Study of
Financial System Guarantees

March 2004

ISBN 0 642 74225 1

Printed by CanPrint Communications Pty Ltd

26 March 2004

The Hon Peter Costello MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

I am pleased to present the Report of the Study of Financial System Guarantees, in accordance with the Terms of Reference announced on 12 September 2003.

Yours sincerely

Professor Kevin Davis

CONTENTS

EXECUTIVE SUMMARY

The Royal Commission into the collapse of the HIH Group of Companies (HIH) recommended that '…the Commonwealth Government introduce a systematic scheme to support policy holders of insurance companies in the event of the failure of any such company'. On that basis Professor Davis was appointed to lead a Technical Study into the merits of a limited explicit guarantee system for the Australian financial system.

In establishing the Study the Government took the view that 'the appropriateness of government intervention following financial institution collapses should be considered in terms of its possible financial system-wide impacts and consequences for the design of the regulatory framework'.

In accordance with the Terms of Reference, therefore, the Study considers the merits of introducing guarantee schemes in various sectors of the financial system. This Study has not been undertaken with one particular financial sector in mind. The interrelationships between any guarantee scheme and the existing regulatory and prudential framework, and consequences for the latter, are a fundamental concern of the Study.

The purpose of the Study is to '…provide a balanced analytical framework against which interested parties can consider the issues and formulate their views.' It was not within the scope of the Terms of Reference to provide recommendations to the Government.

Australian and international experience with failure

The incidence of significant financial institution failure in Australia has been relatively low by international standards. However, even with best practice prudential regulation, failures will occur from time to time.

Government responses have rarely involved attempts to prevent insolvent institutions from failing or to shield creditors or shareholders from loss. Rather, they have sought generally to mitigate the impact of failure for certain consumers.

A number of lessons are evident from experience:

- community expectations of government support appear widespread, particularly where failed financial institutions have been prudentially regulated and 'critical' financial products (such as deposits and insurance) are involved;
- the causes of failure are diverse and the impact on consumers depends upon the type of institution and financial 'promises' involved;
- the probability, extent and associated consequences of a failure can be difficult to predict in advance; and
- the time between failure and resolution can be significant, and create significant costs for stakeholders even if restitution ultimately occurs.

Internationally, deposit insurance and insurance policyholder protection schemes are becoming widespread. Australia is one of only two Organisation for Economic Cooperation and Development (OECD) countries without some form of explicit deposit insurance.

Explicit guarantee schemes for other products offered by prudentially regulated financial institutions are growing in number throughout the world.

Australia's existing regulatory framework

Australia's existing regulatory framework and financial 'safety net' aim to balance efficient risk-taking by financial institutions with protection for consumers of financial products.

At present, the prudential framework is supported by a limited safety net offering depositor preference for customers of authorised deposit-taking institutions (ADIs) and policyholder preference for some insurance products.

To promote efficiency, the current regulatory framework presumes that consumers knowingly bear the consequences of 'counterparty risk' (default) associated with their chosen financial institutions.

However, the prudential framework recognises that many consumers will not be in a position to assess and monitor the risks in dealing with financial institutions. Instead, the Australia Prudential Regulation Authority (APRA) plays an important role as their delegated monitor in the case of prudentially

regulated financial institutions. Prudential regulation is the foundation of the overall policy approach to achieving public policy objectives such as financial system stability, efficiency and equity. Other components include fostering market discipline, corporate and market regulation, and consumer protection.

Consumers can purchase a range of financial products from non-prudentially regulated suppliers which may be close substitutes to many of those offered by prudentially regulated institutions. Consumers willing to bear the counterparty risk associated with such suppliers in pursuit of higher returns are able to do so — and this is a desirable feature of an efficient financial system.

The existing prudential framework is not designed to ensure that consumers will not lose money in the event that their prudentially regulated financial institution fails. Losses incurred will be affected by such characteristics as preference arrangements which vary across sectors and provide different levels of protection for customers of different types of institutions. Depositor preference arrangements and policyholder priority over statutory fund assets, however, can provide a significant degree of protection to customers of deposit-taking institutions and life insurance companies respectively.

Australia's prudential framework exhibits differences between deposit-taking, life insurance, general insurance and superannuation products in terms of the 'intensity of capital' and other risk management requirements; the powers that APRA may exercise; and the protection provided to consumers in insolvency.

There are some existing compensation and guarantee arrangements in place, applying to superannuation, compulsory insurance classes, financial advisers and financial exchanges, that are relevant in assessing the merits of limited explicit guarantees.

The economic rationale for explicit financial guarantees

Financial institution failures will occur even in an efficiently regulated financial system. When failures occur, there is generally strong pressure on governments to underwrite at least some of the financial promises made by some types of failed institutions, regardless of whether there was any prior commitment to do so. Consumers may assume, in dealing with some financial institutions, that governments provide 'implicit' guarantees.

Limited explicit guarantees on financial products can be preferable to implicit guarantees or to a *caveat emptor* approach (which in any event, may not be politically feasible), or to a 'discretionary', or case-by-case, response to failures. Explicit guarantees may contribute to the stability of the financial system, improve the allocation and pricing of risk and provide individuals a greater degree of financial security.

The advantages of an explicit guarantee over a discretionary approach may include timeliness of response, greater certainty for consumers as to product coverage and greater certainty also about the possible scale of compensation.

Appropriately targeted guarantees remove at least some of the risks for those who are exposed to financial institution failure but are least able to assess, and therefore do not voluntarily bear, that risk. Explicit guarantees may also distribute the burden of risk more equitably than implicit guarantees.

The ability of retail consumers to assess counterparty risk associated with financial institutions is limited. Guarantees which are correctly priced (which, together with prudential regulation, mitigate 'moral hazard' concerns) may be warranted in this case. Consumers are generally more aware of 'market risk' associated with investments and there is no case for protecting consumers who voluntarily take on such an exposure.

If poorly designed and priced, explicit financial guarantees can (like implicit guarantees) distort economic behaviour and lead to inefficient outcomes.

Guarantee schemes cannot solve the problems of a systemic crisis where other government responses are necessary.

Consequences of financial institution failure

Assessing the composition of households' and individuals' exposure to risk arising from their financial asset holdings provides some insight into the possible consequences of a financial institution failure. This can assist in consideration of the possible scope of explicit guarantees.

The available data suggest:

- Australian households hold the majority of their wealth in assets involving an exposure to market risk;

- Australian households hold around two-thirds of their financial wealth in the prudentially regulated sector;
- deposit balances are generally quite small, even for high wealth households; and
- the value of assets or income protected by insurance policies is significantly higher than deposit balances.

The consequences of failure of financial institutions vary considerably for consumers.

- An ADI failure would involve a loss of savings. While some households may have very large exposures at certain times, more than 80 per cent of households hold less than $60,000 in deposit accounts and more than 60 per cent hold less than $15,000.
- Failure of an insurer would mean that consumers might not receive compensation for claims lodged under life or house and contents insurance policies. The amounts involved can be quite significant. As at 31 December 2000, the average value of assets protected for all household policies in force at that time was $201,650.
- Similarly, third-party beneficiaries of liability insurance might not receive compensation. For example, in the year-ended June 2002, the average claim size under these categories of insurance exceeds $50,000.
- In extreme circumstances, the failure of one or more large financial institutions could also pose systemic risks.

Guarantee scheme coverage

A criteria-based approach has been used to explore the possible coverage of a guarantee scheme and allow cost estimates for any scheme to be modelled.

The criteria proposed for determining coverage involve restriction to:

- products that are supplied by prudentially regulated institutions;
- 'capital certain' and 'critical' financial products issued by financial institutions; and

- consumers who are least able to assess product risk.

Applying these criteria leads to specific classes of institutions and products that might be covered by a guarantee. These include, primarily, deposits of ADIs, policy liabilities under general and life insurance, and some income products offered by prudentially related institutions. Maximum coverage limits aim to focus protection on retail consumers and preserve incentives for well-informed stakeholders to exert market discipline.

Designing a scheme necessarily involves tradeoffs between multiple objectives. The challenge is to balance concerns about safety with objectives such as efficiency, equity, minimum complexity and minimum cost.

Scheme design features which can assist in meeting these objectives include coverage limits, coinsurance and means testing.

The vast majority of superannuation products would not be covered under the criteria proposed because they do not involve exposure to counterparty risk. Concerns about compulsory contributions being exposed to market and agent risk can be addressed by other means.

Cost of a guarantee

Guarantee schemes involve a redistribution of losses due to financial institution failures. This redistribution is not of itself a cost to society, but some participants may perceive that private costs exceed the likely benefits.

Scheme design variables determine the coverage of any guarantee. The scheme costs depend on the proportion of total liabilities covered. The incidence of guarantee scheme costs depends on the capital structure of the industry, particularly where preference arrangements are in place.

There are considerable practical problems involved in estimating scheme costs, particularly given the relatively limited experience with financial institution failure in Australia.

Estimation of scheme costs in the insurance sectors is made more difficult by the fact that the value of insurance liabilities is more prone than deposit liabilities to uncertainty.

Further industry data would be required to allow the appropriate calibration of model parameters. Estimates that have been derived for the purpose of the

Study do, nevertheless, fall within the (broad) range of estimates derived from international experience.

Subject to a number of important caveats, on the basis of the evidence and theory available, the 'insurance costs' of a limited explicit guarantee in Australia are expected to be very low.

The size of compliance and administration costs depends upon scheme design.

Comparison with costs in other countries should take into account that deposit insurance and insurance guarantee premiums often involve a component for prudential supervision — a cost which Australian institutions already bear through supervisory levies.

Funding and pricing

International practice in funding and pricing guarantees varies according to the industry and products in question.

Whereas the cost of a guarantee derives from the total amount to be redistributed, funding issues relate to the appropriate base from which to collect contributions and pricing issues relate to the determinants of the relative share of contributions from each contributor.

Schemes can be pre-funded to varying extents. Internationally, pre-funding is more common than post-funding in deposit insurance and is becoming more widespread. There is more use of post-funding in insurance policyholder guarantee schemes.

Under both pre- and post-funding, arrangements can be made in advance to ensure scheme access to lines of credit (or interim taxpayer funding) if needed following failure; and to define the limits to government guarantees of initial support. Explicitly identifying such arrangements should provide better protection also for the budget/taxpayers.

The Study concludes that the theoretical differences between pre- and post-funding are minor. Pre-funding involves building up the scheme's capital position from premiums to some positive target level able to provide compensation following failures.

Post-funding generally relies on the scheme borrowing initially (from government or the market) with some or all of this funding recovered through industry/consumer levies.

There is a view, however, that there is a difference between pre- and post-funding in terms of the cyclical impact on the economy. That is, pre-funding allows at least some accumulation of reserves in buoyant times whilst post-funding calls for industry and possibly budget contributions at times of greatest stress. The speed at which the capital position of the scheme is restored or borrowings are repaid from subsequent setting of premium rates is a key consideration in assessing the relevance of that view.

There are some practical differences between pre- and post-funding. The existence of a pool of funds (under pre-funding) may adversely affect perceptions and behaviour both of market participants and managers of the scheme although this may be mitigated by risk-based pricing of contributions. Post-funding enables deferral of the decision about required premium rates until failures occur and costs are known. Applying risk-based pricing under post-funding may, because of uncertainty about when it might occur, have less effect in preventing moral hazard. The fact that failed institutions have not contributed under a post-funded scheme could be seen as unfair and weaken industry support.

A mix of pre- and post-funding is possible.

Some schemes price according to the risk of the provider. This acts to deter moral hazard and is fairer and more efficient than flat-rate pricing. But risk-based pricing is complex, and the probability of mistakes is considerable. Nevertheless, the arguments in favour of some degree of risk-related pricing are strong, and accounting, regulatory and market information can be used to assess risk.

Most deposit insurance schemes tend to be industry-funded and do not discriminate according to the risk of the deposit-taking institution. Pre-funded deposit insurance schemes with risk-sensitive pricing are becoming more common, and Australia could implement such a scheme if necessary.

Insurance guarantee schemes tend to make greater use of post-event funding partly reflecting the difficulty in measuring the quantum and timing of the liabilities of a failed insurer. The incidence of risk-sensitive pricing among these schemes is low.

Many of the inputs required for pricing decisions in any type of scheme can be inferred from financial market prices, accounting and regulatory reporting data, or based on APRA's monitoring activities.

Risk-based pricing, coverage limits and preference arrangements help to overcome concerns about the fairness and viability of a guarantee scheme operating in a concentrated sector with a skewed size distribution of participants.

Governance and accountability

Introducing a limited explicit guarantee would necessitate explicit articulation of the degree of separation, governance arrangements and allocation of powers and functions between the guarantee scheme and existing regulatory authorities.

Key objectives would include:

- avoiding duplication and establishing clear lines of responsibility and accountability;
- avoiding the more serious potential conflicts of interest;
- minimising the administrative costs of the scheme;
- minimising the compliance costs for industry;
- harnessing industry expertise and involvement, where appropriate; and
- ensuring an appropriate incentive structure for regulatory authorities.

Choices concerning appropriate governance arrangements and the allocation of functions probably should flow from decisions about the scope of any guarantee, particularly the question of whether it will extend across a number of prudentially regulated sectors, and whether it is pre- or post-funded.

There does not appear to be merit in creating a scheme which has or needs supervisory powers which duplicate those of APRA. The main options consistent with the objectives outlined above include:

- establishing a scheme under the umbrella of APRA but possibly with an independent charter; or

- creating a separate statutory authority with responsibilities limited primarily to setting premiums/levies, managing funding and compensation arrangements.

Such a statutory authority could be created but remain inoperative until failure necessitated its activation.

Use of private sector capabilities to manage claims assessment and payment may be desirable.

Regulatory implications

The viability of any guarantee scheme depends heavily on the prudential framework and its ability to avoid and manage failure. Introducing a guarantee would appear to warrant some reconsideration of APRA's failure management powers. Regulatory definition of the scope of the guarantee's application would be necessary.

A guarantee scheme may, in certain circumstances, complement the prudential framework by providing the resources necessary to implement resolution strategies other than closure of a troubled institution. This would need to be considered carefully and, if pursued, would have implications for the choice of governance arrangements of the scheme.

The cost of any guarantee scheme, and its distribution between internal and external stakeholders of a failed firm, is directly related to the priority in insolvency of insured consumers. More effective targeting of stakeholder preference arrangements could be analysed.

There is merit in exploring the question of whether the State-based insurance regulatory framework could move towards a national approach over time.

An associated issue is what general rules or principles might need to be satisfied before any guarantee could extend to products associated with statutory classes of State insurance.

It may be possible for administration of the existing compensation arrangements under Part 23 of the *Superannuation Industry (Supervision) Act 1993* (covering fraudulent conduct and theft) to be vested in any independent body administering a guarantee scheme.

CHAPTER 1: INTRODUCTION

1.1 The Royal Commission (the Commission) established to examine the circumstances surrounding the failure of the HIH Group of Companies (HIH) reported to Government in April 2003.

1.2 In his report, Justice Neville Owen recommended that the Australian Government introduce a scheme to support policyholders of general insurance companies in the event of the failure of any such company (Recommendation 61).[1]

1.3 On 12 September 2003, the Treasurer announced the Government's final response to the recommendations of the Commission. In regard to Recommendation 61, the Treasurer noted that the appropriateness of government intervention following financial institution collapses should be considered in terms of its financial system-wide impacts and the consequences for the regulatory framework. He added that the precise design of any support or guarantee arrangements for persons affected by the failure of financial institutions, incentive properties and associated financial costs warranted close consideration.

1.4 These are all complex matters. With that in mind, the Treasurer announced that the Government would commission an independent and comprehensive Technical Study, led by Professor Kevin Davis, to examine the issues. The Study was undertaken in accordance with the Terms of Reference set out at Appendix 1.1.

1.5 The Study was undertaken by Professor Davis with assistance from the Australian Prudential Regulation Authority (APRA), the Reserve Bank of Australia (RBA) and The Treasury. However, this Study should not be assumed to reflect the views of the Australian Government or any of the agencies that offered assistance.

---

1 The Failure of HIH, Volume 1 A corporate collapse and its lessons, The HIH Royal Commission, April 2003, p lxxv.

Conduct of the Study

1.6 The Study drew extensively on the large volume of academic and other literature available on financial sector guarantees; reviewed the nature of, and experience with, schemes which operate in (most) other developed economies; and consulted extensively with stakeholders and experts in the field, both in Australia and overseas. The Study also benefited from the views expressed in a number of public submissions received from interested parties. A brief summary and lists of submissions received and of persons and organisations consulted in the course of the Study are at Appendix 2.2.

1.7 To assist in the conduct of the Study, the following public policy objectives were identified as relevant to assessing the appropriateness or otherwise of adopting an explicit financial sector guarantee in Australia:

- to promote an appropriate spectrum of risks and rewards in the financial system, both within and across sectors, and maintain incentives for self-management of risks;
- to promote transparency and clarity about the risks associated with promises made by financial institutions and provide for adequate consumer protection;
- to limit or effectively manage the financial exposure of government/taxpayers to financial institution failure;
- to ensure a regulatory structure which facilitates efficiency and competitive neutrality in the financial system; and
- to promote system stability, including through effective management of 'moral hazard' and of financial institution failure.

1.8 The extent to which adopting explicit guarantee arrangements may enhance or detract from achieving these policy objectives is likely to be critical to determining the future position of the Government on the issue. Of course, the pursuit of these objectives underpins the existing financial sector regulatory framework in Australia and in other countries. The essential issue that this Study explores, therefore, is the extent to which explicit guarantees might offer limited 'safety net' support to the core regulatory framework. Implications for changes to the regulatory framework are also considered.

Context of the Study

Financial System Inquiry findings

1.9 The 1997 Financial System Inquiry (FSI) provided a comprehensive assessment of policy measures necessary to enhance the safety, efficiency and competitiveness of Australia's financial system. Its report, which was generally embraced by the Government, provided the blueprint for the ongoing reform of Australia's financial system.

1.10 One critical element of the FSI relevant to this Study was its finding 'on balance, that the benefits of a scheme of deposit insurance are not considered strong enough to warrant its introduction'.[2]

1.11 Another key finding, expressed in relation to the philosophy of regulation, was that 'Governments should not seek to impose safety regulation across the entire financial system. The assurance provided by prudential regulation should not extend to a government guarantee of any financial promises.'[3]

1.12 The recommendations of the FSI have provided the basis for ongoing reform of Australia's financial system. The FSI recommended a principles-based model for reforming and modernising Australia's regulatory framework, balancing safety, efficiency and competition.

1.13 The design of this framework has been improved over time to embrace modern regulatory practice and to reflect developments in the constantly evolving financial system. As is common elsewhere, Australia's prudential framework is anchored by prudential regulation and complemented by a limited 'safety net' (notably depositor/policyholder preference arrangements). A perspective on the interaction between prudential regulation and safety net arrangements is given in Box 1.1. (Appendix 2.1 provides an overview of Australia's financial system structure.)

