the SOE model have been highlighted by experience in New Zealand over the past 10 years. These stem from incentive problems associated with continuing government ownership. They mean that it is not possible to establish businesses on a fully neutral basis. The deficiencies result from the following factors:

- Politicians may be unwilling to accept some of the basic principles of the corporatisation model.
- Capital market constraints on the performance of the businesses that remain in government ownership are relatively weak. For example, an implicit government guarantee of debt remains.
- There is an ongoing risk that businesses remaining in government ownership will be subject to politically motivated intervention. Political interference has been a particular problem in sectors such as electricity and health where social and commercial objectives continue to be mixed.
- The ultimate owners of government organisations have relatively weak incentives to monitor the performance of management.
- Governments find it difficult to agree on strategic directions for SOEs given political and fiscal risks and the lack of agreement about the reasons for continuing government ownership.

The problems that face a government-owned fully funded accident insurer are even more serious than those that face other SOEs. The problems are created by the nature of a fully funded insurance scheme.

In a fully funded regime, today's premia are set at levels that cover all of the current and future costs arising from accidents that occur this year. The premia will be affected by estimates of future interest rates, the likely return on capital invested, likely claims duration, the success of the Corporation at rehabilitation, and the future costs of medical treatment. Small changes can have a large effect on the total liabilities. As a result, calculating premia is demanding and subjective.

Actuaries can really only calculate the actuarial values that result from particular assumptions. But different actuaries are likely to favour different assumptions and therefore come to different valuations.

Given the subjectivity in estimating the actuarially correct premia (given all the variables), even with close scrutiny it may be difficult to know categorically whether the Corporation is charging an actuarially fair rate or whether it is actuarially solvent. Underpricing of premia could be difficult for an outside monitor to detect until a number of years had elapsed.

Competing valuations involve different views of the future. Competition allows the contest between such different views to take place subject to a critical discipline – customer satisfaction.

Competition would impose constraints on the Corporation charging premia that are too high. If they are too high, an individual or firm could move to another insurer. Reducing the mandated level of cover would provide an additional constraint since individuals and firms could choose to purchase the lowest level of cover or not buy cover at all if they were dissatisfied with what was being provided. However, competition does not prevent the Corporation underpricing current premia to retain business.

Because the insurer invests premium income to meet the costs of this year's accidents in future years, a fully funded insurance scheme builds up reserves. The reserves potentially provide a large amount of 'slack' in the organisation. Poor performance could be sustained for an extended period before the Corporation, operating a fully funded insurance scheme, became insolvent.

In addition, as long as the Corporation and the ACS are closely associated with the government, politicians have strong incentives to minimise premia. Thus, while the government owns the Corporation there is a risk that the government might instruct it to use its reserves to reduce premia.

The risks of underpricing would be even more serious if the Corporation were retained as the insurer of last resort. Given the difficulty of specifying the role of insurer of last resort and establishing a commercial contract, there is a risk that such a requirement could be used as an excuse for poor performance.

Because of the risk that the Corporation will underprice its policies, private insurers may be reluctant to enter the market while the government-owned insurer remains in it.

A further concern is that specialist accident insurers are rare in private insurance markets. This suggests that efficiency gains are made by companies providing accident insurance along with other forms of insurance. However, the government would be unwise to increase its exposure to the insurance market by allowing the Corporation to expand into other insurance products.

5.5 Privatising the Corporation

The inherent weaknesses in the SOE model mean that government ownership is not the best option for the Corporation in the long term. The usual problems with SOEs are exacerbated in the case of the Corporation because of the greater difficulty of ensuring that it is pricing its policies correctly. Because of these difficulties, the case for privatising the Corporation as soon as is practical is relatively strong.

If the Corporation is first established as an SOE, the government could sell it using its normal, well-established sales process. This generally involves appointing consultants to undertake a business evaluation study. The consultants value the organisation, identify any impediments to sale, and recommend the optimal sales approach. Most organisations have been sold through a competitive tender process. A similar approach would probably be suitable for the Corporation.

The government could possibly privatise the Corporation without first corporatising it. Arguably, private sector individuals are better able to restructure a corporation than is the government, so that selling the Corporation before corporatising it may economise on the costs of transforming it into a fully efficient insurer.

At a minimum, the government would need to remove the Corporation's non-commercial responsibilities prior to sale. It would also need to implement sufficient reform of the accident insurance market to reassure a potential purchaser that the rules were not likely to change adversely in the near future. The Corporation's database should be made available to new entrants to the market so that the purchaser of the Corporation did not obtain an unfair advantage in competing for business.

The Corporation could be sold either with or without the obligation to meet the unfunded liabilities. If the unfunded liabilities remain with the Corporation the government would need to pay a private operator to take the Corporation over. This option would raise the issues discussed earlier about the creditworthiness of the private operator and the government's options if the private operator failed to meet its contractual obligations to existing ACS beneficiaries.

The Corporation should not be sold subject to a requirement to act as the insurer of last resort. The government should obtain any non-commercial outputs by contracting for their provision from the insurer prepared to provide them for the lowest cost.

5.6 Managing the Corporation's exit from the market

Competitive neutrality could also be achieved by the government managing the exit of the Corporation from the market over a period of time sufficient to allow private insurers to take over its business. The Corporation could be required to step out of the accident insurance market within a well-defined period of time. The appropriate timing would depend on the rate at which the market builds up information on risks and how quickly the government can put in place policies to handle individuals unable to afford insurance premia.

The Corporation could possibly continue to manage past obligations (including the unfunded liability) but not be allowed to write new business. Its business would decline as individuals moved off ACS benefits and staff moved to other insurers and/or other activities.

The attractiveness of the option of managing the Corporation's exit depends to a large extent on the value that might be attributed to the organisational structure and expertise that the Corporation has built up over the years. If a private party places value on the organisation, it would make sense to sell it rather than wind it down over time.

5.7 Treatment of different insurance schemes

5.7.1 Voluntary regime

In a competitive insurance market, competing insurance companies would offer a variety of policies and premia to cover work and non-work injuries. Insurance companies would tailor policies to meet the different risks faced by different individuals, as well as differences in their preferences and in their abilities to control the expected costs of accidents. Insurance companies may offer group insurance contracts to firms, members of sports clubs, or to groups organised for other purposes, eg credit card holders. Insurance companies would be likely to offer a variety of options for bundling insurance for non-work, work and motor vehicle injuries, and illness and health cover.

In a voluntary regime, individuals would ultimately be responsible for determining whether they had cover, the extent of cover and the choice of insurer. The government's responsibilities would be limited to any continued involvement with the Corporation, establishing a regulatory framework for competitive insurers and providing a social welfare safety net for accident victims who did not have insurance.

5.7.2 Mandatory regime

If insurance remains mandatory, the government must determine the mandated level of coverage, who should purchase the insurance and how compulsory cover is to be enforced. These issues are complex and contentious.

Section 4 concluded that efficiency would be improved by reducing the mandated level of cover from its current level. If the government continues to mandate coverage it should at least allow greater scope for self-insurance and self-protection. The mandated minimum level of cover for income replacement could be reduced to the level of other welfare benefits if the compensation is the sole source of income for an individual. Those with access to alternative income support (eg from a working partner or investments) could choose a lower level of cover. As at present, individuals could choose higher levels of cover (eg earnings-related cover), but this would require payment of a higher premium. Acute medical costs would continue to be covered by the public health budget.

For each type of insurance, responsibility for purchasing insurance could rest with employers, taxpayers or the individuals covered. If insurance is mandatory, then responsibilities for purchasing cover would probably need to be mandated.

If insurance cover is mandated, responsibility for insurance for employment accidents should probably continue to rest with employers, given the likely transaction cost advantages of group-based arrangements. Employees could possibly be allowed to contract out of employer-provided insurance but would then be required to purchase cover for themselves at the mandated levels. To enforce the minimum insurance cover set by the government, employees opting out of the employer-financed scheme could be required to provide their employer with a certificate confirming that they belonged to a qualifying insurance scheme.

Responsibility for purchasing earners' non-work insurance could either rest with employers or employees. The case for assigning responsibility to employers rests largely on minimising compliance costs – the same enforcement mechanisms could be used both for work and non-work accident cover. As with workplace accidents, individuals should be able to take responsibility for obtaining their own insurance but be required to provide the employer with confirmation that they belonged to a qualifying insurance scheme.

The alternative would be to assign responsibilities to individuals to insure themselves directly for non-work injuries. Ensuring compliance becomes somewhat problematic. One option would be to use the Department of Inland Revenue, but this may be contrary to the department's attempts to reduce compliance costs by reducing the need for individuals to file income tax returns.

Mandatory non-earner accident insurance could continue to be funded by taxes. The government could contract for the delivery of benefits and their management to a private insurer. An alternative approach would be for the government to provide vouchers to individuals with low income. Individuals would then be responsible for purchasing their own cover.

Motor accident insurance could be based on insuring drivers or motor vehicles. Ensuring compliance with a mandatory insurance scheme might favour vehicle insurance, although better tailoring of premia might be possible if drivers are required to obtain insurance. These two options might coexist in a competitive insurance market. Drivers or vehicle owners could be required to obtain cover for pedestrians and passengers. Alternatively pedestrians and passengers could obtain their own cover (but the costs of ensuring compliance would be high).

An option is to leave the issue of insurance and liability arrangements for vehicles to the roading authority to determine, along with the rules for driver and vehicle eligibility for access to the roading network. With the current ownership of roads, this would mean that conditions for access to roads would be determined by central and local governments.

Proof of insurance cover could remain a condition for licensing of vehicles. However, the recovery of accident insurance premia via a petrol tax would not be possible since different insurance companies would be offering different policies and different premia. Ensuring compliance with a compulsory insurance regime in a competitive

market would therefore be likely to be more costly. The costs of ensuring compliance if drivers, rather than vehicles, were insured would also be higher.

Under the current monopoly regime, benefits are guaranteed to all, irrespective of whether or not an individual has paid for insurance cover. Compliance is achieved through linking the payment of levies with the collection of income tax (in the case of the Employers' and Earners' Accounts) and vehicle registration and petrol tax in the case of vehicle coverage.

Even with mandatory insurance, individuals and firms choose not to purchase insurance under the current monopoly regime. For example, levies for motor vehicle accident compensation insurance provided by the Corporation are obtained from annual registration fees and petrol tax. Around 10 percent of vehicles using the road are unregistered and thereby avoid paying the accident insurance premium.[87] Despite premia being recovered through compulsory levies there are substantial unpaid premia and therefore bad debt that is borne by the Corporation (and ultimately the government).

Full compliance can never be achieved whatever regime is adopted. It is inevitable that some individuals will not purchase accident insurance cover in a competitive regime if insurance cover is compulsory. The government should not underwrite the full costs of those who choose not to purchase accident insurance – all can learn from the misfortunes of those who gamble on not having accident insurance and lose. The more generous the benefits provided to those who do not obtain insurance, the more individuals are likely to free-ride on the government's assistance rather than pay for their own insurance. Arguably, the government should not treat individuals who become dependent on others as a result of an accident and who have chosen not to purchase insurance more generously than it treats other cases of dependency.

5.8 Interface with the health system

Currently the Corporation makes a bulk payment to the Department of Health for the costs of acute accident-related care. The Corporation also undertakes a few specific acute care initiatives such as the emergency response ambulances that it funds directly.

With the introduction of competitive accident insurance, one option would be to bill the victim or the victim's insurer for the costs of acute accident-related care. The question that would arise is what to do about a situation in which the victim was uninsured and unable to meet those costs. Two relativity issues arise. One is the relativity between people who have provided for this contingency and those who have not. This issue was discussed in the last paragraph of Section 5.7. One option here would be for the Crown to act as funder of last resort for acute care. If it took on

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87 Accident Rehabilitation and Compensation Insurance Corporation (1997) *Motor Vehicle Account: Premium Structure Options Summary*, p 1.

this role, it might seek to recoup all or some of its expenses out of the uninsured victim's future earnings or benefits, in order to alleviate free-rider problems. It could also tender out this underwriting role. The second relativity issue concerns the basis for treating someone needing critical care, as a result of sickness, differently from someone who has the same requirement as a result of an accident. This distinction, particularly if it has no sound public policy rationale, will, as a practical matter, create regulatory difficulties at the boundaries that are difficult to defend and that attract ongoing public controversy. People's preferences in this respect are surely indicated by the fact that first-party private health insurance policies covering the cost of acute care do not draw such a distinction. This policy needs to be revisited.

An alternative to making the Crown insurer of last resort would be to make the purchase of insurance for acute care mandatory in the case of accidents, if not of sickness. Proponents of this option may justify it on the basis that it addresses the free-rider problem that could arise under the first alternative if the Crown was not good at imposing disciplines on those who did not self-insure. It may also have an efficiency advantage if the premiums on such policies were risk-related and thereby modified risky behaviour. However, the very presumption that the Crown would not be good at imposing disciplines under the first option must create a presumption that, sooner or later, politicians would bow to popular pressure to set up arrangements that involve cross-subsidies for low income groups so that mandatory premiums were more 'affordable'. Indeed, the very fact that premiums are mandatory makes this political response more likely. The fact that people's freedom to self-insure, or to buy a policy that better meets their preferences, has been removed creates a irremovable argument for compensation, perhaps in the form of improved benefits at the same cost – as the whole experience with the ACS demonstrates. Any consequential cross-subsidies undermine the rationale for the mandatory approach that it addresses the problem of free-riders. The affordability objective could be achieved in a more transparent, and therefore more accountable, manner if any such support was provided explicitly through the social welfare system. The greater the extent to which any social welfare support was tied to the provision of acute services, the less effective this approach would be in solving the free-rider problem or improving the target group's incentives to avoid acute care situations.

A third option would be for the taxpayer to pay for all critical care at public hospitals whether the cause was accident or illness. Presumably this would see the Corporation ceasing to make payments for these costs so that it would be competing on the same basis as private insurers in this respect. The ACS would then be much closer to an income replacement scheme than is the case at present – with the unusual feature that it only applies in the case of accident. This option also appears to be worthy of serious consideration. It is noteworthy that, in the private sector, first-party health insurance policies are currently sold independently of income replacement policies. This suggests that such a separation better meets consumers' preferences, at least under current government health care policies.

In our view, it would be preferable for the government to do a fundamental reassessment of the basis for the ACS than to drift into the regulation of the insurance industry that mandatory insurance for acute care implies. A mandatory approach brings with it many regulatory risks and a convincing case would need to be made that it is really likely to produce, in practice, material net efficiency gains.

For elective health services, the Corporation now contracts with providers. It would continue to do so if competing insurers entered the market. The competing insurers would themselves have to contract for the services they required, including services from public providers. Providers will need to track which patients are covered by the Corporation and which are covered by other insurance companies. Thus, the introduction of competing insurers may involve some additional transaction costs. These additional costs are likely to be relatively minor.

5.9 Liability issues

The implementation of a competitive accident insurance regime does not rely on changes to liability arrangements. Nevertheless, the accident insurance and liability issues are linked in the public mind because the ACS was linked with a change to a no-fault liability regime.

Our analysis of existing liability arrangements suggests that there may be a case for reforming liability arrangements. However, determining the optimal approach requires further analysis and public debate. This should be undertaken before decisions on the optimal liability regime are made. Further analysis should not hold up the reform of the accident insurance market.

5.10 Conclusion

Introducing competition to the accident insurance market while retaining a government-owned insurance provider requires that the Corporation be established on as competitively neutral a basis as possible.

To achieve competitive neutrality the government would have to separate the unfunded liability from the Corporation or fully fund the liability. Because of the difficulty of calculating the actuarial liability accurately, there is a risk that providing the Corporation with full funding for past accidents would distort competition in the accident insurance market for future business.

One option is for the government to pay a reputable third party (one with a high credit rating) to assume responsibility for meeting the government's obligations to individuals currently receiving accident compensation payments. The price would be determined by a competitive tender. The successful bidder would be the one that offered to take over responsibility for paying compensation benefits, and rehabilitating those receiving benefits, for the smallest fee. The government could allow insurers to tender for all or part of the liabilities.

Payments to the successful bidder could possibly be made quarterly, subject to conditions that the party maintained a target credit rating with penalties for failure to meet those conditions.

The Corporation should be corporatised if government ownership is retained. Deficiencies in the SOE model highlighted by experience over the past 10 years mean that it is not possible for the government to establish businesses on a fully neutral basis. These problems are exacerbated because of the nature of a fully funded insurance scheme. The reserves that are inevitable in a fully funded regime may weaken the accountability of a publicly owned insurer. There is also a risk that the Corporation would underprice its policies to prevent private insurers entering the market, and this underpricing could not be readily detected in the short term. For these reasons government ownership is not the preferred option for the Corporation in the long term. The Corporation should be privatised or its exit from the market managed as soon as is practical.

If insurance coverage is voluntary, then the introduction of competition to the accident insurance market is straightforward. Individuals can decide for themselves what level of cover to purchase and from which company. The government could address problems of affordability of insurance directly through the social welfare system.

If coverage remains mandatory, ensuring compliance in a competitive market will involve some additional complexities and difficulties. The government must determine the mandated level of cover, who should purchase the insurance and how the purchase of the compulsory cover is to be enforced. The mandated level of cover is likely to reduce the welfare of individuals who would prefer to self-insure or to buy policies (such as those with long stand-down periods) that are inconsistent with the mandated policies. Enforcement of the purchase by individuals of insurance policies covering non-work accidents may be problematic. Other individuals indulging in high risk activities may strenuously resist the commensurately high premiums that private insurers would wish to charge and that the government would have made mandatory for those individuals to pay. Pressure for price control or enforced (cross-subsidised) risk pooling could result. Taxpayers would be at risk if an insurer failed and policy holders could cogently argue that their exposure to such risks was due, at least in part, to the government's intervention. These potential efficiency losses are likely to be smaller the lower the mandated level of cover.

Non-compliance with a mandatory scheme is likely to be somewhat greater in a competitive insurance model than with a single state provider. The adoption of a competitive insurance model would make it even more important to consider moral hazard issues when designing the government's safety net level of care for those who buy insurance policies from financially weak insurers or who otherwise wittingly or unwittingly self-insure.

6 Liability rules and the control of risk

6.1 Introduction

Section 6 explores the issues raised by the proposition that a move to competitive insurance arrangements should be accompanied by a return of the right to sue.

Section 6.2 explains why a return to the right to sue is likely to be a point of debate in New Zealand. It argues that the case for a return of the right to sue might be better built on a deterrence argument than on a compensation argument. Suing those who cause injury confronts injurers with the consequences of their actions. To the extent that potential injurers become more careful, there could be fewer future accidents. But liability suits are not the only way of inducing care. Section 6.2.3 contrasts liability actions with other means available to society for controlling risks. The utility of any technique depends its inherent strengths and weaknesses in relation to any particular type of accident situation. There is no basis for expecting liability rules to be efficient remedies in all situations.

Section 6.3 describes how, in the absence of government regulation, private arrangements using common law and contract would combine to address the issues of compensation and deterrence. It explains, in principle, why a blanket, mandatory, no-liability rule is unlikely to give potential injurers a satisfactory incentive to take care in all situations. However, there is also evidence (as in the stylised analysis detailed in Appendix B) that a no-liability rule can prove, in some situations, to be as effective as liability rules. This section ends with a discussion of the fundamental information cost and transaction cost problems that constrain the control of risk.

Section 6.4 considers the range of measures that governments might use to reduce the problems remaining under imperfect private arrangements. It identifies circumstances in which government interventions may usefully complement or supplant private arrangements. It uses the regulation of occupational safety to illustrate a number of more general points.

Section 6.5 provides a brief history of no-liability systems and reviews the empirical evidence concerning the degree to which the choice of regime affects behaviour and accident outcomes. Clearly, liability rules do not reduce losses from accidents if they do not affect behaviour in a positive way.

Section 6.6 reviews the case for reform in the light of the preceding material.

Section 6.7 considers options for reform, focusing on the proposals by Richard Epstein to the New Zealand Business Roundtable in 1996.

Section 6.8 presents the report's conclusions on the no-liability issue.

Appendix B provides a more detailed commentary on the choice between forms of liability. It looks at alternative liability rules and their strengths and weaknesses in various abstract situations.

Appendix C provides a glossary of terms used in this chapter.

6.2 Liability issues and the optimal control of risk

6.2.1 Why review the prohibition on the right to sue?

From an economic point of view the fundamental concern with the blanket prohibition on the right to sue for the recovery of losses from personal injury by accident is that it removes one mechanism that society might otherwise use to deter behaviour that puts others at risk. The right to sue is potentially useful because it allows injurers to be confronted with the costs of their actions. Such tort actions might usefully modify the behaviour of all potential future defendants.

How much this prohibition affects the accident rate depends on how effective the prohibited tort actions would be in reducing accidents, relative to alternative arrangements. Under common law, losses may be recoverable by court action in some but not all cases. There is no presumption that a no-liability approach is optimal in all circumstances – or that it is never optimal.

A further motivation for a review of the prohibition on the right to sue is the curious nature of New Zealand's current arrangements. The current prohibition is limited, in that it denies actions in the case of bodily injury from accident yet permits actions in the cases of damages to property and violations of health and safety regulations. The prohibition represented a major break from New Zealand's own past, yet this break did not stem from any marked dissatisfaction with the earlier regime in which individuals did enjoy the right to sue for bodily injury from accident.

Furthermore, the recent willingness of courts to impose pecuniary penalties for violations of health and safety regulations for the benefit, in whole or in part, of those injured, is undermining the scope of the original prohibition.

A further motivation for reviewing this issue is the likelihood that a move towards competitive insurance arrangements would provoke a public debate about the case for a return of the right to sue. This is because the insurance and no-fault issues are intimately, if illogically, linked in the public mind. From its inception, supporters of the ACS have justified it as a bundled arrangement. Under this alleged 'social contract' the public gave up the right to sue. In return it is said to have expected an accident compensation scheme that provided generous benefits relative to those otherwise obtainable from tort actions. According to the scheme's proponents, employees would be better off because, for a given premium, a first-party insurance scheme would put more money in the hands of the injured than could a tort-based scheme in which a large portion of the funds might be spent on legal costs.

Indeed, liability regimes are generally inferior to insurance arrangements as a source of compensation for victims for a number of important reasons. Insurance arrangements are likely to provide more targeted, timely, and assured compensation. Insurance contracts can be tailored to the victim's requirements and need not depend on whether the loss was due to sickness or injury, where the injury occurred, or who was at fault. Proofs of causation and the liability of a defendant are not required. The lengthy delays associated with court action are typically avoided. Payment amounts are determined by contract rather than by the vagaries of court or jury determinations. Nor is the defendant's ability to pay an issue. Legal fees do not commonly account for a significant proportion of the amount to be paid. Reflecting these factors, the costs of obtaining a payment under an insurance contract are likely to be much lower than the cost of obtaining compensation through a tort action.

Given the costs society incurs in court actions, a return of the right to sue must therefore be based on an argument that such actions lead to some socially desirable outcomes that could not be better achieved by other means. The most obvious proposition to explore is that given at the start of this section – that tort actions may modify behaviour and thereby reduce the risk of accidents. Furthermore, economic studies of the tort system tend to support the hypothesis that common law tort principles are best explained as an effort to achieve an efficient allocation of resources in the prevention of accidents.[88]

In this section, we focus on the circumstances in which a liability regime may efficiently contribute to the control of risk of loss from accidents.[89]

6.2.2 The fundamental problem of the control of risk

Accidents reflect risk. Risks arise from many sources. Many people enjoy risky activities and accept the risk of injury. Others may take on risky work because the (additional) pay compensates them for the additional risk.[90] There should be no presumption that the optimal accident rate is zero. Some accidents are not worth preventing.

Accident situations are diverse. Accident risks arise in the workplace, on the roads, between producers and their customers (ie encompassing product safety, and medical malpractice), between non-consenting strangers, in the home, and in leisure activities. Some accident risks may be reduced by timely and cheap preventive

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88 For a list of such studies refer to footnote 1 on p 517 of William Landes and Richard Posner (1980) "Joint and Multiple Tortfeasors: An Economic Analysis", *Journal of Legal Studies*, vol 9, pp 517–556.

89 This approach is referred to as the economic approach to the analysis of tort issues by Richard Epstein (1995) *Cases and Materials on Tort*, 6th edition, Little, Brown and Company: Boston, New York, Toronto, London, p 1444. He contrasts this approach with what he refers to as a traditional view of tort as corrective justice and a more recent and severe alternative view that the liability should fall on a defendant who has demonstrably caused harm unless the defendant can show why it should not be so imposed.

90 Empirical evidence on this point is discussed in Section 6.3.4.

actions, such as the erection of a safety barrier. In other cases preventive action may be too costly and the optimal control of risk may involve imposing penalties after the event. No single risk control technique is likely to be preferred in all situations.

Theorists have extensively studied the issue of the optimal choice of a liability rule.[91] *The fundamental result is that the incentives to take care are typically optimal when the sum of the costs of care, the expected cost of accidents and the costs of administering the preventive regime is minimised*.[92] At this point, given the choice of regime, the marginal cost of additional care will equal the reduction in the expected loss from accidents. Conversely, the cost saving from a small reduction in care will be offset by an equal rise in the expected loss from accidents.

The costs of greater care may include, for example, more time spent driving as a result of a lower average travelling speed, as well as less enjoyment or greater inconvenience. It is reasonable to assume that at some point it will become increasingly uneconomic to reduce the costs of accidents. This is because it is usually increasingly costly to make infrastructure ever safer, reduce the level of activity and/or take more care. At some point the greater cost may outweigh the benefit in the form of reduced losses from accidents. In short, 'safer' is only 'better' up to the optimal point. The public policy problem is to determine how society can best reach the point at which the benefits from fewer accidents are less than the cost of avoiding them.