---

2 Financial System Inquiry Final Report, March 1997, p. 298. The FSI appeared to consider a United States-style deposit insurance model in greater detail than possible alternative models of deposit insurance, and did not appear to consider the potential applicability of guarantee schemes to the insurance sector.

3 Financial System Inquiry Final Report, March 1997, p. 175.

Box 1.1: Prudential regulation and financial safety nets[4]

Berger, DeYoung, Genay and Udell (1999) describe the interrelationship between financial safety nets and prudential regulation in the following way:

'Governments typically provide a safety net for at least some of their nations' financial institutions, which absorbs some of the losses or provides liquidity in the event of the failure or distress of the institutions. The safety net may include deposit insurance, unconditional payment guarantees, access to the discount window, help in arranging private-sector funding or M&A [merger and acquisition] partners, forbearance, or other explicit or implicit government guarantees.

It is often argued that the safety net provides moral hazard incentives to take on more risk than would otherwise be the case, and that this incentive to risk-taking becomes stronger as an institution's equity capital or charter value gets very low (for example, Merton 1977, Marcus 1984, Keeley 1990). However, prudential regulation/supervision works in the opposite direction, imposing costs on risk-taking and giving incentives for value maximizing institutions to reduce risk to avoid penalties.

Prudential regulations designed to deter risk-taking include risk-based capital requirements, risk-based deposit insurance premiums, prompt correct action rules and legal lending limits. Prudential supervision includes regularly scheduled examinations backed by threats of cease-and-desist orders, withdrawal of deposit insurance, closure, limits on growth and prohibition of dividend payments.'

What has happened since the Financial System Inquiry

1.14 The failure of HIH and other failures that preceded it, have demonstrated that financial hardship almost inevitably results in public demand for governments to provide some compensation for losses suffered. Australian and State government decisions to compensate some policyholders of HIH, and government responses to other recent failures, raise questions

4 Some commentators use the term 'safety net' more broadly to encompass prudential regulation.

about whether in Australia there now exists an 'implicit guarantee'[5] of some financial promises extended by financial institutions, especially those of institutions which are APRA-regulated. More generally, it can be asked whether many retail customers of those institutions fully understand the limits to protection provided by the prudential framework and thus act as if there were implicit guarantees in place.

1.15 Amongst its Organisation for Economic Cooperation and Development (OECD) counterparts, Australia is distinguished by not having an explicit guarantee scheme for deposits as part of safety net arrangements. Fewer countries have explicit guarantee schemes in place for other products offered by prudentially regulated financial institutions (such as life insurance companies, general insurance companies and superannuation funds or their equivalents), although such schemes are growing in number.

Examining the rationale for change

1.16 Governments are likely to continue to face difficult choices in the wake of financial failures, unless it is believed that a credible *caveat emptor*[6] policy can, and will always, be pursued. This may be a sensible starting point for considering policy options available to Government. However, a reasonably broad base of community understanding of financial risks associated with mainstream financial institutions and products would appear necessary to support a credible *caveat emptor* policy – unfortunately, many consumers are not well-placed to assess counterparty/agent risk.

1.17 Given this, one option is for governments to respond in case-specific, 'discretionary' ways to mitigate the consequences of financial institution failure. A concern is that uncertainty as to the timing and scale of any response may lead to unrealistic community expectations about interventions aimed at resolving failure and protecting consumers. Another alternative is to establish an explicit framework which lays out mechanisms for dealing with such events, and identifies the limits of protection beyond which a credible *caveat emptor* policy can reasonably be followed. Even that approach, however, is

---

5 The term 'implicit guarantee' refers to a situation where a government operates with an unstated practice, or succumbs to pressure to provide assistance in the event of failure even though it may claim it will never do so. An 'explicit guarantee', on the other hand, would involve a pre-determined level of assistance. In compiling a database of deposit insurance practices worldwide, Demirguc-Kunt and Sobaci (2001) assume that any country without an explicit scheme has an implicit or de facto scheme. The term 'discretionary response' might be equally applicable.

6 The axiom or principle in commerce that the buyer alone is responsible for assessing the quality of a purchase before buying (source: www.dictionary.com).

complicated by the problems which can emerge when failures are not isolated events or are of sufficient scale or breadth to threaten systemic stability.

1.18 The purpose of this Study is to present a balanced framework in which the general arguments in favour of, and against, limited explicit guarantees in Australia's financial system can be considered.

1.19 This Study identifies a number of central themes relevant to considering the issues.

- The existing regulatory framework serves to reduce the probability and consequences of a financial institution's failure. The framework is not intended to prevent the failure of a financial institution; however, its existence may be the kernel of community expectations of government assistance in the event of failure. Any explicit guarantee should require prudential supervision of the covered institutions. Therefore, the Study considers the issue only in relation to APRA-regulated institutions rather than contemplating changes in the coverage of prudential regulation.

- For a number of reasons, the existing regulatory framework provides uneven consumer protection across firms and industry sectors. In the event of a failure, this may prove to be inconsistent with community expectations and perceptions of fairness.

- The failure of a financial institution resulting in losses to consumers is a hopefully rare, but inevitable, event in a competitive market. Financial institution failures will often have far-reaching consequences. A limited, explicit guarantee would be one means of mitigating some of the consequences for some consumers. It could serve to mitigate losses, provide more rapid restitution than the insolvency process and provide governments and regulators with the benefit of drawing upon a better-defined, pre-determined response to failures.

- APRA-regulated financial institutions typically provide a range of retail financial products, broadly classified as deposit, insurance and superannuation products, that could be considered necessary for participation in a modern economy. The relative importance of these financial products to individuals varies across the spectrum of products on offer and according to a number of demographic factors. The range of products which might appropriately be covered by a guarantee is limited. The Study examines some principles that might be used to determine coverage of any guarantee.

1.20 Also relevant for a decision on whether to implement an explicit guarantee is the likely cost of a scheme, its pricing, governance arrangements and implications for the existing prudential framework.

CHAPTER 2: AUSTRALIA'S EXPERIENCE WITH FAILURE AND INTERNATIONAL EXPERIENCE WITH GUARANTEES

Overview

- The incidence of significant financial institution failure in Australia has been relatively low by international standards.
- Government responses have rarely involved attempts to prevent insolvent institutions from failing or to shield creditors or shareholders from loss. Rather, they have generally sought to mitigate the impact of failure for certain customers.
- A number of lessons are evident from experience:
  - community expectations of government support appear widespread, and may be stronger for particular financial institutions and products;
  - the nature and associated consequences of a failure are likely to differ substantially across the sectors and in each case;
  - the probability, extent and associated consequences of a failure can be difficult to predict in advance; and
  - the time between failure and resolution can be significant.
- Internationally, deposit insurance and insurance policyholder protection schemes are becoming widespread. Australia is one of only two Organisation for Economic Cooperation and Development (OECD) countries without some form of explicit deposit insurance.
- Explicit guarantee schemes for other products offered by prudentially regulated financial institutions are growing in number throughout the world.

Financial institution failure in Australia

2.1 Throughout the last two centuries and across all sectors of the Australian financial system, there have been only infrequent failures.[1] Australia's experience with restructuring within the prudentially regulated sector has been marked more by relatively uneventful mergers and well-managed exits than by spectacular failures and their associated consequences. Australian prudential regulators have played an important role in the process of managing the smooth exit of troubled institutions.[2]

2.2 In recent decades there have been some large and notable failures such as the collapse of the State Bank of South Australia and the State Bank of Victoria, Pyramid Building Society (Pyramid), and the case of fraud and subsequent collapse of life insurers Occidental Life and Regal Life. Most recently, there has been the failure of general insurers, the HIH Group of Companies (HIH), and medical insurance providers, United Medical Protection/Australasian Medical Insurance Limited (UMP/AMIL), were placed into provisional liquidation. These examples, however, need to be considered in context. Current generations of Australians have experienced relatively few instances of financial institution failure.

Early history

2.3 Australia's early experience with failure is punctuated by a number of important episodes. The banking sector throughout the nineteenth century experienced considerable turbulence and numerous bank failures. Key events included the 1826 liquidity crisis and the depressions of the 1840s and 1890s.[3] The twentieth century was less volatile with just three Australian banks suspending payment. The last bank failure in which Australian depositors lost money (and then only a minimal amount) was that of a trading bank, the Primary Producers Bank of Australia, in 1931 (Fitz-Gibbon and Gizycki 2001). Since the early 1930s, banking sector problems have been resolved without losses to depositors.

---

1 In simple terms, an institution may be said to have failed when it cannot meet its financial promises to customers, employees or other creditors. Failure as discussed in this Study can be differentiated from 'managed exits' from the financial system which regularly occur on a voluntary basis, or as a result of a takeover (sometimes prompted by regulatory oversight of a troubled institution).

2 The experience of the early 1990s, however, when two significant sized State-government owned banks required recapitalisation and were subsequently sold, highlighted flaws in the then extant structure of supervisory arrangements. These institutions were not subject to the prudential framework that was then overseen by the Reserve Bank of Australia.

3 Figures on bank liquidations during this period are not available.

2.4 In the case of life insurance companies, between 1901 and 2003, 11 life insurance companies entered liquidation, with the majority of these occurring during the late 1920s and early 1930s, and one in 1954. Since the introduction of the *Insurance Act 1973* in the early 1970s, 30 general insurers have entered liquidation (Australian Prudential Regulation Authority (APRA) 2003), with several cases of failure.

Recent history

2.5 Volatility in the banking sector re-occurred in the late 1980s and early 1990s. Deregulation of bank lending and removal of restrictions on foreign bank entry led to increased competition and a desire by some institutions to grow rapidly. This took place in an environment in which asset prices, particularly commercial property prices, were increasing quickly, and credit assessment procedures in many financial institutions had not adjusted to the newly liberalised environment.

2.6 The result was extremely strong credit growth secured against increasingly overvalued commercial property. While resulting losses were sustained throughout the banking system, they had greatest impact on banks owned by State governments and foreign banks.[4] The problems were sufficient to lead to the failure of the State Banks of Victoria and South Australia. In the face of large losses, public confidence in the banking system weakened during 1990 and 1991.

2.7 By and large, the losses incurred by the State banks were paid for by the taxpayers of the States concerned. The State governments (as owners) had unconditionally guaranteed all liabilities (not just deposits) of these banks. Hence, a relatively broad range of stakeholders were protected.

2.8 The fragility of public confidence arising from failures in the banking sector in the early 1990s extended to non-bank deposit-taking institutions. The failure of Pyramid marked the most significant failure in this sector at that time. Pyramid was Victoria's largest building society and Australia's second largest. The Victorian Government ultimately 'bailed out' depositors at a cost to taxpayers of over $900 million, leaving other creditors and investors, including holders of redeemable preference shares to bear losses.

---

4 Money market corporations (investment and merchant banks) and finance companies (in some cases subsidiaries of banks), were sectors which also experienced problems and some failures.

2.9 Pyramid's problems had flow-on effects for other non-bank financial institutions in Victoria, with the highest profile case being the OST Friendly Society. Like Pyramid, OST was heavily exposed to the property market, and its problems were eventually resolved by a merger with IOOF (the largest friendly society). Pyramid's difficulties may also have contributed to short-term deposit runs on the Bank of Melbourne and Metway Bank (former building societies). The runs stopped shortly after the Reserve Bank of Australia (RBA) issued press releases stating that the banks continued to meet prudential standards and were soundly managed. The RBA did not provide emergency liquidity support in any of these cases (Gizycki and Lowe 2000).

2.10 The start of the 1990s was also a difficult time for credit unions. There had been several notable failures in the late 1980s, where members' funds were protected by State-based support schemes, other credit unions and/or governments.[5] Consumer uncertainty arising from these events and fallout from the Pyramid failure created temporary liquidity problems for a number of credit unions.

2.11 Life insurance failure in Australia has been rare in the post World War II period. The most recent cases of failure are that of Occidental Life and Regal Life which were unable to meet their obligations due to the improper use of $65 million from statutory funds. Payments by the Bank of Melbourne to remedy the problems which occurred in the settlement process during the aborted sale substantially eliminated any shortfall in assets. The insurance companies were subsequently taken over by Mercantile Mutual Life Insurance Company Limited. The worst affected policyholders lost less than 10 per cent of their policy value and up to one year's uncredited interest on their savings.

2.12 General insurance failures have been more common although relatively minor and infrequent with VIP Insurances, Palmdale, Bishopgate and New Cap Re being the most recent cases prior to the failure of HIH. From the late 1990s into the early part of the current decade, the general insurance sector experienced major problems internationally. The collapse of HIH, then Australia's second largest insurer, marked a significant failure of a major general insurer. Considerable and widespread consequences surrounded the collapse and the Government announced a Royal Commission to examine the circumstances of the failure. The Government also announced the HIH Claims Support Scheme (HCSS) for some affected policyholders.

---

5 A number of Australian States including NSW and Victoria operated 'stabilisation funds', which served liquidity support, failure resolution and deposit insurance type roles. Funded by credit union contributions their purpose was to provide resources to facilitate rehabilitation through transfers of business.

2.13 Many of the broader and contagious consequences of the HIH failure were a result of the company's significant market share, particularly in some of the statutory classes.[6] This raised general concerns about the impact of the failure of a general insurer on the financial system and the economy more broadly. This period also witnessed UMP/AMIL, a large medical insurance provider, being placed in provisional liquidation. The Government later announced a package of reform measures.

2.14 There have been some instances in Australia where members of superannuation funds have lost money as a result of mismanagement or fraud or theft by a trustee. The best known example is Commercial Nominees of Australia (CNAL), which was trustee for a number of superannuation funds. CNAL's actions in 2000 resulted in an estimated 25,000 investors losing a proportion of their superannuation savings, which amounted to a total loss of over $24 million, or around 8.5 per cent of CNAL's funds under management.[7]

2.15 Appendix 4.1 provides a timeline of failure and an overview of subsequent policy reform measures. Appendix 4.2 provides some case studies of Australian financial failures.

The lessons from history

2.16 Failures throughout Australia's history demonstrate that, while some significant losses occurred, the prevailing regulatory arrangements were broadly successful in dealing with the pressures that emerged during those periods.

2.17 Despite the rarity of failure in Australia and the infrequency of government financial assistance, community expectations of government intervention appear strong. There may be a number of possible explanations for this. One possible misconception is that because the Government is responsible for the regulatory framework, it therefore guarantees those systems against failure.

---

6 State governments who are responsible for the regulation of the statutory classes (Compulsory Third Party (CTP) motor vehicle insurance, Workers' Compensation and Builders' Warranty) also became involved in 'bailouts' of some statutory classes. The NSW and Queensland Governments announced separate rescue packages for CTP and the Western Australian and Tasmanian Governments for Workers' Compensation.

7 The estimated cost to date of rehabilitating CNAL's funds is around $17.5 million. Refer to Appendix 4.2 for details on arrangements for rehabilitating CNAL. Table 3.1 in Chapter 3 provides details on the operation of Part 23 of the Superannuation Industry (Supervision) Act 1993.

2.18 The nature of failure will differ according to the type of institution involved and its relative business mix. For example, banking failures typically involve erosion in asset values linked to general economic conditions or imprudent lending practices. Alternatively, they may be precipitated by 'runs' by depositors that reduce the bank's liquidity and ultimately threaten its solvency. Insurance failures generally are associated with random catastrophic events, prolonged investment market downturns and/or long-term risks in matching current premium revenues with future liabilities. Each instance of failure will be different and affect stakeholders in different ways.

2.19 Experience also demonstrates that the final cost of a given failure can be difficult to predict and can vary widely in each case. Differences in financial structures and legal arrangements across sectors make comparisons difficult. The accounting value of an institution's assets and liabilities prior to failure will not necessarily be an accurate indicator of the likely shortfall or cost of resolution. For instance, general insurance liabilities, especially 'long-tail'[8] liabilities, can be difficult to determine and may be serially underestimated. Such 'discrepancies' may not materialise until after the failure of the institution. In addition, the value of remaining assets of a failed institution may deteriorate as resolution is taking place. This makes determining the level of potential exposure to failure problematic.

2.20 A feature of past financial disturbances and institutional failures in Australia is that they have often served as a catalyst to significant subsequent policy and regulatory reforms. Appendix 4.3 provides an overview of some of the recent policy responses to failure.

2.21 There can be no absolute certainty, however, that even with best practice regulation and supervision, failures of significant financial institutions will not occur in the future. Governments and regulators cannot prevent poor management, nor can they be a fully effective proxy for the market discipline exerted by sophisticated investors.

2.22 Risk is a critical feature of the financial system. Indeed, the continuing international development of financial markets and the ever increasing innovation and sophistication of risk transfer mechanisms within the financial system are readily observable trends. Such developments are likely to continue to test the ability of our regulators to maintain the strength of the regulatory framework at the level expected or demanded by the community.

---

8 'Long-tail' business involves considerable lags between a claimable incident and the settlement of the claim, and contains uncertainties over the amount, timing and potential length of payouts. Examples include CTP, professional indemnity and workers' compensation.

2.23 Australia has a relatively modern, flexible, and competitive financial system, which engages closely with the rest of the world. Its development does not appear to have been hindered by the absence of explicit guarantee schemes.

2.24 On balance, notwithstanding the recent experience with HIH, Australia's existing regulatory system has a very favourable international reputation. Indeed, aspects of it (such as creation of a multi-sector prudential regulator separate from the central bank) have been embraced as a model for reform in other economies.

2.25 An important question thus arises as to whether Australia's strong track record of financial stability can be partly attributed to the way in which our existing regulatory framework allows efficient risk-taking in conjunction with appropriate risk sharing by all stakeholders.

2.26 Internationally, however, there has been increasing use of explicit financial system guarantees as an important component of regulatory systems.

International experience with financial system guarantees

2.27 There is a considerable wealth of international literature and opinion on guarantee schemes, but this focuses primarily on deposit insurance. It includes material from the Financial Stability Forum (FSF),[9] the World Bank and the International Monetary Fund as well as practitioner associations and a number of leading academics in the field. This includes detailed guidance on the issues to address in considering and developing deposit insurance schemes as well as surveys of international practice.

2.28 Deposit insurance and insurance policyholder protection schemes are becoming more widespread in financial systems around the world and are fairly common amongst OECD member countries. For example, 28 of the

9 The FSF is an international body comprising representatives from central banks and prudential supervisors which was created in 1999 to promote international financial stability, improve the functioning of markets, and reduce systemic risk.

30 OECD countries now have in place or are implementing explicit deposit insurance schemes.[10]

2.29 Twenty one OECD countries are reported to have in place or are implementing schemes for life and general insurance products. Many focus on protecting claimants under compulsory classes of insurance [11] while 9 of the 21 schemes extend beyond compulsory classes (Yasui 2001).[12] These include Canada, France, Ireland, Japan, Korea, Norway, Poland, the United Kingdom (UK) and the United States (US) (OECD 2001).

2.30 A number of countries have implemented guarantee schemes to cover situations where an employer, who has occupational superannuation commitments, becomes insolvent. These include Germany, the US and UK[13] and in many cases these countries run defined benefit schemes.[14] Under the schemes, employers are required to have insurance cover in place to ensure adequate protection in the event of employer insolvency. Australia's superannuation and retirement income arrangements[15] differ from many countries making international comparisons difficult.

2.31 Table 2.1 provides additional statistical information on the adoption of explicit schemes for depositors. Table 2.2 provides some statistical information on international insurance schemes. Newly emerging schemes for life and non-life insurance are less well researched with data on coverage features less readily available.

---

10 Amongst OECD members, Australia and New Zealand are the only two countries which do not have some form of deposit insurance. Between 80 and 90 per cent of New Zealand banking assets are Australian controlled.

11 This type of scheme steps in when an insurer becomes insolvent as well as when an insurer cannot be found, similar to the way in which nominal defendant schemes operate in some of Australia's States and Territories.

12 It appears as though Australia is counted among those countries with insurance guarantee schemes by virtue of existing State-based compensation arrangements for privately underwritten CTP, Workers' Compensation and Builders' Warranty insurance.

13 There is limited data available on these types of schemes.

14 See Chapter 5 for a discussion on defined benefit schemes.

15 Australia has a three pillar system comprising: the age pension, a government-funded social safety net; compulsory superannuation, funded by employer contributions; and superannuation and savings funded by the individual or voluntary employer contributions.

Table 2.1: Key statistics on deposit insurance schemes — globally and for OECD countries

Variables		Globally	OECD
Type	Explicit scheme	68	28
	Implicit or no scheme	110	2
Fund	Pre-funded	58	21
	Post-funded	10	7
	Coinsurance	17	9
	No coinsurance	51	19
Premiums	Risk-adjusted premiums	23*	9*
	Flat rate premiums	45	19
Fund sources	Public funding	1	Nil
	Private funding	15	8
	Joint funding	51	20
Membership	Compulsory membership	55	27
	Voluntary membership	13	1
Administration	Official administration	33	12
	Private administration	11	8
	Joint administration	24	8

* Since the survey, Canada appears to have introduced differential premiums. In addition, contributions under the French scheme are now risk-based. Hong Kong introduced legislation into parliament in 2003 to establish a deposit protection scheme intended to become operational in 2005. There may be other changes since this time that have not been included.

Source: World Bank Deposit Insurance Database 2000.

2.32 Increasingly, explicit guarantees are being embraced as a legitimate and desirable component of the overall financial regulatory system. While the vast majority of financial sector guarantee schemes operating internationally relate to the protection of bank deposits, there has been a noticeable move towards implementing guarantee schemes in the insurance sector in recent years.

Table 2.2: Statistics on insurance schemes — OECD countries

Countries	Life /Non-life insurance	Funding
Canada	Life and non-life	Post
France	Life	Pre
Ireland	Life	Post
Japan	Life and non-life	Pre
Korea	Life and non-life	Pre
Norway	Non-life	Pre
Poland	Non-life	Post
UK	Life and non-life	Post
US	Life and non-life	Post

Source: OECD Workshop on insurance and private pensions in the Baltic States, February 2002.

2.33 Appendices 2.3 and 2.4 provide a more detailed comparison of selected countries' guarantee systems for deposit-taking and insurance schemes.

2.34 A number of options are available to a country regarding protection of consumers in the case of financial institution failure (Garcia 1999).[16] These range from explicit denial of protection (New Zealand), through discretionary approaches and implicit guarantees, to limited and comprehensive explicit guarantees.

2.35 The US has the oldest explicit deposit insurance scheme in existence, with the Federal Deposit Insurance Corporation (FDIC) commencing in 1934. Policyholder protection schemes for general insurance have existed in the US since the late 1960s. Elsewhere, explicit schemes have been in existence since the late 1960s and early 1970s, such as in Canada and the UK, while other countries such as Hong Kong and Korea have introduced schemes over the last five years. The schemes have generally been introduced in the aftermath of a major bank's failure or more general crisis. One certainty exists — the range of guarantee schemes is highly diverse; no one scheme fits all circumstances.

2.36 Despite an apparent international movement towards their adoption, explicit guarantees may not be applicable or appropriate in every situation. Moreover, the institutional and product coverage of these guarantees is never assumed to be universal. There is ample recognition that introducing guarantees in the absence of an adequate supervisory framework, or introducing poorly designed guarantees, can weaken a country's financial system over time and may give rise to significant fiscal exposures.

2.37 Various studies comparing international experience have highlighted a correlation between financial crises and the existence of explicit deposit insurance schemes, while the US Savings and Loan crisis in the 1980s is often cited as a case study of what may go (very) wrong. Notably, however, it is a combination of overly generous guarantees, inadequate supervisory and regulatory structures, and lack of market discipline (rather than guarantees *per se*) which appear to have been factors in explaining the adverse experiences with guarantee schemes.[17] This is also the conclusion which emerges from the

16 Garcia identifies six separate options: an explicit denial of protection; legal priority for depositors over other creditors; ambiguity regarding guarantee coverage; an implicit guarantee; explicit limited guarantees; and explicit full guarantees.

17 Demigurc-Kunt and Kane (2002) provide a valuable recent review of some of this international evidence and lessons which may be drawn from it.

much more limited research into the performance and effects of insurance guarantee schemes (Bohn and Hall (1995, 1997) and Hall (1998)).

2.38 Few countries that have adopted explicit deposit insurance or insurance guarantee schemes have had the opportunity to consider the issue across the financial system as a whole, nor during times of relative stability.[18] Most countries have implemented sector or product-specific schemes despite ongoing blurring of institutional boundaries and product overlap.

2.39 As noted by Garcia (1999), 'if well-designed, an explicit deposit insurance system can be preferable to no insurance and can complement legal priority'. On the other hand, a poorly designed deposit insurance scheme is likely to exacerbate existing problems and possibly have systemic implications. While systemic concerns are lesser in relation to insurance, many of the concerns in relation to the need for well-designed schemes of deposit insurance would appear to be applicable for insurance schemes.

2.40 Underlying prudential structures, and the stability of institutions, are important in ensuring that a system of guarantees does not lead to adverse outcomes for bank stability. Demirguc-Kunt and Detragiache (2000) argue that a system of deposit insurance has the potential to lead to banking instability and higher chances of failure by reducing market discipline. Nevertheless, they argue that in countries with stable institutions 'an effective system of prudential regulation and supervision is in place to offset the lack of market discipline [that may be] created by deposit insurance'.

2.41 Laeven (2002) also found that 'the effectiveness of deposit insurance has shown to be country specific'. Viewed another way, Demirguc-Kunt and Detragiache (2000) argue that in countries with weak institutions and poor regulatory frameworks, the benefit of a guarantee system is diminished and has the potential to lead to banking crises. As noted by Demirguc-Kunt and Kane (2002), 'deposit insurance is neither always good nor always bad. It can be a useful part of a country's overall system of bank regulation and financial markets'.

18 The UK is one exception. Following its establishment, the UK Financial Services Authority undertook a comprehensive public consultation process concerning compensation arrangements across the UK financial sector.

2.42 The Study has had regard to the range of international literature and best practices. Two key issues noted from the literature that have guided deliberations are:

- the unique nature of the Australian financial system. Schemes are best designed around country specific requirements; and
- the importance of a well-designed scheme. Poorly constructed schemes can be expensive and they can have perverse incentive effects.

CHAPTER 3: AUSTRALIA'S EXISTING REGULATORY FRAMEWORK

Overview

- Australia's existing regulatory framework is supported by only a limited safety net for consumers of some financial products.
- To promote efficiency, the current regulatory framework presumes that consumers knowingly bear the consequences of counterparty risk associated with their chosen financial institutions.
- However, the prudential framework also recognises that many consumers will not be in a position to assess and monitor the risks in dealing with financial institutions. Instead, the Australian Prudential Regulation Authority (APRA) plays an important role as their delegated monitor in the case of prudentially regulated financial institutions.
- Consumers can purchase a range of financial products from non-prudentially regulated suppliers which may be close substitutes to many of those offered by prudentially regulated institutions. Consumers willing to bear the counterparty risk associated with such suppliers in pursuit of higher returns are able to do so.
- The existing safety net is not designed to ensure that consumers will not lose money in the event that their prudentially regulated financial institution fails. Arrangements vary across sectors and different outcomes would be expected in each case.
- Australia's prudential framework exhibits differences between deposit-taking, life insurance, general insurance and superannuation in terms of the intensity of capital and other risk management requirements; the powers that APRA may exercise; and the protection provided to consumers in insolvency.
- There are some existing compensation and guarantee arrangements in place that are relevant to consider in the context of a limited explicit guarantee.

Regulatory philosophy

3.1 Australia's financial system is governed by a number of interrelated components constituting a regulatory framework that reduces the probability and impact of failure by select classes of financial institutions.[1] The components include generic, principles-based requirements for all corporations, other rules applying to commercial endeavours as well as some quite specific requirements aimed at addressing particular financial system problems.

3.2 Each of the components of the regulatory framework has quite distinct objectives. Introduction of any guarantee scheme as part of a limited 'safety net' would complement the regulatory framework and its implications can only be assessed by understanding how it would interact with the other components.

3.3 The role of the financial system is to facilitate the settlement of trade in goods and services; to marshal accumulated savings toward investments; to facilitate productive risk-taking and enable wealth portfolio adjustments to achieve desired risk-return characteristics; and to allocate risks to those who can bear them most efficiently.

3.4 The system can be viewed as a diverse array of financial transactions and financial promises made by financial institutions to various stakeholders. Such promises include those to pay monies to depositors, policyholders or investors and promises to manage assets on behalf of, and in the best interests of, others. A key feature of financial promises is that they involve a future commitment which may not always prove possible to honour.

3.5 Risk is an inherent feature of the financial system in a competitive market. Some of the risks faced by consumers include:

- institutional (counterparty) risk — where promises of repayment are not kept because of unexpected default by the counterparty;
- market risk — where an investor has exposure to fluctuations in the market value of financial assets or fluctuations in the earnings from those assets; and

1 The focus of this Study is on financial institutions regulated by the Australia Prudential Regulation Authority (APRA). The term 'financial institution' is taken to mean an APRA-regulated financial institution.

- agent risk — where a trusted party fails to act in the principal's best interest by making poor investment decisions, providing poor or negligent advice, failing to handle an investor's funds honestly (for example, fraudulent conduct and theft) or having inadequate systems and controls which create the possibility of loss due to operational risk.

3.6 Ideally risk is accurately priced, adequately compensated by expected returns, and knowingly taken on by those with the best capacity to manage it. In practice, most countries erect some form of regulatory framework to ameliorate problems faced by (some) participants in identifying risk and to deal with some adverse consequences of risk-taking. Like those in other countries, the Australian financial regulatory framework does not aim to ensure that all financial promises are kept. The framework is designed to allow risk to be taken, and for financial gains and losses commensurately to accrue to those who knowingly take risks.

3.7 A financial product's quality depends upon the offering firm's current and future financial health. By contrast, in physical product markets, quality is often more closely related to past investment and operational decisions. The resulting question of how to ensure trust and confidence in the future actions of financial firms is crucial to the efficient operation of the financial system. The prudential framework can play an important role in establishing and maintaining such trust and confidence.

3.8 When financial products are purchased their quality or the soundness of the promise involved is uncertain and may remain so for a considerable time. In espousing its vision for the design of the Australian financial system regulatory framework, the Financial System Inquiry (FSI) focused upon the 'intensity' of the promise attached to financial products.

3.9 The concept of intensity of promise can be applied to the principal and the earnings associated with a financial product as well as the type of entity offering the product.

3.10 The most intense forms of promise (a capital-certain promise) relate to a guaranteed repayment of claims on demand, such as for a transaction or at-call savings account, upon maturity of a term deposit or for valid claims under life insurance or general insurance policies. Less intense forms of promise might be argued to attach to investment products sold by a financial institution where the value of the product is exposed to market risk, but nonetheless is an obligation of the supplier as a counterparty.

3.11 In contrast, the promise associated with a typical superannuation investment, managed fund or other collective investment is that the trustee or manager will act in the member's or investor's best interest. This does not mean that the trustee absorbs any risks; fund members or investors may be exposed to fluctuations in value in accordance with market movements. While the exposure to market risk means that the promise is not as intense, the promise that funds will be responsibly managed in the members' best interests is relatively intense.

3.12 The typical policy response to these issues is to seek to ensure that at least some categories or classes of financial firms only make 'intense' promises that they are capable of, and will remain capable of, honouring. This tends to encourage an expectation of longevity in such firms offering these financial products, or that the demise of such firms and exit from the industry will occur in an orderly fashion. This can be expressed as the objective of financial safety.

3.13 While financial safety is important, so too is the objective of efficiency. An efficient financial system achieves its transactional and allocative functions at an appropriate cost. In this sense, it plays a supporting role to real economic activity, providing a given level of service at minimum cost. An efficient financial system allows the consequences of risk-taking to be realised. It allows the best-managed endeavours to prosper; mismanaged endeavours to exit and new endeavours to be created in response to perceived profit opportunities.

3.14 Similarly, opportunities need to be available for investors to knowingly take risky positions, if they so desire, in the knowledge that they may gain or lose as a result. In this regard, it can be expected that there will be some institutions not subject to the same degree of regulatory oversight as others offering apparently similar financial products — and for which the intensity of the promise is recognised as less. For example, a B-rated corporate bond promises repayments of interest and principal, similar to the promises in a bank term deposit, but is — or should be — recognised by investors to involve a higher probability of default and consequently offer a higher expected return.

3.15 In summary, a widely held vision of an efficient financial system is one that is competitive and contestable, offers a broad spectrum of risk and return opportunities, promotes and rewards innovation, punishes failure and avoids artificial regulatory distortions. Consistent with the FSI vision, Australia's financial sector regulatory framework is geared to delivering these outcomes.

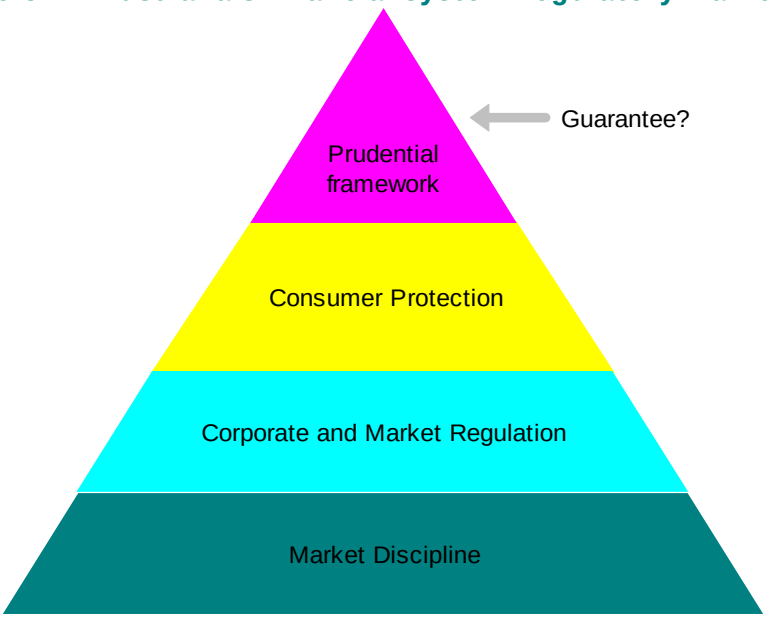
3.16 The potential role for an explicit guarantee depends upon the soundness of the regulatory framework. There is a spectrum of possible views on how an explicit guarantee might interact with the existing arrangements ranging from:

- where the prudential framework is sound, a guarantee could complement existing arrangements, serving as a 'safety net' should the other components fail to achieve their objectives; or
- where the prudential framework is weak, a guarantee could undermine the regulatory framework, impacting adversely upon incentives and altering the profile of financial system risks.

The regulatory framework

3.17 Australia's financial system regulatory framework comprises a number of distinct but complementary components. Each of these is described in turn, in order from the general to the more specific. Figure 3.1 provides a visual representation.

Figure 3.1: Australia's financial system regulatory framework



Market discipline

Financial promises and performance are assessed on their merits

3.18 Market discipline is the foundation of Australia's regulatory framework. Given the complexity and volume of transactions taking place within the financial system, those best placed to make an assessment of the quality of a financial promise are those who most directly stand to gain or lose from it. Market discipline is exercised by counterparties to financial transactions, sophisticated investors, customers, other creditors and shareholders alike.

3.19 Effective market discipline depends upon the effective dissemination of information together with the capacity to make accurate assessments of risk. Not all customers, particularly in the retail context, can be expected to possess the required information and skill to exert market discipline.

Corporate and market regulation

Facilitates orderly operation of companies and ensures adequate and timely disclosure of information to the market

3.20 The corporate regulation framework, administered by the Australian Securities and Investments Commission, governs requirements for starting, running and 'winding-up' companies. This includes requirements for registration, establishing the company's objectives and scope of operation, lodging annual statements and solvency resolutions, record-keeping, auditing requirements, rules surrounding meetings and protecting the interests of a company's members and creditors.

3.21 For any company, responsibility for meeting its liabilities rests squarely with its board of directors and management. Certain obligations are imposed on a company's directors in terms of their general duties and standards of conduct.

3.22 Each year the directors are required to express their opinion as to whether there are reasonable grounds to believe that the company will be able to pay its debts as and when they become due and payable. The role of independent auditors brings external scrutiny to this process.

3.23 In general, financial institutions regulated by APRA are required to be established as companies. In the case of superannuation, the responsible entity

or trustee is also generally required to be established as a body corporate or to be established for approved purposes. Such bodies are subject to a range of fiduciary requirements established under separate legislation and the common law.

3.24 Companies that choose to quote their securities on the stock exchange are subject to a number of further obligations that promote transparency to their shareholders or other security holders and ensure the market is made aware of significant developments.

3.25 The Australian Stock Exchange requires listed entities to immediately disclose any information that might affect the price of its securities to ensure that the market is fully informed. The markets also establish other forms of best practice for listed firms, including on such matters as desirable aspects of corporate governance.

3.26 In addition, many financial institutions gain access to capital from wholesale markets by issuing debt securities. The holders of these securities perform an important role in monitoring the health of financial institutions. In order to raise capital from retail investors, the financial institution would have to meet additional disclosure requirements under the *Corporations Act 2001* and would normally require a credit rating, a process which brings further scrutiny to bear on its operations.