As a rule, governments cannot hope to determine accurately how risks should be allocated amongst diverse individuals or how much they should sacrifice in the interests of greater care. Given that willingness to be exposed to any particular risk is likely to vary markedly across individuals, the central problem in relation to safety concerns arrangements for allowing individuals to determine, and achieve, their optimal level of risk. Many accidents take place in situations in which the individuals involved have consented to participate in the risky activity. In such cases, decentralised processes that cater for the diverse preferences of individuals may best solve the problem.

Under decentralised processes some accidents will occur because potential victims will not pay potential injurers enough to induce them to change their behaviour or, equivalently, because potential injurers will pay potential victims enough to induce them to accept risk of injury. These are accidents that are too costly to avoid given existing constraints. Where transaction costs are so high as to prevent such contracting for risk, some potentially welfare-enhancing exchanges between individuals will not take place.

Section 6.2.3 reviews the broad range of techniques that societies have at their disposal for the control of risk.

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91 Steven Shavell (1987) *Economic Analysis of Accident Law*, Harvard University Press: Cambridge, Mass, provides a useful introduction to this topic.

92 See, for example, proposition 9.1 on p 217 in Shavell (1987) *op cit*. The stylised analyses described in Section 6.3 and Appendix B of this report abstract from the costs of administering the preventive regime.

6.2.3 Techniques for the control of risk

Liability rules are only one of a number of techniques that can reduce the risks of accidents. Other techniques include government regulations, permits and corrective taxes,[93] private injunctions, fines and imprisonment, private contracts including warranties, voluntary rules and formal or informal codes of conduct, and training programmes.[94] Social sanctions, such as the loss of reputation and goodwill, may also be important. Each technique may affect the risk inherent in a given activity, the level of participation in that activity and the behaviour of those involved in that activity. Each may have significant virtues and drawbacks, the relative strengths of which will vary with the situation.

Shavell[95] classifies some of the techniques for controlling risk. This classification is shown in the following table.

Table 6.1: Classification of techniques for controlling risk

How initiated	**When applied**	
	Ex ante	*Ex post*
By the private sector	Injunction	Liability
By the state	Permits, regulations and corrective taxes	Fine for harm done

The classification separates risk control techniques into four categories based on two dimensions. These are whether the risk control disciplines apply before the accident (ie *ex ante*) or after the accident (ie *ex post*) and whether they are initiated by the private sector or by government.

Criminal sanctions can result from actions initiated privately or by the government. They can apply *ex ante*, thereby penalising dangerous behaviour that did not result in an accident on that occasion, or *ex post*. Criminal sanctions therefore apply to all four category boxes in the table. The sanction of loss of reputation also applies to all four boxes. It is a powerful sanction in the case of individuals and organisations whose future business depends heavily on maintaining an existing high reputation.

Shavell observes that criminal sanctions, such as imprisonment, impose greater economic costs on society than do fines that simply transfer wealth. He suggests that this consideration could favour the use of sanctions that are fine-based, rather than imprisonment, in many unintentional accident situations.

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93 For example, taxes on alcohol will raise alcohol prices and may reduce binge drinking according to F Sloan, B Reilly, and C Schenzler (1995) "Effects of Tort Liability and Insurance on Heavy Drinking and Driving", *Journal of Law and Economics*, 38(1), April, pp 49–77.

94 In all cases where formal contracts, rules or regulations apply, the scale of penalties for violations and the probability of detection and conviction will be important for behaviour. For example, the incentive to drink and drive is affected by the probability of being caught and the penalty if caught. One penalty might be that the insurance company may not pay out on any loss to people driving with alcohol in their blood.

95 Shavell (1987) *op cit*, p 278.

In consensual situations the participation of the parties to the accident may be conditional on their prior agreement to the observance of the terms of a contract or the rules of the road, club, association or firm. Given the flexibility of contractual arrangements, achieving a satisfactory assignment of risk in consensual situations in the absence of government intervention may be much less of a problem than in the case of accidents between non-consenting strangers.

Private arrangements for risk control, the subject of the first row in the table, are discussed in Section 6.3. Section 6.4 discusses state-initiated remedies. Before turning to these sections, it may be useful to contrast the *ex ante* and *ex post* approaches, ie looking across the columns in the table.

Ex ante arrangements

Private injunctions are a sparingly used, but potentially very potent, remedy available under a common law tort system. They are more potent than an *ex post* liability action because they close an activity down whereas a successful tort action may only raise that activity's production costs by a few percent. They are normally confined to situations in which there is actual recurrent damage or an imminent threat of damage. They are normally structured so as to protect the plaintiff against harm while minimising interference with the defendant's overall activities. Injunctions always aim to find a balance between the defendant's freedom of action and the plaintiff's right to protection of person and property. No tort rule can avoid this compromise.

In many consensual situations, contracts and warranties may be more effective than any other device for the optimal assignment of risks. Some of their limitations are discussed in Section 6.3.

Permits and regulations are government-initiated *ex ante* risk control measures. Their terms may substitute for the contracts that the parties would have wished to negotiate but perhaps could not because of transaction costs. This aspect of regulations is discussed in Section 6.4.2. Alternatively, they may serve as a type of injunctive relief that can circumvent the need to identify exactly who is the incipient injurer. As such they have the potential to affect, perhaps adversely, a much larger number of people that the true number of incipient injurers. This aspect of regulations is discussed in Sections 6.4.3.

Ex post arrangements

The liability rules that are the focus of this discussion impose penalties after the accident has occurred and are an important class of *ex post* remedies.

In product safety, workplace and medical cases, private liability for harm to consenting customers, employees and suppliers arising from unsafe products may be assigned under the laws of contract, warranty and fraud. In more wilful cases of harm arising from force or assault, liability actions may also be available as a means of redress.

Ex ante and ex post compared

As Shavell, Section 12.2, pp 279–282, observes, *ex ante* approaches are likely to be superior to *ex post* approaches when injurers can readily escape *ex post* sanctions. This may occur if, for example, injurers:

- are hard to identify;
- can easily escape jurisdiction;
- have inadequate assets in relation to accident costs; and/or
- cannot easily be proven to be liable for the accident.

Workplace accidents would not obviously fall into this category, except perhaps in the case of latent harms such as those arising from the presence of chemicals, fertilisers or asbestos; nor would some accidents involving risky products. Causation may be difficult to attribute in some product-related accidents, and in some medical cases. In other cases, causation may be much easier to establish.

Commonly, fault can be readily determined for many automobile accidents. This should facilitate tort actions as a deterrent. However, the case of hit-and-run automobile accidents shows that this is not always the case. Furthermore, some drivers may lack the ability to pay. Depriving a driver with a bad record and no ability to pay insurance premiums of the licence to drive would be an *ex ante* approach to such a problem. An alternative approach, as mentioned in Section 4.8, might be to make third-party insurance mandatory.

Ex post tort actions are less effective as a deterrent when causation is difficult to establish. In medical cases, it may be very difficult to determine the degree to which an unsatisfactory post-operative outcome is due to chance (such as complications from infection), unusual difficulties, or a mistake by the surgeon. The temptation of courts to take the view that surgeons should underwrite all unsatisfactory outcomes has to be tempered by the implications of such a view for the costs of surgery and the supply of surgeons.

In contrast, damage to a neighbour's land from flooding, pollution or erosion should often be relatively amenable to *ex post* remedies, because land is immobile and concealment would be difficult if not impossible.

In the case of accidents in consensual situations involving employees, medical patients and customers who purchase risky products, risks can be assigned *ex ante* by contractual arrangements. These arrangements will commonly not be perfect, but the extent of any difficulties will depend on the importance of any defects in any particular situation. This is discussed further in Sections 6.3.4 and 6.3.6.

Motor vehicle accidents also have a consensual setting in that participation in road travel depends on prior agreement to abide by the rules of the road and to conform to vehicle inspection and driver licencing arrangements. In such consensual cases, *ex ante* contractual arrangements may be able to assist in the optimal assignment of risk.

In contrast, the risks of accidents between a firm or motorist and non-consenting victims (such as strangers unwittingly injured by customers using the firm's risky product, or pedestrians) cannot be governed by *ex ante* contracts and must be governed by other risk control instruments.

6.3 Optimal control of risk in the absence of regulation

6.3.1 Introduction

This section looks in greater detail at the privately initiated risk control instruments introduced in Section 6.2.3.

Section 6.3.2 explores the alternative to New Zealand's mandatory no-fault approach, ie tort actions under common law. It introduces the concept of unilateral and bilateral accidents.

Given the strength of the *prima facie* case for liability rules, Section 6.3.3 looks at the choice of rule. It focuses on strict liability and negligence. It distinguishes between accidents between strangers and accidents in consensual settings. A more detailed discussion of these cases is contained in Appendix B.

Section 6.3.4 looks further into accidents in consensual settings, focusing in particular on the possibility of using contracts to optimally control risk. This subsection considers, in turn, club situations, medical accidents and firm-related product-safety and worker-safety situations.

Section 6.3.5 comments on the effect of private insurance arrangements on the optimal assignment and control of risk.

Section 6.3.6 comments on a number of irreducible problems that constrain the absolute efficacy of private arrangements for the control of risk that use liability rules. Issues discussed include *probabilistic causation*, *asymmetric information*, *problems of hold out* and *free-riders* (see Glossary, Appendix C), and the possibility that courts will not respect private contracts.

Section 6.3.7 presents some conclusions.

6.3.2 No liability versus liability

In the absence of government regulation, risk would be controlled by assignments that result from transactions and from the evolution of common law. Common law – the body of law based on judicial decisions and custom – is at the heart of English legal systems. Common law plays a critical role in enforcing contracts and protecting property rights and personal liberty in a market system. Starting from a basis of established property rights, common law addresses risk by providing for injunctions in cases of imminent peril from known persons, and tort actions for damages for civil wrongs or injuries. Privately initiated criminal sanctions for force and fraud are also available.

The law of tort is concerned with 'keep off' situations. The issue here is to allow people to enjoy their property free from the imposition of someone else's will. The benefits are reciprocal and the obligations are mutual.

In a liability action under English common law, a plaintiff must prove an injury was caused by the defendant and establish that the defendant is obligated to pay damages under an applicable law of liability.[96] This contrasts with New Zealand's mandatory prohibition on such actions in the case of personal injury from accident.

Depending on the nature of the circumstances and the rule of liability that applies, the defendant has a number of defences. The defendant may plead:[97]

- that there was no injury;
- that the injury was not caused by the defendant, for example that it may have been an 'act of God';
- the defence of the *assumption of risk* (ie the plaintiff voluntarily put himself or herself at risk);
- *contributory negligence* (ie the plaintiff failed to take due care); and
- *non-negligence* (ie the defendant took due care).

Even where defendants are unsuccessful in these defences they may be able to diminish their liability by a plea of *comparative negligence* (ie that the plaintiff was also negligent).

In considering these defences, decisions made in past cases establish precedents that guide later determinations of the circumstances under which compensation will, or will not, be paid. The fact that the injured person can establish injury, loss and a need for compensation, is not enough – an award is not made unless there is some other reason for compensation to be paid by a party to the accident.

Where the awarding of compensation payments is clearly related to behaviour that is both discretionary and puts the injured person at risk, the incentive for all potential future defendants to take greater care should be increased by the prosecutions of others. In such cases, there is a possibility that the benefits resulting from restoring the right to sue could exceed the costs associated with such court actions. Key issues here concern the ability of potential defendants to modify behaviour that puts others at risk, and the ability of the courts to determine causation and to award damages with sufficient precision. The answers to these questions may depend, to a marked degree, on the type of situation.

The formal theoretical work summarised in Appendix B explores the optimal liability rule in a range of accident situations. For example, it takes account of whether:

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96 S Shavell (1980) "An Analysis of Causation and the Scope of Liability in the Law of Torts", *Journal of Legal Studies*, vol 9, pp 463–515.

97 See Appendix C for a glossary of terms.

- accidents are unilateral or bilateral;[98]
- accidents involve only non-consenting strangers;
- accidents are between a firm and its customers or employees;
- accidents involve a firm and non-consenting strangers;
- the accident rate depends on the level of activity;
- any insurance premiums do not accurately reflect risk; and
- consumers do not perceive risks in suppliers' products as accurately as the supplier does.

With unilateral accidents, there is a potential externality problem if the injurer gets the benefits from imposing risks on others while others bear the costs of those risks.[99]

With shared (bilateral) accidents there is a coordination problem. This problem arises because it might be efficient for both the injurer and the victim to take some care. The issue in this case is to induce both parties to take the optimal level of care. In a tort action the coordination problem manifests itself when the defendant is permitted to plead that the plaintiff's actions contributed to the cause of the accident.

The theoretical work summarised in Appendix B contrasts the strengths and weaknesses of having a no-liability rule and of having liability rules across a wide range of accident situations. Losses from accidents depend on the frequency and severity of the accidents – this depends in turn on the risks inherent in an activity, the level of activity and the amount of care taken by those participating. Incentives to reduce risk are likely to be affected by the assignment of liability to meet losses in the event of an accident.

The risks inherent in an activity depend on its *nature and design features*. Three examples illustrate these points. Motoring, playing basketball and eating at restaurants are risky activities. In these cases the inherent level of risk depends on: the design features of the road network and motor vehicles, and the quality of the road code; the rules governing the basketball game; and the code of practice that the restaurant adopts with respect to food safety – and the level of enforcement of such rules and codes.

Arrangements affecting risk vary markedly with the type of activity. Contracting options are simply not available in non-consensual situations. Government regulation dominates in the case of the road network; the rules of basketball are essentially a matter for its governing body (ie in generic terms they are a private club

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98 In unilateral accidents only the injurer's behaviour can affect the probability of the accident; in a bilateral accident, both the injurer's and the victim's behaviour matters.

99 It is only a potential problem in a high transaction cost situation. Otherwise the arrangement would signal that the value of the activity to the injurer exceeded the amount potential victims were prepared to pay to induce the potential injurer to eliminate the risk. Such accidents are not worth avoiding.

matter) and restaurants like McDonald's have their own codes of practice, but are also constrained by regulation.

The activity's design features (such as the design of a road network) are affected by the constraints arising from existing technologies, more general scarcity of resources, externally imposed rules and regulations, and liability for losses. The last of these could be assigned by regulation, or by tort or contract law.

The *level of activity* will depend in part on the cost of participation. The level is likely to be too high, relative to that in an ideal world, if participants are not confronted with the costs that their decisions impose on themselves and others.

The accident rate, given a particular activity level, will also commonly depend on the *level of care* taken by those participating in an activity. Incentives to take care at the margin are therefore likely to affect the expected losses from accidents.

In many instances the probability of an accident depends on the level of care taken by people other than the injured. Accidents relating to roads, workplaces, product safety, sport and medicine come into this category. While potential victims may be able to increase their level of care to compensate for the low level of care taken by others, it may be less costly to society to induce a greater level of care amongst potential injurers.

Instruments for the control of risk might operate on one or all of the three categories just mentioned – design features, level of activity and level of care. Liability rules, for example, may act on all three. Other things being equal, a provider of an activity who is liable for losses from accidents has a stronger incentive to design a safe structure for the activity than one who is not liable. The level of activity is also likely to be lower when participants are liable for losses from accidents that they cause. Finally, those participating are likely to be more careful if they are liable for losses.

Unlike a no-liability rule, arrangements that make potential injurers liable for actions that put others at risk could accord, *prima facie*, with both efficiency and equity principles. They could accord with efficiency principles when potential injurers could be expected to materially modify their behaviour if they were made liable and if more efficient arrangements for achieving this modification did not exist. The concept of holding individuals to account for the damage they cause to others also has an enduring basis in equity (where the injured party owns the relevant property right).

Without attempting to do justice to the full body of this research, the following findings, taken from Appendix B, illustrate the essential choice between a no-liability rule and a full-liability rule:

- In accidents between strangers, the no-liability rule will fail to produce the optimal level of care in unilateral and bilateral accidents. This is because it will encourage potential injurers to minimise the cost of the care they take, regardless

of the effect on the potential victim. This result holds regardless of whether risk varies with the level of activity. Liability rules do not have this defect.

- The no-liability rule should be less defective in the case of a reciprocal accident (such as that between motorists) where the potential injurer could be injured along with the victim. Here each may behave as if they were both a potential injurer and a potential victim. However, the no-liability rule has no advantage over a liability rule in this respect.
- In accidents to a firm's customers, suppliers or employees, the no-liability rule should be satisfactory in unilateral and bilateral accidents as long as the potential victims perfectly perceive the risks. This is because the respective levels of prices and wages will reward the firm for providing optimal levels of care. Liability rules also have this attribute.
- The no-liability rule is likely to induce excessive risk, the case described in the previous bullet point, if customers misperceive risk and therefore fail to reward a firm for producing the optimal level of risk. A strict liability rule can avoid this bias because the firm bears the risk of defects regardless of errors in buyers' perceptions.
- The no-liability rule is also likely to induce excessive risk in the unilateral and bilateral cases when a firm supplies a risky product that could injure strangers. This is because the supplier will take too little care and customers will buy more than they would if the product price reflected the risks to strangers. A strict liability rule avoids this defect because the firm is liable regardless.

There is therefore a *prima facie* case that a no-liability rule is inferior to a liability rule in some important general situations, without being superior in any one situation. It is inferior in accidents involving non-consenting strangers and in firm-related cases where customers or employees fail to perceive risks accurately. In many product safety cases, and arguably in medical cases, victims may have failed to accurately perceive the risks before the event, particularly if a no-liability rule removed the supplier's incentive to inform the customer or employee of the risks.

In short, the analysis contained in the report up to this point does not support the proposition that there can be a sound theoretical basis for mandating a no-liability rule. On the other hand, the stylised analysis presented in detail in Appendix B also finds that a no-liability rule is as good as a liability rule in consensual situations involving a firm as long as risks are accurately perceived. It does not support, therefore, the contrary view that a liability rule should be imposed in all situations.

The formal analysis just described ignored administrative costs and uncertainties. The cost of litigation, delays and unpredictable outcomes, and the risks that courts or juries will generate undesirable incentives by providing excessive awards in cases that excite their sympathy, favour the no-liability rule. The material presented in the report up to this point therefore motivates rather than proves the case for a return of the right to sue.

Any consideration of the case for a return of the right to sue would also need to take account of the possibility that contracting options would be more efficient than reliance on tort liability, even where a liability rule is likely to be superior to a no-liability rule.

Epstein notes[100] that there are other arguments in favour of a liability approach compared to a no-liability approach. For example, some would argue that the principle of corrective justice also warrants the reintroduction of tort liability to penalise those who cause accidents through abominable behaviour towards others. Such views have a respectable pedigree. Catherine Yates[101] refers to such concepts as the value of being able to bring a wrongdoer to account, to re-empower victims, to restore mana, and to establish standards for behaviour. However, Epstein is sceptical about the applicability of corrective justice concepts:[102]

> However, it is impossible to be sure how justice enters such an equation. The Aristotelian model of redress for grievances may well be powerful in stranger cases, but in the end it is justified only by efficiency considerations. The more one talks like Ernst Weinrib about corrective justice, the less one understands its relevance to a particular case as an independent factor. Around 1970 Guido Calabresi came out with a famous minimisation formula, in which the objective was to minimise the sum of the cost of accidents, the costs of administration and the cost of prevention, subject to a constraint of justice. We have now waited over 25 years to see how that last constraint influences the first three elements of the analysis, and nobody has yet provided a strong and clear example of where four variables give us a better analysis than three.

The next subsection looks into the liability issue more deeply by taking contracting issues into account.

6.3.3 Negligence and strict liability

This subsection considers more fully how risks would be assigned and controlled in the absence of government regulation.

In the absence of government regulation that constrains voluntary reassignments of risk, individuals would be expected to bear only those risks that they will not pay others to directly or indirectly assume. Other things being equal, those who are risk averse could be expected to work in less risky occupations, buy safer products with longer warranties, buy more insurance, take greater care of their health and indulge less in risky activities and pastimes than would less risk averse individuals. The higher the incomes of the risk averse, the more they can afford to reduce risk and the less risk they are likely to bear. Between individuals who are equally risk averse, it is

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100 See p 10 in R Epstein (1996) *Accident Compensation: The Faulty Basis of No-fault and State Provision*, New Zealand Business Roundtable: Wellington.

101 Refer to section IV, pp 38–41 in C Yates (1989) "Law Commission Proposals for Accident Compensation: What Place for Personal Remedies?", *Victoria University of Wellington Law Review*, 19, pp 29–56.

102 Epstein (1996) *op cit*, p 10.

likely that those who are best placed to manage and minimise risks will probably assume those risks. Such individuals may have greater knowledge of, or experience or skill in handling, those risks. These advantages should make it cheaper for them to bear the risks than to pay someone else to assume them.

The degree to which individuals reassign risk also depends on what information they possess about those risks, and on transaction costs. They may bear some risks because they are unaware of their true magnitude, or because it is too costly to pay others to assume them. Contractual arrangements may be less effective in high transaction cost situations.

Where contracts do not exist between parties to an accident, private arrangements must rely more heavily on tort actions to determine liability and the amount of any penalties. Tort actions may be particularly useful in non-consensual cases because they can confront strangers with the consequences of their actions.

Two distinct legal traditions exist in respect of liability actions. Which of the traditions applies depends on whether the courts will accept a defence of contributory negligence by the plaintiff. When courts do not accept a defence of non-negligence a situation of *strict liability* is said to apply. Alternatively, the plaintiff might also be required to prove that the defendant acted negligently. Injurers are only liable under the *negligence rule* if their level of care was less than a level specified by the courts. This level is called *due care*.

Strict liability covers the direct application of force against someone else and the creation of indirect harms such as traps. It does not permit the defendant to argue that he or she has taken due care, but it does allow defences based on the plaintiff's assumption of risk, misconduct or inevitable accident. Ideally, courts would narrowly construe these defences to ensure a meaningful degree of liability. It therefore permits the element of the defendant's wrongdoing to be explicated in terms of these other defences.

Strict liability is therefore less severe from the defendant's point of view than *absolute liability*. Epstein uses the term absolute liability to refer to a legal system that treats causation of the plaintiff's harm as the only question relevant for determining liability.[103] Some criticisms of strict liability arrangements confuse it with absolute liability; others erroneously assume that its definition of causation would be so flexible as to permit any link between the defendant and the plaintiff, no matter how tenuous, as establishing the former's guilt. It is important to distinguish strict liability from such caricatures, which are universally attacked and never seriously advocated.

The two rules, strict liability and negligence, stem from fundamentally opposing instincts, but the differences between them may be subtle from an optimal deterrence perspective. This report looks at the philosophical differences first.

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[103] Epstein (1995) *Cases and Materials on Tort*, p 155.

The notion underlying the concept of strict liability is that no one should be permitted to cause harm to another – as in the 'polluter should pay' principle. In contrast, the negligence rule aims to impose liability only when it is desirable to alter basic behaviour. Actions that may harm others, such as performing surgery, are permitted as long as the person causing the harm did not violate a benchmark for behaviour – in this case the benchmark is the due care standard. The negligence rule is akin in this respect to the spirit of criminal law.

Epstein's version of strict liability[104] makes the person(s) deemed to have caused the accident liable for the losses. Causation would be tightly rather than loosely defined. Someone who throws away an imperfectly lit firecracker would not be responsible if it fails to ignite and if someone subsequently picks it up, relights it and causes an accident. Strict liability actions permit defences based on alternative propositions as to causation. An example would be a defence that the victim forced the injurer to so act. These actions could also permit non-causal defences such as the defences of trespass and the defence of the assumption of risk. The former of these non-causal defences might be necessary in order to preserve the defendant's right to exclusive possession of property.[105] The latter might be necessary in order not to deprive plaintiffs of the right to *ex ante* compensation for exposure to risk.[106] The defendant cannot use as a defence the fact that he or she exercised due care.

In the case of both strict liability and negligence, damages may or may not be reduced by the defence of the plaintiff's comparative negligence.

The strict liability rule is consistent with the notion that injurers should be confronted by the consequences of their actions. From this perspective there is an externality problem if injurers can derive the full benefits from a risky activity while the costs fall on their victims. However, there is no externality if the victims have been paid to bear a portion of the risk, or have had the chance to pay the injurer to assume the risk, but chose not to take it.

In contrast, the negligence rule is consistent with the notion that it is not desirable to oblige somebody to take more care than they would if only they were at risk. The idea here is that people should not be liable if they were exercising recognised standards of due care, because it is not desirable to attempt to change their behaviour further.

The formal analysis of accidents demonstrates how much the optimal liability rule may depend on the type of accident situation, even in very stylised cases. The following paragraphs summarise the analyses presented more fully in Appendix B.

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104 Refer to the foreword by Mario Rizzo to R Epstein (1980) *A Theory of Strict Liability: Toward a Reformulation of Tort Law*, Cato Institute Report No 8, The Cato Institute: Washington DC, pp ix–141.

105 For example, a plaintiff trespassing on someone else's property would have no claim.

106 For example, the freedom to contract for higher wages in return for riskier work.

Accidents between non-consenting strangers

When the optimal standard of care does not vary with the level of activity, and can be easily determined by the courts, both the negligence rule and the strict liability rule are likely to be efficient at this level of generalisation for both unilateral and bilateral accidents. Under the negligence rule, the injurer adopts the optimal level of care because doing so minimises the cost of care while avoiding liability. Under strict liability, the injurer adopts the optimal level of care because the additional costs of providing a higher level of care are less than the expected savings from a lower probability of injury.