3.27 The ongoing monitoring role performed by financial markets brings heightened scrutiny to the financial position of listed companies.

Consumer protection

Addresses the relative imbalance of information available to unsophisticated investors

3.28 Retail investors are afforded a level of protection above wholesale investors, reflecting their relative disadvantage in exercising market discipline and lesser ability to gather and analyse the information relevant to complex financial decisions. Retail financial consumers are also unable to diversify their risks in many circumstances, notably when purchasing general and life insurance policies, but also in their exposure to a single superannuation trustee.

3.29 Requirements exist for firms offering financial products to fully disclose the inherent risks to retail investors, for example, that those products

with exposure to market risk may fall in value. However, the information disclosed to retail investors in relation to product features and associated risks is unlikely to correspond to the information required to make an accurate assessment of the financial health of the provider at any point in time.

Prudential regulation, supervision and failure management of financial institutions

Reduces the probability and impact of failure of regulated entities

3.30 A general justification for prudential regulation and supervision is that the community's tolerance for financial institution insolvency is lower than may be accepted for firms operating in other parts of the economy. It may also serve to add to the stability of the financial system.

3.31 The Australian prudential framework applies an additional level of external scrutiny to financial institutions to that provided by a firm's board or market discipline. Banks, insurance companies and superannuation funds, credit unions, building societies and friendly societies are all subject to a range of additional requirements and supervision by APRA.

3.32 The prudential framework comprises a number of elements:

- ***prudential regulation*** — standard setting to define what constitutes minimum acceptable behaviour and promote sound risk-management practices by firms;
- ***prudential supervision*** — to facilitate early detection of financial difficulties in regulated firms and to monitor and enforce compliance with prudential regulation;
- ***comprehensive intervention and resolution strategies*** — to handle regulated firms in difficulty, including the ability for APRA to issue directions to a company, to replace the management of such companies and to effect a merger or a 'transfer of business' from the failing company to a healthy company; and, as a last resort
- ***the ability to apply for winding-up*** — to allow the closure of a regulated company and distribution of its assets before the potential losses become too great. The process of winding-up any company, but particularly financial institutions, can be lengthy, complex and expensive.

3.33 APRA-regulated financial institutions (other than superannuation funds) are generally required to have a diverse ownership base.[2] This is intended to reduce the institution's capacity to favour related parties and provide greater surety that an institution is able to access additional shareholders' capital when required. Many are therefore established as listed companies with their shares and other securities traded in secondary markets. It must also be noted that many financial institutions, particularly those smaller ones, are not publicly listed companies.

3.34 Aspects of the prudential framework that are most relevant to considering the efficacy of introducing limited explicit guarantees are discussed below. The Australian prudential framework is explained in more detail in Appendix 3.1, particularly addressing its application in each of the prudentially regulated sectors.

3.35 Australia's prudential regulation framework is industry-based, with the requirements for authorised deposit-taking institutions (ADIs), life insurance companies (including friendly societies), general insurance companies and superannuation funds established under separate legislation.

Capital adequacy, solvency and other risk management requirements

3.36 The relevant industry legislation provides for a range of standards which govern the operation of financial institutions.

3.37 The standards recognise the primary responsibility of the board and management of the institution to systematically assess and manage the risk that it faces according to the scope of its operations. For example, the risks of an entity that operates as part of a conglomerate group require special consideration.

3.38 A range of other prudential requirements apply to how capital is measured, to liquidity management and lending practices (including large exposures, exposures to related entities, classification of impaired assets and provisioning policy) and to deal with a diverse range of business situations faced by institutions. APRA is also able to request institutions to meet higher minimum requirements.

---

2 These requirements are found in the Financial Sector (Shareholdings) Act 1998.

3.39 In practice, a financial institution facing financial difficulty should normally be identified by APRA as having breached requirements under the legislation or prudential standards before it reaches the point of insolvency or illiquidity. In addition, for many APRA-regulated institutions, the board of the institution has an obligation to inform APRA of any breach or potential breach of certain requirements.

3.40 Appendix 3.2 provides a summary of some relevant standards.

APRA's failure management powers

3.41 APRA has powers for dealing with a range of circumstances including actual or prospective breaches of the relevant Acts, prudential standards, prudential regulations or operating standards. APRA also has the capacity to issue directions, although the relevant prerequisites and nature of directions differ across the sectors. The range of directions that APRA may give allow it to effectively influence the operations of a financially stressed or ailing institution with the objective of returning it to a prudentially sound position.

3.42 In certain circumstances, particularly for ADIs, APRA has the power to assume control of an ailing institution, thereby temporarily replacing the role of the board and management. While it does not have such powers in relation to life insurers or general insurers, APRA does have the capacity to petition a Court for orders to be given to an external administrator of such companies. In the case of superannuation, APRA has powers to suspend a trustee and appoint an acting trustee.

3.43 There are also specific legislative provisions (for example, transfers of business and provisions of a similar nature for insurance and superannuation) that allow for a financial institution's business to be restructured or transferred. This might facilitate a healthier firm or firms taking over the troubled firm's financial promises. In many cases, all or a material part of the business of the failed institution can successfully be transferred to another firm without significantly impacting upon customers.

3.44 Appendix 3.3 summarises APRA's failure management powers.

3.45 Liquidity support mechanisms exist in Australia that are intended to support solvent but illiquid firms. These are explained briefly in Box 3.1.

Insolvency

3.46 When dealing with the insolvency of a financial institution, the prudential framework tries to ensure that there is sufficient leeway to identify and manage the exit of a troubled institution before significant losses to certain stakeholders accrue. However, this is not always possible and the customers and other creditors of a financial institution may not always be repaid in full.

3.47 Instances of widespread contagion and market failure need to be distinguished from the occasional failure of an individual firm. Insolvency is a perfectly normal occurrence in competitive markets. However, for financial institutions, there is a concern to ensure that failure does not transmit to other financial participants or give rise to undue complexity or cost as it is resolved.

3.48 In the infrequent event that a financial institution does enter liquidation, there are a number of special rules (such as depositor preference, rules surrounding the distribution of statutory fund assets and reinsurance 'cut-through' provisions) designed to deal with the remaining assets and liabilities of the institution. The application of these rules would generally be determined by the Courts in the event of insolvency. (These provisions are detailed in Appendix 3.4).

3.49 For example, depositor preference arrangements provide for the proceeds from liquidating the assets of a bank, building society or credit union to first meet liabilities to depositors, in priority to other creditors. This can occur prior to entering the liquidation process that would meet the claims of other creditors.

3.50 For life insurers, the legislation provides that the assets of a statutory fund are first used to meet liabilities to policyholders (of that fund) above other unsecured creditors.

3.51 For general insurers, reinsurance cut-through provisions (contained in Section 562A of the Corporations Act) hypothecate the proceeds of reinsurance contracts to claims under the underlying insurance policies. A number of similar arrangements apply in relation to privately underwritten statutory insurance, whereby State statutory authorities (nominal defendants/nominal insurers) may enjoy priority over reinsurance assets.

3.52 In the winding-up of a superannuation fund, the fund's assets are distributed in accordance with the Superannuation Regulations. In general, this provides that the costs of administration and winding-up are met in priority to liabilities to members.

Box 3.1: Liquidity support

The Reserve Bank of Australia's emergency liquidity support role

The Reserve Bank of Australia (RBA) has primary responsibility for safeguarding the stability of the Australian financial system. In pursuing this mandate, the RBA's objective is to ensure that disturbances in any part of the financial system do not threaten the health of the economy. This task is closely linked to the RBA's other policy obligations, including the maintenance of low and stable inflation and a robust payments system.

Where financial disturbances do arise, however, the RBA is able to provide emergency liquidity support to the financial system. The need for this 'lender-of-last-resort' capacity reflects the fact that ADIs may be particularly vulnerable to sudden and unexpected demands on them for funds.It is the responsibility of an ADI's board and management to ensure the ADI has sufficient liquidity to meet its obligations as they fall due. If an ADI has concerns about its current or future liquidity profile it must inform APRA of the problem and of the steps it is taking to rectify the situation. In formulating liquidity management policy, ADIs should not assume that the RBA would provide support if they faced problems.

Liquidity problems with an individual ADI may have significant implications for the whole financial system if, for example, other institutions have substantial counterparty exposures to the troubled ADI, or if its problems undermine confidence in other institutions. To counteract such problems, the RBA is able to use its balance sheet to provide liquidity support if it is of the view that it is dealing with a fundamentally sound financial institution whose failure to make payments would have serious implications for the rest of the financial system; the RBA's balance sheet is not available to support insolvent institutions. The RBA's preference in dealing with such circumstances is to make funds available to the market as a whole through its domestic market operations.

The RBA will consider applications for emergency liquidity support from any institution supervised by APRA. This accords with the division of responsibilities within Australia's regulatory arrangements whereby the RBA has the mandate for overall stability of the financial system and APRA has responsibility for the prudential oversight of individual financial institutions.

Box 3.1: Liquidity support (continued)

The Memorandum of Understanding between the RBA and APRA requires that there be close and effective cooperation between the two agencies during periods of financial stress.

Industry support mechanisms

Credit union members have access to the Credit Union Financial Support System (CUFSS)[3] which is a voluntary, industry-funded scheme that provides liquidity and, possibly, capital support in the event of financial difficulties. This system is designed to keep an institution afloat temporarily.

Guarantees of certain retail financial products

Defines the impact of failure for certain customers and enables earlier restitution

3.53 A range of narrowly targeted compensation arrangements currently exists in the Australian financial system. For the most part, these arrangements are concerned with agent risk — that is, loss suffered due to the deliberate actions of an individual or entity, such as fraudulent conduct and theft. They do not address cases where promised payments associated with certain products have not been honoured due to financial institution insolvency.

3.54 Table 3.1 summarises the existing compensation arrangements in the Australian financial system. The focus on agent risk means that these schemes would complement rather than duplicate any guarantee scheme focused on counterparty risk.

3.55 The nominal defendant and nominal insurer schemes that exist in some States and Territories are one exception. These have served in the past to cover insolvency-related losses under privately underwritten statutory insurance schemes (for example, Compulsory Third Party (CTP) motor vehicle insurance and Workers' Compensation). An explicit guarantee scheme could either replace or complement these arrangements. The relevant issues are discussed further in Chapter 10.

3 CUFSS is an APRA-certified support mechanism (under Section 11CB of the *Banking Act 1959*).

Table 3.1: Summary of compensation arrangements

Product/Service	Existing regulatory framework	Name of arrangement	Compensation categories	Funding arrangements
Examples in prudentially regulated sectors				
Superannuation	*Superannuation Industry (Supervision) Act 1993* Commonwealth law	Part 23	Fraudulent conduct and/or theft.	Levy on industry (post-funded).
Compulsory insurance classes (CTP, Workers' Compensation and Builders' Warranty)	Statutory insurance schemes State/Territory law Private underwriters regulated under the *Insurance Act 1973* Commonwealth law	Nominal defendant/ insurer arrangements	Uninsured defendants, unidentified defendants and insolvent private underwriters.	Pre- and post-funded as part of insurance premiums. In some instances special purpose levies have been charged to industry or consumers.
Examples in financial services sector				
Financial service licensees and representatives[4]	Chapter 7 (Section 912A, Section 912B[5]) *Corporations Act 2001* Commonwealth law	Financial services licensees[6]	Breach of obligations by financial services licensee or their representatives.	To be licensed, financial service providers licensees must make private provision to compensate consumers for breach of obligations. This can be through professional indemnity insurance or a similar mechanism[7].
Brokers operating on the Australian Stock Exchange	Chapter 7 Division 4 *Corporations Act 2001* Commonwealth law	National guarantee fund	Breach of contract guarantee, unauthorised transfer, incorrect certificate cancellation and insolvency.	Currently funded to a level not requiring further collection of levies. Provision does exist to levy participants.
Brokers operating in other financial exchanges[8]	Chapter 7 Division 3 *Corporations Act 2001* Commonwealth law	Operators of other financial markets	Defalcation and fraud against retail clients.	Financial markets must make provision to compensate retail clients for defalcation or fraud (all markets still have in place a fidelity fund).

4 Securities dealers and investment advisers, brokers, life insurance and general insurance companies, superannuation funds, deposit-taking institutions and their agents and employees.
5 The requirement under Section 912B will take effect from March 2005.
6 Subject to transitional arrangements.
7 The final details are still to be determined.
8 Including the Newcastle and Bendigo Exchanges, Sydney Futures Exchange and the Australian Stock Exchange futures market.

CHAPTER 4: THE ECONOMIC RATIONALE FOR EXPLICIT FINANCIAL GUARANTEES

Overview

- Financial institution failures will occur from time to time in any efficiently regulated financial system.
- When failures occur, there is generally strong pressure on governments to underwrite at least some of the financial promises made by some types of failed institutions regardless of whether there was any prior commitment to do so.
- Limited explicit guarantees on financial products can be preferable to implicit underwriting or to a *caveat emptor* approach (which in any event, may not be politically feasible).
  - Explicit guarantees may contribute to the stability of the financial system, improve the allocation and pricing of risk and provide individuals a greater degree of financial security.
  - The advantages of an explicit guarantee over a discretionary approach include timeliness of response, greater certainty for consumers as to product coverage and greater certainty also about the possible scale of compensation.
- Appropriately targeted guarantees remove the risks for those who are exposed to financial institution failure but are least able to assess, and therefore do not voluntarily bear, that risk. They may also distribute the burden of risk more equitably than implicit guarantees.
- If poorly designed and priced, explicit financial guarantees (like implicit guarantees) can distort economic behaviour and lead to inefficient outcomes.

Approaches to deal with financial failure

4.1 As discussed previously, the Financial System Inquiry (FSI) re-affirmed that prudential regulation is intended mainly to prevent disruptive failure; it is not designed to eliminate the consequences of risk-taking from the financial system.

4.2 This perspective on prudential regulation was, and is, broadly appropriate for the Australian financial system but is not necessarily inconsistent with the introduction of a limited explicit guarantee. Indeed, there is a delicate tension between protecting customers thought unable to assess counterparty risk, whilst requiring they bear their share of losses when the system fails to deliver protection.

4.3 Recent events suggest there may now be stronger arguments for explicitly protecting some individuals against losses on a narrow class of retail financial products. Specifically:

- The collapse of the HIH Group of Companies (HIH) together with previous episodes of government intervention in financial institution failures, led governments to respond to public concern by supporting some of the affected policyholders. This suggests that Australians expect and demand financial security on at least some financial products.

- International practice of formalising guarantee arrangements has developed, and Australia's methods for protecting deposits with banks and other authorised deposit-taking institutions (ADIs), in particular, have become somewhat anomalous. An increasing number of countries are also providing greater protection for some non-deposit financial products, such as insurance and pension plans.

- Australian consumers' engagement with the financial system continues to deepen as a result of explicit government policies, demographic trends and technological advances. Some common financial products are a prerequisite or 'critical' for participation in the modern economy.

4.4 The implications of these developments need to be weighed carefully. On the one hand, the creation of the policyholders' support scheme for HIH and government intervention in other failures indicates that there is a perceived need to support those customers most exposed to financial institution failures. But, on the other hand, too comprehensive a system of

support would constrain investors' ability to take risks in pursuit of profit, and it would greatly undermine the efficiency of financial markets.

4.5 Australian governments historically have responded to infrequent financial institution failures by providing compensation to the most vulnerable customers funded from the general tax base.[1] It can be argued that this risk is not recognised appropriately and therefore not appropriately priced in financial products. Moreover, the costs of failure are not necessarily being borne by the beneficiaries or by consumers of the types of products in question.

4.6 Financial institution failures will occur from time to time in any efficiently regulated financial system. When failures occur, particularly among prudentially regulated institutions, there is generally pressure on governments to underwrite at least some of the financial promises made by some types of failed institutions regardless of whether there was any prior commitment to do so.

4.7 In principle, there are several ways to deal with the risk and resulting problems of financial institution failures:

- *Adopt a caveat emptor approach, denying responsibility for providing any compensation for losses due to financial institution failure.*[2] *Caveat emptor* relies upon market discipline working effectively to moderate the behaviour of riskier financial institutions even though there may be information asymmetry problems inherent in the financial sector. Relying on such a policy could lead to price and behavioural adjustments which might deliver the most efficient financial resource allocation outcomes. The success of such a policy stance would depend upon governments maintaining a consistent position.

  - The history of government interventions in Australia, and convergence of international best practice on a different approach, suggests that sustaining a credible *caveat emptor* policy is problematic. Moreover, there may be legitimate system stability, efficiency, equity and broader socio-economic reasons for governments to choose to intervene to protect at least some classes of consumers.

1 A history of financial institution failure and government responses in Australia is contained in Chapter 2 and Appendices 4.2 and 4.3.

2 For logical consistency, such a policy stance might also require a winding back of the scope of prudential regulation.

  - In addition, the legal duty of the Australian Prudential Regulation Authority (APRA) to depositors of ADIs as set out in the *Banking Act 1959* may in itself create the expectation amongst depositors that they will be protected if an ADI fails. This would reduce the possibility that a *caveat emptor* policy could apply in Australia.

- *Tighter control of the range of products on offer by selected institutions*. The range of products that some prudentially regulated institutions offer could be restricted, or some financial products could be fully collateralised with risk-free securities — the so-called narrow banking model (Merton and Bodie, 1993). This would create a class of risk-free financial products for retail investors. Such an approach would be difficult in a modern cross-border financial system already occupied by financial conglomerates.

- *More direct government provision of risk-free financial services and products*. Governments have some experience in providing these products, as (mainly historical) examples of government-owned banking and insurance arrangements show. There continues to be some public underwriting of certain insurance products, to ensure financial safety and achieve other policy outcomes. It might be possible to extend this to other types of product. However, this would run counter to prevailing views on the appropriate role of government in the financial system and competitive neutrality.

- *Alter the relative position of stakeholders under the insolvency framework as it applies to regulated financial institutions*. Under the current arrangements, the entitlements of retail consumers in insolvency are not always differentiated from those of other stakeholders, and these vary across types of financial product. Changing priority arrangements to enhance the entitlements of retail investors in failed firms does not provide for certain outcomes but it may reduce the loss suffered following the failure of their financial service provider. Other stakeholders, of course, would be made worse off by such reform, and could be expected to demand changes in contract terms to compensate.

- *Commit to respond to financial institution failures on a 'discretionary' or case-by-case basis, tailoring assistance to suit the circumstances*. This may preserve flexibility but provides a relatively low degree of certainty and may take some time to implement. Some of the uncertainty may be reduced by committing to some pre-determined criteria for providing assistance.