Given that the level of care is the same with each rule, their notable point of difference lies in who is liable for the costs of accidents that are not worth preventing. Under a negligence rule it is the victim; under a strict liability rule it is the injurer. In an insurable situation, the difference is in who pays the insurance premium. At this level of abstraction the difference is one of income distribution, not efficiency.

In *unilateral* accident cases a strict liability rule will outperform a negligence rule if the courts set the standard for due care at less than the optimal level for the negligence rule. This is particularly likely when the optimal level for this standard depends on the level of activity.

In *bilateral* accident cases both rules are inefficient if the standard for due care cannot be set optimally because it varies with the level of activity in ways that are too difficult for courts to determine. The strict liability rule fails because the victim will not observe the optimal level of due care whereas, the negligence rule fails because the injurer's level of care will be suboptimal. Shavell volunteers the following guidance:[107]

> Comparing the two rules, we see that either could result in a higher level of social welfare. Very roughly, strict liability with the defense of contributory negligence will be the better rule if the problem of controlling injurers' level of activity is more important than that of controlling victims' level of activity. Otherwise the negligence rule (with or without the defense) will result in the higher level of welfare. (These statements could be made more precise by introducing parameters describing the influence of activity levels on utility and on expected accident losses, but that does not seem worthwhile.)

Accidents involving a firm or seller, and a non-consenting victim who is a stranger to the seller and the seller's customers

The conclusions for the efficiencies of the two liability rules when a firm or the firm's customer is responsible for harming a non-consenting stranger are the same as in the stranger-versus-stranger case.

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[107] Shavell (1987) *op cit*, p 45.

Accidents between a firm and its customers, employees or suppliers

When a firm sells a risky product or provides risky work, the price for the product will be higher, or the wage rate paid lower, the greater are the firm's costs of care and the more it bears the costs of losses from accidents.

However, where customers or employees have perfect knowledge about the risks, all rules, including the no-liability rule, will be efficient in the theoretical model. This is because customers and employees will prefer the product price or wage offered by the firms that supply the optimal amount of due care. Firms not providing the optimal amount of due care will be eliminated.

In the *asymmetric information* cases, in which the firm knows more about the risks than its customers or employees, the strict liability rule is likely to outperform the negligence rule for *unilateral* accidents. This is because under the negligence rule the product price is lower (wage is higher) by the amount of the cost of accidents not worth avoiding, and customers (employees) do not accurately perceive the full product price (effective wage). The volume of purchases or of employment is then too high or too low depending on the nature of the error in perceived risks. In contrast, under the strict liability rule, the customer or employee can simply assume that the product price or wage incorporates the full accident risk.

In the case of *bilateral* accidents and asymmetric information, the strict liability rule is also likely to outperform the negligence rule when customers or employees cannot perceive accurately even the average risk in the industry producing that product or supplying that type of work. Under strict liability, the price of the product embodies the cost of optimal care by the firm and the expected cost of all accidents. This is because the firm bears the full cost of accidents. Therefore customers buy the optimal quantity of product. Customer care will also be optimal as long as the level of due care for comparative negligence is also set optimally, and customers conform to this standard. In contrast, under a negligence rule, the product price is lower because the firm does not bear the costs of accidents not worth avoiding and customers buy the wrong level of product as a result of the lower price and of their failure to perceive the level of unpriced risk correctly.

The following table summarises these cases. The table does not include the case in which the probability of an accident depends on the customer's intensity of use of the firm's product (an example being the customer's frequency of use of a motor mower). In this case all the liability rules will be inefficient if customers fail to perceive risks accurately. This is because the frequency of use of the product will be suboptimal.

Table 6.2: (Idealised) efficiency of liability rule and type of accident situation[a]

Situation	*No-liability*	*Negligence*	*Strict liability*
A. Unilateral accidents			
1. Stranger & stranger	Notably inefficient	Inefficient[b]	Efficient
2. Seller & stranger	Notably inefficient	Inefficient[c]	Efficient
3. Firm and customer/employee			
(i) Perfect knowledge	Efficient	Efficient	Efficient
(ii) Know only average risk	Inefficient	Efficient	Efficient
(iii) Misperceive even average risk	Inefficient	Inefficient[d]	Efficient
B. Bilateral accidents			
1. Stranger & stranger	Inefficient	Inefficient[e]	Inefficient[f]
2. Seller & stranger	Inefficient	Inefficient[e]	Inefficient[f]
3. Firm and customer/employee			
(i) Perfect knowledge	Efficient	Efficient	Efficient[g]
(ii) Know only average risk	Inefficient	Efficient	Efficient[g]
(iii) Misperceive even average risk	Inefficient	Inefficient[d]	Efficient[g h]

Notes

a This table is derived from Appendix B of this report and S Shavell (1980) "Strict Liability Versus Negligence", *Journal of Legal Studies*, vol 9, pp 1–25.
b The level of activity is too high if the standard of due care does not accurately reflect the level of activity.
c The level of activity is too high because the product price does not embody the expected costs of accidents to strangers.
d The firm supplies the optimal level of due care, but customers buy a suboptimal amount of product.
e *Injurer* activity is too high if the due care standard does not reflect the level of activity.
f *Victim* activity is too high if the due care standard does not reflect the level of activity.
g A strict liability rule does not induce customers to internalise their intensity of use of consumer durables.
h This presumes that customers conform to an optimally set standard of due care for comparative negligence.

Transaction costs, excluded in the main from the discussion of liability up to this point, may also help in assessing the relative merits of the two rules in different situations. Under a strict liability rule a plaintiff must prove that there is an injury that was caused by the defendant's actions. In a negligence case, the plaintiff faces the additional burden of proving that the defendant's actions violated the standard of due care.

Strict liability might result in more court actions because the plaintiff would not have to prove the defendant breached a standard of due care. On the other hand, at first blush, a given case might be more costly to try under a negligence rule because it would require courts to consider the additional element of the level of care exercised by the defendant.[108] Determining the optimal level of care may be difficult and costly.

This raises the possibility that it is difficult to decide which rule would have lower transaction costs since the possibly lower cost per case under the strict liability rule

[108] Both rules require the court to determine who is the injurer.

may be offset by a sufficiently greater number of cases. If so, the choice on transaction costs grounds between these two rules may be an empirical matter, and the answer may vary across accident situations.[109]

For example, in complex multi-provider situations it may be more costly to attribute causation than to determine conformity with a standard for due care. For example, in medical malpractice (unilateral accident) cases it may be much easier for medical professionals to establish that they took due care than for them to show that their actions did not contribute to the patient's adverse outcome. In such cases, a negligence rule might provide greater certainty and lower legal costs.

Furthermore, in bilateral accident cases, a defendant might be able to plead that the plaintiff's negligence contributed to the accident. If so, the legal costs of a strict liability rule and a negligence rule may be similar.

Epstein does not dispute the possibility that fewer cases might be brought under a negligence rule if plaintiffs are deterred by the costs of proving negligence, but points out that this is just one factor behind the total number of cases brought. For example, more actions might be taken under a negligence rule if there was little doubt that the court would find for the plaintiff on the fact of injury caused by the defendant, but marked uncertainty existed about what it would find on the issue of negligence. Epstein further argues that lawyers show great ingenuity in asserting negligence, making these cases more frequent and less clear-cut than prosaic non-lawyers might expect.

A related issue here is the height of the standard that courts set for due care by the defendant for preventing a product defect. The more olympian is this standard, the more a negligence rule will look, in practice, like a strict liability rule. An example would be the expansion of the definition of a product defect from the rare case of the unintentional inclusion in a cigarette of a foreign body (such as a piece of glass) to the unvarying case that it includes tobacco that is harmful.

Indeed, the strict liability and negligence approaches can look confusingly similar in practice. Both require establishing that an injury was caused by the defendant. With strict liability, establishing causation may require the plaintiff to prove a defect or a breach of a rule. If so, the plaintiff's burden in a strict liability case may be similar to that in a negligence case. In addition, a strict liability case might involve an examination of the plaintiff's level of care. If so, both negligence and strict liability cases could involve lengthy examinations of causation and due care.

Patricia Danzon has further pointed out that the distinction between a fault-based rule (such as the negligence rule) and a strict liability rule is subtle when the cause of an accident is probabilistic – as is often the case.[110] Suppose that there is a probability

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[109] Refer, for example to Epstein (1995) *Cases and Materials on Tort*, p 162–163.
[110] Patricia Danzon, pers comm, 17 February, 1998.

that a plaintiff engaging in a risky activity will have an accident regardless of the defendant's behaviour. Now suppose there is a shift in the defendant's behaviour that alters the probability of an accident to the plaintiff. After an accident has occurred how easy is it to determine if the accident was caused by the change in the defendant's behaviour or whether it was an accident that would have occurred sooner or later anyway? In many employment, road, medical or product accident cases it may be difficult to answer the (essentially large sample) question as to whether the defendant caused that particular accident to occur. In contrast, it may be easier to answer a fault-based, process question about the defendant's standard of care.

In similar vein, Epstein has noted how easily courts can easily blur the distinction between strict liability and negligence:

> [The] similarities [between strict liability and negligence] suggest, as has historically been the case, that the bulk of cases will be decided in the same way, more or less elegantly perhaps, regardless of the substantive position adopted. It is quite easy for juries and indeed for lawyers to treat "fault" first as an equivalent for negligence and second as an equivalent for responsibility, and thus bridge the gap between the two systems with but a single ambiguous term. That indeed is what is done whenever we say that the traffic laws provide us with the standard of decision in negligence cases. [111]

Epstein sums up these elements of divergence and congruence as follows:[112]

> The negligence system tends to ignore the relationship between parties and asks only of each taken in isolation, is there any reason to believe that he should not have acted as he did, where the harm that ensues is itself never taken as that reason. To answer the questions posed by it, the law of strict liability creates a prima facie case that rests on causal notions alone, subject to a series of defenses, replies, and the like, which are designed to reduce the gap between notions of causation and those of responsibility. On the other hand, the law of negligence tries to state many of the necessary qualifications upon the causal principle by adding the element of "reasonableness" to the prima facie case. These two distinct methods of qualifying causal principles work to create a convergence between the two systems, but, even so, it is quite clear that the two systems will yield different results in certain contexts, such as the treatment of the defenses of infancy, insanity, compulsion and best efforts clearly reveals.

At this level of generality, it is easy to see why common law courts have struggled for so many years to decide whether to permit a defence of non-negligence in many common situations.[113] While the choice of rule could have an enormous impact in specific cases, each might provide a workable foundation for tort law and the overall social consequences of the choice may be less important than might first have been thought.

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111 Epstein (1980) *op cit*, p 135.
112 *ibid*, p 133.
113 Refer for example to Epstein (1995) *Cases and Materials on Tort*, p 161.

6.3.4 Consensual situations and contracts

The transaction cost approach is also useful in exploring why, in practice, a mandatory liability rule is unlikely to be optimal in all circumstances. When transaction costs are sufficiently low, individuals may be able to increase their welfare by reassigning risk by direct negotiation or agreement.

Contractual arrangements may override, by mutual agreement, the tort liabilities that would otherwise apply. This may reduce, to a marked degree, uncertainty and legal costs and delays. Contracts allow the parties involved to reassign risk and create agreed penalties for breaches. Contracts can be very efficient and flexible devices for the optimal allocation and control of risk. Once again, it would be reasonable to expect that transactions would see risks assigned to those who are least risk averse or who are best able to control risk.

The range of situations in which parties can readily contract is broad. Cases where the potential victim contracts directly with the potential injurer include employer–employee situations, product liability, and non-urgent medical cases. In many other cases the risk of injury will arise from the presence of other participants who have contracted with the provider of the facility rather than with each other. Examples include accidents between motorists, rugby players and skiers on a public ski field.

The contracts that individuals use when reassigning risk would range from the highly complex (that implies a sharing of risk) to the very simple. A health insurance contract or an interest rate/currency swap contract might be relatively complex, and a *caveat emptor* contract very simple. Given the costs of trying to gather together widely dispersed information about costs and preferences, no government or other agency could hope to determine the optimal assignment of risk in a country.

Many government regulations prohibit some transactions. In so doing they may prevent society from achieving the welfare maximising allocation of resources (and risk). The prohibition on being able to sue in the case of personal injury by accident is an example of a regulation that constrains individuals' freedom of contract. It therefore risks reducing welfare.

The remainder of this subsection applies these considerations to specific accident situations. We look, in turn, at club-type situations, medical accidents, and firm-related accidents, distinguishing between product safety and employment-related accidents.

Provider–multi-user (club) situations

In many situations a provider of a facility sets rules for participation, but participants do not contract directly with each other. Accidents between the participants are then often bilateral and are stranger–stranger accidents in a consensual setting. A club's membership rules permit consensual arrangements in the case of risk as long as those who do not agree to the club's rules can be excluded from participating in the activity. This is essentially a consensual bilateral accident situation even though the members

of the club may be strangers to the members of clubs with whom they are competing, or even to each other.

In the absence of restrictive legislation or judicial override, individuals, and those determining the rules of membership of a club, would be permitted to contract for whatever liability arrangement they preferred.

Members of a club might agree that participation involves the common assumption of risk, at least as long as the laws of the game are being observed. This would be an example of a reciprocal benefit – each player is compensated for giving up the right to sue other players by the other players' agreement to give up the right to sue in turn.

Sports clubs may fall into this category. As long as unlicensed drivers and unregistered vehicles can mostly be excluded from the roads, motorists may also be seen as members of a club whose ongoing participation depends on observing the rules. Pedestrians do not fit this category.

The club of those who drive on our roads has so many members as to exclude the possibility of members meeting to negotiate the optimal rules for the assignment of risk. Instead, this task would fall on the road provider in the absence of government regulation. Government ownership of the road network makes this task a government responsibility.

In the case of roads it is relatively easy to draw a clear boundary for acceptable behaviour based on violations of the road code.[114] This makes a liability rule feasible. One possible rule would be to assign liability to those parties who were violating the road code in a manner that contributed to the likelihood of the accident. From one perspective this could be interpreted to be a strict liability rule, with causation determined solely on the basis of conformity with the road code. On another interpretation it could be seen as a fault-based rule in which the standard of due care is conformity with the code.

The rule could be made more forgiving by allowing mitigating arguments in relation to causation or to due care. Perhaps the car got forced over the centre line by a sudden landslide or another car. Perhaps it swerved as a consequence of something outside the driver's reasonable control, like a blow-out, a sudden heart attack, or a bee sting, or perhaps the driver had to swerve in order to avoid a child.

The case for an unforgiving (simplistic) rule is that the gains from a more refined approach in terms of improved incentives are less than the benefits. Those offended by rough justice may, nonetheless, argue for a different balance. However, those

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[114] The issue of dangerous driving in relation to the conditions would require the exercise of judgment so that conformity with the road code would not always be a simple matter to determine.

concerned about the possibility of being on the wrong end of such rough justice could insure against their liability. Insurance pools the risks and thereby removes the element of rough justice in any particular case. Insurance would spread the risks of rough justice across a large number of motorists.

Medical accidents

Medical accidents to a consulting patient are essentially unilateral accidents to a consenting victim (ie a firm–customer situation). In the theory discussed in Section 6.3.3, the better informed the victim is about the risks, the less the choice of liability rule would matter. In theory, even a no-liability rule could perform as well as a liability rule if consumers were perfectly informed. However, this assumes that patients can readily ascertain the supplier's actual level of care.

When medicine is subsidised, the prices charged will not fully reflect the supplier's cost of care. Nor will that level of care necessarily be optimal. For this reason too much surgery may be purchased. In addition, occupational licensing could also shelter surgeons that supply a lower standard of care than the customer expects from normal market disciplines. Government ownership may also inhibit voluntary contracting for risk. These qualifications may be less relevant to services provided privately.

The case for a liability rule and/or regulation of risk is greater where direct contracting for risk is not permitted and providers are not necessarily motivated to provide value for money to consumers. The case for allowing the contracting out of liability rules is therefore arguably greater in the supply of private, unsubsidised, medicine.

A particular difficulty with liability rules for the practice of medicine arises in that many procedures are inherently risky. There may be a significant probability of some form of post-operative complication or disappointment in difficult cases. Causation may be probabilistic and it may be very difficult to determine if an adverse outcome was due to chance, irreducible human error, or negligence. The effect of a strict liability rule could be to drive up the cost of operations and reduce the number of surgeons to a degree that few might care to defend. For such reasons, a strict liability rule is scarcely conceivable in medical malpractice cases.

In contrast, a negligence rule could give surgeons and other providers greater certainty about their costs as long as they follow well-established professional standards that the courts continue to accept as the standard for due care. However, if the courts progressively ratchet up the standard for due care while standard practice in medicine becomes ever more defensive, a negligence rule will look increasingly like a strict liability rule.

Either rule could, therefore, see patients who are constrained by a limited budget effectively denied access to services that they would willingly purchase if they were permitted to assume some of the risks for themselves.

On the other hand, patients will expect and demand professional standards of care from professional providers. Private contracting and market-determined charges for risk, with no statutory prohibition of the right to sue, should be considered given the complexities of the situation.

Firm-related accidents

In a voluntary situation, the contracts between the firm and its customers and employees, in conjunction with common law, simultaneously assign risk and compensate the bearers of additional risk for that reassignment.

Product safety, workplace and medical accidents share the important feature of a price (wage) relationship between the parties.[115] The price/wage relationship is unequivocally transactional. Something is being bought and sold. Conditions can be, and often are, attached to the terms of supply or purchase; these conditions should be enforceable under common law.

Whatever the liability rule, its expected costs to the supplier should be capitalised into the price of the product (or wage). The customer (or employer) thereby pays for whatever risk is being borne by the supplier (employer).

Suppose, for example, that a firm wishes to sell a risky product to its customers or to hire workers for dangerous work. The greater the extent to which the firm contracts for its customers and employees to be legally responsible for bearing those risks, the lower the price the firm can expect to command for its products and the higher the wage it can expect to have to pay to its employees. The increase in the wage rate is referred to as a compensating wage differential. This theory is relied on heavily in the analyses summarised above and in Appendix B.

There is some direct evidence of the effects of risk on wages. Thomas Kniesner and John Leeth report that:

> All other things being equal, the typical US worker in a job with a likelihood of injury at about the labor market average earns 2 to 4 percent more than a person working in a totally safe job.[116]

More dramatically, Viscusi[117] notes that firefighters in Kuwait during the Gulf War were paid US$500 000 per annum. On a smaller scale, elephant handlers at the Philadelphia Zoo receive additional annual compensation of $1000 because of the risk of injury.[118]

More commonly, such effects cannot be observed directly and must be inferred from research. Empirical studies of American labour markets[119] suggest that, on average,

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115 We consider the case of accidents caused to non-employees and non-customers later.
116 T Kniesner and J Leeth (1995) "Abolishing OSHA", *Regulation* No 4, Cato Review of Business and Government, Washington DC, pp 46–56, p 55.
117 W Viscusi (1992) *Fatal Tradeoffs*, p 6.
118 *idem*.
119 *ibid*, p 24.

workers receive a higher wage the greater the risk of injury. If they were certain to be injured seriously enough to be out of work, the higher wage would be of the order of $56 500 per annum (in 1990 dollars). However, the amount of compensation for risk embodied in the wage rate varies across types of individuals. For example, non-smokers and seat belt wearers (with higher than average life expectancy) were paid $95 200 per statistical risk of injury. Smokers received only $30 781 for the risk.[120] It appears that people who put themselves at risk through living habits also supply their labour to risky occupations relatively cheaply.

In another study, Viscusi and Moore[121] find, using 1977 US employment survey data, that:

> Higher levels of workers' compensation benefits reduce wage levels and controlling for workers' compensation raises estimates of compensating differentials for risk. The rate of trade-off between wages and workers' compensation suggests that benefit levels provide sub-optimal levels of income insurance, abstracting from moral hazard considerations. The value of nonmonetary losses from job injuries (including pain and suffering and nonwork disability) is estimated to be $17,000–$26,000.[122]

The existence of compensating wage differentials creates a strong incentive for employers to take care – as long as the cost of doing so is offset by the gains from lower wage costs and a lower employee turnover rate. In a competitive market such measures will reduce an employer's insurance premia.[123] Employers will not necessarily choose to eliminate workplace risk, even if this were possible without ceasing operation. Indeed, depending on worker preferences for higher wages, the optimal level of risk could be very high in the riskiest industries.

The higher wages paid to employees to compensate them for greater risk represent *ex ante* compensation for risk.[124] The alternative is for the employer to pay lower wages but to compensate employees for losses from accident *ex post*. Because the employer has to compensate employees for the risk either *ex ante* or *ex post*, product prices may not depend markedly on the choice, ie on how risks are shared between employees and employers. In the *ex ante* case, employees can use the higher wages to purchase first-party insurance. Alternatively, employers may pay lower wages and use the 'savings' to fund a workers' compensation scheme.

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120 J Hersch and W Viscusi (1990) "Cigarette Smoking, Seatbelt Use, and Differences in Wage-Risk Tradeoffs", *Journal of Human Resources*, 25, no 2, pp 202–227.

121 W Viscusi and M Moore (1987) "Workers' Compensation: Wage Effects, Benefit Inadequacies, and the Value of Health Losses", *Review of Economics and Statistics*, vol 69(2) pp 249–261.

122 *ibid*, p 249.

123 W Viscusi, J Vernon, and J Harrington (1995) *Economics of Regulation and Antitrust*.

124 Viscusi and Moore, *op cit*, provide an indicative list of a decade of empirical studies on this issue.

6.3.5 Effects of insurance arrangements[125]

Risk averse firms, consumers or workers may pay insurance companies to assume risk.[126] The insurance contract might use co-insurance to increase the burden of care on the insured. A first-party insurer may also take over the right of action against an injurer. If so, the insurance company's right of action may affect the behaviour of potential injurers.

It is sometimes thought in the public debate that potential injurers will be able to avoid the costs of accidents by shifting the risks to insurance companies. The fear is that the purchase of liability insurance could effectively remove the potential injurer's incentive to take care. Shavell reports that past restrictions on the sale of liability insurance in the USSR reflected this fear.[127]

However, this fear is unwarranted as long as insurers charge potential injurers a premium that accurately reflects the expected costs of claims or, to the extent that this can only be done imperfectly, impose on policy holders a burden of care through such devices as co-insurance arrangements. Co-insurance arrangements are particularly likely when the possibility of *moral hazard* arises (see Section 4.7).

Abstracting from moral hazard issues and other forms of transaction cost, Shavell shows that all risk averse individuals will fully insure against accidents and the level of care will be still optimal. This is because insurance premiums would perfectly reflect the level of care that injurers and victims were actually taking at the time of the accident. Their reward for greater care would be a premium that was lower by the amount of the reduction in the expected payout. They would balance this against the marginal cost of the additional care.

In reality, insurers will not be able to perfectly match premiums to risk levels for transaction cost reasons. This reality creates problems of adverse selection and moral hazard. These concepts were discussed in Section 4.7 above. The actions that insurance companies take to deal optimally with such problems will leave some risk averse injurers and their victims more exposed to risk than they would otherwise wish to be. These issues may affect the idealised optimal assignment of liability.

Furthermore, denying the right to purchase liability insurance could impose significant welfare losses on risk averse individuals. Thus its sale is now prevalent, on a worldwide basis.

There are many other potential interconnections between insurance arrangements and the optimal assignment of liability. The theory of optimal deterrence discussed above required injurers to be sensitive to the total losses resulting from accidents in

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125 Shavell (1987) *op cit*, chapters 8–10 discusses the allocation of risk and the theory of insurance.

126 If the injured party is insured, these costs are incurred through the payment of the insurance premium. The injured party could avoid these *ex ante* costs but not the full *ex post* costs. Either way the costs and benefits of such accidents fall on the injured person, unless the insurance company has mispriced the premium. In the absence of government regulation, the pricing of such premiums is a purely private sector matter and no particular policy issues arise.

127 Shavell (1987), *op cit*, p 214.

unilateral accident situations. This is the sum of pecuniary and non-pecuniary losses. However, the amount victims require as compensation for losses from an accident may differ markedly from this total. This gives rise to the possibility that the optimal penalty from a deterrence viewpoint differs from the optimal amount of compensation.

To understand how such a situation might arise, consider the case of the sudden death of a child. The non-pecuniary loss to the child's parents might be enormous, but the death might have eased the parents' financial situation. The parents might therefore require less financial wealth without the child than with the child. Such parents would not rationally buy insurance against the possibility of the child's death because paying the premium in effect transfers financial wealth from a state in which they are already relatively financially constrained to one in which they expect to be relatively less constrained. Thus most parents do not take out life policies on their young children. Similarly, owners of family heirlooms or photographs of no pecuniary worth but of unique sentimental value may also rationally choose not to insure them.

Shavell shows formally that when victims and injurers are risk averse the socially optimal insurance solution to such an accident problem will be achieved when:

- the wealth of risk averse injurers is unchanged by an accident (that is they are fully insured);
- the marginal utility of wealth of risk averse victims is unchanged by the accident; and
- injurers are motivated to provide the optimal level of care.

Risk averse victims will insure only against pecuniary losses if their marginal utility of wealth is unaffected by an accident. If the marginal utility of wealth is unaffected by the loss of a family photograph, the photograph is unlikely to be insured.

Risk averse victims will insure for more (or less) than pecuniary losses if their marginal utility of wealth would otherwise be increased (or reduced) by an accident. For example, the need to spend more money to compensate for non-pecuniary losses caused by a disability may make it optimal to insure for more than the amount of pecuniary losses.