- *An 'explicit' government provided or mandated guarantee*. Such a guarantee defines limits on the losses which individuals could suffer on some financial

products. The costs are then borne by taxpayers or the industry where the guarantee applies (and ultimately by the consumers and shareholders). The classic example is deposit insurance — a system in which bank deposits are protected up to a pre-specified limit. These arrangements could be extended to a limited number of other financial products.[3]

4.8 This Chapter reviews some of the general benefits and costs of explicit guarantee schemes, as required by the Study's Terms of Reference. It is important to recognise that any assessment of explicit guarantees is complicated because some of the economic implications are ambiguous. The institutional and behavioural consequences of introducing explicit guarantees and the implications for the broader stability of the financial system are heavily dependent, in particular, on their scope and pricing.

4.9 Appropriately designed schemes may improve the efficiency and stability of the financial system in some respects. Conversely, badly designed schemes can embed inequities, create additional deadweight costs, and undermine market discipline and financial stability.

4.10 That said, there are some potential benefits of explicit guarantees that are less equivocal. They can, for example, relieve taxpayers of implicit liabilities, albeit by transferring these liabilities to shareholders and customers of financial service providers. They can also clearly delineate a set of relatively risk-free financial products for consumers who are not well-placed to assess, or who otherwise do not wish to accept, risk.

4.11 The context in which explicit guarantees are being assessed is also important. Much depends, for example, on judgements about community perceptions of government responsibility in the wake of a financial institution's failure and expectations about the response of government to such perceptions.

---

3 A possible variant might be to encourage voluntary, private provision of such guarantees. Such a market does exist in relation to deposit insurance in North America, as an adjunct to the government-run schemes in Canada and the United States. It is not clear, however, that in the absence of such base government cover, private insurance would be a viable proposition. At the very least, a prerequisite would be a credible government policy stance of non-intervention in financial institution failures which, as noted above, is likely to be problematic in the Australian context. The ultimate solvency of a private provider is also an issue for the success of such schemes.

An assessment of explicit guarantees

4.12 This Study assesses the general merits of explicit guarantees against the backdrop of the prudential regulatory framework. For example, it appears possible to consider, at least in a qualitative sense, the key implications of introducing a well-designed explicit guarantee, based upon:

- an analysis of the structure, incentives and expectations embedded within Australia's existing regulatory framework;
- an assessment of known market failures, such as imperfect information, externalities and imperfect competition; and
- some assumptions about the likely behaviour of consumers, financial institutions, regulators, other creditors and governments.

4.13 It is also important to note that the benefits and costs of a guarantee depend on how it is designed, in particular the coverage, funding arrangements and extent to which efficient pricing can be achieved. Critically, the economic impact is also likely to turn on how an explicit guarantee might affect the behaviour of participants in the financial system.

4.14 One's perspective on the impact of explicit guarantees will depend on the extent to which it is believed that some form of guarantee already exists within the financial system.

- For those who believe that no implicit guarantee exists, introducing a limited explicit guarantee may be viewed as introducing a distortion into the financial system, making it less efficient and potentially less stable.
- For those who believe that an implicit guarantee already exists, a well-designed explicit guarantee may be viewed as reducing the scope of an existing subsidy and improving the integrity of the financial system.

4.15 The international literature suggests that implicit guarantees are common, at least with respect to bank deposits.[4] In Australia, the Reserve Bank of Australia (RBA) acknowledged their existence in relation to deposits in the

4 See, for example, Miller 1996; Santomero 1997; Benston and Kaufman 1995; Goodhart 1991; Llewellyn 1999. Gropp and Vesala (2001) interpret a reduction in risk-taking by European banks following the introduction of explicit deposit insurance schemes as indicative of a removal of broader implicit insurance.

following terms: 'it is hard to believe that … democratically elected governments will (or should) stand by and watch a large number of citizens (and voters) lose money they thought was relatively safe' (RBA 1997). Moreover, the World Bank classifies countries without explicit deposit insurance schemes as having implicit schemes (Demirguc-Kunt and Sobaci 2000).

Moral hazard and financial system integrity

4.16 The most common concern arising with any form of financial system guarantee is the potential it has to create moral hazard.

4.17 Moral hazard exists when people take risks because they know that someone else is protecting them against a financial loss. This increases the probability of loss, and it is unfair to the provider of the guarantee. Both explicit and implicit guarantees create moral hazard because they can affect the behaviour of owners, managers, customers and regulators of financial institutions, leading to increased risk-taking and risk of failure. (See Box 4.1).

Box 4.1: Examples of potential moral hazard in the financial system

Guarantees can encourage the shareholders of a financial service provider to accept greater risk-taking by the institution in the hope of a higher reward. They know that retail investors will not object and demand compensation for increased risk because they are protected by the guarantee.

A guarantee can also encourage retail investors to target products with the highest promised return, irrespective of the inherent risks. Service providers competing for funds can only satisfy this preference for maximum nominal return by undertaking more risky activities.

Moral hazard also applies when the trade-off between risk and return is not quite so apparent. For example, customers may seek the cheapest general insurance cover available, without considering the risk of the provider.[5] Insurers then face competitive pressure to lower the price of insurance and to invest the premium income in a more risky portfolio. Either way, a moral hazard exists if there is a guarantee attached to the policy.

5 Fifty-six per cent of respondents to a recent ANZ Bank survey (ANZ 2003) indicated that they consider either price or the convenience of their existing provider when renewing insurance.

Box 4.1: Examples of potential moral hazard in the financial system (continued)

If the original value of a market-linked investment is guaranteed, there is a strong incentive for the provider or investor to invest in the riskiest assets in the hope of maximising the potential upside, knowing that their losses will be covered if the strategy fails.

Managers of a financial institution whose remuneration is linked to growth and profitability may be more inclined to undertake risky strategies if not subject to the restraint imposed by customers demanding compensation for increased risk.

Regulators who are not subject to appropriate incentives and accountability arrangements may be more inclined to indulge in forbearance towards troubled institutions in the knowledge that (some) consumers are protected if the institution is unable to recover.

4.18 Moral hazard concerns potentially exist for both implicit and explicit guarantees. However, the design features of an explicit arrangement can substantially ameliorate the problems. In this sense, the moral hazard might be successfully contained to parts of the system where moral hazard may matter less — for example, across a limited range of low risk products and only for relatively unsophisticated customers. Explicit guarantees could also provide a more sustainable basis upon which governments could establish a *caveat emptor* policy in regard to consumers of non-guaranteed products or liabilities; a strategy to minimise moral hazard.

4.19 In the Australian context, one argument in favour of explicit guarantees over financial products may be that the better-designed schemes are more efficient than any prevailing implicit guarantees. Guarantees of any kind can impair the efficiency of the financial system. But a well-designed explicit guarantee can make the problems less likely and less serious. In a system where implicit guarantees currently exist, introduction of industry-funded explicit guarantees returns the burden of risk to the financial system. This may not only improve the financial position of taxpayers; it could also enhance the efficiency of the financial system.

4.20 Implicit guarantees are considered to be especially strong for depository instruments because the banks which offer them are often large,

highly leveraged, and crucial to both the payments system and the wider economy; that is, the 'Too Big to Fail' doctrine (Garcia 1996). Although this internationally popular theory emphasising systemic concerns remains plausible, the guarantees associated with HIH, a general insurer, suggests that the size of the firm, the size of consumer losses and/or the fact that an institution is prudentially supervised may be more defining factors.

4.21 Explicit guarantees do not automatically eliminate moral hazard existing under a system of implicit guarantees. If they strengthen and clarify protection, they may discourage investor awareness and monitoring of risk. If they protect well-informed stakeholders who are capable of assessing and monitoring institutional risks, they can intensify moral hazard and weaken market discipline on financial institutions.

4.22 Indeed, a potential benefit in not having an explicit guarantee is that the coverage and extent of compensation is uncertain and stakeholders may be more cautious about where they invest their money. Potentially this will reward better-managed and more prudent financial institutions. An explicit guarantee could reduce this reward for quality.

4.23 Moral hazard can be exacerbated when there is an explicit guarantee for products which are inherently risky or when the price of the guarantee does not reflect the risk of the institution.

4.24 Bohn and Hall (1997) explore the possible moral hazard implications associated with insurance guarantee funds in the United States (US). Because of the time lag between collecting premiums and paying out on policies, they argue that insurers are effectively borrowing money from policyholders. Therefore, the existence of guarantee funds might allow riskier insurers to write policies for (borrow money from) policyholders at rates that do not sufficiently reflect their default risk. That is, they might compete vigorously on the basis of price, cover and service rather than the quality of their promise.

4.25 In some schemes, the possibility of moral hazard raises important issues of fairness. If the explicit guarantee is funded by industry and it is improperly priced, then it could lead to well-managed firms paying unfairly for the risk borne by other service providers. This is an impediment to competitive neutrality and may create incentives to undertake excessive risk in the pursuit of return.

4.26 In extreme cases, moral hazard can increase aggregate risks in the financial system. In particular, it can encourage providers of capital to finance

risky projects which would not otherwise be eligible for credit on the same terms.

4.27 An increasing number of countries tackle these problems by pricing the explicit guarantee according to the riskiness of the service provider. In theory, this should solve the moral hazard problem and stop inequitable transfers between firms. But in practice, risk-sensitive pricing of guarantees remains difficult, and the inevitable pricing errors may be unreasonably expensive for some institutions and cause moral hazard in others.

4.28 Several other features of prudential regulation arrangements can work to mitigate moral hazard. Requirements that ownership of financial institutions is well-diversified limit the ability of any group of owners to induce greater risk-taking by the institution in response to guarantee schemes. Also relevant is the existence of significant minimum capital requirements which ensure that owners incur a substantial loss if increased risk-taking leads to adverse outcomes. Prudential oversight of governance arrangements and risk-taking can also serve to constrain any managerial incentives towards excessive risk-taking. Similarly, regulatory sanctions on managers who have previously been responsible for failure (and the role of 'fit and proper' tests) are important in this regard.

Consumer protection/monitoring costs

4.29 Explicit guarantees for retail consumers of financial products might generate a more even level of protection.

4.30 The potential costs involved in continuously monitoring the health of any institution are very high for retail customers, relative to the extent of their exposures. This information asymmetry problem is one of the reasons why governments choose to prudentially regulate certain financial institutions. However, since prudential regulation is not intended to prevent all failures, a limited explicit guarantee could enhance welfare by removing, or substantially reducing, the need for protected consumers to incur their own monitoring costs. It would ensure a limited supply of risk-free or lower-risk financial assets.[6]

6 Gorton and Pennachi (1990) provide a theoretical justification for deposit insurance as a mechanism which under some assumptions enhances social welfare by creating a supply of risk-free liquid assets to protect uninformed participants in the financial system.

4.31 At the same time, the health of the system depends on sophisticated investors utilising their superior capacity to assess and price risk. A limited explicit guarantee may encourage non-guaranteed stakeholders to undertake more rigorous monitoring and risk assessment than if broader implicit guarantees are thought to exist.

4.32 Explicit guarantees would lead to greater consistency and certainty in the degree of protection which eligible consumers would receive from financial losses across the different financial sectors. As noted in Chapter 3, the depositor preference provisions of the Banking Act require that the assets of a failed ADI must be applied first to meeting deposit holder liabilities. Provisions of the *Life Insurance Act 1995* together with those of the *Corporations Act 2001* also give a degree of preference to holders of life policies over the assets of the relevant statutory fund. General insurance policyholders generally are treated equally with unsecured creditors in any wind-up, although the specific ranking of policyholders can be affected by the terms of reinsurance arrangements and the application of State and Territory laws.

4.33 Under current legislation the extent of losses faced by consumers also varies according to the degree of insolvency of an institution; that is, the extent to which the value of liabilities exceeds that of assets. An explicit guarantee gives certain compensation irrespective of the shortfall in assets relative to liabilities.

4.34 Among ADIs, for example, credit unions and building societies have less exposure to wholesale borrowing markets than do banks. An important implication of this is that a higher proportion of the liabilities of smaller institutions is covered by the depositor preference provisions of the Banking Act, making these provisions relatively less effective in shifting losses to other stakeholders in the event of a failure (Table 4.1).

Table 4.1: The funding structure of ADIs

ADIs (Jun 03)	Major banks per cent	Building societies per cent	Credit unions per cent
Total assets: total liabilities	108	108	109
Tier 1 (risk weighted) capital ratio	7.2	11.8	14.0
Total (risk weighted) capital ratio	10.2	13.9	14.4
Australian assets: Australian deposit liabilities (excl. certificates of deposit (CD))	213	112	116
Deposit liabilities (excl. CDs): liabilities	49	96	94
Non-deposit liabilities: liabilities	51	4	6

Source: Australian Prudential Regulation Authority.

4.35 This does not mean that building societies and credit unions are necessarily more risky — these typically hold larger capital buffers than banks and undertake a different mix of activities — but their depositors would be more vulnerable should their equity capital ever be exhausted.

4.36 More generally, guarantees arguably can also serve to level the playing field in terms of risks borne by large, sophisticated consumers/investors and smaller, retail customers. While both groups benefit from prudential regulation, large investors also have better ability to assess risks, access superior information and have access to protection mechanisms that are not available at reasonable cost to small investors. For example, wholesale investors can more easily reduce their exposure to risk by diversifying their portfolios. Individual investors are less able to divide their wealth, and therefore risks are more concentrated with individual providers. In addition, individual investors are less able to negotiate pricing and terms in order to ensure they are fairly rewarded for risk.

4.37 Wholesale investors can also use certain credit risk transfer products, such as credit default swaps, to buy protection against the risk of failure. At the moment, the markets are not heavily used for this purpose, but the technology is developing and is certainly available. Retail investors, by contrast, do not have access to these products, either because markets do not exist for small exposures or because they do not exist for credit exposures to small institutions. Nor do they have the financial sophistication necessary to effectively use such products.

4.38 Other possible explanations for considering the addition of explicit guarantees as a consumer protection mechanism include:

- *Consistency with the prudential framework*. Governments may be held liable for failures because these failures may seem to suggest inadequate prudential regulation. [7] This reasoning ignores the plausible co-existence of prudential regulation and failure in competitive markets. However, it is probably so widely held that governments are not able to formally abrogate

7 One of the findings of the recent ANZ Bank survey (ANZ 2003) was that 3 per cent of respondents felt that all financial products were guaranteed by the regulators. However, this was in response to a question asked about financial sector regulation generally, not just those products or institutions that are prudentially regulated. In contrast, a survey conducted in the United Kingdom by the Financial Services Authority (FSA 2003) tested respondents' appreciation of whether (prudentially) regulated firms would be allowed to fail (and that they could lose money as a result). Thirty-three per cent of respondents correctly acknowledged that all regulated firms are potentially allowed to fail. Another 33 per cent thought that only some types of prudentially regulated firms would be allowed to fail, while a further 19 per cent thought that no regulated firms were allowed to fail. Twelve per cent responded that they did not know.

responsibility for socialising losses (Llewellyn 1999). Misunderstanding the role of the prudential framework and the existence of depositor preference, for example, may artificially inflate community expectations of financial safety.

- *Precedent*. In the case of deposits, the FSI observed that Australians have rarely been exposed to substantial losses. They may therefore believe that they are well secured, with this perception supported by the response of governments to the failures of HIH and other institutions.

- *Community views on fairness*. People may regard the incidence of losses on retail financial products as simple bad luck. The case for compensation on these grounds no doubt seems strongest in cases where the losses cause extreme financial hardship. An example of community acceptance of the need for compensation in unfortunate circumstances is Compulsory Third Party (CTP) motor vehicle insurance.

Financial system and macroeconomic stability

4.39 Explicit guarantees on retail financial products may help support the stability of financial systems. This is more so for deposit-taking institutions, and is one explanation for why explicit guarantee schemes are more common internationally for deposits than for other products. They also provide a mechanism for reducing the impact of financial shocks on the economy, in particular, by preserving the ability of consumers to maintain spending and productive endeavours.

4.40 Explicit guarantees can help stabilise financial systems because they can reduce the chance of bank runs and contagion. Diamond and Dybvig (1983) showed analytically that runs can happen because banks engage in maturity transformation, using high leverage and sequentially callable liabilities (that is, demand deposits which can be withdrawn on a first-come, first-served basis). Taken together, these attributes of banks give depositors strong incentives to withdraw their deposits quickly, whenever they fear either that their bank may be insolvent, or that there may be a run on the bank.

4.41 An important insight of the Diamond-Dybvig theory is that runs can destroy even solvent institutions, because they are driven by self-fulfilling panic. International experience shows that in extreme cases, this panic can become quite general. The run can spread from one institution to another, disrupting the payments system and creating disorderly conditions in financial markets and the wider economy.

4.42 Credible guarantee schemes reduce the chance of this happening. If depositors are confident that their funds will be accessible regardless of the condition of the ADI, then they have little incentive to withdraw their money in response to bad news or rumour.

4.43 In the Australian context, any explicit deposit guarantee may be unlikely to extend beyond a subset of individuals and therefore might cover only a fraction of the liabilities of systemically important institutions. Household deposits, for example, represent only 22 per cent of the Australian liabilities of the four major banks. In these circumstances, it might be argued that such a limited guarantee would do very little to assist systemic stability since it would do nothing to reduce the incentives of non-guaranteed, wholesale customers to participate in a run.

4.44 It is important to recognise that ensuring system stability requires regulators to focus both on avoiding disruptive failures of systemically important institutions *per se* and, if a failure of any consequence does occur, avoiding any broader, unwarranted loss of confidence in the creditworthiness of similar institutions.

4.45 Therefore, by preventing such spillover effects, even a quite limited explicit deposit guarantee could provide a useful complement to the regulatory framework for forestalling financial system instability. Similar reasoning suggests that limited insurance policyholder protection schemes could also be important to sustaining confidence in other sectors of the financial system in the wake of institutional failures. The preservation of financial stability is not, however, a primary motivation for limited financial guarantees; instead it may be a welcome consequence.

4.46 A guarantee scheme can have a (more indirect) impact on financial stability via its effect on moral hazard. To the extent that the protection offered by a guarantee affects the behaviour of stakeholders in the financial system, there is the potential for increased risk-taking and risk of failure. In turn, this could increase the chance of a major systemic crisis which impacts on the stability of the financial system as a whole. As discussed previously, the design of any guarantee scheme is therefore critical to limiting moral hazard, not only to maintain the efficiency of the financial system but also to minimise any potential impact on financial stability.

Managing failure

4.47 Insolvency processes for financial institutions are likely to be lengthy, complex and expensive. The liquidation process for ADIs and insurance companies can take many years. Compared to a discretionary approach, an explicit guarantee provides some additional certainty to protected consumers that a failure may be resolved more quickly than would occur through the insolvency process, with greater certainty for consumers as to product coverage and greater certainty also about the possible scale of compensation.

4.48 In the event of failure, a guarantee scheme provides a mechanism where selected liabilities to a group of consumers are transferred to the scheme. In essence, the guarantee scheme would assume the group's place in the insolvency queue. An explicit scheme can also ensure that governments and regulators have a well-defined approach to deal with financial institution failure when it occurs.

4.49 Explicit guarantees can create additional deadweight costs. In particular, depending on how schemes are designed and funded, it is possible that administrative and compliance costs associated with explicit guarantees will be higher than those involved in discretionary responses to institutional failure. That said, explicit schemes may better redistribute the costs of actual compensation away from taxpayers generally towards participating institutions and/or their stakeholders.

4.50 Further discussion of the costs of explicit guarantees is provided in Chapter 7.

Competition and competitive neutrality

4.51 By establishing a credible pre-commitment about how failures would be managed, a well-designed explicit guarantee may remove any advantages of larger institutions perceived to be 'too big to fail'.

4.52 Implicit guarantees are a form of subsidy and, like all subsidies, they distort economic outcomes. They can cause a transfer of funds to the financial institutions where the guarantee is thought (rightly or wrongly) to be strong, thereby distorting competition within the financial system. Achieving competitive neutrality requires that the beneficiaries of a guarantee are charged an appropriate premium.

4.53 Therefore, implicit guarantees distort the competitiveness of institutions in the financial system. Institutions generally perceived to be implicitly guaranteed are advantaged, with the greatest benefit accruing to the most risky. An explicit guarantee which is correctly priced to reflect relative institutional risks of insolvency could address this distortion.

4.54 Explicit guarantees may distort the spectrum of risk, by increasing the range of financial assets that are deemed risk-free. They might also cause similar products to be priced differently because they lie on either side of the boundary dividing guaranteed from non-guaranteed products. For example, cash management accounts offered by ADIs involve counterparty risk and might be guaranteed. However, there may be no guarantee for (non-prudentially regulated) cash management trusts operated by ADIs' funds management subsidiaries which involve market and agent risk.

4.55 A further concern with explicit guarantees is that, depending on how they are funded and priced, they may constitute an (additional) barrier to market entrants. A feature of some pre-funded schemes, for example, is that new entrants are required to contribute premiums for some minimum period (or amount) even though a scheme may be fully funded and premiums suspended for existing market participants. Similarly, under risk-based pricing, a new entrant commencing with the minimum required regulatory capital might be charged a higher premium than many incumbent players.

4.56 Potentially offsetting these price barriers is that explicit guarantees provide new entrants with instant 'charter value'. In other words, a guarantee obviates the need for new entrants to have demonstrated a history of prudence in order to gain the trust and support of consumers of the guaranteed products.

Budgetary protection

4.57 Implicit guarantees are a contingent liability of government, culminating as a liability to taxpayers. They could also inflict substantial capital losses on holders of government bonds, if government debt issues (which would put upward pressure on interest rates) were needed to finance the payments resulting from implicit guarantees.

4.58 Appropriately designed explicit guarantees can help to protect taxpayers from the costs of future financial institution failures. This is done through limiting coverage and establishing appropriate funding and pricing mechanisms.

4.59 Although this may serve to reduce the impact of financial institution failures on public finances, it obviously involves a transfer of risk back to the financial system.

4.60 It is important to note that major crises may occur which affect the stability of the financial system and which no guarantee scheme would be capable of dealing with, no matter how well-designed or capitalised. In such circumstances, the role played by a guarantee scheme would, at best, be in support of other government actions designed to safeguard the workings of the financial system and economy. An explicit guarantee scheme can deal best with an individual or limited number of failures which do not involve potential costs to the scheme which are very large relative to the scale of the financial system. Large scale, systemic problems must be dealt with in other ways.

Regulatory forbearance

4.61 Explicit guarantees may adversely affect the incentives of regulators. If retail customers are protected against risk, regulators may be more accommodating of troubled institutions. This can make supervised institutions less efficient or even lead to a greater likelihood of their failure.

4.62 Explicit guarantees may also complicate closure rules for ailing institutions, and the foreclosure rules that best support explicit guarantees can often encourage weak institutions to absorb too much risk. This may be the effect where the regulator needs to be aggressive in foreclosing on failing institutions — especially those with low intrinsic worth or charter value — in order to prevent or limit the moral hazard of guarantees (Acharya 1996). Yet this strategy sometimes works perversely. For instance, it may force troubled institutions with low charter value to assume increased risk (in the hope of higher returns) at precisely the time that regulators would prefer that they be more cautious (Marshall and Prescott 2000).

4.63 On the other hand, explicit guarantees may have beneficial effects on the incentives of regulators to act earlier and decisively to minimise losses when confronted with impending failures. In particular, in circumstances where the regulator is confident that the most vulnerable consumers will be protected from the impact of foreclosing on an institution. The critical issue in this regard is the appropriate design of incentive and accountability arrangements for regulatory authorities rather than the existence or non-existence of a guarantee scheme *per se*. The interrelationships between a

guarantee scheme and other regulatory arrangements are considered in Chapter 9.

Conclusions

4.64 It is evident that there is a range of cogent arguments both for and against the adoption of explicit financial sector guarantees. Where the balance lies obviously depends on the weightings that are attached to them and the appropriate design of any scheme.

4.65 In the Australian context, the case for adopting explicit guarantees rests partly on the presumption that there already exists a strong implicit guarantee of retail customer claims on financial institutions, and hence, many of the distortions associated with guarantees already exist. The crucial question then is whether moving from an implicit to an explicit guarantee offers a better public policy outcome.

4.66 With respect to design, it is clear that to the extent a case can be made for explicit guarantees, these should be limited to a small range of retail products offered by APRA-regulated institutions. Any sensible guarantee scheme requires monitoring of guaranteed institutions but duplication of APRA supervision would be inefficient.

4.67 Informed customers and large investors provide a crucial source of market discipline and can assess and take steps to protect themselves against the risk of institutional failures. Scheme design issues necessary to maintain such discipline are further discussed in Chapter 6.

4.68 To realise the full potential benefits of explicit guarantees they must be appropriately priced, ideally reflecting the individual insolvency risks of participating institutions. Although public policy and practical considerations could inhibit pure risk-based pricing this may not be a major problem in a well-supervised financial system. Issues concerning funding and pricing are discussed in Chapter 8.

CHAPTER 5: CONSEQUENCES OF FINANCIAL INSTITUTION FAILURE

Overview

- Assessing the composition of households' and individuals' exposure to financial assets provides some insight into the possible consequences of a financial institution failure. This can assist in consideration of the possible scope of explicit guarantees.
- The available data suggest:
  - Australian households hold the majority of their wealth in assets involving an exposure to market risk;
  - Australian households hold around two-thirds of their financial wealth in the prudentially regulated sector;
  - deposit balances are generally quite small, even for high wealth households; and
  - the value of assets or income protected by insurance policies is significantly higher than deposit balances.

Background

5.1 Before considering the possible scope of explicit guarantees (Chapter 6), it is instructive to analyse the potential exposure of retail customers to financial institution failure across a number of asset or product categories. The nature and value of the loss will vary across different institutions and product types.

5.2 For illustrative purposes, the discussion focuses mainly on the household unit as the most significant category of retail customer. A broader definition of retail customers may well include small businesses and community organisations. The consequences are considered in general terms and across the range of prudentially regulated products. A lack of consistent data across the sectors has made comparisons difficult. Data from a range of sources have been used to overcome inconsistencies.

5.3 Two possible ways of considering the consequences are examined:

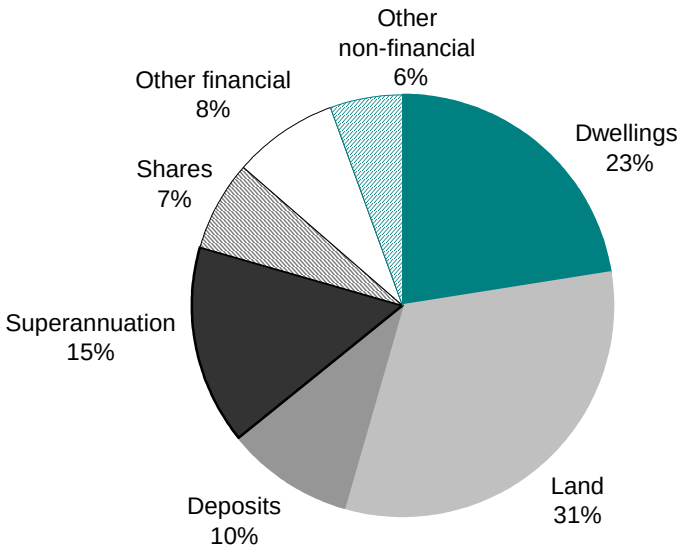
- the nature of the loss; and
- the value of the loss.

Aggregate household exposures

5.4 Chart 5.1 and Table 5.1 provide an overview of aggregate household assets. The Australian Bureau of Statistics (ABS) estimates that as at 30 June 2003, households in Australia had a net worth of $2,516 billion.[1] Total assets amounted to $3,209 billion offset by liabilities of $693 billion. Non-financial assets represented around 60 per cent of total assets ($1,921.6 billion). Within this category, land represented around 53 per cent and dwellings around 38 per cent. Financial assets represented around 40 per cent of total assets ($1,287.4 billion).

1 Per household this equates to $340,000 based on 7.4 million households in Australia (as at June 2001). Source: http://www.abs.gov.au/Ausstats/abs@.nsf/Lookup/F25B71F5D61F5346CA256CAE00053F9B.

Chart 5.1: Aggregate household assets



Source: ABS Cat.No. 5204.0 2002-03, 5232.0 June Quarter 2003.

5.5 Table 5.1 and Chart 5.1 also document the average composition of household wealth across various sectors and asset classes using a range of data sources. These data illustrate how most of an average household's total asset holdings are exposed to some market risk – housing (land and dwellings) and superannuation being the major categories.

Table 5.1: Composition of household wealth (total assets)

	$billion	Per cent of component
Assets	**3,209.0**	
Non-financial	1,921.6	59.9
Financial	1287.4	40.1
Liabilities	**693.4**	
Net worth	**2,515.6**	
Non-financial assets	**1,921.6**	
Land	1,020.7	53.1
Dwellings	723.3	37.6
Financial assets	**1,287.4**	
Non-prudentially regulated	408.0	31.7
Prudentially regulated	879.4	68.3

Source: ABS Cat.No. 5204.0 2002-03, 5232.0 June Quarter 2003.

5.6 Of households' total financial assets, $879 billion or 68 per cent, are held with financial institutions that are prudentially regulated by the Australian Prudential Regulation Authority (APRA).[2] Table 5.2 shows the composition of household wealth across the subset of prudentially regulated assets.

5.7 The two largest household financial assets in the prudential sector are deposits ($315 billion) and superannuation ($494 billion). APRA data show that households hold around 38 per cent of their deposit balances in transaction accounts and 62 per cent in savings accounts. Of the money in savings accounts, 38 per cent is in at-call accounts, 61.5 per cent in term deposits and 0.5 per cent in retirement saving accounts. APRA data show that superannuation funds directly invested 35.5 per cent of assets during the June quarter 2003, investment managers had a similar share of superannuation assets at 35.2 per cent and assets held in statutory funds of life offices represented 29.3 per cent of total superannuation assets.

Table 5.2: Composition of household wealth (prudentially regulated assets)

	Per cent of component of prudentially regulated assets*	$billion**
Prudentially regulated assets		**879.4**
Deposits		**315.3**
Transaction	38.0	
Savings	62.0	
At- call	38.0	
Term	61.5	
Retirement saving	0.5	
Life insurance		**41.1**
General insurance		**29.5**
Superannuation		**493.5**
Directly invested	35.5	
Investment manager	35.2	
Life insurer	29.3	

*APRA data.
** ABS data.
Source: ABS Cat.No. 5204.0 2002-03, 5232.0 June Quarter 2003, APRA (2003).

2 Of that, 35.9 per cent is in deposits and 56.1 per cent is in superannuation.

5.8 Table 5.3 examines how the composition of households' assets varies according to their wealth. Lower wealth households typically hold most of their assets in the form of superannuation. Higher wealth households were found to have considerable equity in land and dwellings and hold relatively diversified financial assets.

Table 5.3: Distribution of household wealth*

Non-financial assets

Wealth Quintile	Home		Rental properties		Total	
	$	Per cent of total wealth	$	Per cent of total wealth	$	Per cent of total wealth
1	1,000	5.9	0	0.0	1,000	5.9
2	38,000	40.9	3,000	3.2	41,000	44.1
3	121,000	61.7	11,000	5.6	132,000	67.3
4	203,000	63.0	17,000	5.3	220,000	68.3
5	415,000	53.8	58,000	7.5	473,000	61.3
Av	**155,000**	**55.4**	**18,000**	**6.4**	**173,000**	**61.8**

Financial assets

Wealth Quintile	Deposits		Shares		Superannuation		Total	
	$	Per cent of total wealth	$	Per cent of total wealth	$	Per cent of total wealth	$	Per cent of total wealth
1	1,000	5.9	0	0.0	15,000	88.2	16,000	94.1
2	4,000	4.3	2,000	2.2	46,000	49.5	52,000	55.9
3	8,000	4.1	4,000	2.0	52,000	26.5	64,000	32.7
4	15,000	4.7	11,000	3.4	76,000	23.6	102,000	31.7
5	58,000	7.5	152,000	19.7	89,000	11.5	299,000	38.7
Av	**17,000**	**6.1**	**34,000**	**12.1**	**56,000**	**20.0**	**107,000**	**38.2**

* The National Centre for Social and Economic Modelling (NATSEM) estimate average household wealth to be $280,000 although they note that this average varies by State and that there is a large dispersion of wealth. To provide a more detailed view of the dispersion, all households have been ranked by wealth and then divided into five equal size groups (quintiles). (NATSEM 2002).
Source: NATSEM 2002.

Authorised deposit-taking institutions (ADIs)

Transaction and savings accounts

5.9 Table 5.2 shows the aggregate composition of household wealth. Table 5.3 disaggregates household wealth by wealth quintile. It indicates that more than 80 per cent of households hold less than $60,000 in deposit accounts.

5.10 The failure by an ADI to honour its obligations on transaction or savings accounts will result in a loss of wealth for depositors and may involve considerable inconvenience due to an inability to participate in the payments system.

5.11 The balance held by depositors in a transaction account is likely to vary considerably over time. At one extreme, it could contain the proceeds of a major asset sale, such as a home, insurance settlements or superannuation rollovers. At the other extreme the balance could be close to zero.

5.12 A transaction account is necessary for effective participation in the modern payment system.[3] Many Centrelink payments recipients are paid into transaction accounts and most employees receive their salaries and wages via transaction accounts. Fees and charges also discourage individuals from holding more than one transaction account. Loss of a transaction account due to ADI failure involves inconvenience costs (as well as wealth loss) associated with opening an account with another ADI, and rearranging direct credit and debit arrangements.

5.13 The failure of an ADI can lead to losses on savings products purchased by depositors.[4] The loss of principal (including accumulated interest) could represent a significant proportion of total wealth for some depositors.

5.14 Loss of savings may mean that an individual's consumption plans have to be delayed or cancelled. For some small businesses, routine operations (such as payment of suppliers and wages, for example) and investment plans could be seriously disrupted.

---

3 While a credit card can be used for participation in the payments system, a transaction account is necessary to receive certain payments and settle card accounts. The increased use of Electronic Funds Transfer at Point of Sale (EFTPOS) may also encourage individuals to hold greater amounts to cover transactions.

4 ADIs also offer deposit products with fixed principal but earnings involving exposure to market risk. In some cases this reflects the nature of the interest rate arrangements (fixed or linked to some market rate). It may also arise when the rate of return is linked to a share market index.

5.15 These losses and inconveniences will not necessarily be overcome if depositors are forced to wait for the recovery of the failed ADI's assets as part of a liquidation process.

Life insurers

Risk products

5.16 Risk products are similar to ordinary insurance products, but typically provide a benefit in the event of death, disability or injury. Policyholders pay a premium for insurance cover and receive a lump-sum benefit contingent upon a particular event. The loss to policyholders from the failure of a life insurer will entail non-payment of expected policy benefits and a loss of cover.

5.17 In relation to expected policy benefits, this would entail loss of a lump sum payment or source of income for the policyholder, their dependents or third-party beneficiaries of the policy. Third-party beneficiaries could include the employees of a business that has taken out a group policy.

5.18 Given the nature of the events insured against in income protection products, it is unlikely that affected parties will be able to replace the lost income through a return to work in the short term. Even if some or all of the policy benefit is recovered at a later date, as a result of the sale of the failed insurer's statutory fund assets, this will not overcome the problem of a lack of income in the intervening period.

5.19 Loss of life insurance cover involves some different consequences. One consideration (relevant in all insurance failures) is the replacement cost for the unexpired portion of a policy for which an annual (or more frequent) premium has been paid in advance. This is not likely to be significant relative to the consequences attaching to a loss of an expected policy benefit. However, policyholders may need some time to be able to arrange suitable replacement cover.

5.20 A possibly more significant consideration is the affordability of replacement cover. In the case of many life insurance policies, premiums are determined at the date that the policy is taken out and remain fixed or on a fixed path for the term of the policy (as long as it is renewed). Policyholders may be unable to find replacement cover at the same price (or at all), due to their ageing or an adverse change in their health.

5.21 To reduce the risk that a claim will not be met or their cover interrupted, policyholders must attempt to buy their insurance from the most financially sound life insurer. This can be a difficult task as the long-term nature of many policies means judgements may have to be made now about the likely soundness of the insurer many years into the future.

Savings products

5.22 A number of life insurance products involve a savings element which is exposed to loss if an insurer fails. The savings component will consist of accumulated principal and earnings on the principal. For some products, known as investment-linked products, the value of the policy benefit will be subject to fluctuations due to exposure to market risk, akin to investments. Other products may entail a capital-guarantee or earnings-guarantee on the part of the life insurer, which may be likened to deposits in savings accounts with an ADI. The savings component may be distributed to policyholders as either a lump sum or as an income stream.

Annuity products[5]

5.23 Purchase of an annuity product involves the transformation of savings into a regular income stream. For most people this would occur at retirement using accumulated superannuation savings. The nature of the promise attached to an annuity, in terms of the value of future income, may range from purely investment-linked products (providing exposure to market risk and earnings volatility) to guaranteed income streams (underwritten by the provider).

5.24 Failure of a life insurer to honour its obligations on guaranteed annuity products[6] may mean significant wealth loss for retirees who are unlikely to be able to rebuild these savings and may suffer a reduction in retirement income.[7]

5.25 Policyholders have options to reduce the risk associated with guaranteed annuity products, including purchasing products with multiple insurers. In practice, policyholders face informational and transaction cost difficulties in acting this way.