However, Shavell is able to show, in the general case, that the level of injurer care under a strict liability rule is likely to be inadequate relative to the ideal in the presence of non-pecuniary losses. In principle, the negligence rule is more promising in this regard, although its virtues may not be realisable in practice because of information problems. Shavell suggests that corrective fines on injurers may improve the situation in stranger cases. However, in the case in which the firm is the injurer, imposing liability on the firm for an amount exceeding the insurance coverage will tend to undesirably discourage customers from purchasing the product.[128]

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[128] Shavell (1987) *op cit*, pp 250–251.

First-party insurance arrangements in conjunction with tort liability also raise the issue of who has the right to the proceeds from any successful legal action against the injurer. Either of two legal rules may apply. Under the *subtraction rule* the tortfeasor (see Glossary, Appendix C) can only be sued for the amount by which the losses caused by the accident exceed the amount the victim receives from his or her insurance company. (The insurance company's payment is known as a *collateral benefit*.) Under the *no-subtraction rule* the tortfeasor can be sued for the losses caused by the accident regardless of the size of any collateral benefit the victim receives from his or her insurer. Double compensation is possible.

Either rule permits the insured victim to achieve their compensation target, but only the no-subtraction rule confronts the tortfeasor with the full amount of this loss. It may therefore provide the greater deterrent. However, Epstein has argued that a subtraction rule may provide a better incentive in the common situation in which a manufacturer is using a machine that is potentially dangerous. This is because passing full liability to the perhaps long-past supplier of the manufacturer's equipment could reduce the incentive of the manufacturer who is responsible for the use of the machine to take care.[129]

Although the non-subtraction rule could see insured victims compensated for up to twice their losses, it would be more rational for them to reduce their insurance premiums by buying insurance policies that are subject to a *subrogation* arrangement.[130] This arrangement still allows the tortfeasor to be sued for the victim's losses but it permits the insurance company to deduct from the proceeds the amount it paid separately to the victim as a collateral benefit. Under this arrangement a potential victim cannot expect to receive double compensation.

Shavell demonstrates that whether or not the subtraction rule applies, risk averse victims will purchase full cover insurance policies that give insurers subrogation rights.[131] For this reason, subrogation contracts in regimes that allow insurance companies to sue only to recover the insured amount may fail to confront injurers with the amount victims would have been prepared to pay to avoid the accident.

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[129] R Epstein (1978) "The Coordination of Workers' Compensation Benefits with Tort Damages Awards", *The Forum*, 13, p 464.

[130] Shavell (1987) *op cit*, p 239 comments that subrogation is nearly universal worldwide in property cases. In the cases of life and personal injury insurance, subrogation is often prohibited, or at least not encouraged. This means that collateral benefits are not subtracted in calculating the injurer's liability. In workers' compensation, the usual outcome around the world, reached in diverse ways, is that victims collect only once and insurers may seek reimbursement from liable parties. Great differences between countries are observed in subrogation practices with respect to medical insurance and social security.

[131] *ibid*, p 255.

6.3.6 Problems with unfettered market arrangements

The discussion up to this point has identified a number of problems with unfettered market arrangements. First, high *transaction and information costs* inhibit the development of consensual arrangements for assigning risk and liability for losses that would be more efficient if it were not for these constraints. (As discussed in Section 6.4, they also inhibit government-initiated mechanisms for risk control.) Second, the legal system may or may not protect property rights and the sanctity of contract.

Free-rider and hold-out problems

Contracting solutions may not be available in situations in which those who would benefit from a reassignment of risk cannot be excluded from that benefit if they do not contribute to the cost of achieving it. This is the familiar 'public good problem'.

A related problem arises when the agreement of all is critical to the reassignment of risk, but some are in a position to hold up the entire reassignment in the hope of being able to transfer wealth disproportionately in their favour.

In these high transaction cost situations, *ex ante* contracting of risk may not be possible.

Problematic and probabilistic causation

In some cases *causation may be difficult to establish* because the origin of the harm cannot be clearly established. Whereas it may be easy to determine if a pollutant has seeped from a neighbour's land, causation may be much harder to establish in cases in which the polluter is not readily identifiable. Similarly, it may be difficult to ascertain if an adverse outcome from medical treatment was due to random misfortune or professional negligence.

Causation may be difficult to attribute when several, if not many, factors have created the probability of the accident. Suppose, for example, that a car approaching an intersection maintains its speed for longer than expected by the driver of a second car that is already turning on the intersection. Suppose the driver of the second car hesitates to complete the turn as a result of this surprise with the result that a third car collides with the second car because the third driver fails to react in time to the second car's unforeseen drop in speed. Did the driver of the first car cause the accident?

Escape from jurisdiction

A related transaction cost problem arises if injurers can avoid the financial consequences of their actions through *bankruptcy* or by escaping from the jurisdiction of the law in some other manner (eg by emigration). In such situations there must be greater reliance on *ex ante* risk control measures or, where applicable, on *ex post* criminal sanctions. The former include private injunctions and *ex ante* rules or taxes that regulate who can participate and under what circumstances.

Risks of default from such sources can be reduced in many ways in contractual situations. Trustee arrangements, bonds, pledges, letters of credit, requirements to insure property and keep the insurance up to date, credit-enhancing financial structures, parent or third-party guarantees, or underwriting arrangements can all be brought to bear on the problem. In an employment situation, workers are likely to seek arrangements in the case of any employer-provided superannuation or income replacement insurance that protect them against the risk of employer default. In a motor vehicle situation, the road provider might require all those licensed to drive to have third-party insurance.

Errors in risk perceptions

As discussed in Section 4.7.3, individuals can misperceive risk for many reasons. When they do so, there is a probability that they will make less than ideal decisions. Such errors represent potential losses of welfare. They are only potential losses because it remains to be established that alternative arrangements will improve outcomes.

Latent defects present a near intractable risk management problem if they are only recognised long after any behavioural change can alter the risk, as in the case of asbestos. People can only usefully modify their behaviour when they recognise that they are at risk. Latent defects that are known to the seller but are not readily detectable by a buyer would be fraudulent if the seller had knowingly misrepresented the product.

Where no fraud is involved and the firm is not aware of the latent defect, the issue is one of *inaccurate risk perceptions* by the injurer and the victims. When no one connected to the situation perceives the risk accurately, only better or more timely information might result in better outcomes.

A more tractable problem arises when information about the potential risks exists, but there are barriers to bringing it to the attention of potential victims or they find it difficult to correctly perceive those risks. As discussed in Section 4.7.3, the risk literature finds that individuals tend to overestimate low probability events and underestimate larger risks. Individuals tend to overreact to increases in the risk level, or to highly publicised and dramatic risks. They often react with alarm to risk increases but are less concerned about achieving a comparable risk reduction.

This is the *asymmetric information* case. Asymmetric information is common as firms will typically know more about their products than the average customer wishes to know.

The enduring issue here is the costly nature of information collection and processing. How much are consumers prepared to pay to acquire information that may be relevant to their decision? How much does this amount vary across consumers? How well do private arrangements harness the information, known only to some? As

Hayek[132] long ago observed, the problem of how best to utilise widely dispersed information is one of the major problems faced by any complex society. In general, decentralised market processes provide the best mechanism for utilising decentralised information, for the reasons explained by Hayek.

As noted in Section 6.3.2, the no-liability rule stands out for its inability to get incentives in the right place in cases of imperfect risk perception. *Prima facie*, the strict liability and negligence rules are superior in this respect for both unilateral and bilateral accidents. The strict liability rule appears to have the edge on the negligence rule in the unilateral case. This is because it ensures that the price of the firm's product incorporates the firm's perception of the expected costs of the accidents, to customers and strangers, that could result from the use of the product. It may also be superior in the case of bilateral accidents involving the firm and a customer, employee or supplier.

The analysis described in the previous paragraph simply assumes that information problems exist that cannot be satisfactorily addressed by normal market mechanisms. This is an assumption that should not be made lightly without regard to case or circumstance. Far from being an insurmountable problem, asymmetric information is a normal and unexceptional situation in complex societies. Every consumer is profoundly ignorant about most of the world's known information. There is too much detailed knowledge in the world for it to be otherwise. It is simply not efficient for consumers to know as much about their home appliance, computer or car as the manufacturer does.

Asymmetric information inspires much entrepreneurial activity and motivates many transactions. Suppliers obviously have a strong incentive to put a favourable light on their products, but they also need to answer customer questions about safety to the customer's satisfaction. In order to make the virtues of their own products more credible, some suppliers will tell potential customers about the hazards hidden in competing products. The strength of their incentives to disclose or prevent defects can be expected to be affected by their dependence on repeat business and reputation, by fraud laws and by the liability rule that would prevail in the absence of an overriding contractual assignment of risk. Firms that take more care will have an incentive to explain this to their customers. Some will pay experts to rate their products or to certify their organisations for compliance with safety standards or other domestic or international benchmarks. Independent rating agencies may be hired to assure customers about the firm's financial strength and therefore its ability to meet any future commitments. Because information is costly to collect, consumers will pay others to collect and pass on useful information about product characteristics and qualities. Consumer associations, product certification groups

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[132] F Hayek (1945) "The Use of Knowledge in Society", *American Economic Review*, vol 35, no 4, pp 519–530.

and other interested parties will also have an incentive to provide value to their customers by being first to identify which products offer the better value for money. Enthusiasts, journalists and writers of non-fiction continually collect information and make it more accessible to others for commercial or non-commercial reasons. It would be a mistake for regulators to presume that it is always more efficient for the supplier to be obligated to provide the information that can best help consumers.

In many situations, suppliers will become aware that some but not all of their customers are relatively knowledgeable. For example, trade buyers can be expected to be more knowledgeable of and more expert in handling the product than a typical retail customer. In the absence of one-size-fits-all regulation, firms can tailor products and services (including information services) to the category of user that finds them the most valuable. Power tools for the home handyman may, for example, include safety features that a professional user would reject as costly, unnecessary and inconvenient.

Of course, many customers and employees will not uncover even relatively readily available information about product and workplace risks. They may fail to do so out of unthinking ignorance. Alternatively, they may choose not to do so out of a thinking or unthinking judgment that any risks are acceptable and already priced as a result of the more considered decisions of buyers who have invested in the relevant information. Nor is such free-riding solely a private sector phenomenon. Customers may also fail to take care out of an unwarranted assumption that, because safety regulation exists, it is being fully observed and enforced.

The resulting accidents may be ones that were not worth the expense of avoiding, or they may be accidents that result from mistaken *ex ante* judgments about the value of investing in further information or negotiating improved incentive structures. Mistakes are intrinsic to the trial and error processes of learning and innovation, and provide the mechanism by which all learn and adapt.

Good public policy cannot be predicated on the proposition that people should not be allowed to make mistakes. This is not to rule out, however, the possibility that government actions may assist in some cases to overcome problems of asymmetric information, as discussed in Section 6.4.

Capricious court cases

A widespread concern with any return to the right to sue arises from the apparent willingness of courts and juries to award excessive damages, reward opportunistic claims and fail to improve incentives. Concerns about the excesses appear to be most strident in the case of the United States. For example, Sir Geoffrey Palmer, in arguing that the tort system should be abolished, commented that:

> I have taught the law of torts ten times to American law students spread over a period of exactly twenty-five years. I never fail to be shocked by its excesses, its lack of principle, and its social disutility. … For me, teaching American torts excites the sort of enjoyment people get from going to the horror movies.[133] [Citations in the original have been omitted.]

In similar vein, David Bernstein, from George Mason University, commented:

> By all reasonable measures, the American tort system is a disaster. It resembles a wealth-distribution lottery more than an efficient system designed to compensate those injured by the wrongful actions of others.[134]

Aggregate statistics suggest that the problems with tort actions could be particularly severe in the United States. Tillinghast, an international consulting firm, reportedly estimated that the tort system in the United States in 1991 cost US$132 billion, or 2.3 percent of gross domestic product. In a sample of 10 other countries, which included Canada, Japan, and eight major European countries, Tillinghast found that the next most costly tort system was Italy's – at 1.3 percent of gross domestic product. The average cost for these 10 countries was 0.9 percent of gross domestic product.[135]

Paul Rubin notes in this context that the costs of the court system in the United States between 1970 and 1984 averaged 1.5 percent of gross domestic product. He attributes much of the rise to the growth in product liability suits associated with the courts' imposition of strict liability for product defects and for the failure to warn customers of these defects.[136]

However, as the following paragraphs illustrate, he does not see this as an isolated development:

> The problems of the current tort system and those of the regulatory system stem from the same source: the willingness of the New Deal Supreme Court to overturn contracts. Before the New Deal, the supreme court generally upheld contracts. The era preceding the New Deal is sometimes referred to as the "Lochner" era after the 1905 case, *Lochner v. New York*, in which the Court held that a state law limiting the number of hours that bakers were allowed to work was an unconstitutional interference with freedom of contract.
>
> The pre-New Deal Supreme Court had established a complex edifice of rulings that protected contracts and private property. Some of the pillars of that edifice were: the Commerce Clause, which was interpreted as allowing regulation of interstate commerce but not production; the Takings Clause, limiting the power of the

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133 Refer to p 1163 in Sir Geoffrey Palmer (1995) "The Design of Compensation Systems: Tort Principles Rule, OK?", *Valparaiso University Law Review*, 29(3), Summer, pp 1115–1169.

134 Refer to p 71 in D Bernstein (1996) "Procedural Tort Reform: Lessons from Other Nations", *Regulation*, no 1, pp 71–81.

135 Refer to page 31 in P H Rubin (1995) "Fundamental Reform of Tort Law", *Regulation*, no 4, pp 26–33.

136 *ibid*, p 31.

> government to take property; and the principle of separation of powers, which was interpreted as prohibiting Congress from delegating power to regulatory agencies. It took numerous legal changes in all of those eras to overthrow the era of free contract that preceded the New Deal.
>
> The New Deal demanded that the Supreme Court overturn all of those restrictions, and the Court ultimately complied. The result has been a tremendous expansion of government regulation of all sorts. The explosion of tort liability is only a small twig on the tree of government growth watered by the New Deal Court.[137]

Epstein has traced the trend of ever more litigation with respect to product liability rules since the 1840s. He identifies the following four phases:[138]

- The 1842 *Winterbottom v Wright* case held that an injured consumer or user had an action only against the immediate vendor of the product, while a bystander could sue only the party then in possession of the product immediately before the accident occurred.
- This so-called 'privity' limitation was almost entirely overthrown in 1916 in the *MacPherson v Buick Motor Co* case. This case imposed a negligence rule on a remote seller, ie one that has no contractual relationship with the injured party.
- The third stage is marked by Justice Traynor's famous opinion in 1944 in *Escola v Coca-Cola Bottling Co* that urged that strict liability should govern manufacturers' liability. Epstein reports that this had become the dominant view by 1965 on the basis of manufacturers' perceived market power, capacity to buy insurance and ability to internalise the costs of accidents.
- The fourth and current stage began with a series of important defective design and duty-to-warn cases that expanded liability; ironically, this was within the traditional framework of negligence law. The upshot has been an enormous expansion in litigation, dominated by asbestos cases, but with pharmaceutical cases also registering highly.

The same trend has seen a weakening of respect for contractual arrangements. Rubin cited the landmark[139] *Henningsen v Bloomfield Motors* case in 1960 to support his assessment that :

> … courts have generally been unwilling to enforce contracts between buyers and sellers involving compensation for harms caused by accidents. No matter what terms the parties may want to govern the results of an accident, the court will decide and impose its own terms.[140]

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137 *ibid*, p 33.

138 Epstein (1995) *Cases and Materials on Tort*, p 727–728.

139 Epstein (1995) *Cases and Materials on Tort*, p 752, cites Prosser as commenting in 1966 that 9 May, 1960 was the date of the fall in the citadel of privity. However, Epstein comments that the importance of this case appears to have waned somewhat more recently "… not because courts reject its outcome, but ironically because its implied warranty theory left product liability actions too closely tied to the law of sales".

140 Rubin (1995) *op cit*, p 27. Palmer (1995) *op cit*, p 1160, suggests that the judicial expansion of tort law in the United States has reduced in recent years.

Epstein also reports that there appeared to be little, if any, correlation between the rise in litigation during these phases and the trend fall in accident rates. He also observes that the domain for tort liability can change markedly depending on how product defects are defined and whether case rulings shift the level of proof from a negligence-based system to strict liability.

In a recent article, Danzon has also expressed concern about the volatility in the United States in definitions of product defect and in payouts for successful cases and the moves by courts to sanction tort claims by injured employees against the manufacturers of products used by their employer.[141]

In medicine, negligence-based actions in the United States appear to have resulted in considerable costs and high error rates. There is room for ambivalence about the net gains from such a system. Danzon commented at length on the potential distortions that tort actions could produce in the provision of managed health care where causation may be hard to attribute between the plan provider, the individual provider(s) of the actual service, and the utilisation review officers.[142]

A number of plausible reasons for the much greater costs of litigation in the United States have been put forward. This is a well-studied question. Reasons given include:

- the prevalence of civil jury trials in the United States;[143]
- tort actions in the United States do not operate under the loser-pays system for legal expenses that applies under the English legal system; and
- American law, unlike the law in most Commonwealth jurisdictions, puts no limits on contingency fees.[144]

Palmer lists other features of the American system that seem to set it aside from the British Commonwealth system. These include the relative ease of securing punitive damages, vitually non-existent standards for valuing non-pecuniary losses, the invention of product liability by judicial decision, the techniques of trial lawyers, and the lobbying activities of the American Trial Lawyers Association.[145]

For all these reasons, any return of the right to sue to recover losses from personal injury from accident in New Zealand need not result in the excesses associated with

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141 Patricia Danzon (1997) "Tort Liability: A Minefield for Managed Care", *Journal of Legal Studies*, vol 26 (pt 2), June, pp 499–520.

142 *idem.*

143 Bernstein *op cit*, pp 72–73 suggests that juries are not competent to weed out dubious expert testimony and, particularly in toxic tort and product liability cases, have accepted plaintiff arguments about causation that are directly contrary to the overwhelming weight of scientific evidence. He reports that in the United Kingdom the jury is used in less than 1 percent of civil cases. Palmer (1995) *op cit*, p 1162, also sees this as a factor.

144 Bernstein *op cit*, pp 79–81, suggests that the American system has created a conflict of interest for lawyers concerning the distribution of the proceeds of out-of-court settlements, involves an abuse of the monopoly position enjoyed by lawyers with respect to their non-market privilege of being able to invoke the legal authority of the state in serving against defendants, and promotes too much speculative legislation.

145 Palmer (1995) *op cit*, p 1162.

the American situation. Nevertheless, the New Zealand legal system is clearly vulnerable, at least to some extent, to the type of 'judicial activism' that undermines security of contract and makes judicial decisions more dependent on the perception of the court at the time of 'the needs of society'. James Allan, law lecturer at the University of Otago, recently referred to the "all-to-common tendency of our courts: … to think the judicial nose for fairness and 'social change' should trump clear statutes and long established precedents".[146]

Reflecting on this trend, another lawyer, Mike Ross, commented in 1997 that:

> In words that are proving prophetic, Justice Cooke said back in 1982 that it was for judges to mould the law of damages to meet social needs. Exemplary damages could serve a compensatory role.
>
> Having let the genie out of the bottle, he then cautioned that judges should not be using exemplary damages to top up any perceived inadequacy in ACC compensation.[147]

However, Ross observes that this is exactly what is happening and notes in the same article that:

> Claiming exemplary damages for careless or thoughtless behaviour is a far cry from punitive damages historically awarded for outrageous, high-handed deliberate behavour.

John Smillie, law professor at the University of Otago, also infers from the *McLaren Transport v Somerville* 1996 decision that courts have determined that their jurisdiction to award exemplary damages is not confined to cases of intentional wrongdoing, and such damages may now be awarded in an action for common law negligence resulting in personal injury. He concludes that:

> Our judges have extended the remedy of exemplary damages into areas where it does not properly belong. In fact the courts seem to view exemplary damages as an all-purpose discretionary remedy. They can now be awarded, if the judge thinks fit, to punish defendants for deliberate breaches of non-tortious obligations which did not previously attract punitive sanctions. But the traditional understanding was sound. The notion that damages should be awarded solely for the purpose of inflicting punishment is foreign both to the law of contract and the law of equity, and appropriate levels of deterrence are achieved by orthodox application of the traditional rules that regulate the remedies available for breach of contractual and equitable obligations.[148]

Turning to employment law cases, Colin Howard, of Melbourne University and the Victorian Bar, has analysed at length the "quite extraordinary resistance" of a section of the judiciary to the implementation in New Zealand of the Employment Contracts

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146 James Allan, "Judicial activism rides again in Lange decision", *National Business Review*, 26 June, 1998, p 19.

147 Mike Ross, "Anything goes with exemplary damages despite the ACC setup", *National Business Review*, 9 May, 1997, p 20.

148 See p 172 in J Smillie (1996) "Exemplary Damages for Personal Injury", *New Zealand Law Review*, pp 140–175.

Act 1991.[149] More happily, in *Aoraki Corporation v McGavin* (1998) the Court of Appeal, under new leadership, reversed one of the Court of Appeal's most notorious employment law decisions under the then Justice Cooke's presidency – the *Brighouse v Bilderbeck 1994* case concerning employers' obligations to pay redundancy even when not contracted to do so.

This latest decision does not, however, demonstrate that the Court of Appeal can now be relied upon to uphold contracts – or the law itself. Allan refers in his article to the Court of Appeal's recent judgment in the *Lange v Atkinson* (1998) defamation case as a "striking example of judicial activism" that:

> … ignores (or overrules) clearly established law in favour of what it thinks is right and just … .

The author notes that while this judgment removes from journalists any duty to take care when criticising politicians, it does not allow journalists the same luxury when criticising judges. However, the more the judiciary exercises executive power and makes political decisions, the less independent it may become of political processes. Interest groups will seek to capture or influence the processes for appointing judges and determining who is to hear which cases. The general public will subject the judiciary to the same public criticism, scrutiny and satire that politicians attract. Given the importance of the rule of law to a market economy, it would be difficult to think of a less desirable outcome from a public policy perspective.

6.3.7 Concluding comments

Private arrangements for harnessing widely dispersed information and assigning and controlling risk are rich in diversity and sophistication. Accident situations differ so markedly in terms of whose behaviour is important, who is best placed to alter their behaviour and the costs of coordinating behaviour, that it is highly implausible that any given rule (eg a no-liability rule) could be optimal for all occasions.

Indeed in most theoretical situations a no-liability rule is likely to be inferior to a liability rule. This is because it is likely to induce potential injurers to take inadequate care. There are four possible cases in which this effect might be unimportant. They are:

- Accidents to customers who perceive risks perfectly accurately and therefore pay firms to supply the optimal amount of care.
- Any cases in which increased care by potential victims is no more costly than the cost savings resulting from reduced care by potential injurers. These situations are likely to be uncommon.
- The reciprocal accident case in which potential injurers are also potential victims and so might still take reasonable care on their own account. This is most obviously applicable in principle to motor vehicle accidents, although even here

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[149] C Howard (1995) *Interpretation of the Employment Contracts Act 1991*, New Zealand Business Roundtable and New Zealand Employers Federation: Wellington, pp 1–27.

there is no doubt that some young males in old vehicles fail to take the same level of care as most of their victims.

- The possibility that the no-liability rule reduces the care taken by the potential injurer to only a minor degree. This empirical question is explored in Section 6.5.2.

The first of the four cases outlined above is a consensual accident situation in which the parties involved are transacting with each other and pricing the risks each party is assuming. Contracting for the optimal assignment of risk may be superior to any imposed solution. In the absence of a prohibition on the right to sue, it is conceivable that optimal contracts could see suppliers in some situations agreeing to accept liability for negligence. In general, it is hard to see, for example, a contracting professional person not accepting responsibility, in some form, for any failure to meet professional standards of performance. Otherwise they surely cannot justify charging a fee commensurate with that standard of performance.

Given the endless flexibility of contracts, contracting for the assignment of risk in consensual situations could well provide superior outcomes, from an accident point of view, to any imposed tort rule. In some of these cases, a mandatory no-liability rule may simply impose conditions that the parties may have agreed to independently of that rule. However, an argument that it might be redundant in some situations does not justify making it mandatory in all situations.

The theoretical analysis to this point suggests that liability rules are superior to a no-liability rule in accidents between non-consenting strangers. Obviously they must also be superior to any contractual solutions when the costs of negotiating such contracts are prohibitive. While contract solutions are not available in many situations involving strangers, they are potentially available in the situations that dominate tort cases in the United States (product safety, workplace, and medical malpractice). They are also available in the situations in which many if not most accidents occur (such as between motor vehicles and on construction sites).

However, the *prima facie* arguments in favour of a liability rule in the case of accidents involving non-consenting strangers, as presented so far in this report, are not conclusive. There are many reasons why, in reality, the costs and uncertainties associated with tort court actions may exceed the benefits. The discussion in Section 6.3.6 identifies several of the underlying problems. Furthermore, regulation is an alternative to a liability rule, even in non-consensual situations where transaction costs rule out the contractual alternative. Regulatory solutions are the subject of Section 6.4.

In summing up the role for tort actions, Viscusi (1989)[150] argued in a US context for a conscious coordination of risk-reduction measures involving market forces, tort law,

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[150] W Viscusi (1989) "Toward a Diminished Role for Tort Liability: Social Insurance, Government Regulation, and Contemporary Risks to Health and Safety", *Yale Journal of Regulation*, vol 6: 65, pp 65–107.

social insurance and government regulation. He argued that tort solutions have their place, but that this is most likely to be where hazards have discrete, easily traceable causes. He suggested that they are likely to be more unsatisfactory the more difficult it is to apportion causation and the more troublesome, arbitrary, open-ended or unpredictable are the standards set for due care and product defect. They are not well-suited to mass product liability suits,[151] or to situations in which risks are high but complex and involve long durations before loss occurs. He argued that the tort system should have only a secondary role in addressing health and safety risks.

When reflecting on these factors, Shavell has observed that tort rules are most likely to be optimal when: the injurer's assets are large relative to the likely harm; the injurer cannot readily escape responsibility; injurers know more about the risk than others; and it is cheaper to apply an *ex post* remedy to a relatively small number of occurrences than to try to regulate all *ex ante* activity.

The following tabulation of these considerations may be helpful.

Table 6.3: Potential role for tort actions in controlling risk

Relatively favourable circumstances	*Problematic situations*
Injurer behaviour affects risk.	The contribution of injurer behaviour to risk is uncertain.
Injurers can more economically modify their behaviour at the margin than can victims.	The product defect should have been obvious to the consumer prior to its use.
Injurers are aware of the risk at the time when their behaviour can still affect outcomes.	Latent hazards, perhaps involving long delays in recognising the hazard, such as asbestos.
It is easy to prove who caused the injury and to assess relative contributions.	Probabilistic causation. Elastic definitions of product defect and causation. Multi-source pollution. Mass action cases. Bankruptcy etc.
It is less costly to deal with a small number of *ex post* cases than a large number of *ex ante* cases.	A product likely to cause mass destruction of non-consenting strangers – this invites a regulatory solution.
Injurers have substantial net worth and cannot escape jurisdiction easily.	Injurers have minimal assets.
It is easy to set standards for due care.	The circular effect in medicine of lifting the standard of due care so that it matches any move to more defensive medicine makes the due care test unstable. Definitions of product defect need to be similarly stable.
Regulatory or contractual solutions are costly.	Contractual solutions are available – perhaps involving firms and their customers, suppliers or employees. Arguably also motorists.
Courts dedicate themselves to interpreting existing law and protecting the sanctity of contract.	Courts or juries are 'judicially active', attempt to seek justice in individual cases, and have an anti-business and anti-contractual bias.

[151] A recent article by G Priest (1997) "Procedural Versus Substantative Controls of Mass Tort Class Actions", *Journal of Legal Studies*, vol 26 (pt 2), June, pp 521–574, discusses options for reducing the abuse of power through class certification in mass tort cases where the claim is meritless.

The choice of liability rule is difficult. One reason for this is that the differences between strict liability and negligence are often subtle. Another is that it is an empirical question as to which would impose the greater costs for similar benefits – and the answers to this question may be situation specific.

Looking at particular cases, causation may be much more difficult to assign in medical cases, and in some product liability and environmental cases, than in the case of automobile accidents.

However, the strongest point to draw from the above discussion is that contractual solutions to the problem of the optimal assignment of risk are available in the case of consensual accidents involving firms and their customers, employees, or suppliers. Medical practitioners and their consulting patients also fall into this category. Arguably so do accidents involving only motor vehicles, but not accidents involving pedestrians. Contractual remedies could be expected to ensure redress for customers in the event of supplier negligence.

6.4 Regulation

6.4.1 Introduction

The previous section presented a discussion of the theoretical influence on safety of accident insurance and of tort laws. This section looks at the role of government regulation or statute law in the optimal control of risk. As noted in Section 6.2, regulation is an *ex ante* device for controlling risk. The strength of the incentive to conform to regulations depends on how efficient the regulations are, on the level of probability that non-conformance will be detected and on the severity of the penalty. In commercial situations, the penalty is commonly pecuniary.

Depending on their nature, government regulations can be seen as substituting for the contracts that the parties might otherwise have negotiated – or they may be seen as substituting for private injunctions. Sections 6.4.2 and 6.4.3 discuss these aspects.

6.4.2 Regulations as contracts

The imposition of a government regulation or statute that affects safety has the effect of changing existing property rights in relation to risk. As discussed in Section 6.3.4, individuals can contract to reassign risk when transaction costs are not prohibitively high.

Regulations may or may not permit individuals to contract out of the imposed assignments. For example, the Employment Contracts Act 1991 includes a prohibition against individuals opting out of the provisions in the Act. Depending on the situation and how readily individuals could reassign risk in the absence of prohibitive regulations, the welfare implications of preventing voluntary contracting could be material.

In a seminal analysis published in 1960, Ronald Coase established that any initial assignment of property rights would not matter for economic efficiency if property rights could be defined, monitored, enforced and transferred without cost.[152] Costless contracting means complete freedom of contract.

In an accident situation, the Coase theorem implies that the allocation of property rights between an injurer and a victim at any point in time will make no difference to efficiency *as long as these property rights can be monitored, enforced and transferred without cost*.[153] In this theoretical situation, individuals will costlessly reassign property rights if necessary in order to produce the optimal accident rate, regardless of the kind of liability rule established by government regulation or statute.

When contracting costs are low, risks can be readily reassigned to those who are best placed to bear them in the absence of prohibitive government regulations. That might be someone who is better able to control or reduce the risk. Alternatively, it might be someone who is not very risk averse or who is even risk neutral or risk loving.

Any sums paid as part of such reassignments would be a transfer of wealth. In reality, transfers of wealth occur continuously, as the daily volatility in share prices and exchange rates illustrates. Typically they have no efficiency implications. This is because they do not alter the balance between marginal benefit and marginal cost that is fundamental to efficiency. For an efficient outcome it is immaterial whether the potential victim pays the potential injurer to take more care or whether the potential injurer pays the potential victim to incur greater risk. The point is that they trade until marginal benefits and marginal costs are in balance.

The practical implication of the Coase theorem is that the case for regulation must be weaker, other things being equal, when the costs of contracting are relatively low. This is because of the strength of the *prima facie* argument that the parties involved could generally be expected to be the ones who will best know their preferences and the costs of alternative arrangements.

Clearly, where transactions costs are high, it may be too costly for individuals to contract with each other, *ex ante*, for the optimal assignment of risk. Accidents between non-consenting strangers may commonly fall into this category. Transaction costs would often preclude *ex ante* contracting in accidents between strangers, simply because the parties to the accident cannot determine in advance whom they might be. In addition, in some situations causation may be difficult to ascertain after the event. Furthermore, in some cases the degree of loss (particularly non-pecuniary loss) may be difficult to value.

Where they are not based on paternalism or a desire to expropriate the wealth of some for the benefit of others, well-designed regulations may serve in such

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[152] R Coase (1960) "The Problem of Social Cost", *Journal of Law and Economics*, 3, October, pp 1–44.
[153] More technically, Coase assumes zero transaction costs to establish this proposition.

circumstances to provide the assignment of property rights that individuals would have wished to negotiate had transaction costs been lower. At their best, regulations may help to overcome free-rider and hold-out problems.

However, information costs and public choice problems create a real possibility that any regulation will assign property rights suboptimally. Coase's insight suggests that this is less likely to be serious in terms of economic efficiency where individuals are free to reassign those property rights by contract and the costs of doing so are low. The case for tradable rather than non-tradable permits is based on this insight.

Where transaction costs are high, a regulation that prohibits subsequent market transactions in the associated property rights is less likely to be costly, because welfare-enhancing transactions are unlikely to occur anyway. Whether government regulation was likely to do more good than harm in these situations might depend on the government's ability to overcome the same information and transaction cost difficulties that impede private solutions.[154]

As it happens, regulations often raise the costs of reassigning property rights. For example the Accident Compensation Act 1972 removed the right to sue in the case of personal injury from accident. Voluntary contracting cannot restore this right. Similarly, individuals are not permitted to contract out of much of the government's food and product safety regulation. Furthermore, the inflexibility of regulations raises the risks that regulations will impede rather than enhance efficiency as circumstances change.

This raises a question about the degree to which individuals should be permitted to opt out of regulations when transaction costs permit them to do so. Clearly, contractual remedies are available in the case of employee accidents.

6.4.3 Regulations as injunctions

As noted in Section 6.2.3, permits can be thought of as a potentially very powerful form of injunctive relief. They are very powerful because they have the potential to close down a whole industry.

Epstein has argued that permit powers are likely to adversely change the balance between the defence of freedom of action and avoidance of harm to others that is so painstakingly sought, case by case, in common law actions.[155] Permits make the citizen a supplicant before the government in all cases, whether or not a real threat of harm exists. They thereby bring a much larger number of cases into a system in which delay is endemic, lobbying is opportunistic, and adjudicators may be specialised bodies with pronounced ideological positions on matters such as safety, the environment or some forms of land development.

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154 Of course, where the government is the provider (as with the road network) it cannot stand aside.

155 R Epstein (1995) "The Permit Power Meets the Constitution", *Iowa Law Review*, vol 81, no 2, December, pp 407–422.

Many of the tests that protect the potential injurer's property rights and reduce the abuse of a private injunction may not apply. Neutral judges have only limited powers to issue injunctions, but interested administrators may have far greater freedom to deny permits. The issuer of a permit may have some latitude in defining the ends for which permits are granted, defining the means for achieving those ends, and assessing the relative risks of moving too quickly or too slowly. The issuer typically does not bear the risk of delay. Pressures to delay arise from competitors of the applicant, those ideologically against development, and the issuer's awareness that if something goes wrong the issuer is the one who will be criticised for moving too quickly by those who are wise after the event. The issuer's ability to avoid the need to objectively determine that there is an imminent peril, the costs of which exceed the costs of avoiding the danger, tips the balance away from that which is so painstakingly sought under common law processes.

The power to issue a permit may be subject to rules and conditions that may be made so onerous as to make a proposed land use uneconomic. Such flexibility effectively gives the government a co-owner's power of veto in some circumstances. It is possible that governments could use these powers to provide benefits for others that would otherwise have to be paid for out of rates or taxes, even when there is no case of imminent peril. Epstein draws attention to the case of *Dolan v City of Tigard* in this regard.[156]

However, there is no consensual solution to the problem raised by the hold-out power assumed by the government. Unlike a co-ownership situation, the impasse cannot be removed by one owner purchasing the other's interest. In contrast, when a court issues a private injunction the defendant is free to approach the plaintiff and negotiate a mutually agreeable way of overcoming the original problem.

Another contrast between the power of a permit and that of the private injunction is that governments may retain the right to unilaterally alter the terms of a permit at some future date, even after people have taken action in accordance with them. A change in the terms of a permit, after investments have been sunk on the basis of the original terms, is akin to retrospective legislation.

Epstein suggests that a permit system would be much better tailored to the problem of minimising the costs of accidents and the costs of care if it was viewed as a form of government-initiated injunctive relief that was subject to the same limitations as are routinely applied to private plaintiffs.

Of course, the above remarks apply generally to many regulatory arrangements. Epstein cites the example of the power of the US Food and Drug Administration to hold up drugs indefinitely until it is satisfied that they are safe and effective. It sees no need to prove that the release of such drugs would present an imminent peril or to pay compensation to the developers of the drugs or those who would have

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156 *ibid*, p 419.

benefited from them. In contrast, under common law arrangements all drugs could go on the market as of right, save for those that *are shown* to pose an imminent peril to the population at large. *Ex post* remedies could also apply as we discuss below.

6.4.4 General assessment

Viscusi notes that the great potential benefit of regulation is that it spares every party covered from having to incur information costs at the individual level. Regulation can create clear standards, reducing uncertainty as to how courts might interpret common law in any given situation. Regulation can thereby achieve an outcome that may be too costly to obtain under voluntary contracting or through the evolution of common law. For example, voluntary contracting may be particularly difficult in public good situations in which free-riders cannot be excluded in hold-out situations, or when the actual injurer is difficult to identify.

However, regulation also has many potential drawbacks. Putting to one side the regulatory problems that arise for the reasons identified by public choice theory and theories of voting behaviour, Viscusi identifies three main difficulties with regulations:

- inadequate design;
- ineffective enforcement; and
- offsetting behaviour.

Design problems may arise in part because governments lack information. Government regulation generally requires more centralised information than do other risk control techniques. Because information is costly to gather, governments have to make decisions on the basis of more limited information than is available to the market as a whole. Self-serving parties can capture regulatory processes by exploiting the regulator's lack of information and flawed incentives. For example, exaggerated claims of 'fly-by-nighter' problems may extract greater government regulation for the benefit of incumbents. Enforcement may also be impaired by lack of information. Finally, regulations commonly distort behaviour in unintended and undesired ways.

Regulations also lack the flexibility of market solutions. In particular, they may suppress the price mechanism and so prevent markets from transmitting information about risks through compensating differentials. A strength of autonomous processes is that they permit experimentation and also the exploitation of decentralised information that is too costly for any single agency to collect. In general, voluntary contracting and voluntary exchange have strong efficiency attributes. They permit risks to be flexibly reassigned to the parties that are best placed to bear and/or manage them.

The government should hesitate to inhibit, let alone preclude, trading in risks. The costs of reassigning property rights are likely to be highest when a government

legislates against such reassignments and effectively enforces those prohibitions. Thus government legislation that removes the right to sue, or prevents workers and employees, or firms and their individual customers, from agreeing to whatever assignments of liability are mutually acceptable, could be very costly. Even if the rule is not costly when first passed, changing circumstances could make it more costly in the future. This would not be a problem if governments had good information about the changing nature of such costs and were able flexibly and expeditiously to amend their regulations – but typically they are constrained in both respects.

The costs of such government prohibitions on the reassignment of property rights are likely to be higher, the lower the costs of transacting in the absence of the government prohibition. The costs of renegotiating any initial assignment of liability are likely to be small when the parties have an independent commercial relationship that brings them together despite the prohibition. This is the situation between employers and employees, between producers of goods and services and their customers, and between medical practitioners and patients who have been consulted before the delivery of the service. Thus, any mistake in the initial assignment of liability in the cases of workplace accidents, product liability and medical malpractice may be of little consequence in terms of accident outcomes if the parties can freely contract for a different assignment. Hence the case for allowing parties to mutually agree to 'opt out' clauses in such regulations if complete removal of such regulations is undesirable or unachievable.

In contrast, reassignments of liability may be much more costly with respect to accidents between non-contracting strangers (as with road accidents or poisoning from airborne pesticides). In this case well-designed regulations that prevent the reassignment of liability may be more efficient since parties cannot contract to reassign liability anyway. On the other hand, a case would need to be made that the regulatory solution is more efficient than the common law solution it overrides.

Where regulation is warranted, it might be best in a start-up situation to assign a property right, such as liability for loss, to the party in the best position to control risk. The smaller the costs of transacting, the smaller the costs to efficiency of any mistake in the regulatory assignment. Again the efficiency of the regulation may be increased if opting out by contract is permitted.

As always when information is costly to obtain, the choice between autonomous solutions and regulation is a choice between imperfect alternatives. Market solutions are commonly as subtle and optimal as human ingenuity over centuries can devise, but they cannot be expected to be perfect. Markets require *ex ante* estimates of risk in order to be able to create compensating differentials. These estimates may be inaccurate. Viscusi argues that private insurance options are also likely to be imperfect because of adverse selection and moral hazard and because premia will not be actuarially fair due to other transaction costs.

Extensive government regulation of workplace safety is the norm in Europe, North America and Australasia. There are grounds for concern about how much of this regulation can be justified in cost–benefit terms. Autonomous contractual solutions are available for workplace accidents, weakening the case for regulation except perhaps in the case of accidents to strangers.

Shavell suggests that government regulation is less likely to be justifiable when the state knows less than individuals about the harm caused. He also argues that the case for state-initiated measures may be strongest when:

- the harm to an individual victim is small and the costs of coordinating victims through private contract would be large; or
- the government has information about risk that it would be costly to convey adequately to every potential victim.

Table 6.4: Potential role for regulations in controlling risk

Relatively favourable situations	*Problematic situations*
Contracting remedies are costly, perhaps because of free-rider or hold-out problems or because the injurer is difficult to identify.	The government suffers from the same information problems that bedevil private solutions.
Usefully creates a clear standard for due care.	Voter preferences differ and no known voting mechanism can produce a dominant solution.
Lowers information costs for each individual .	One-size-fits-all regulations do not cater well for the full range of voter preferences.
Eliminates substantial uncertainties under common law processes.	Governments cannot determine a clear, cogent, overriding, self-limiting objective for the regulation. This creates incentive and monitoring problems.
	Regulators use the regulations to expand their influence. Interest groups try to capture the regulators. Rent-seeking expenditures are a deadweight loss.
	Rent-seeking, ambiguity and regulatory politics lead to non-transparent and inefficient cross-subsidies.
	Behaviour is distorted in other unintended ways. For example, people may take less care because they assume that the regulations are being perfectly enforced or that the government is underwriting the risks.
	Unclear objectives, flawed incentives and information costs create design problems for the regulations.
	Regulations may be costly to enforce.

6.4.5 Applications

Road Accidents

Use of the roads must be subject to rules that can be enforced by fines, imprisonment or confiscation of vehicles depending on the circumstances. The scope for redress by tort actions is obviously limited where jurisdiction can be avoided through anonymity or bankruptcy.

Pedestrians, and to a lesser extent cyclists, cannot be practicably excluded from most local roads. This precludes contractual solutions to coordinating access conditions. Nevertheless, rules governing the interactions between these users and motorists are required. The road code embodies some of these regulations. As discussed in Section 6.7, it is possible that the deterrence effect of these regulations could be usefully supplemented by greater recourse to tort actions.

Government ownership of roads brings with it responsibility to determine the rules for access and for use of the provider's facilities. For these reasons regulation of road use is likely to be efficient for the foreseeable future.

Product regulation

The case for ongoing regulation of products that could injure customers is less clear. These are commonly contractual situations and differences in consumer preferences may mitigate against a one-size-fits-all regulatory approach. In the absence of regulatory standards, voluntary standards would no doubt be more prevalent. This suggests that serious consideration could be given to permitting customers and firms to opt out of product safety regulation that is intended to protect customers rather than strangers.

This concept is discussed more fully in Credit Suisse First Boston's report for the New Zealand Food and Beverage Exporters' Council and the New Zealand Business Roundtable, *Regulation of the Food and Beverage Industry*, which was published in July 1998.

Medical malpractice

The dominance of the state as supplier of medical services ensures the ongoing regulation of standards of public hospital care and much more besides. In the absence of regulation, subsidies for private medicine could increase risk by increasing the level of activity. On the other hand, intrusive regulation could reduce the supply of such risky medical services.

Most medical services are private goods that may be provided *in extremis* or by scheduled prior arrangements. In general, providers are highly trained in a specialist skill and have a strong incentive to preserve a high reputation. Where medical services are provided by prior arrangement, contractual assignments of liability would emerge in the absence of regulation. Courts may use these arrangements to guide assignment of risk in those emergency situations that do not permit direct

contracting. Government subsidies, regulation and ownership of hospitals have markedly reduced the scope for private risk-sharing initiatives.

Workplace injuries and occupational safety and health[157]

The issue of occupational safety and health regulation is particularly relevant to workplace accidents. A submission by the New Zealand Business Roundtable in September 1988 summed up concerns about the likely efficacy of workplace health and safety regulation in the following terms:

> Legislation setting health and safety standards is motivated by the belief that individual workers (or their representatives in labour unions), are either badly under-informed about the health and safety risks that they face (and presumably unable to remedy this), or powerless to reduce these risks or moderate their effects through negotiation or the use of general legal remedies. An implicit assumption is that governments can be better informed about particular workplace hazards than are workers, and can enforce solutions which workers could not (or perhaps should not be required to) negotiate with their employers directly. It will be argued in this submission that in fact the comparative advantage of people closely involved with a workplace in gathering information about risks and negotiating means of handling them, combined with the existence of a diversity of worker preferences, raise strong doubts as to the ability of governments to improve on voluntary solutions in most cases. These doubts are reinforced by international experience in health and safety regulation.[158]

Occupational health and safety in New Zealand is governed by the Health and Safety in Employment Act 1992 (the HSE Act). This Act's principal objective is to prevent harm to employees at work. It places primary responsibility on employers to provide a safe and healthy work environment. The HSE Act requires employers to "take all practicable steps" to ensure the safety of employees, contractors and subcontractors and anyone in the vicinity of the workplace, whether or not an employee.

Enforcement of standards is undertaken by a government agency and incentives for conformance with the standards are provided by the threat of prosecution and the imposition of fines.

The HSE Act adopts a performance-based rather than a prescriptive approach to safety. Codes have been used to reduce uncertainty in specific workplaces. A performance standard requires that the employer achieve certain outcomes but also leaves the employer free to decide how to achieve them. Most criticism of health and safety standards has been concerned with prescriptive standards such as those implemented by the US Occupational Safety and Health Administration. There is considerable concern about the cost and efficacy of such standards. The approach adopted in New Zealand avoids the worst excesses of a prescriptive approach.

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157 This subsection draws heavily on (1988) *Regulating for Occupational Health and Safety*, New Zealand Business Roundtable: Wellington.

158 *ibid*, p 2.

Even so, as the 1988 NZBR submission observed:

> … performance guidelines are unlikely to be the most efficient instrument for improving outcomes in all cases. Rather, some outcomes may be improved more directly by the provision of information. Others may be improved by special legal protection of particularly vulnerable groups. The nature of the intervention will thus best be decided on a case by case basis and may not require the creation of any specialist government agency.[159]

Given the range of private risk control options, the case for government regulation of workplace safety is not straightforward. One set of arguments for direct government regulation is based on failures that arise from other government interventions.

Prior to the passing of the Employment Contracts Act 1991, labour legislation was arguably inhibiting the ability of many employees and employers to flexibly negotiate firm-specific arrangements. The 1988 NZBR report argued that reform of labour market legislation should therefore be the first priority in addressing workplace safety issues. The report also argued that labour market reform:

> … should simultaneously involve removal of the Accident Compensation Corporation's monopoly on basic accident insurance, and consideration of the case for introducing some form of negligence tort. Reform of health and safety standards legislation should then concentrate on any apparent residual health and safety problems, and the potential for handling them cost-effectively through some system of legislated standards. More generally there is a case for proceeding with reform of the public health system, so as to reduce inefficiencies in service provision, enhance choice as to treatment, and reduce distortions between providers.[160]

Government regulation can readily, if inadvertently, increase accidents by allowing riskier activities to be cross-subsidised by less risky activities. Indeed, this is a major concern with social insurance arrangements that tend to stress universality and flat rate premia. Removing the Corporation's monopoly would reduce this problem because competition tends to drive out cross-subsidies for risky activities. This 'cream skimming' is efficient.

If political constraints do not permit open competition to eliminate inefficient cross-subsidies, direct regulation of the riskiest activities might be considered. Such targeted regulation might be more efficient than across-the-board regulation that could further penalise low risk activities.

As noted in Section 6.3.6, it is sometimes suggested that regulation is justified because individuals incorrectly assess the extent of risks. Errors in assessing probabilities do not necessarily justify government regulation. If individuals cannot properly assess probabilities in a private market context, it seems unlikely that they could do so as regulators either, or as voters evaluating the performance of politicians and regulators. The literature on 'cognitive biases' can also be criticised on

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159 *ibid*, p 30.
160 *ibid*, p 29.

the grounds that incorrect estimation of probabilities does not necessarily represent an imperfection to be corrected. Individual perceptions of risk reflect a complex mix of attitudes about the kinds of risks people are willing to take, the timing of those risks, and the mix of different kinds of risk. Given the complexity of the entire judgment, it is difficult for outside observers to ever know that a given probability is 'incorrect'. In any case, risk perception problems may, in some situations, be better addressed by information provision than by restricting contracting opportunities.

There is also the problem that government agencies not only lack the information to overcome cognitive biases but have bureaucratic and public choice reasons for over-emphasising some risks relative to others in the public debate. Competitors and special interest groups (such as Greenpeace) will attempt to make their perceptions the regulator's perceptions. Evidence from the United States suggests that government agencies systematically overestimate risks.[161]

Workers typically have access to a number of sources of information on employment-related risks. The nature of the work, the experience of other workers and the reputation of the employer all provide relevant information. Even when workers do not have an accurate perception of job risks when they start employment, they re-evaluate their risks relatively quickly.[162]

In relation to whether employees are adequately informed and compensated for the risks they bear, Viscusi *et al*[163] comment that the research findings:

> … should be regarded as evidence of some reasonable perception of job risks by workers. They do not, however, imply that workers are perfectly informed. It is unlikely that workers have completely accurate perceptions of the risks posed by their jobs. These risks are not fully known even by occupational health and safety experts. … In situations where workers are aware of the hazard, the riskier jobs should be expected to command a wage premium.
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> Overall, roughly [US]$70 billion in wage premiums for risk is paid by the United States private sector each year, above and beyond the amount that is paid by workers' compensation. … Although market behaviour may not be ideal, the substantial magnitude of compensation per unit risk does suggest that there is substantial awareness of risks and their implications.

Decisions on the allocation of risk, including whether or not accident insurance is funded by the worker or employer and what safety standards are appropriate, are usually best made at the level of the firm since information about the relevant risks is held at the firm level. Risks differ between firms. The costs to workers or employers of reducing risks differ. Different individuals have different preferences for risk, just as they have different preferences for other goods. Workers, unions, insurance

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161 A Nichols and R Zeckhauser (1986) "The Perils of Prudence", *Regulation*, November/December, pp 13–24.