5 These are referred to as pension products if offered by superannuation funds. Annuities may also be provided by other registered entities.
6 The life insurer has no 'obligation' in terms of the capital value of investment-linked products.
7 The age pension provides a public form of retirement income for eligible parties, which may provide a partial offset to the loss.

Total exposure

5.26 The ABS estimates that Australian households had claims against the reserves of life insurance companies of $41 billion at end-June 2003 (Table 5.2). This includes savings that have been accumulated or deposited in life insurance statutory funds and reserves for claim payments in excess of savings. In total, these claims represent around 3.5 per cent of household financial wealth. Life insurance policy payments in the year to June 2003 were around $4.5 billion, which is equivalent to less than 1 per cent of household total gross income. While total claims paid are small in household income terms, they are crucial in the relatively few households receiving them.

5.27 Data from an Investment and Financial Services Association (IFSA) survey (IFSA 2003) indicates that approximately 33 per cent of the population hold life insurance risk policies, suggesting that life insurance will be relatively more important for those households with cover than indicated by the average value. The average policy benefit associated with various categories of policies is presented in Table 5.4.

Table 5.4: Life insurance policies — average policy benefits[8]

Policy category	Average benefit per policy
Term life cover	$235,000
Disability cover	$3,500 per month
Trauma cover	$165,000

Source: Investment and Financial Services Association (2003).

General insurers

Risk products

5.28 Similar to the case for life insurance risk products, the loss for policyholders from the failure of a general insurer will entail non-payment of expected policy benefits and a loss of cover. The consequences will vary according to the type of cover.

8 Data is based upon a November 2001 survey of 13 of IFSA's 19 members.

Short-tail classes[9]

5.29 For those policyholders with outstanding or incurred but not reported claims against the insurer, there will be a loss of an expected policy benefit. The magnitude of this loss will depend on the value of the asset protected by insurance and the extent of the claim. The implications may range from severe — for example, where the insured's claim relates to total loss of their house from a fire; to minor — for example, where the insured's claim relates to a damaged windscreen.

Long-tail classes

5.30 Incurred but not reported claims may relate to long-tail classes of insurance such as professional negligence. Such insurance policies may provide future compensation for events that have already occurred but the consequences of which may not yet be apparent.[10] Failure of a general insurer writing such business may involve loss of an expected policy benefit for policyholders for many years to come.

Liability classes

5.31 For liability classes of insurance,[11] failure of the insurer may involve implications for both policyholders and third-party beneficiaries. Loss of an expected policy benefit may leave the insured party exposed to liability and the injured party without compensation.

5.32 Even if some or all of the money is recovered at a later date as a result of the sale of the failed insurer's assets, this will not overcome the problem of the loss of the expected policy benefit in the intervening period.

Loss of cover

5.33 The failure of a general insurer will also mean that policyholders will no longer have insurance cover. The failure of the HIH Group of

9 'Short-tail' business has a well-defined period, normally a year, between when an incident occurs and a claim is settled by the insurer. It usually includes claims against loss or physical damage to goods or property.

10 Generally, the manifestation of an occurrence may take years, for example, the effects of asbestosis. There are some occurrences, however, that may manifest early but have not been reported, depending upon the type of policy coverage.

11 For example, Workers' Compensation, Compulsory Third Party (CTP) Motor Vehicle Insurance, Builders' Warranty insurance, professional indemnity and public liability insurance classes protect both the policyholder (from financial loss in providing compensation) and the injured party (by providing compensation for the injury or loss).

Companies (HIH) demonstrated how certain occupations may be threatened because it is too financially risky or against the law to operate without insurance. Unused premiums lost plus additional costs in arranging alternative cover determine the magnitude of this loss. Policyholders may need some time to be able to arrange suitable replacement cover.

5.34 As with buying products from other types of financial institutions, most retail policyholders are not well placed to assess whether a general insurer will be able to pay its claims in one year from now, let alone in five or ten years' time as may be the case for the long-tail classes. Third-party beneficiaries have very few options available to reduce the risk that an insurer with existing or potential liabilities to them will be unable to meet their rights for compensation under liability classes.

Total exposure

5.35 The ABS estimates that Australian households had claims against the reserves of general (and health) insurance companies of $29.5 billion at end-June 2003 (Table 5.2). These reserves include provisions for outstanding claims and unearned premium. This represents 2.25 per cent of households' financial assets. The ABS Household Income Account shows that households received around $14 billion from general and health insurance claims in 2002-03, representing around 2.25 per cent of total gross income.

5.36 However, the liabilities on general insurers' balance sheets are the expected payouts for claims, which are the product of the sums insured and the probability of a claim. Figures on the value of general insurance policies would provide a better indication of the importance of general insurance to Australians. The Insurance Council of Australia (ICA 2002) has estimated that as at 31 December 2000, the average sum insured (value of assets protected) for all household policies in force at that time was $201,650.

5.37 The failure of HIH illustrates the consequences for policyholders from the failure of a general insurer. Initial estimates put HIH's deficiency in assets compared to liabilities at between $3.6 billion and $5.3 billion.

5.38 Data from the HIH policyholder support scheme provide an indication of the consequences for some of HIH's retail policyholders with outstanding claims. The scheme has received over 14,000 applications for

compensation.[12] As at March 2003, the average value of claims by policyholders in the short-tail classes, such as motor vehicle and domestic property insurance, has been around $18,000; for salary continuance it has been around $58,000; for public liability $88,000; and professional indemnity $106,000. The average value of the long-tail classes of claims may rise over time.

5.39 APRA data on general insurers' policies and claims provide an additional indication of the likely number and average value of claims that would be outstanding if an insurer failed. Table 5.5 shows, for the industry as a whole, the number of policies in force at end-June 2002, the number of outstanding claims at that point in time and the provisions for those claims.

5.40 If an insurer writing business that was representative of the industry as a whole failed at end-June 2002, it would have outstanding claims equal in number to 2.4 per cent of its total policies in force. The average claim size would be $22,497 per policy. The proportion of claims outstanding and the average claim size varies considerably by type of insurance. For Compulsory Third Party (CTP) motor vehicle insurance, there are only a small proportion of claims outstanding but the average claim size is almost $133,000. For commercial motor vehicle insurance, there are a relatively large number of claims outstanding but the claim size is quite small. Professional indemnity and employers' liability have both a high proportion of claims outstanding and about average claim size.

5.41 In terms of policyholders' exposure to lost cover, if an insurer writing business that was representative of the industry as a whole failed, its policyholders would have, on average, unused premiums of $258 each. In some categories (professional indemnity and employers' liability), these amounts could be substantial, but generally of very much smaller consequence to affected parties than the loss of benefit to the claimants' policies.

12 The Commonwealth scheme, HIH Claims Support Scheme, was targeted to policyholders suffering hardship so the total number of policyholders with outstanding claims against HIH will be higher than this figure.

Table 5.5: General insurance — claims outstanding and unearned premium (end-June 2002)

	Total number of policies	Outstanding claims	Provisions for outstanding claims	Unearned premium provision	Outstanding claims as a proportion of total policies	Average size of claim	Average unearned premium
	'000		$'000		Per cent	$	
Fire & Industrial Special Risk	2,146	44	1,228,003	882,871	2.1	27,909	411
Houseowners/ householders	10,790	173	832,238	1,425,500	1.6	4,811	132
CTP Motor vehicle	5,813	58	7,709,115	1,116,883	1.0	132,916	192
Commercial motor vehicle	982	91	355,547	605,841	9.3	3,907	617
Domestic motor vehicle	9,203	388	851,227	2,096,661	4.2	2,194	228
Marine and aviation	346	7	237,838	153,835	2.0	33,977	445
Professional indemnity	156	34	1,842,079	310,855	21.8	54,179	1,993
Public and product liabilities	2,520	33	3,665,353	587,211	1.3	111,071	233
Employers' liability	174	29	2,200,597	452,138	16.7	75,883	2,598
Mortgage consumer credit	1,020	8	58,865	252,345	0.8	7,358	247
Travel	945	18	77,738	16,531	1.9	4,319	17
Other accident	1,918	24	494,398	403,862	1.3	20,600	211
Other	1,041	18	281,780	306,788	1.7	15,654	295
Inward treaty	3,098	50	2,111,219	1,332,738	1.6	42,224	430
Total	**41,439**	**978**	**22,002,443**	**10,675,193**	**2.4**	**22,497**	**258**

Source: Australian Prudential Regulation Authority, Selected Statistics on the General Insurance Industry, Year-ending June 2002.

Superannuation[13]

5.42 Financial losses within the superannuation environment could result in a significantly lower standard of living for fund members in retirement. For most workers, compulsory contributions on the part of their employer represent the bulk of their superannuation savings, particularly early in the accumulation phase.

13 This analysis relates to accumulation products offered by superannuation funds. Superannuation funds also offer retirement income products. See section on life insurance failure for an analysis of these products.

5.43 The consequences for individuals from the loss of some proportion of their superannuation savings will depend on the individual's stage of life when the loss occurs. As the sum of money needed to provide for retirement income is many multiples of a person's annual income during their working years, it takes many years to accumulate the necessary savings. A loss of these savings late in a person's working life cannot be made up through contributions at a slightly higher proportion of salary. Should the loss occur early in a person's working life, however, there may be scope to recover these funds.

5.44 It is important to emphasise an important characteristic of some superannuation funds *vis-a-vis* other products discussed earlier.

5.45 In the case of defined contribution superannuation funds, the member has an investment-linked claim over the value of assets managed by the fund. In contrast, deposit and insurance promises are typically 'fixed value' promises. In this sense, the risk associated with accumulation superannuation funds does not generally take the form of a counterparty risk between the fund's trustee and the member.

5.46 It is worth noting, however, that the member's superannuation balances may be placed as deposits with ADIs or used to take out forms of life insurance cover. Moreover, a special form of product, a retirement savings account, involves accumulating a superannuation balance with an ADI. In these special cases, the member's exposure to the ADI or life insurer as a superannuation fund member might be compared to their exposure in an individual capacity outside of the superannuation environment.

5.47 Defined benefit superannuation funds create particular complications. Members are promised (by an employer) a level of retirement benefits to be paid by the fund. If the fund's assets (built up by contributions and earnings) are inadequate to meet those promises, the employer is liable to meet the shortfall. If the scheme is unfunded, members face the counterparty risk of possible failure of their employer. The retirement benefits for members are paid from the market value of the fund's assets; members receive an additional guarantee from their employer that sufficient assets will be available to meet a specified level of retirement benefits. In this case, however, it is the employer and not the fund that makes the promise.

5.48 The consequences of agent risk (such as fraudulent behaviour by the fund manager or imprudent investment strategies) are particularly relevant for superannuation fund members. Prudential regulation of superannuation funds seeks to reduce these risks. An employer's responsibility to make sufficient

contributions to a defined benefit fund to meet the promises it makes to its employees is also supported (but not guaranteed) by the prudential framework, contribution rules and accounting requirements. Also, Part 23 of the *Superannuation Industry (Supervision) Act 1993* gives the Minister discretion to provide compensation to fund members that suffer financial losses due to fraudulent conduct or theft.

5.49 As at 30 June 2003, the ABS estimated that households held superannuation assets in pension funds of $493.5 billion, or an average of around $66,800, which is around 15.5 per cent of total household assets and around 38 per cent of financial assets.

CHAPTER 6: GUARANTEE SCHEME COVERAGE

Overview

- A criteria-based approach has been used to explore the possible coverage of a guarantee scheme and allow cost estimates for any scheme to be modelled.
- The criteria proposed for determining coverage involve restriction to:
  - products that are supplied by prudentially regulated institutions;
  - 'capital certain' and 'critical' financial products issued by financial institutions; and
  - consumers who are unable to assess product risk.
- Designing a scheme necessarily involves tradeoffs between multiple objectives. The challenge is to balance concerns relating to such objectives as efficiency, equity, minimum complexity and minimum cost.
- Scheme design features which can assist in meeting these objectives include coverage limits, coinsurance or means testing.
- The vast majority of superannuation products would not be covered under the criteria proposed because they do not involve exposure to counterparty risk. Concerns about compulsory contributions being exposed to market and agent risk can be addressed by other means.
- An internationally suggested coverage level of twice average per capita income for deposit insurance would involve a cap of around $75,000, although survey data indicates that more than 94 per cent of households in Australia have deposit balances of less than $50,000.
- Insurance coverage levels would be expected to be significantly higher than for deposits, recognising the significant impact a failure would have on individuals with outstanding claims. A distinction between outstanding claims and loss of cover (associated with pre-paid premiums) may be made in determining coverage.

Design criteria

6.1 A discussion of the scope of any guarantee can be simplified by first considering some possible principles or design criteria. The Study has considered international experience and the structure of the prudentially regulated sectors of the Australian financial system in settling on the proposed criteria. These are also considered to reflect the broad direction provided by the Study's Terms of Reference, namely, to focus on limited explicit guarantees.

6.2 The criteria can then be used to illustrate the hypothetical range of covered institutions and products. This appears important as a test of the reasonableness of the criteria themselves; and has proven necessary to facilitate a more detailed discussion about the scope of any guarantee and in order to undertake preliminary modelling of costs.

6.3 The criteria and associated institutional and product coverage should be seen as a starting point for future debate rather than firm recommendations. They could readily be adjusted to reflect alternative assumptions.

Products that are supplied by prudentially regulated institutions or entities

6.4 A guarantee scheme has the potential to alter the incentives facing financial institutions, particularly if the pricing mechanism is not calibrated to take account of differences in risk. Institutions covered by a guarantee would need to be prudentially regulated to ensure that they continue to manage appropriately their overall risks and the risks they present to a guarantee scheme. In this way, prudential regulation, in particular capital adequacy requirements, can partially compensate for a lack of pure risk-based pricing.

6.5 Effective regulation and supervision will also limit the cost of a guarantee by reducing the incidence and severity of failure and, in some cases, resolving failures in ways that avoid claims on the guarantee scheme.

6.6 Restricting guarantee coverage to certain products offered by financial institutions regulated by the Australian Prudential Regulation Authority (APRA) reflects the need for prudential regulation. It should also preserve the ability for customers to take on risk through other products and/or other institutions.

'Capital certain' and 'critical' financial products issued by the financial institution

6.7 A guarantee scheme could be limited to only those products that are 'capital certain' promises backed by assets, and protected by the capital, of financial institutions. In other words, it might only apply to those products which are purchased without an objective of higher gains from risk-taking.

6.8 Such an approach means that products whose principal value fluctuates due to exposure to market risk would not be covered.[1]

6.9 The rationale for confining coverage to 'counterparty' risks, rather than market risks, is twofold. First, counterparty risks are impossible or extremely difficult for most individuals or retail consumers to judge in any cost effective manner. They are generally low probability, high adverse-consequence events. Second, market risk involves high probability, gain or loss events and is generally assumed knowingly by the consumer in pursuit of higher investment returns.

6.10 Only some capital certain financial products, specifically those which are essential or critical to participation in the modern economy, appear to warrant consideration for two reasons.

6.11 One is the difficulty individuals face in participating effectively in the modern economy without the use of such products.

6.12 The second is that broadening coverage beyond such a limited range would threaten the ability of the financial sector to provide the appropriate spectrum of risk-expected return choices necessary for efficient functioning of the economy, and inappropriately remove risk assessment responsibility from individuals in cases where they should perform that function.

6.13 Accordingly, the following coverage might result:

- Products consumers need to participate in the payments system, such as a transaction account with an authorised deposit-taking institution (ADI). The alternative of conducting all transactions with cash is generally infeasible.

- Products that allow consumers to save with minimum risk, such as basic deposit accounts, term deposits, some life insurance products and

1 Some deposit products may have their interest rates exposed to market risk. This complication might be addressed by a guarantee scheme applying to the principal and credited earnings but not any uncredited earnings.

retirement saving accounts (RSAs). Saving underpins wealth accumulation and facilitates larger, infrequent expenditures. Arguably, in accumulating such saving, most consumers are not looking to take on any appreciable degree of risk.

- Products that allow consumers to protect against the loss of an asset or the loss of an ability to earn income, such as life and general insurance risk products. Insurance is an effective way for retail consumers to protect their assets and income and is motivated by a desire to avoid risk.

- Products that allow consumers to draw down their savings in retirement without exposure to risk, such as guaranteed annuity or pension products. Some retirement income products allow people to convert their accumulated superannuation assets into a guaranteed regular income stream that will last for a given number of years or until death.

6.14 One implication of not covering investment or market-linked products is that superannuation products in the accumulation phase and those which are exposed to market risk in the retirement phase would not be covered. The reasons for this are examined in greater detail below.

Consumers unable to assess product risk

6.15 A guarantee scheme may limit eligibility for compensation on the basis of whether the consumer is a 'retail' or 'wholesale' consumer. In this context, the relevant features that distinguish a consumer as being either retail or wholesale are their capacity to assess the creditworthiness of the financial institutions offering the products they wish to purchase and/or their ability to guard against counterparty risk.

6.16 Such a distinction might also be made to target assistance to those perceived to be relatively worse off in the event of a failure.

6.17 As discussed previously, information asymmetry is a significant problem in the financial sector and is one of the main reasons why many institutions are prudentially regulated. It requires considerable skill and resources to assess the likelihood of a financial institution being able to honour its obligations in full at some point in the future. A wholesale consumer is one that is assumed to have the resources to make this assessment or to otherwise be able to off-load or diversify their risks.

6.18 In practice, drawing the line between retail and wholesale consumers is an arbitrary decision. Three ways that this distinction can be drawn are: by specifying the type of consumers that fall into each category; by means testing; or by applying thresholds to compensation payments, so that low wealth individuals receive relatively more compensation. Such a distinction has been made in other contexts.

6.19 Criteria for distinguishing between retail and wholesale consumers exist in the *Trade Practices Act 1974*, the *Corporations Act 2001*, and the *Australian Securities and Investments Commission Act 2001*. Criteria were also developed for the support scheme established following the failure of the HIH Group of Companies (HIH). In these contexts a combination of factors are used to make the distinction, such as the type of product being traded, the price of the product and the number of employees of the business that is buying or selling a particular product.

The practical scope of a guarantee scheme

6.20 Adopting the high-level design principles discussed above would limit any guarantee scheme coverage to:

- ***financial institutions*** regulated by APRA;
- ***products*** essential for participation in a modern economy where the principal or policy benefit is guaranteed by the supplying institution;
- ***promises*** where failure would involve materially adverse consequences not compensated for by a higher expected return; and
- ***consumers*** who are unable to overcome the information asymmetry problems that exist in the financial sector.

6.21 The types of products relevant for coverage would be those purchased for transaction, saving and risk protection services. Therefore, the discussion in this Report focuses on deposits and insurance.