162 T Kniesner and J Leeth (1995) "Abolishing OSHA", *Regulation*, no 4, p 55.

163 *ibid*, p 798.

companies and so on are likely to have better information on the trade-offs individuals are prepared to make than will the government.

Because information is costly, decisions on workplace safety will not be perfectly informed whatever institutional arrangements are adopted. Information problems justify government intervention only when the government has a comparative advantage in handling them.

Government agencies have less incentive to balance the costs of obtaining information against the benefits than do the parties comprising the employment contract. In addition, information provided by the government may not accurately reflect the relevant risks.

Given the tendency of government agencies to adopt a relatively risk averse approach to regulation, there is a possibility that regulation will result in too much reduction in risk (the benefits are not outweighed by the costs), or the regulation will achieve little but will impose substantial costs.

Regulation of occupational health and safety and product safety involves other costs. Regulation for a single risk standard imposes costs on those who would have been prepared to accept a higher level of risk if they were compensated for it. Although higher standards are apparently imposed directly on employers, employees also bear the costs through lower wages. To the extent that workers would rather have higher wages than lower risks, resources are wasted if regulated standards are observed.

Health-related hazards may be more difficult for workers to assess than accident-related hazards, and in turn market mechanisms such as compensating wages may be less effective in providing firms with appropriate incentives to manage and reduce such risks. Health effects sometimes occur with long time lags, and episodes of illness cannot always be attributed with any certainty to workplace exposure. In these circumstances, insurance companies and unions may have a role in researching relevant risks. Given the public good nature of some information provision, the government might also have a role in trying to uncover and disseminate information on the causes and consequences of health hazards in the workplace.

Anecdotal information indicates that employers do expose workers to unreasonable hazards from time to time. Latent defects are the usual case of unreasonable risk that calls for common law actions. In any case, no system can entirely eliminate risk, or ensure that parties provide acceptable levels of risk at all times. Regulation has not eliminated unacceptable hazards.

The scope for regulation to make a major difference is limited. The incentives provided by regulation are small relative to the incentives provided by insurance and compensating wage differentials. In the United States, for example, it is estimated that in 1993 firms paid more than US$55 billion in workers' compensation, an estimated US$200 billion for compensating wage differentials to workers for accepting job hazards, and only US$160 million in fines for occupational safety

breaches. The result is that the economic incentives to improve safety by reducing compensating wage differentials and workers' compensation costs (where premia are experience rated) far outweigh the safety enhancing incentives from the relatively small fines imposed for breaching health and safety standards.[164]

Unsurprisingly, given the above considerations, a number of significant concerns have been raised about outcomes under the HSE Act in New Zealand:

- Employers are responsible for their own employees, the employees of contractors and subcontractors and other people in the vicinity of the workplace.[165] It appears to be doubtful that they can limit this liability by entering into indemnity arrangements with contractors.[166] This problem should be looked into so as to ascertain what the difficulties are with contractual remedies. The multiple monitoring of safety may, in many situations, increase costs without necessarily improving safety. Assigning multiple responsibilities results in a duplication of effort. It may also reduce the incentives for the party best able to undertake monitoring (the immediate employer) to monitor safety since another party (the principal) has primary responsibility for safety.[167]
- As noted in Section 6.3.7, courts have shown an increasing propensity to award exemplary damages as compensation for injuries. According to a report published in the New Zealand business weekly *The Independent*, fines for first offenders have been larger, in relation to the maximum fine, than is typically the case for other offences and about 40 percent of fines imposed under the HSE Act have been paid to victims or their families.[168] As the Labour Select Committee of New Zealand's parliament emphasised, fines under this Act are meant to be used solely to penalise the errant party, not to compensate injured workers.[169] Concerns about inadequate compensation for injured workers should be addressed directly rather than indirectly. The focus on penalties for the firm could lead to an inadequate emphasis on worker precautions that could possibly prove more economic.
- Critics have complained that enforcement of the HSE Act is haphazard and the prosecution policy lacks consistency. Furthermore, legal costs are significant and the fines awarded by the courts are "something of a lottery".[170]
- The HSE Act imposes particularly burdensome compliance costs on small businesses.[171]

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164 Kniesner and Leeth, *op cit*, p 55.
165 A Howman and I Frengley (1995) "Workplace Health and Safety", *Current*, February, p 12.
166 Refer to the opinion expressed by a Hesketh Henry lawyer in "Judges Go Berserk with Big OSH Awards", *The Independent*, 31 October, 1997, p 28.
167 J Yeabsley (1997) "LEANZ Forum: Cranes and Safety Leverage", *Newsletter of the Law and Economics Association of New Zealand*, October, p 4.
168 "The Health and Safety in Employment Act: A Commercial Hazard in Itself", *The Independent*, 31 October, 1997, p 27.
169 Labour Committee of House of Representatives (1996) Inquiry Into the Administration of Occupational Safety and Health Policy, Government Printer: Wellington, p 11.
170 "The Health and Safety in Emplyment Act: A Commercial Hazard in Itself", *The Independent*, 31 October, 1997, p 26.
171 *ibid*, p 5.

- Employers are assigned primary responsibility for safety. Even if an employer takes all practical steps to control a hazard, and an employee does not follow instructions and as a result incurs serious harm related to the hazard, the employer can be prosecuted.[172]
- There are major problems with some definitions, particularly "serious harm" and "all practicable steps".[173]

In addition to their willingness to use the HSE Act to provide compensation for injured workers, the courts are also extending the domain for civil claims. The High Court confirmed in 1997 that injured workers can sue employers for exemplary damages based on negligence and breach of duty. These actions would permit, in principle, recovery of compensation for non-pecuniary losses. Penalties from such actions could be additional to fines imposed under the HSE Act.

Employers, employees and subcontractors do not have the clear right to contract out of their liabilities under the HSE Act. The Act is intended to regulate behaviour and the courts are likely to rule against contracts that appear to violate the public policy intent of the legislation. If this is correct, legislation would be required to permit contractual reassignments of risk.

In conclusion, the courts appear to have seized the opportunities provided by the HSE Act to undermine the effects of the abolition of lump sum payments under the ACS. At the same time, the right to sue in the case of workplace accidents is being re-established, albeit by an indirect route. The issue of reform of the ACS is therefore linked to the issue of the optimal regulation of health and safety in the workplace as embodied in the HSE Act.

6.5 Empirical evidence and history

6.5.1 A brief history of no liability systems[174]

According to Epstein,[175] workers' compensation systems have:

> … served as the model for a number of other contemporary no-fault systems of liability, including those for injuries arising out of the use of automobiles, the distribution of consumer products, or the provision of medical services.

Under these schemes workers typically forgo the right to sue in return for employer-sponsored compensation arrangements. Accordingly, we follow Epstein in first briefly reviewing the development of workers' compensation. Epstein reports no recorded cases in which an employee sought damages from an employer for a work-related injury before 1837. The first case occurred in England in that year. The first

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172 *ibid*, p 10.
173 *ibid*, p 6.
174 This section is largely taken from R Epstein (1995) *Cases and Materials on Tort*, chapter 13, section B, pp 1014–1021.
175 *ibid*, p 1013.

major decision in the United States was in 1842. In each case an employer was sued under common law on the basis of negligence. Employers were able to use what Epstein refers to as "the famous trinity of common-law defenses: common employment, assumption of risk, and contributory negligence".

Dissatisfaction with the subsequent evolution of common law cases led some individual firms and their workers to contract out of common law remedies for industrial accidents. In their place some of these contracts established a complex voluntary compensation scheme that, so Epstein reports – citing two cases in 1882 and 1894 – had some considerable resemblance, in its particulars, to the modern system of workers' compensation.

In general, Epstein reports:[176]

> … that in the nineteenth century there was massive contracting out from the liability system in large industrial plants, and often on the railroads and in mines. The optimal conditions for contracting out depend heavily on the mode of production. Team production tends to lead to workers' compensation, while individual production within loosely organised work settings tends to retain the system of negligence and the assumption of risk. But it is instructive that the consensual arrangement that usually turned out to be optimal was a version of workers' compensation, with no-liability (ie harm arising out of and within the scope of employment), limited damages and arbitration mechanisms.

The same dissatisfaction with the evolution of common law also led to legislation. In particular the Employer's Liability Act 1880 eliminated the defence of common employment in England and provided for employer liability for negligence. It was construed to permit employers and workers to opt out of its provisions. This statute became the model for many state statutes in the United States.

The first modern workers' compensation act was passed in England in 1897 and, not without significant subsequent constitutional challenges, in the United States by New York State in 1910. The challenges to the New York statute eventually established that imposing 'liability without fault' on employers was constitutional (ie employers were liable regardless of contracts or circumstances). This was a departure from the common law concept of strict liability subject to the above-mentioned trinity of defences.

Workers' compensation schemes typically impose strict limitations on the amount of compensation obtainable from the employer. Usually awards under these schemes relate compensation to forgone earnings capacity rather than full recovery of all losses. In contrast, the common law rules imposed no such maximum and permitted full recovery of lost earnings and expenses. Compensation for pain and suffering was possible under common law but not under workers' compensation schemes.

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[176] Epstein (1996) *op cit*, p 9.

Actions for intentional torts were not barred by workers' compensation legislation.

The no-liability principles underlying workers' compensation arrangements were extended to the development of no-liability automobile insurance this century, and particularly during the 1960s. This was largely based on first-party insurance. Prior to this development, every state in the United States had passed laws ensuring that liability insurance would be available to compensate victims.

Peter Swan[177] reports that between 1971 and 1976, 16 states in the United States adopted no-liability laws. New Zealand's system was put in place in 1974. In Australia, the states of Victoria and Tasmania also brought no-liability schemes into operation during 1974.

A feature of no-liability systems is that payments in the event of an accident are often periodic rather than lump sum. This reflects the annuity-type insurance arrangements often associated with such a rule. Tort-based systems commonly compensate for loss through a lump sum payment, but may also result in periodic payments. Whereas workers' compensation schemes tend to compensate according to pre-agreed schedules, insurance-based no-liability systems are likely to more closely relate payments to actual loss. Schemes that make an open-ended one-off payment based on loss incurred can amount to excessive insurance and can create moral hazard.

The Canadian state of Quebec implemented a universal no-liability automobile insurance scheme in 1979, while the government of Ontario introduced a partial no-liability system for automobile insurance in the early 1990s.[178]

Some states in the United States have adopted a partial form of no liability insurance in which the right to sue applies only when the victim's losses exceed some threshold level. The threshold level varies from state to state. Escalating premiums during the last three decades and ongoing dissatisfaction with the loss of the right to sue have seen the emergence of proposals to offer motorists a choice of scheme:

> Under a choice auto insurance system, drivers may choose either a traditional auto insurance plan (tort) or a no-liability plan. Those who choose tort retain traditional tort rights and liabilities. Those who choose no-liability neither recover, nor are liable to others for, noneconomic losses (typically, pain and suffering) for less-serious injuries incurred in auto accidents.[179]

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[177] P Swan (1984) "The Economics of Law: Economic Imperialism in Negligence, Occupational Licensing and Criminology?" *Australian Economic Review*, 3rd quarter, pp 91–108.

[178] R A Devlin (1993) "Automobile Insurance in Ontario: Public Policy and Private Interests", *Canadian Public Policy*, September, pp 298–310.

[179] RAND Research Brief (undated, obtainable at http//www.rand.org/publications/RB/RB9024.html) "Choosing an Alternative to Tort", see A Abrahamse and S Carroll (1995) "The Effects of a Choice Auto Insurance Plan on Insurance Costs", MR-540-ICJ, pp xix, 55. Motorists who take the tort option can sue negligent drivers for economic losses in excess of those covered by their first-party insurance. They can only get compensation for pain and suffering from their insurer or from drivers who have inflicted loss intentionally or as a result of drug or alcohol abuse.

Proposals have been made in the United States since the 1970s to extend no-liability arrangements into product liability[180] and medical malpractice[181] cases. These proposals tend to rely on third-party coverage mechanisms that require the supplier's insurance company to compensate the victim. Where many providers are supplying services to the victim at the time of the accident (eg in a service plan or hospital situation), the problem of determining which insurance company should pay can be troublesome.[182] Epstein comments that:

> While proposals for no-liability coverage have largely disappeared in the products area they have had a more lasting influence in the area of medical and hospital malpractice. As before, the basic no-liability bargain is broader coverage and lower administrative expenses in exchange for reduced coverage awards. In dealing with these health-related injuries, the no-liability proposals have been made on both an elective and a mandatory basis. As before, a central question has been the revised and expanded definition of a compensable event.[183]

Epstein himself has argued that the problems with determining what is a causal event will lead a no-liability system into the worst of all possible outcomes – the economies of inquiry that result from a successful demonstration of non-negligence will be lost, but fault will reappear in some form when liability for damages is assigned, possibly across diverse parties.

As noted in Section 6.3.6, Palmer has suggested the abolition of tort remedies in the United States on the basis that current tort arrangements are seriously defective and the chances of usefully reforming them seem low. However, this does not establish that the chances of the abolition of tort remedies in the United States are high. Bernstein comments:

> Previous attempts at instituting no-fault systems in the United States in such diverse areas as Social Security disability, workers' compensation, and auto insurance, have resulted in continued high transaction costs, moral hazard problems, widespread fraud, and opt-out provisions that defeat the purpose of instituting no-fault. Perhaps because of these cautionary examples, there is little support for replacing the American tort system with a no-fault system.[184]

To conclude, legislation imposing no-liability may be on safest ground when it is effectively endorsing a market arrangement that would apply anyway – in which case it has few or no benefits, only costs. The more ambitious governments become

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[180] In the United States strict liability has taken over from negligence in product liability cases. Medical malpractice is still based on negligence concepts.

[181] See, for example, P C Weiler (1993) "The Case for No-Fault Medical Liability", 52 *Maryland Law Review* 908. Florida and Virginia have enacted an optional no-liability medical insurance programme according to D Sapping (1994) "Designing Optional No-fault Insurance Policies for Health Care Systems", *Journal of Economics and Management Strategy*, 3(1), Spring, pp 113–42.

[182] Epstein (1995) *Cases and Materials on Tort*, p 1065 illustrates this point as follows: "Thus, Professor Blum has asked *who* should provide coverage when a worker wearing slippery shoes falls off a well-constructed ladder after drinking a few beers."

[183] *ibid*, p 1065.

[184] Bernstein, *op cit*, p 72.

in extending the jurisdiction of no-liability beyond this point, the greater the risk of adverse effects on welfare and the more convincing the arguments need to be that the claimed benefits exist.

6.5.2 How much does choice of regime matter?

The theory discussed in Section 6.3.3 presumed that tort liability rules could materially affect behaviour. This is a law and economics perspective. However, the issue of the degree to which tort liability rules actually deter risky behaviour is contentious, as Dewees, Duff and Trebilcock explain:

> Critics of the law and economics (deterrence) perspective on tort law claim that this perspective overemphasizes both the amount of overly dangerous activity that would occur without tort liability and the amount of injury reduction achieved by it. It is often claimed that ignorance by prospective injurers of both law and facts, incompetence, discounting of the threat of liability, taste for risk, small expected penalties, and the pervasiveness of liability insurance all combine fatally to undermine any deterrence effects that the tort system might otherwise achieve. In addition (and not always consistently), it is claimed that in some contexts the tort system induces overdeterrence, for example, by promoting defensive medicine in the case of medical malpractices or causing beneficial product withdrawals or reductions in product innovation in the case of product liability. These critics typically argue that deterrence and compensation objectives should not be assigned to the same legal instrument, but should instead be disengaged from each other and assigned to separate legal regimes that have been exclusively designed to achieve one or the other objective: deterrence to penal and regulatory regimes, and compensation to either special or general administrative compensation schemes. [185]

Definitive empirical evidence on the effects of the choice of liability regime on the rate of accidents is difficult to produce because many other factors can be operating through time and across jurisdictions. Furthermore, the degree to which such regimes deter injurious behaviour may vary with the type of situation. For example, tort liability rules might be expected to be more efficacious in the case of accidents in which cause is easy to ascertain, such as automobile accidents, than in other cases, such as non-site specific environmental accidents.

Dewees, Duff and Trebilcock reviewed in detail the empirical evidence on the efficacy of the tort system and its alternatives. They looked at five major accident categories – automobile, medical malpractice, product-related accidents, environmental injuries and workplace injuries. Their findings are summarised in the following paragraphs.

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[185] See p 6 in D Dewees, D Duff and M Trebilcock (1996) *Exploring the Domain of Accident Law: Taking the Facts Seriously*, Oxford University Press: New York, Oxford, pp vii–452.

In the case of *automobile accidents* they cite[186] two comprehensive empirical studies that find that fatality rates in Quebec rose by between 6 percent and 10 percent following the adoption in 1978 of a pure no-liability compensation regime that foreclosed all tort claims for personal injuries. In contrast, they report that the empirical evidence is ambiguous in the case of the United States. However, they discount the significance of the latter finding, noting that most US no-liability regimes retain large elements of tort law and provide relatively modest no-liability benefits. Epstein[187] also discounts the significance of US results, citing the effects of government regulation of the insurance market. In particular, the assigned risk pooling arrangement subsidises high-risk drivers, thereby undermining the tort system.

Dewees, Duff and Trebilcock report that the fact that tort was abandoned for most *workplace accidents* early this century makes it difficult to obtain good empirical evidence on its effects. They cite two major studies that yield mixed results. They conclude that the deterrent effect of tort liability is limited in this case and is likely to depend on the workplace situation. For example, its effectiveness is likely to depend on how easily employers can monitor employees and how accurately risks can be perceived. Obviously, tort liability is less likely to prove a deterrent when long latency periods occur between exposure to risk and evidence of injury.

Tort *medical injury* cases in the United States appear to have had a significant impact on medical behaviour with some evidence of a statistically significant but modest reduction in the proportion of injuries caused by negligence.[188]

However, the operation of the tort system in this area has caused concerns about the degree to which it may have induced an excessive level of defensive medicine. The danger here is that if tort damages are awarded on an excessive and unpredictable basis, and medical professionals and their customers cannot mutually contract out of this system, medical practitioners may deny treatments that customers would be happy to purchase even if supplied on a no-liability basis. Dewees, Duff and Trebilcock cite evidence that the tort system in the United States has imposed significant costs as a result of reduced therapeutic services.[189]

Research into these effects by Michelle White[190] has found that, despite the unpredictable nature of tort actions in this area, it is much more likely that an injury due to negligence will result in a successful claim than will an injury in which there is no negligence. But there is also evidence that good patient communication after a

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186 *ibid*, p 415.
187 Epstein (1996) *op cit*, pp 40–41.
188 Dewees, Duff and Trebilcock, *op cit*, p 417.
189 Dewees, Duff and Trebilcock, *ibid*, suggest that the net benefits from tort liability might be positive as a result of increased physician discussion of treatment risks and alternatives with patients, and institutional programmes of risk management.
190 See, for example, M White (1994) "A Comparison of Formal and Informal Dispute Resolution in Medical Malpractice", *Journal of Legal Studies*, 23(2), June, pp 777–806.

mishap is the best defence. This suggests that personal factors, rather than legal standards, influence outcomes. High error rates and large administration costs are also a concern. The issue of the optimal tort rule in this area is a controversial one.

In the case of *product liability*, Dewees, Duff and Trebilcock report that recent industry specific case studies suggest that product liability has marginally increased safety in some industries, but it has also reduced rates of product innovation. Viscusi notes that it has also led to the withdrawal of products such as diving boards at motel swimming pools in the United States.[191] Epstein reports that successful lawsuits put an estimated US$100 000 on the cost of each new private plane and accounted for about 25 percent of the cost of a household ladder.[192] Production of private planes dropped from 17 000 in 1979 to little more than 1 000 by 1987. Gary Libecap has noted that these rules can lead innovators to reduce their exposure to lawsuits by having thinly capitalised firms own their innovations – but the effect may be to increase the risk that they will fail commercially.[193]

Tort liability cannot be expected to deter injuries materially in *environmental cases* when causation is difficult or impossible to establish. Dewees, Duff and Trebilcock report that it has been more effective:

> … where a large amount of pollution is discharged from an isolated source, causing characteristic harm in a large amount to an individual, a small group of individuals, or property belonging to a small group.[194]

Evidence relating specifically to New Zealand is disappointingly scarce. In 1984 Peter Swan[195] reported research on New Zealand data by Berkowitz that found evidence of increased accident rates in New Zealand industries in the years immediately following the introduction of the ACS. For example, Berkowitz reported that accidents involving loss of time in the meat processing industry rose 117 percent between 1970 and 1976/77 and in the rubber industry the number of accidents involving loss of time per 100 000 person-hours had progressively risen from around 3.1 percent prior to the introduction of the ACS to 7.05 percent in 1976.

Swan also used traffic accident and injury rates in New Zealand and in Australian states and territories from 1960 to 1981 inclusive to explore the effect of the removal of the negligence system in New Zealand and the Northern Territory. He expressed his findings in the following guarded terms:

> The principal finding of the econometric study undertaken of the effects of the removal of the negligence system in New Zealand and the Northern Territory is that the death rate increased in a statistically significant fashion, although some indication of how

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191 W Viscusi, J Vernon and J Harrington, *op cit*, p 755.
192 Epstein, *Cases and Materials on Tort*, p 729.
193 See, for example, G Libecap (1996) "The Evolution of Governance Structures: Entrepreneurs and Corporations Comment", *Journal of Institutional and Theoretical Economics*, 152(1), March, pp 35–39.
194 Dewees, Duff and Trebilcock (1996), *op cit*, p 419.
195 Swan, *op cit*, p 100.

> robust this result is may have to await further work. Such a rise in the death rate is anticipated from the reduced incentive of potentially negligent accident victims to take adequate care under the 'no-liability' principle. In addition a whole variety of factors that affect these rates are identified and quantified. Nonetheless, there is considerable room for further work to improve both the specification of the model and the quality of the data.

In 1987 Samuel Rea reviewed a range of empirical evidence drawn from the United States and Canada concerning the effects of no-liability regimes. However, in the case of New Zealand he could only report that:

> It appears that no one has analysed the data. The few articles that exist are written by lawyers who are advocates of this type of system, and they contain no statistical analysis and no mention of the possibility of any change in the number of accidents.[196]

In a footnote to this remark Rea acknowledges some work by Brown (1985) that reports a reduction in traffic accidents, but comments that Brown does not control for other variables. Yates (1989) also cites Brown. In addition, she presents data that indicate that the abolition of the right to sue has not seen a notable increase in criminal prosecutions against employers, yet it has eliminated a much greater number of civil actions. She infers that:

> … whether the deterrent effect of tort actions was minimal or substantial, it has not been replaced.[197]

The Corporation does publish injury statistics annually (refer to Appendix A). This publication provides annual data from 1975 on the Corporation's income; expenditure; the total number of services rendered annually by general practitioners, physiotherapists, specialists, radiologists and others; and the number of claims that the Corporation estimates it ultimately faced each year from 1975 (the last publication includes figures for 1997). Unfortunately the data do not provide such details dating back to 1975 on a disaggregated basis. It is therefore not possible to draw any conclusions about trends in safety adjusted for changes in trends in occupation, activity or age. Based on these tables, the number of services rendered per head of population all but tripled from 1975 to 1997, from 0.76 to 1.99, while the number of claims per thousand of population rose 34 percent from 23 to 43 per thousand of population. The (linear) trend per capita rates of increase were 4.7 percent and 1.2 percent per annum respectively.[198] The expenditure data suggest that trend expenditures per head of population rose at around 8 percent per annum faster than the consumers' price index during this period. The actual growth rates have not been uniform around this trend. Eligible numbers and per capita services rose early in the period to be well above trend by the early 1990s. Both moved below

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196 S Rea (1987) "Economic Analysis of Fault and No-fault Liability Systems", *Canadian Business Law Journal*, vol 12, no 4, May, pp 444–472.

197 Refer to Yates, *op cit*, p 41.

198 These numbers are derived from pp 7 and 9 in the Corporation's *Injury Statistics 1997*.

trend following the introduction of the 1992 Act, although services per capita by 1997 were higher than in any earlier year. Between 1985 and 1997 real expenditures rose at around 8 percent per annum and real per capita expenditures at around 7 percent per annum.

A recent article in *Safeguard*, a magazine published by the Occupational Safety and Health Service of the Department of Labour, confirmed the ongoing paucity of accident statistics in New Zealand – and the impression of a woeful trend in accident rates. The cost of workplace injuries and illness in New Zealand was put at 2.5 percent of gross domestic product. This figure used International Labour Organisation figures and was not based on New Zealand research. The reviewer suggested that the real rate for New Zealand might be in the range of 4–8 percent of gross domestic product. This was made on the heroic basis that New Zealand's estimated workplace fatalities per 100 000 workers in 1989/90 of 8.1 was comparable with Australia's figure of 8.4 for the period from 1982 to 1984 and that the cost of workplace injuries and illnesses in Australia was 3.4–8.4 percent of gross domestic product. Possibly more noteworthy was the estimate of an annual fatality rate in New Zealand of 7.2 deaths per 100 000 workers during 1975–84, apparently lower than in 1989/90, although the two statistics come from different sources, suggesting that their comparability may be in doubt. Nevertheless, the author (who was making a case for increased government spending on the regulation of occupational safety and health) felt on strong enough grounds to observe that:

> Our fatality rates are shamefully high compared to other countries with which we like to be compared. Overseas research reports reductions in occupational related fatality rates of between 60 and 70 percent over the last two decades in Sweden, Japan, Germany and the United States. Table Four shows that in the same period New Zealand's occupational fatality rates have certainly not fallen, if anything, they have increased.[199]

The situation appears to speak for itself. State control of accident insurance in New Zealand does not appear to have induced state agencies to produce meaningful measures for monitoring the Corporation's performance with respect to the accident prevention objective, nor to assess the performance of New Zealand's no-liability arrangement or its occupational health and safety regulations. Instead, heroically massaged figures are used in a departmental publication to make a case for greater government expenditure and regulatory effort, rather than to evaluate the efficacy of existing programmes.

6.6 The case for a coordinated review of regulation and tort

This section uses the foregoing material to make a case for a coordinated review of the role for regulations and tort actions in controlling risk.

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[199] J Wren (1998) "A Matter of Priority", *Safeguard*, no 48, March–April, New Zealand Department of Labour, pp 34–37, p 36.

Section 6.3 analysed the strengths and weaknesses of tort solutions in general terms, taking into account their interactions with insurance arrangements. It established a strong *prima facie* case that a no-liability rule would fail to produce the incentives to take care that liability rules could be expected to create for accidents involving strangers. The no-liability rule also appeared to be inferior in situations in which buyers of a firm's products or its employees have less information than the firm about accident risks.

The case for *mandating* any rule concerning the right to sue appears to be particularly weak in consensual situations for which contractual solutions to the problem of the optimal assignment of risk are feasible. Empirical evidence suggested that the payments for the assumption of risk that are embodied in prices and wage rates generally represent an incomparably greater cost to businesses than payments arising from fines or tort actions.

While liability rules have many potential weaknesses, they appear to offer potential benefits in the case of accidents in non-consensual situations involving strangers. However, those benefits occurred only in certain circumstances. One of the limitations involved the need to establish their superiority to government regulation. This is not to deny liability rules a potential role in consensual situations when their application does not override a contractual agreement.

Section 6.4 listed many concerns with the efficacy of regulatory approaches in general and with current safety regulations, particularly as they apply to the workplace. The case for government regulation that inhibits contractual assignments of risk appears to be particularly weak.

In a United States context, Viscusi concluded that current (regulated) arrangements for workers' compensation do not appear to be satisfactory from a risk control perspective. Premiums do not accurately reflect risk, and worker behaviour is further distorted by serious moral hazard problems, the tax deductibility of premiums and effects on wages. In New Zealand ACS premiums are also unlikely to reflect risk accurately. This problem should be reduced in time under competitive insurance arrangements.

Section 6.5 moved the discussion further from *prima facie* considerations by addressing the empirical question of materiality. The history reviewed in Section 6.5.1 showed again the power, versatility and prevalence of contracting arrangements in consensual situations in the past and the dissatisfaction that has developed with some of the regulatory measures that have displaced the contractual approach. On the other hand the concerns about the vagaries of tort actions are real and longstanding.

Section 6.5.2 reviewed the empirical evidence on the degree to which liability rules affect safety. There is little if any point in restoring the right to sue in order to reduce accidents if doing so would not have this effect. The strongest evidence of an effect was found in the case of road accidents, although even these findings are not

unqualified because of data difficulties. Possible effects on other activities cannot be ruled out for the same reasons, but they appear to be too small to be readily detected. We regard this empirical evidence as being too tentative to provide a good basis to dismiss the possibility that the choice of rule could affect safety in some workplace, medical and other situations.

Finally, as Viscusi has argued, there is a public policy case for a conscious coordination of government-imposed risk-reduction measures. Currently, the evolution of contractual remedies is seriously impeded by the government through regulations, government ownership and the prohibition on the right to sue. There is a case for reviewing the current reliance on these approaches in a coordinated manner. For example, increased reliance on the control of risk through tort actions after an accident has occurred might make it optimal to rely less heavily on *ex ante* risk control techniques such as safety regulation.

As noted earlier, the growing recourse to tort remedies under occupational health and safety legislation also serves to heighten the case for reviewing the optimality of the existing prohibition.

6.7 Options for reform of liability arrangements

This section discusses options for the reform of liability arrangements. Many countries are interested in this topic, but the reasons for the interest differ. For example, interest in the United States stems in part from concerns about the efficacy of the tort system, whereas in New Zealand the pressure and the trend is to reintroduce and expand tort remedies.

Epstein's proposals for the reform of New Zealand's arrangements[200] are fully informed by the material discussed in Section 6 to this point. Epstein has proposed the following reforms for New Zealand:

- strict liability for road accidents between strangers; and
- voluntary contracting for liability in the case of accidents arising from consensual arrangements – these cases include medical malpractice, industrial accidents and product liability affecting customers.

With respect to other accidents, consideration could be given to allowing the normal common law (tort) remedies to apply. In particular, Epstein would favour allowing full tort law remedies to apply when products that have latent defects injure users during ordinary use, subject to whatever contractual limitations apply.

Discussion: road accidents

Epstein proposes strict liability for road accidents involving strangers in part to avoid the wasteful and possibly unpredictable litigation directed at determining

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[200] Epstein (1996) *op cit.*

negligence. He is very sympathetic to the widespread concern about the capricious outcomes from some negligence-based systems and outlines some solutions that safeguard against this problem.[201]

Potential injurers whose behaviour could be amenable to tort disciplines might include those with positive net worth or paid-up liability insurance who are prone to speeding, following too closely, passing dangerously and/or driving with insufficient attention, perhaps because of the abuse of alcohol or drugs.

Road accidents occur between strangers who have gathered to collectively participate in a common activity and who are subject to the rules governing participation in that activity. The road code is a set of *ex ante* rules designed to govern behaviour and control risk efficiently. Those who control the activity in question would set the rules. As long as the road network is owned and controlled by the government, the decisions about these rules are a government responsibility under all options. Hence Epstein's proposal would see central government impose a rule of strict liability for road accidents in New Zealand.

The government announced in December 1997 that one or more government-owned companies would be set up to operate the national network. In due course private operators may also become investors in roading. Ideally, such operators should be rewarded for balancing user willingness to pay at the margin – for such attributes as safety, route capacity, quality and convenience – against the respective marginal costs of providing these attributes. Such operators would have an incentive to set rules for safety that balance costs and benefits accordingly. Only motorised road users who agreed to abide by these rules would be authorised to use the private roads in question.[202] Others would be trespassing on the network and would be dealt with accordingly. In the spirit of Epstein's proposal, the contracts signed by those who wish to drive on the private road network would determine the liability rule. The government would not impose a strict liability standard.

When responsibility for operating a road network is divided amongst different operators, the issue of rule harmonisation may arise since drivers who are used to the rules in one jurisdiction may find it inconvenient to assimilate differences in rules when they drive in an unfamiliar jurisdiction. It is possible that it would be efficient for central government to impose a degree of uniformity. However, as with other network industries (eg computing and telecommunications) a high degree of harmonisation must be expected to emerge spontaneously, as long as road operators

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201 Epstein (1996) *op cit*, p 9.

202 Because of transaction costs, the road operator probably cannot contract with pedestrians, charge them, or exclude them in the absence of government support. Network services provided for pedestrians therefore have public good characteristics and there may be a case for some government contracting for funding and/or purchasing pedestrian-related facilities. Similar public good issues may arise in relation to cyclists. A private road operator may permit cyclists to use all or part of the private network without having a contractual relationship with it (ie without registering each cycle or each cyclist), but the power to fine, and/or exclude, cyclists who violate safety rules may need legislative backing because of this public good problem.

are forced to balance user willingness to pay with the marginal cost of provision. This point can be illustrated by an extreme example: no operator could credibly propose a right-hand-side driving rule for a portion of the network when virtually all drivers and all cars are geared to a network based on a left-hand-side driving rule. The inconvenience to users would be too great. On the other hand, some jurisdictional variations in rule may be optimal – despite some inconvenience to road users who cross jurisdictions. Variations may reflect different regional requirements and the dynamic processes of competition and innovation that allow user preferences to be discovered and new ideas and technologies to be tested, refined, enhanced, or discarded. In an unfettered market, some controversies arising from variations in rules across jurisdictions may be solved by the takeover mechanism or by cooperation between road operators. In the case of roads, antitrust rules may prevent or inhibit such solutions. Some inconvenience from incomplete harmonisation may be optimal for all these reasons.

Restoring the scope for tort actions in the case of road accidents would not substitute for the need for *ex ante* risk control measures based on monitoring and enforcement of road safety regulations and *ex post* criminal sanctions. Tort remedies cannot be expected to be effective against people who drive in the expectation that they can escape paying for losses through bankruptcy, emigration, and/or the laxness of judicial processes. Rather the question is the degree to which liability rules might usefully complement regulation.

Would a material reduction in the accident rate be achievable by supplementing existing risk control techniques with a liability rule? Grounds for hesitating on this question include the observations that these are reciprocal accident situations and injurers are already liable for the damage they cause to other people's property. In addition, it may be costly to determine causation in some situations where causation is probabalistic.

Rea argues (see below) that it is so easy to regulate driver behaviour as to make a no-liability rule plausible for road accident cases – in order to save the transaction costs associated with determining liability. However, he makes it clear that this case is conditional on hard evidence that the effect of adopting a no-liability rule on automobile accident rates would be small. It is relevant here that the empirical evidence reviewed in Section 6.5.2 provides some support for the proposition that increasing the liability of potential injurers could reduce the probability of accidents.

How costly might tort actions be? As it happens, the costs of determining fault are often incurred at present in any case. This is so that injurers at fault can be fined and held liable for property damage. Even so, determining causation would add to costs in some cases. All cases would incur costs in determining the amount of damages. Furthermore, there is the problem that capricious judgments could distort incentives.

Should the strict liability option be pursued, consideration could be given to Epstein's suggestions for ways of limiting both the costs of tort actions and the

uncertainties in relation to the level of damages. A simple rule might specify that motorists who observed the road code would not be liable for accident costs. This would permit a defendant the defence of contributory negligence based on the injurer's ability to establish that the victim also failed to conform with the road code. Where more than one person contributed to the cause of a road accident by violating the road code in a relevant manner, another simple rule could be used to allocate costs. For example, Epstein suggests that the costs of the accident might be shared equally amongst those who caused it. To further reduce the costs of litigation, Epstein notes that consideration could be given to establishing a schedule of damages to limit determinations. He also puts forward for consideration the idea of expediting claims by a fast track legal mechanism using the current High Court structure.

Rules of marginally or even markedly more complexity could also be considered. For example, rules could be established that more concretely cover cases of reckless driving that do not clearly violate the road code. More complex rules for apportioning losses are also obviously possible. The essential question is whether the costs of the increased complexity would exceed the benefits.

While Epstein describes this approach as a strict liability rule, this description is not fundamental. As Danzon notes, if the test for strict liability is conformity with the road code it is not very different from a fault-based approach based on the same standard.

To sum up, theory and empirical evidence provide some support for the proposition that tort remedies may be relatively efficacious in road accident cases. *Ex ante* injurer–victim private contract remedies are not available in such stranger situations.

The critical question is how plausible is the case that the current no-liability rule increases the road accident rate by more than enough to warrant incurring the costs associated with determining strict liability.

Regulation would continue to have a major role to play in road safety given the limitations of tort solutions when injurers have minimal net worth in relation to the damage caused. Rea has pointed out that the level of regulation may be such as to markedly reduce the need for a liability rule.

Fears of excessive and unpredictable awards may explain why those at fault in road accidents can be sued for property damage but not for losses from personal injury. The authorities may also be of the view that increasing the scope for tort actions would not materially reduce the accident rate given existing deterrents including fines and other penalties and the reciprocal nature of accident risks to persons. It is possible that devices such as those proposed by Epstein that reduce the costs and vagaries of tort actions may tip the balance on such judgments.

An immediate issue that would arise would be the case for mandatory third-party insurance for drivers with minimal financial assets. Currently such insurance is not required in New Zealand despite the fact that drivers at fault are liable for damage

to property. It is not therefore a forgone conclusion that it should be required if liability were extended to encompass losses from personal injury.

Firm–customer and firm–employee accidents

There is less ground for confidence about the likely efficacy of *mandated* tort solutions in the cases of workplace accidents in a consensual setting, and in medical malpractice and product liability situations. The empirical studies do not find that tort rules reduce accidents in these areas. Moreover, in all these cases *ex ante* contract remedies are available. These could preserve tort actions in some cases if the prohibition on the right to sue were removed.

By the same token, the scope for contracting raises doubts about the justification for detailed mandatory regulation of private sector medical, workplace and product safety situations. Allowing parties to contract out of such regulation might have the potential to raise welfare markedly, at least in some industries.

In proposing freedom of contract in consensual settings, Epstein envisages that parties would choose to contract out of common law remedies in many cases. The large-scale contracting out in various industries last century, before the advent of government legislation, gives credence to this prediction. However, he envisages that voluntary arrangements would result in contracts that could vary markedly across situations. Medical cases, employer cases and product cases would all operate under very different contracts.

Viscusi proposed in 1989 that the role of tort actions be reduced in the United States in situations in which wage rates or prices incorporate risk. Such a proposal appears to be congruent with Epstein's approach, although Viscusi's proposals generally appear to be less far-reaching.

In similar vein, Viscusi also suggests that it might be desirable to permit the defences of compliance with regulations or assumption of risk. Danzon (1989)[203] has also suggested that no tort liability should apply where regulatory approval had been obtained. Epstein agrees with this in consensual situations in which all parties agree to the rule, but does not find it to be necessarily optimal in non-consensual unilateral accident cases.

Any proposal for a permissive, court-driven approach to the adoption of tort solutions in New Zealand would need to be consider the implications of the constraints imposed by international agreements and laws, common law traditions and domestic judicial activism. International Labour Organisation agreements are likely to constrain the degree to which employers and employees can negotiate mutually optimal risk assignments. The freedom to reassign risk by contract may also be constrained by the degree to which common law and statute law traditionally

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[203] P Danzon (1989) *Who Should be Liable? A Guide for Managing Risk*, May, Committee for Economic Development: Washington DC.

constrain the ability of individuals to contract out of liability for bodily injury caused by negligence. How much this constraint reduces welfare depends on the degree to which it forces firms, employees or customers to adopt less preferred arrangements.

The degree to which these constraints matter could depend markedly on the type of activity or the nature of the product. If international agreements have to be observed regardless of any domestic policy decision, their existence may not affect the domestic policy choice. However, their existence may affect the domestic policy choice if New Zealand is currently failing to comply fully with such international agreements but will come under greater pressure to comply to a greater degree in future if it deregulates accident compensation.

The material discussed in Section 6.3.6 raises serious doubts about the degree to which courts would preserve contracts that assigned risks between employees and employees, firms and their customers, and medical practitioners and their consenting patients. Factors that courts might use to give themselves wide scope for discretion in overruling contractual agreements might include those relating to:

- bargaining power or coercion;
- how well informed the victim's consent was;
- implied consent as distinct from explicit consent (is a label on a bottle enough?); and
- the degree of congruence between expectations based on customary use and any new contractual situation.

Courts may be more willing to acknowledge contractual reassignments of risks when it is beyond doubt that the parties to a contract agreed to specific terms that serve this purpose. Greater uncertainty may arise where there are grounds for doubting whether the less well-informed party read, understood, or explicitly or implicitly agreed to the supplier's contractual terms.

There is also the question of whether the courts would protect the sanctity of the contract even when it was clearly agreed to by both parties. Judicial activism challenges the proposition that permitting contract law and common law to play a greater role in the assignment of risk in the community would raise welfare. Judicial activism is fundamentally a political activity. It is not consistent with the rule of law to permit courts to make policy far from the scrutiny of the legislature. To allow courts to do so is to permit them to have executive powers. This implies a potential breakdown in the independence of the judiciary. Such a process can only fuel pressures to make the courts politically accountable. The drive by special interest groups to play a greater role in the appointment of judges is entirely predictable in this respect.

The concerns about the quality of decisions by New Zealand courts that were outlined in Section 6.3.6 must affect judgments as to the degree to which courts

would respect contractual undertakings in the event of a simple removal of the prohibition of the right to sue. The potential for unfortunate outcomes from such a measure is exacerbated by the fact that the same prohibition has prevented our common law from evolving in relation to such cases during the last quarter of a century. It seems unlikely that giving our courts a clean slate to make up the lost ground would best serve the community's interests.

For these reasons, a relatively cautious approach to permitting greater freedom of contract is warranted. Options that might curtail the proclivity of courts to award excessive damages for losses from personal injury include specifying, perhaps by statute:

- that the courts must respect contractual assignments of risk;
- criteria that would provide safe harbours for firms concerning the circumstances in which purchases of their products by customers would be deemed to constitute acceptance by those customers of the specified conditions of supply;
- the standard of due care to be used in particular activities;
- simple arbitration procedures based on independent valuations;
- simple rules of evidence that must be applied; or
- maximum schedules for determining damages.

There are many options. Working through them carefully would be an appreciable task. Rules could determine the level of care, imposed arbitration could reduce the costs of administering the law, there could be scope for early neutral evaluations of the accident and simple rules for evidence, and a predefined schedule for damages could be provided for by contract or by legislation or regulation. Incentives for bluffing and strategic behaviour could be reduced if early neutral evaluation proceedings provided penalties for contesting recommendations and losing.

The US experience with tort actions discussed in Section 6.3.6 points to the desirability of ensuring that such tort actions are heard by judges rather than by juries. It could also be desirable for cases involving commercial business judgments about risk to be heard by judges with expertise in commercial law.

This brief discussion suggests that there may be considerable scope for reducing the costs and uncertainties of tort actions, but the complexities and diversity of the issues and of the accident situations suggest that much more analysis is required before any decisions to permit a return of the right to sue could be taken confidently.

Firm–customer and firm–employee accidents: product safety

Tort rules are most likely to have a role to play in consensual product situations when a product defect is not obvious to the user whereas the supplier should be better aware of the risks. The better informed users are about product risks the weaker the case for a liability rule. Since a vast amount of information is produced about product

risks by companies, researchers and consumer groups and much of it finds a ready market in the mass media, the problems here should not be exaggerated. Nor should it be presumed that the onus for conveying information should all fall on the producer. It may be less costly to expect that some consumers search for the information that they require but others do not.

Even so, contractual arrangements that do not permit tort remedies may not handle the problem of latent defects well. Of course, similar difficulties confront regulatory solutions. As noted above, Epstein suggests that tort actions should be permitted in product safety cases, subject to any contractual limitations.

In cases of risks to large numbers of victims (as in the tobacco case) clear rules that make compliance easily feasible may be the best remedy. The costs of mass tort actions are very high and seem likely to far exceed any benefits. For example, clear rules may be established by regulation, and compliance with those rules might be an absolute defence against liability. This could minimise uncertainty about liability. In cases of mass pollution, tradable rights may also be efficient.

Rea has suggested that strict liability may be better suited to product liability cases than to motor vehicle accident cases. The argument here is that regulation may be a superior option in the automobile case since it may be easier to regulate driver behaviour than it is to regulate for manufacturers' or occupiers' lack of care. However, this does not establish the superiority of either tort actions or regulation over contractual arrangements. Epstein has noted that tort actions may be difficult in product safety cases when defects are difficult to define and causation is probabilistic. Furthermore, in contrast to the typical motorist, manufacturers typically have a powerful incentive to preserve their reputations. This should markedly reduce the need for tort disciplines or regulation. User prevention of risk may also be efficacious with some products.

Firm–customer and firm–employee accidents: workplace accidents

The history of workplace accidents supports the intuitive proposition that workers' compensation arrangements would evolve spontaneously in many situations in the absence of regulation. These arrangements would often provide for a fixed compensation schedule on a no-fault basis, in return for a voluntary waiver of the right to sue. The detailed arrangements would be likely to vary across industries. In the absence of a mandatory (no) liability rule, one driving force for the development of contractual arrangements would be dissatisfaction with tort actions.

Arguably, no proposal to permit a return of the right to sue should be entertained if courts could readily overturn mutually agreed contractual waivers of the right to sue.

Firm–customer and firm–employee accidents: medical malpractice

Medical malpractice tort actions in the United States have been notoriously troublesome. The problem of probabilistic causation appears to be particularly severe in this area, but it is not the only problem. The standard set for due care might simply become ever more onerous, forcing ever more defensive medicine.

Epstein comments that:

> The war stories I hear all cut in the same way: any single error in a complex procedure gets you a law suit, and the filters for summary judgment are weak, and expensive to apply. [Dewes, Duff and Trebilcock] find that the Canadian rates on medical injury are about the same as those in the US and the medical malpractice rate is about 10 percent of what it is in the US, notwithstanding that the formal rules have a lot of similarity. So one has to find a way to explain why the American system adds value when it does not further reduce those rates.[204]

Even so, there seems little doubt that patients expect professional standards of care from medical professionals. In a consensual, contracting situation, it would be surprising if such professionals were not induced to provide optimal assurances that the level of care supplied would be commensurate with that implicit or explicit in their charges. The empirical work surveyed in Section 6.5.2 does indicate that liability rules can affect the accident rate.

Current medical care arrangements around the world are so heavily regulated and government controlled that it may be difficult to determine what they might look like in a voluntary contracting situation. Some form of fault-based negligence could not be ruled out, but it could be a tightly constrained form in order to minimise the problems that have arisen in the United States.

Tort actions are occurring in New Zealand under the occupational health and safety regulations. The problem of the optimal control of risk is compounded in this country by widespread government subsidies, government ownership of hospitals and heavy regulation of providers. The prices at which services are offered are heavily distorted and commonly will not reflect consumer preferences for quality, quantity, or risk.

All the information and incentive problems associated with central planning are evident in this sector and the issue of the right to sue is only one of the many public policy questions that need to be better addressed. Arguably, there are many higher priority issues than those associated with the right to sue. Nevertheless, in private medicine cases involving a consenting patient, the arguments presented here appear to favour permitting greater scope for contractual assignments of liability.

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[204] R Epstein, pers comm, 20 February, 1998.

Firm–stranger accidents

The above classes of accidents cover the most common categories of injury in relation to commerce. But they do not cover all such injuries. Injuries to non-customers that arise from the use of a firm's products by customers (eg polluted air or an injury to a passer-by which is caused by a piece flying off a mechanical hedge trimmer) are 'stranger cases' that cannot be addressed by contractual remedies.

Tort remedies may be efficacious in cases in which causation is relatively easy to determine and the injurer easy to identify. In other cases, regulations may be most efficacious. In these cases issues of compensation and efficient regulatory design (eg tradable permits) need to be carefully considered.

However, tort approaches may not be effective in those environmental accident cases in which causation is difficult to ascertain or in which the hazard is poorly perceived until so long after the event that it is too late to usefully modify behaviour.

6.8 Concluding comments

The literature surveyed above on the optimal arrangements for deterring accidents and for allocating losses in the event of losses from accidents reveals the complex and subtle nature of the issues involved.

There are sound *prima facie* reasons for believing that, in the absence of specific government actions, tort approaches could be efficacious in some situations but not necessarily in all. If regulations permitted, practice in this respect would evolve.

Increasing government regulation of risk during the last century has reduced the scope for the spontaneous development of decentralised solutions to the many problems. At the same time, such regulations, by depriving individuals of choice, can aggravate problems such as moral hazard and adverse selection while creating many of the problems pinpointed by public choice theory, including pressures for further regulatory restrictions on choice.

While dissatisfaction with the growing role of tort actions last century motivated, at least in part, recourse to statute law for workers' compensation, such legislation may have largely served at that time to (inadequately) mimic the evolving market solution to this problem. Given that the regulation of workers' compensation is highly intrusive in many countries, this raises a question as to the degree to which it is necessary at all.

In discussing where countries like New Zealand and the United States might have erred, Epstein commented that:

> It was the anti-contractual bias of both product liability and workers' compensation that was the key judicial mistake. If we want to make innovative reform we should allow people to voluntarily choose to have strict warranties – no-liability liabilities, no proof of defect, nothing – on condition that they limit their damages and have

> essentially what is implicit in all default systems, namely discontinuing the use of the product once a defect is discovered. … Standard consumer warranties also work for physical injury. If we recognise that the tort issue needs to be disaggregated and that all of the common law rules developed originally in stranger cases do not carry over to consensual cases, then we will understand the essential problem in many so-called tort cases to be one of optimal contractual allocation – the assignment of certain kinds of market risks or physical injury risks, some of which are sudden and cumulative. [205]

The arguments for allowing reassignment of liability by contract in consensual situations seem to be logical and powerful. The removal of the prohibition of the right to sue in the case of personal injury by accident would increase the range of remedies available to contracting parties, as long as courts respected those contracts. This covers workers' compensation, product liability cases between firms and their customers, and medical malpractice.

Nevertheless, there are essentially three reasons for hesitating to come to a strong conclusion concerning the removal of the prohibition of the right to sue for recovery of losses from personal injury by accident:

- too much litigation could occur if courts fail to uphold contracts that waive the right to sue;
- tort actions may lead to excessive and unpredictable payments that offend concepts of fairness and justice and create poor, if not perverse, incentives from a deterrence perspective; and
- the evidence that tort liability actually reduces the accident rate is often not compelling.

The material discussed in Section 6.3.6 leads us to conclude that, of these difficulties, the major concern is that the benefits from greater freedom of contract in employment, medical and product safety cases would be minimal if courts overruled contractual assignments of risk. This leads us to recommend that there be no removal of the prohibition on the right to sue in consensual accident situations except where there is widespread agreement that sanctity of contract will prevail.

The issue of what might be done to improve the focus of the courts on preserving property rights and the sanctity of contract is a major one. Section 6.7 canvassed a number of mechanisms that could be used to provide greater certainty of contract. The optimal mechanisms could vary across accident situation categories. Even with one category, say the product safety category, 'safe harbour' rules or rulings that would clarify for producers what measures would suffice to limit privity or to avoid strict liability, should they wish to do, are likely to vary across products. Obviously, where a patient is consulting with a specialist, detailed one-on-one contracting for risk is possible. The same applies when a car is rented. On the other hand, with supermarket products, it is not possible for the supplier to get each and every

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[205] Epstein (1996) *op cit*, p 28.

customer's express approval of the conditions of supply. The range of situations and categories needs to be worked through carefully.

How large might be the costs of delay from such a deliberative process? One point here is that the empirical evidence indicates that the American drift to strict liability for products has produced great costs in litigation for no change in safety trends (see Section 6.5.2). Another point[206] is that the no-liability rule does not prevent suppliers of goods and services from providing a greater level of safety to customers or employees who are prepared to pay for safer products. In contrast, the American approach of strict liability for products denies Americans the option of buying riskier products at a lower price. (This is because contracting out of risk is also problematic in the United States.) New Zealand's no-liability rule therefore arguably caters better for diverse risk preferences in the community than does the American approach. (This is not to deny that the strict liability rule in America is likely to make it a safer place than New Zealand. However, whether this is a good thing depends on the risk preferences of the two populations. For example, adventure tourism would presumably be more constrained under a strict liability rule.)

The deliberative research programme envisaged here should be guided by judgments as to where the evidence showed that safety would be materially and beneficially improved and legal excesses could be relatively effectively curtailed. The empirical work, while being far from definitive, suggests that liability rules may offer the best prospect of usefully reducing accidents in road and medical cases. However, the US experience indicates that the problems with excessive litigation appear to be quite severe in medical cases for reasons that might not be easy to rectify. In contrast, problems of excessive litigation appear to be much less severe in the case of road accidents.

These considerations lead us to recommend that it would be logical to focus this work programme initially on the case for extending motorists' liabilities for the damages they cause. Epstein's proposal for a carefully limited liability rule in respect of motor vehicle accidents appears a logical starting point for such an investigation. In considering this issue, those involved in road safety and the provision of road services might need to address the issue of compulsory third-party insurance for categories of drivers who might otherwise be likely to default.

The issue of the optimal liability rule for accidents affecting non-consenting strangers where contractual assignments of risk are too costly to achieve has not been discussed in great detail in this report, outside the formal theoretical results discussed in Section 6.3. This theoretical work provides a powerful *prima facie* case against a no-liability rule. The major offsetting consideration is the degree to which court decisions may be erratic and unpredictable, so that they deter fewer potential

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[206] We are grateful to one of our referees, Tyler Cowen, for drawing our attention to this point.

injurers. In the case of accidents involving firms or their products and non-consenting strangers the discussion has identified the erosion of the privity limitation in the United States as being an issue that should be addressed before reaching any firm policy conclusion. Further work needs to be done on this issue.

Last, but definitely not least, is the issue of ever escalating government regulation and the undermining of contract that appears to have occurred during the last 100 years. The concern about sanctity of contract that has played such an important role in leading to the guarded conclusions above has ramifications that apply much more widely than the discussion of the deterrence of accidents. Where regulations apply, contractual remedies would be enhanced if consenting parties had more freedom to opt out of regulatory constraints.

Appendix A ACS statistics

A1 Introduction

This appendix provides details on the six ACS accounts and presents some statistics on scheme expenditure.[207]

A2 The ACS accounts

The *Employers' Account* funds the cost of work-related injuries, except for work-related motor injuries. It also funds non-work injuries from before 1 July, 1992. Expenditure was $867 million in 1997. In the year to 30 June, 1997, 293 239 claims on the Employers' Account were registered. Of these, 39 438 were new entitlement claims. The Corporation divides claims into minor claims and entitlement claims. Entitlement claims are those for which more is involved than direct payment to a medical provider. Twenty percent of all ACS claims in 1997 were to the Employers' Account.

The *Earners' Account* funds the cost to earners of non-work and non-motor vehicle accidents. The premium is paid by employees and the self-employed. It is collected with PAYE tax. The account was set up under the Accident Rehabilitation and Compensation Insurance Act 1992. Prior to that, the Employers' Account covered the costs of non-work accidents. In 1997 expenditure from the Earners' Account was approximately $287 million.

The *Non-Earners' Account* funds the cost of ACS claims for people who do not earn an income, other than claims for their motor vehicle accidents. It is funded by the government. Expenditure from the Non-Earners' Account in 1997 was approximately $173 million.

The *Motor Vehicle Account* funds the costs of motor vehicle accidents. The account is funded from licensing fees on motor vehicles and from a tax of two cents per litre on petrol sales. Expenditure from the Motor Vehicle Account in 1997 was approximately $289 million.

The *Subsequent Work Injury Account* funds the costs of work-related claims resulting from a recurring injury received in previous employment. The four main accounts (above) contribute to this account. In 1997 expenditure from the Subsequent Work Injury Account was $0.8 million. Approximately 50 percent of the account's income came from the Employers' Account.

The *Medical Misadventure Account* funds the cost of injuries due to error by medical providers, or from rare and severe outcomes of procedures. The account is funded from

[207] Information in this appendix is drawn from the Corporation's website and its 1997 Annual Report. Years refer to the Corporation's financial year to 30 June.

the Earners' and Non-Earners' Accounts. In 1997 expenditure from the Medical Misadventure Account was approximately $10 million.

A3 Number of claims [208]

During 1997, 1 495 993 new claims were registered. Most of these (92 percent) were minor claims for medical treatment only. Figure A1 below illustrates the distribution of all new claims in 1997 across the four main accounts.

Figure A1: New ACS claims in year to 30 June, 1997 by account

Figure A2 (below) illustrates the distribution of the 127 081 new entitlement claims made in the year to 30 June, 1997 across accounts.

Figure A2: New entitlement claims in year to 30 June, 1997 by ACS account

[208] The Corporation's Annual Report 1997, p 45.

Although new entitlement claims were 48 percent of total entitlement claims in the year to 30 June, 1997, they represented only 16 percent of entitlement costs. Figure A3 illustrates the distribution of all entitlement claims by year of registration.

Figure A3: Year of registration – entitlement claims in year to 30 June, 1997

A4 ACS expenditure

As Figure A4 shows, ACS expenditure has grown much faster than inflation since 1975. Initially, expenditure growth was unsurprising as the scheme was maturing. However, growth continued to exceed inflation once the scheme could have been expected to be mature, as shown in Figure A5.

Figure A4: ACS nominal expenditure and inflation ($000), 1975–97

Figure A5: ACS nominal expenditure and inflation ($000), 1985–97

Figure A6 shows ACS expenditure by account for the four main accounts. Prior to the passing of the Accident Rehabilitation and Compensation Insurance Act 1992, accidents now covered by the Earners' Account were covered by the Employers' Account.

Figure A6: ACS expenditure by account, 1975–97

In the year to 30 June, 1997 total ACS expenditure was $1 627 million, consisting of $483 million on rehabilitation benefits, $934 million on compensation benefits, $178 million on operating costs and $31 million on other payments.[209] The Corporation uses the higher amount of $1.8 billion to describe total expenditure for

[209] The Corporation's Annual Report for 1997, p 60.

the year to 30 June 1997.[210] This figure includes $0.2 billion of costs related to backdated attendant care following a recent court decision. Our use of the lower figure understates the size and growth of the ACS.

It is interesting to compare this level of expenditure with other expenditure items in the Crown Financial Statements. Expenditure for the same period on core government services was marginally higher, at $1 667 million. ACS expenditure exceeded the $1 447 million spent on the domestic purposes benefit, the $1 327 million spent on the unemployment benefit, and the $1 577 million spent on the invalids benefit, the sickness benefit, and the accommodation supplement combined.

[210] The Corporation's Annual Report for 1997, p 89.

Appendix B Incentive effects of liability rules

B1 Introduction

Researchers such as Steven Shavell at Harvard University have formally modelled accident situations so as to demonstrate how the effects of any given liability rule depend on the situation. This appendix summarises some of the findings from this type of analysis. The key conclusions from this analysis are utilised in Sections 6.3.2 and 6.3.3 of the report. Tables summarising the major findings appear at the end of this appendix.

The analysis applies to accident situations in which the probability of an accident depends on the level of care and the level of activity of each party to that accident. It considers the effects of imperfect insurance arrangements and how asymmetric information about risks may affect any particular party's risk-related decisions. To make the analysis tractable, the mathematics assumes zero transaction costs in administering liability claims.

The approach does not consider the feasibility of negotiated solutions to determining the optimal liability rule in consensual situations. This is a material omission because contracting solutions may be available in some of these situations.

The analysis distinguishes between accidents between non-consenting strangers and accidents involving firms. It focuses on three possible liability rules: no liability, strict liability and negligence, and two basic accident types: unilateral and bilateral. [211]

Unilateral accidents are accidents in which only the injurer can affect the expected losses from an accident. Passengers in a public airline may be totally dependent on the airline's care for their safety. From their perspective, a crash would be a unilateral accident situation.

These accidents are distinguished from *bilateral accidents*. The latter are defined as accidents in which both victims and injurers can affect the risk of accident by altering their behaviour. In a typical workplace, the likelihood of loss from accident might depend on the level of care taken by the employer and employees. This would be a bilateral accident situation.

Shared accidents invoke a coordination problem. It arises because it might be efficient for both the injurer and the victim to take some care, in which case each may assume some liability for accident losses. In a tort action the coordination problem manifests itself when the defendant is permitted to plead that the plaintiff's actions contributed to the cause of the accident.

[211] The definition of strict liability incorporates the defence of the victim's comparative negligence.

The entire analysis assumes that individuals take more care if they are liable for the adverse consequences of their actions. Empirical evidence for the validity of this assumption is provided in Section 6.5.2 of the report.

Insurance contracts may reassign risk from a relatively risk averse party to a less risk averse party or to a wealthier party.[212] The premium paid by the relatively risk averse party reflects the expected losses from the risks being reassigned and transaction costs. In the absence of transaction costs and where insurance is sold at an actuarially fair price, the insured's incentives to take care should be unaffected by insurance since the insurance premium would accurately reflect the insured's actual level of care. When this is the case, greater care is rewarded by a lower premium.

In reality, premiums will be higher than is actuarially fair because of taxes and transaction costs. Similar transaction cost problems will prevent insurers from perfectly matching premiums to the level of care. Problems of moral hazard, adverse selection and risk of bankruptcy could further lead to the risk averse being unable to completely insure themselves against risks. Many risk averse potential victims will still prefer to buy some first-party insurance in these circumstances, but some loss of care may be expected. The optimal insurance policy might involve incomplete coverage so as to improve the incentive to take care.

For the sake of brevity the following discussion about consensual cases considers only the case of a firm that sells a risky product that may injure a customer. However, the analysis applies equally to firm-employer situations. The analysis therefore encompasses medical accident cases and workplace accidents to employees. Arguably, it also applies to accidents in situations that are controlled by clubs. Here the club can be thought of as the firm and its members as customers. Accidents between club members are likely to be in consensual settings, although in large clubs the members may be strangers to each other. The results of these analyses are summarised in the tables at the end of this appendix. The remaining text in this appendix describes the intuition behind the results.

B2 The no-liability rule

Accidents between strangers

In theory the accident rate is likely to be too high under the no-liability rule for *unilateral* accidents. It is also likely to be higher than would be expected under rules that make injurers liable. This is because it is likely to induce injurers to minimise their personal cost of care and any personal damage they suffer in the event of accident – regardless of what this does to the victim's costs.

In the *bilateral* accident case the victim may offset this effect to a degree by taking greater care. Indeed, victims will recognise the dangers and could be expected to take

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[212] Injurers who are risk neutral will be indifferent to actuarially fair insurance schemes.

more care than they would if they knew injurers were liable for their level of care. However, in the general case, it is optimal for both the injurer and the victim to take care as it is relatively expensive for only the victim to take care.

In reciprocal accident situations where the potential injurer could be injured along with the victim, each may behave as both a potential injurer and a potential victim. In this case, the reduction in a potential injurer's level of care may be less marked. Road accidents between two moving vehicles are a reciprocal accident situation.

The accident rate under a no-liability rule is likely to be even more excessive if the probability of an accident varies with the level of activity. This is because too high a level of activity aggravates the problem of too little spending on care by injurers in both the unilateral and bilateral accident situations.

Where the accident to a stranger results from the use of a firm's risky product by a customer, the accident rate is also likely to be higher than is ideal and higher than the rate that could be expected under the two liability rules. This is because neither the firm nor its customer has an incentive to take care or to take the costs to strangers into account when choosing the level of activity. Too much product will be produced and consumed as a consequence. This is true in both the unilateral and bilateral cases. Potential victims will accordingly have an incentive to take greater care, but again, in the general case, it is likely to be optimal for firms and customers to also take care.

Accidents in consensual situations

As long as customers can *perfectly observe the level of risk* associated with the item they are purchasing, a no-liability rule can produce the optimal amount of care when a firm supplies a risky product to a customer. This is because customers will buy from firms that provide the optimal level of firm specific care and will be happy to pay a price for the product that includes the cost of this level of care. This result holds for both *bilateral* and *unilateral* accidents.

However, if customers do not accurately perceive how the risk of the firm's product differs from the industry average, the firm has an incentive to minimise its cost of care under a no-liability rule. Customers will not perceive this and will buy too much of the product or activity. Less care and a higher accident rate is likely to result relative to the two liability rules. The accident rate is likely to be even higher if customers underestimate the industry-average risks.

In the no liability case, no one requires third-party insurance. Risk averse parties will buy first-party insurance if it can be obtained at an actuarially fair rate.

B3 The strict liability rule

Accidents between strangers

In accidents between strangers, in theory a strict liability rule would provide the ideal level of care and of activity in *unilateral* accident situations. This is because

injurers would bear the full costs of the consequences of their actions – and only their actions affect the expected losses from accidents.

Furthermore, when a *firm* supplies a product that could injure a *stranger* to the firm and to the firm's customer alike, a strict liability rule will force the *firm* to take the optimal amount of care and to include the costs of doing so in the price charged the customer. This is true for both *unilateral* and *bilateral* accidents. The price of the product will include the costs of optimal care and the expected losses from accidents. This process is likely to induce the customer to purchase the optimal quantity of the product. In the case of *unilateral* accidents the accident rate should therefore be optimal.

In the case of *bilateral accidents* the strict liability rule should also see the victim take optimal care in the base case in which risks depend on the level of care but not the level of activity. This is because the rule permits the defence of contributory negligence. (In contrast, an excessive accident rate would be likely under absolute liability because the victim would take inadequate care.) On the other hand, the level of activity is likely to be too high if the standard of due care set for the victim does not vary with the level of activity.

Accidents in consensual situations

In the case of accidents to users of a firm's products, the *firm* is likely to adopt the optimal level of care under a strict liability rule in *both unilateral and bilateral* accident situations even if customers fail to perfectly perceive risk. This is because firms not their customers pay for any deficiency in the firm's level of care.

In the *unilateral* accident case, customer care cannot alter that accident rate and customers will treat the firm's price as risk free and purchase the optimal amount of activity. This result also holds in the unilateral case even if customers misperceive the average risk in the product.

In the *bilateral* accident case, errors in the customer's perceptions of the riskiness of the firm's product or even of the industry-average product do not necessarily lead to suboptimal outcomes. In all circumstances the firm is induced to supply the optimal level of care and to include this cost and the expected costs of all accidents in the price of the product. Customers who presume that the firm's product is as risky as the industry average will behave optimally under these assumptions. Customers who do not accurately perceive even industry-average product risk will take the optimal level of customer care as long as they conform with an optimally set standard for due care under the contributory negligence test.

In the formal theory which assumes that transaction costs are zero, strict liability will see risk averse injurers fully insured and acting so as to minimise the sum of the costs of their care and the expected costs, to themselves and their insurance companies, of accidents.

B4 The negligence rule

Accidents between strangers

Like the strict liability rule, the negligence rule should produce the optimal amount of care in *both unilateral and bilateral accidents* in the base case in which risks depend on the level of care but not the level of activity. In the bilateral accident situation the victim takes care because the injurer is not liable if due care has been taken. As with the strict liability case, the negligence rule is superior to a no-liability rule because injurers are more careful.

However, the accident rate is likely to be higher than is ideal *if risk varies with the level of activity* and courts find it too difficult to adjust the standard set for due care accordingly. It is likely to be higher because the *injurer* is likely to take less care than would be the case if the due care standard rose with the level of activity. This contrasts with the strict liability rule where the *victim* is likely to take less care than would be the case if the standard of due care took into account the level of activity.

The accident rate is also likely to be too high in both bilateral and unilateral accidents when the victim is a stranger to the firm and the firm's customer. In both cases, customers will buy too much of the product because the price includes only the firm's costs of meeting the standard level of due care. In both cases, customers would be induced to take due care only on their own account. They would not be liable for the victim's costs. The stranger may recognise the level of risk and compensate to some extent by increasing his or her own level of care (a bilateral accident situation). The accident rate will then be closer to the theoretical optimum but the gain will not be achieved at least potential cost because the unconstrained optimum would call for greater care by firms and customers.

Accidents in consensual situations

The negligence rule should see *firms* taking the optimal level of care in *unilateral* and *bilateral* situations (as long as the level of due care is set optimally). If customers either perceive the risk in the firm's product accurately or assume that the firm's products are as risky as the industry average, they will buy the optimal volume accordingly and take optimal care as the firm will not be liable as it is conforming with the standard of due care. Firms will take the optimal level of care, even if customers cannot tell if the firms are doing so, because this is the only way they cannot be held liable for the costs of all accidents.

The prices for the firm's products will reflect the firm's costs of meeting the standard of due care. This is also the level of care that customers are expecting, so the level of activity is also optimal. Product prices will therefore be lower than in the strict liability case where customers effectively have to pay the firm an insurance premium in order to compensate the firm for covering all the costs of accidents, including the costs of those accidents not worth preventing.

However, customers who fail to accurately perceive even the product's industry-average risk will buy the wrong level of activity and will also apply the wrong level of care in the bilateral accident case. This will result in a suboptimal safety outcome.

B5 Summary

The following tables summarise the points outlined above.

Table B1: Unilateral accident outcomes (relative to theoretical ideal)

Situation		**Tort rule**	
Accidents to strangers	*No-liability*	*Negligence with optimal due care*	*Strict liability*
A(i) Risk depends only on level of care.[a]	Too much risk as injurers take no care.	Risk and care are optimal.	Risk and care are optimal.
A(ii) Risk also varies with the level of activity.[b]	Even more risk than A(i) as activity is also too high.	Unit care is optimal, but risk and the level or activity are likely to be too high.[c]	Risk, care, and activity are optimal.
A(iii) Firm supplies a product that could injure strangers (ie non-customers).[d]	Too much risk as firm takes inadequate care and customers set activity too high.	Too much risk as customers set activity too high, but firm takes optimal care.	Risk, activity and care are optimal.
Consensual situations			
B(i) Firm supplies a product that could injure customers who accurately perceive only the industry-average risk.[e]	Too much risk as the firm takes no care.	Risk, activity and care are optimal (because the firm is liable for any lack of care and the cost of its care is priced into the product price).	Risk, activity and care are optimal.
B(ii) Firm supplies a product that could injure customers who underestimate the risks of this product regardless of the firm.	Too much risk as the firm takes no care and customers set activity too high.	Too much risk as customers set activity too high, but the firm takes optimal care.	Risk, activity and care are optimal (because customers are underwritten at the firm's price).

a Shavell (1987) *op cit*, proposition 2.1, p 36. A(i) and A(ii) presume that risks are accurately perceived.
b *ibid*, proposition 2.3, p 43.
c In determining optimal due care courts would need to determine how risk varied with the level of care and the level of activity. This may be asking too much.
d Shavell (1987) *op cit*, proposition 3.1, p 65.
e *ibid*, proposition 3.3, p 68. All three rules are optimal in this case if customers perceive risks perfectly.

Table B2: Bilateral accident outcomes (relative to theoretical ideal)

Situation		**Tort rule**	
Accidents to strangers	*No-liability*	*Negligence with optimal due care*	*Strict liability (including contributory negligence)*
C(i) Risk depends only on level of care.[a]	Too much risk as victim care does not fully offset lack of injurer care in the general case.	Risk and care are optimal.	Risk and care are optimal.
C(ii) Risk also varies with the level of activity.[b]	Too much risk as injurers take no care and activity is too high.	Too much risk as *injurer* activity is too high if due care standard is inflexible.	Too much risk as *victim* activity is too high.
C(iii) Firm supplies a product that could injure strangers (ie non-customers).[c]	Too much risk (see A(iii)) but victims' levels of care and activity will be optimal.	Too much risk (see A(iii)) but victims' levels of care and activity will be optimal.	Firm unit care is optimal (see A(iii)) but victims' levels of activity are too high.
Consensual situations			
D(i) Firm supplies a product that could injure customers who accurately perceive only the industry-average risk.[d]	Too much risk as firm care is zero, although customers take greater care given the firm's lack of care.	Risk, care and quantity are optimal.	Risk, care and quantity are optimal.
D(ii) Firm supplies a product that could injure customers who underestimate the risks of this product regardless of the firm.	Too much risk as firms take no care and customers also take too little care.	Too much risk as customer care is too low and the level of activity is too high, but firm care is optimal.	Risk, care and quantity are optimal as long as due care standard is optimal.

a Shavell (1987) *op cit*, proposition 2.2, p 40. C(i) and C(ii) presume that risks are accurately perceived.
b *ibid*, proposition 2.4, p 45.
c *ibid*, proposition 3.2, p 66. Firm's level of care and customers' level of activity are as described in A(iii).
d *ibid*, proposition 3.4, p 69. Firm's level of care and customers' level of activity are as described in B(i).

Appendix C Glossary of terms used in Chapter 6

Absolute Liability
Strict liability without the ability to claim comparative negligence.

Adverse Selection
The situation that arises when insurance companies cannot accurately distinguish higher risk customers from lower risk customers with the result that too many high risk customers sign up with a company relative to low risk customers because its premiums are higher than is fair to low risk customers and lower than is fair to high risk customers.

Assumption of Risk
A situation in which the defendant is not liable because the plaintiff voluntarily assumed the risk, either implicitly or explicitly.

Asymmetric Information
A situation in which the seller or the employer is better informed about the risks than the customer or employer.

Bilateral Accidents
Accidents in which both the victim's and the potential injurer's level of care affects the probability of the accident.

Collateral Benefit
The amount an insurance company pays to an accident victim under an insurance policy.

Comparative Negligence
A plea for reduced liability on the grounds that the plaintiff was also negligent.

Contributory Negligence
A defence based on the argument that the defendant is not liable because the plaintiff failed to take due care.

Due Care
Level of care set by courts as a standard for determining if the level of care of the defendant or plaintiff was negligent.

Free-rider Problem
The problem that some may free-ride on the efforts and expenditures of others. For example, some may not take care because they are relying on the efforts of others (perhaps including the government) to ensure that risks are low.

Hold-out Situation
A situation in which the benefits for all depend on the participation of all, so that the last few whose participation is needed might hope to gain a disproportionate share of any benefits by holding out for better terms than would apply to everyone else in their class.

Moral Hazard
The tendency for those who are insured to lower their costs of care, knowing that others will make good the deficiency.

Negligence
Injurers are only liable under a negligence rule if their level of care is less than the level of due care.

No Fault
This term is used to describe a system in which the victim can claim from an employer or a producer (or the employer or producer's insurance company) without having to prove that the employer or producer was at fault. It amounts to absolute liability. No fault in an automobile accident context refers to a first-party insurance situation. The ACS is a no-fault scheme that funds itself from assessments imposed on potential victims and potential defendants.

No Liability
This term is used to describe a system in which employers and producers and their (third-party) insurers are not liable for the costs of accidents.

No Subtraction
This system allows the tortfeasor (see below) to be sued for the full amount of losses resulting from an accident, regardless of the victim's separate receipt of a collateral benefit.

Privity Limitation
The principle that holds that an injured consumer or user has an action only against the immediate vendor of a product, while a bystander can sue only the party in possession of the product immediately prior to the accident, as in *Winterbottom v Wright* (1842).

Probabilistic causation
A situation in which more than one factor or person contributed to the probability of an accident making it difficult to assign causation or the degree of causation to any one factor or person.

Risk Averse
Someone is deemed risk averse if they would pay an amount to reduce risk that is more than the expected losses from holding that risk.

Strict Liability
A liability system that does not permit the defendant to plead non-negligence, but does permit the defendant to deny causation and/or to claim the plaintiff's contributory negligence.

Subrogation
An arrangement in which a first-party insurer can sue a tortfeasor (see below) for the victim's losses but is only required to pay to the victim any amount received in excess of the collateral benefit.

Subtraction System
A system under which the tortfeasor (see below) can only be sued for the amount by which the losses caused by the accident exceed the collateral benefit.

Tortfeasor
A person or entity who is sued for losses from an accident.

Unilateral Accidents
Accidents in which the potential injurer's level of care can affect the probability of the accident but the victim's level of care cannot.

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Index

Table of Statutes

Abbreviations

ACS	Accident Compensation Scheme
ARCI	accident rehabilitation and compensation insurance
CFS	Crown Financial Statements
ERC	earnings-related compensation
GP	general practitioner
KPIs	key performance indicators
KRAs	key result areas
NZBR	New Zealand Business Roundtable
SOE	state-owned enterprise
the Corporation	Accident Rehabilitation and Compensation Insurance Corporation
WCAP	work capacity assessment procedure