6.22 Investment-type products either directly purchased or as part of some collective investment scheme (for example, unit trusts and superannuation funds) would be excluded. Consumers would be knowingly exposed to market risk and counterparty risk on these products and to agency risk on others. In the case of superannuation, alternative mechanisms to provide protection

against agency risk may be appropriate given special characteristics, such as compulsion and preservation.

Additional design features to limit costs and adverse behaviour

6.23 Additional criteria might prove necessary to ensure administrative efficiency, that the costs associated with a guarantee are sustainable and to reduce the potential for adverse behavioural responses. In addition, practical considerations may affect design characteristics so that some of the criteria are not fully realised. For example, it may prove difficult to limit scheme beneficiaries to a subset of consumers or to apply differential treatment to a range of products issued by a financial institution.

6.24 It may prove sensible to apply slightly different design features to different sectors of the financial system.

Basis of coverage

6.25 One design question relates to whether a limited scheme should compensate consumers for each account or policy they hold, or on a per consumer basis, in relation to each failed institution.

6.26 Providing compensation on the basis of each account or policy, rather than on a per consumer basis may give rise to incentives to hold multiple accounts just below the threshold, but overcomes some problems in dealing with joint accounts.

6.27 Providing compensation on a per consumer basis may create incentives to diversify across institutions. Financial innovation in the form of a broker market for deposits of the maximum insured size (whereby brokers place wholesale funds from consumers in a portfolio of smaller insured deposits at different institutions) is the sort of response which might be expected.

6.28 Experience from overseas suggests a trend towards a per consumer, per institution basis. However, there are some exceptions to this general rule, with the United States (US) and Canada being examples, where separate,

additional coverage is provided for the various capacities in which an individual might operate an account.[2]

Basis of participation

6.29 Participation in a guarantee scheme may be either voluntary or compulsory on the part of each of the financial institutions. Most schemes require all financial institutions in the relevant category to participate in order to avoid problems of adverse selection.[3]

6.30 Institutions are also generally not given the option to offer consumers the choice between guaranteed and non-guaranteed products (of the same category). If this were allowed, consumers may tend to use the guaranteed products offered by perceived riskier institutions and the non-guaranteed products offered by those institutions perceived to be relatively safe. This potential adverse selection problem could be overcome if it is possible to correctly price the levy applying to participating institutions according to their risk of failure.

Severity of loss

6.31 A guarantee scheme, where possible, should only compensate for losses that are significant. For example, at the time that an insurance company fails, a distinction could be drawn between its liabilities to those with outstanding claims and liabilities in terms of unearned premium revenue (unexpired policy cover). The losses for consumers in relation to the latter category are unlikely to be catastrophic (being limited to the value of premium paid), assuming that replacement cover is available from an alternative insurer at a similar price.

6.32 It may also be appropriate to set floors on the amount of compensation provided by any scheme to reduce administrative costs and to ensure that only the more severe losses are compensated. This seems most applicable to general insurance claims relating to relatively minor asset

2 Separate cover is provided in relation to accounts held solely, accounts held jointly, accounts held in trust and accounts for retirement savings purposes.
Varying from a per consumer, per institution approach leads to problems in applying standardised thresholds. For example, the Federal Deposit Insurance Corporation (2001) illustrates how a family of four could, via a particular structuring of accounts, achieve coverage of $2 million of funds placed with one institution, despite a stated cap of $100,000 per depositor.

3 Adverse selection is the problem of parties who are most likely to produce an undesirable (adverse) outcome being the most likely to nominate for protection (or be selected).

damage. However, it would run counter to the approach most commonly taken internationally, whereby schemes fully compensate for losses up to some minimum amount and partly compensate for losses above this point.

Monetary limits

6.33 Most deposit insurance and many insurance guarantee schemes apply a monetary limit to the amount of compensation payable. The limit is usually lower for deposits than it is for general insurance, life insurance and pension schemes. This is consistent with the generally greater severity of personal loss associated with failures of the latter type, together with arguably greater difficulty for consumers to assess the financial institution risk involved.

6.34 The limit could be set as either a monetary limit or as a proportion of the total liability. In some circumstances monetary limits could be used as a substitute for means testing. Proportional limits could be used in circumstances where there is a desire to reduce the cost of the scheme but it does not make sense to unduly penalise those consumers with large exposures to a failed institution.

Coinsurance

6.35 It is common for financial guarantee schemes to limit the amounts of compensation payable to consumers to a proportion of the actual loss. For example, under the current arrangements to address cases of fraud and theft in superannuation it has been Government policy to pay compensation of 90 cents per dollar of the fund loss. The coinsurance approach ensures that consumers bear some part of the cost arising from the failure of their institution and hence provide them with some incentive to exert caution when placing their money with a financial institution. Such an arrangement also forms part of the broader question of how to allocate costs among parties. Where individuals have little or no choice as to where they place funds the logic of coinsurance arrangements may be less compelling. In this case, the moral hazard is reduced as is the ability of these persons to exert market discipline.

6.36 There are numerous examples where coinsurance is not applied. These relate to a preference to rely on monetary caps alone; or where there is little to be gained (in terms of reduced moral hazard) by penalising the person to be compensated. A latter example is payments to third-party beneficiaries of insurance policies (for example, where personal injuries are concerned). Since

these beneficiaries do not select the institution, no moral hazard problem arises and broader objectives of social equity and fairness might suggest that they should be fully compensated.

Means testing

6.37 Some schemes, particularly insurance guarantee schemes, do not pay compensation to consumers who, by reference to their net worth, assets or income, are deemed to be less vulnerable or less seriously affected by a financial institution's failure. In some cases, means tests also apply to small business consumers.

Generosity of promise

6.38 A feature of some schemes is to limit the generosity of the promises (such as the rate of interest or maximum term for deposit products or the terms of an insurance contract) that can be offered to consumers of guaranteed products. The rationale is to obviate the moral hazard of institutions seeking to leverage off a guarantee by offering very generous promises and investing the funds in higher risk-return propositions. However, such limitations may be difficult to apply in practice, and may not be necessary if the prudential standards apply appropriate penalties in the form of higher minimum capital requirements. Coinsurance may also reduce the need.

Further issues to consider

Whether to establish different schemes for different sectors or within each sector

6.39 It is generally the case internationally that different schemes are established for the key sectors of deposit-taking, life insurance and general insurance, and where they exist, pension schemes. Schemes also vary in the types of risks or outcomes that they cover.

6.40 Different considerations within each sector - for example, varying business mixes giving rise to different risks to consumers, the degree of market concentration affecting the viability of pooling the risks of failure, or concerns that institutions may cross-subsidise institutions in another sector — might also explain the existence of sub-schemes. These may include separate schemes

for banks and other classes of deposit-taking institutions, or for the different classes of insurance. It may be necessary to apply a different combination of design variables for the different sectors.

6.41 In some cases, an umbrella governance arrangement is used to coordinate the operation of separate schemes. For example, in the United Kingdom, the Financial Services Compensation Scheme (FSCS) provides coverage for depositors, policyholders and investors. The FSCS operates multiple sub-schemes covering institutions accepting deposits, insurance providers and designated investment businesses. For levy collection and compensation purposes, each sub-scheme is kept separate from the other.

Need for clear distinction between guaranteed and non-guaranteed products

6.42 An important design choice arises as to whether to:

- explicitly prescribe those products which must be subject to a guarantee; or
- allow guaranteed and non-guaranteed versions of the same product.

6.43 Under either option, consumers would need to appreciate that some products would be subject to a guarantee and some would not. Given the diversity of products that already exists in the financial system, and the propensity towards innovation, it appears inevitable that financial institutions would find ways to offer (perhaps via subsidiaries) both guaranteed products and other products which are similar but not guaranteed.

Restrictions based on nationality

6.44 Limiting the coverage of a guarantee scheme to liabilities repayable in Australia would be consistent with the coverage of Australia's prudential framework. This would exclude the liabilities of overseas branches of Australian incorporated ADIs and insurance companies. It would include liabilities in Australia to foreigners who have deposits or insurance policies with Australian incorporated ADIs and insurance companies. This coverage would be similar to the coverage of the Canadian and US schemes.

6.45 An alternative, more restricted approach would be to exclude liabilities in Australia to non-residents who have deposits or insurance policies with Australian incorporated ADIs and insurance companies.

Coverage of superannuation

6.46 In considering whether to include superannuation products within a guarantee scheme it is useful to separate superannuation into its accumulation and drawdown phases.

6.47 Three general categories of products are offered in the accumulation phase:

- ***defined contribution*** products in which the value of the member's claim is market-linked;
- ***defined benefit*** products in which the value of the fund assets is also market-linked, but where the consumer's employer provide a guarantee that the amount specified as an entitlement on retirement will be available; and
- ***RSAs*** offered by ADIs or life insurance companies which are akin to deposit products, but with restrictions on the ability to make withdrawals.

6.48 The proposed design principles discussed above would exclude defined contribution products from a guarantee scheme because the consumer is taking on a managed exposure to market risk and not counterparty risk. A consumer's exposure is not so much to the viability of the institution (trustee) as it is to the capacity of the trustee to prudently manage investments on their behalf. That is, once monies are placed within the superannuation environment, the value of a member's ultimate retirement benefit is subject to investment fluctuations.

Box 6.1: Other forms of risk in the superannuation environment

In addition to market risk, consumers face other forms of risk in the superannuation environment, which are generally dealt with through other mechanisms. These include:

- Contribution risk — under the Superannuation Guarantee legislation, employers are required by law to make contributions to their employees' superannuation fund every three months. In the event that an employer becomes insolvent, its unpaid wages and superannuation contributions rank above many other debts in liquidation.
- Fraud and theft — losses suffered by members due to fraudulent conduct or theft may qualify for compensation under Part 23 of the *Superannuation Industry (Supervision) Act 1993* (SIS Act) or members may be protected by virtue of liability insurance taken out by the trustee.
- Mismanagement — action can be taken against the trustee for a breach of their duties to members. This could include the risk that trustees fail to work in the members' best interests because of conflicts of interest. Action may include removing and replacing the trustee or seeking a Court's award of compensation. Members may be protected by virtue of liability insurance taken out by the trustee.
- Investment risk — this risk is managed through the prudential framework, the duty imposed on trustees to manage funds in the best interests of members and through investing in a diverse range of assets.

6.49 The regulatory framework for superannuation contains a range of provisions addressing other forms of risk — such as the non-payment of contributions, breach of duties by trustees, funds that are facing financial difficulty — together with a range of regulatory, civil and criminal remedies. Appendices 3.1 to 3.3 provide additional detail. Moreover, in practice, the Australian Government already has in place a 'safety net' for superannuation funded by taxpayers in the form of the old age pension for those with limited assets and/or income in retirement.

6.50 Defined benefit products would also be excluded, according to the proposed design principles, because the promise of capital certainty is being provided by a non-prudentially regulated body (the employer). Defined benefit fund members are covered by Part 23 of the SIS Act for losses as a

result of fraud or theft. Compensation is, however, provided only where the loss is unable to be met by the employer while remaining solvent. If greater protection for the members of defined benefit schemes is raised as a concern, a guarantee scheme may not be the most desirable or direct remedy. For example, it might be possible to strengthen requirements for employers to fully fund their defined benefit schemes. Expected changes to accounting rules will soon require businesses to account for any shortfall in their superannuation schemes, potentially reducing any incentives to under-fund such schemes. This may promote better funding practices and may hasten the trend away from defined benefit schemes.

6.51 Superannuation funds placed in an RSA with an ADI or life insurance company could be eligible for inclusion in the proposed scheme, given their likeness to deposit products and the associated capital certain promise. It may not be appropriate, however, to apply the same (relatively low) monetary limits to RSAs as to other deposit products offered by ADIs as the balances in RSAs could be very large for consumers that have been contributing for many years. However, the inclusion of RSAs and not other superannuation products could potentially affect competition within the industry; contrary to the objective of competitive neutrality.

6.52 There are at two general categories of products offered in the drawdown phase: market-linked annuities and pensions; and guaranteed annuities and pensions. Consumers of market-linked products, such as allocated and growth annuities and pensions, deliberately expose their principal to market risk and so these products would be excluded from any guarantee scheme by the proposed design criteria. Consumers of guaranteed annuity and pension products receive a guaranteed indexed income stream for a fixed number of years or for life that is not affected by movements in market prices. As such, these products may warrant inclusion in any guarantee scheme.

6.53 The compulsory nature of superannuation raises the concern that individuals are thus required (perhaps involuntarily) to bear market risk on a large portion of their financial wealth. Because the criteria utilised to determine coverage of any guarantee scheme excludes market risk, such savings would not be protected from adverse market movements.

6.54 It would be unwarranted and costly for a government to consider any scheme which protected superannuation fund members against short-term market downturns in asset values that could be achieved by, for example, requiring funds to protect against market downturns by purchasing put options on the stock market index, or by holding a larger proportion of low

risk assets. The effect of reducing short-term risk bearing by funds would be to reduce the average returns likely to be achieved by superannuation funds over the long term horizon of importance to their members.

6.55 However, to the extent individuals have concerns that the retirement value of their compulsory long-term superannuation savings may be diminished by an untimely market downturn, some possible policy options could be considered. One such option would be to ensure that all members of superannuation funds have freedom to choose, within the fund, between alternative portfolios with different risk characteristics. Thus, members approaching retirement could elect to have their funds placed in a portfolio of low risk assets (such as government bonds) to protect against market risk. Younger members, for whom the 'swings and roundabouts' effect of economic cycles have time to take effect, may elect to invest in more risky portfolios.

6.56 One policy concern with this approach may be that risk averse individuals may elect for excessively conservative investment strategies which work against accumulation of adequate retirement income. In addition, this approach assumes that consumers are able to understand and take appropriate actions to manage market risk. Although the problems of imperfect information and risk assessment capability are less in this context than in dealing with counterparty risk (that is, the possible failure of a financial institution) this may remain a cause for concern. If so, policies to ensure that superannuation funds provide appropriate information to members to enable them to make informed portfolio choices appropriate for their life cycle position and risk tolerance could be considered.

6.57 Concerns about compulsion also can arise from the resulting inability of members to 'exit' a fund which is performing poorly (and is expected to continue to do so). This impacts adversely upon market discipline of fund managers and trustees by preventing members from sanctioning poorly performing agents. Full portability of superannuation would resolve this problem, but potentially create problems of excessive transfers between funds if members react excessively to short-term return performance. Limited portability, enabling members to direct future contributions to a different fund (but with past contributions remaining under the management of the previous fund), may be an option worthy of pursuing in this regard.

Third party issues

6.58 The design criteria suggest excluding wholesale consumers from the coverage of any guarantee scheme. However, an exception may arise where the consumer of the product is considered to be a wholesale consumer but the ultimate beneficiary of the product is a retail consumer. For example, a large business buys an insurance policy from a general insurer to cover itself in case one of its workers is injured and makes a claim for compensation. If the general insurer fails and is unable to pay a worker's compensation claim by the large business, should a guarantee scheme compensate the large business or should the business be expected to meet all or part of the worker's claim from its own resources? Another common example where this issue is relevant is where an employer takes out group life insurance for its employees.

Product coverage

6.59 Following from the above discussion, the following table shows possible product coverage of a guarantee scheme based on the design criteria outlined earlier.

Table 6.1: Product coverage

	Guaranteed Products	Non-Guaranteed Products
Deposits	**ADIs** Transaction accounts Savings accounts Cash management accounts Term deposits Retirement savings accounts Capital guaranteed performance deposits **Life insurers/Friendly Societies** Capital guaranteed deferred annuities Retirement savings accounts	**ADIs** Bank accepted bills (Negotiable) Certificates of deposit
Risk	**General insurers** Home and Contents Domestic and Commercial motor vehicle Business premises CTP motor vehicle Workers' Compensation Builders' Warranty Marine and Aviation Professional Indemnity Public Liability Travel Salary continuance **Life insurers** Accident Trauma Death Disability Business continuity	**General insurers** Mortgage A large proportion of policies in the marine and aviation, public and product liability, and commercial motor vehicle classes will not be covered as they are taken out by wholesale consumers. Consideration needs to be given to whether to exclude liability classes where the policyholder is a wholesale consumer. **Life insurers** Consideration needs to be given to whether to exclude group life insurance policies where the policyholder is a wholesale consumer.
Income stream	**Life insurers** Guaranteed annuities **Superannuation funds** Guaranteed pensions	**Life insurers** Allocated, growth annuities **Superannuation funds** Allocated, growth pensions
Investments		**Subsidiaries of ADIs** Unit trusts Cash management trusts **Life insurers** Non-risk component of whole-of-life policies Managed funds Approved deposit funds **Superannuation funds** Defined contribution funds Defined benefit funds Approved deposit funds Pooled superannuation trusts

Deposit products

6.60 The difficulties likely to occur in distinguishing between transaction and savings products offered by ADIs suggest that a guarantee scheme should not attempt to make the distinction.

Possible coverage

Australian dollar deposits of households, private unincorporated businesses and community service organisations repayable in Australia held in transaction, savings, cash management, term deposit and RSAs with locally incorporated ADIs.

6.61 The objective of coverage, as well as protecting against loss of wealth, is to provide rapid restitution to restore liquidity of the consumer, and support continued operation of the retail (high volume, low value) payments system. Rapid restitution and simplicity may be facilitated by relatively low monetary limits, limited coinsurance and few, if any, other qualification requirements.

6.62 This proposed coverage would exclude large-denomination, deposit-like products such as bank accepted bills and certificates of deposit. These products are likely to be used almost exclusively by wholesale consumers and can be traded in secondary markets at values that will fluctuate in accordance with interest rate movements and changes in perceived counterparty risk of the issuer.

Coverage limits

Monetary limits

6.63 A rule of thumb, identified by the Financial Stability Forum (FSF 2001) in its guidance on deposit insurance, is to set thresholds at twice the average level of per capita income. In the Australian context, that would suggest a threshold of approximately $75,000 per customer. Chapter 5 reported that more than 80 per cent of Australian households have total deposit balances of less than $60,000. A higher threshold may be appropriate for RSAs (and eligible rollover funds) given the purpose for which balances are held.

Coinsurance

6.64 Coinsurance may be appropriate both to leave some incentives in place for consumers to consider their choice of financial institution; and in order to ensure they share in a reasonable proportion of scheme costs. For example, compensation of 90 cents per dollar of deposit may be appropriate. However, since many consumers who would be covered have a limited ability

to assess or to avoid risk and would indirectly share in meeting the cost of compensation schemes through premiums paid by institutions, the benefits from coinsurance may be limited.

Principal and interest

6.65 Transaction accounts will generally not be used for generating investment returns. However, savings products are usually associated with an objective of generating interest income or other forms of earnings. It seems both appropriate and convenient to compensate for interest already credited to the account (subject to any monetary limits) but there may be practical problems in compensating for accumulated interest that has not yet been credited.

Special dispensation

6.66 Despite the need for some level of monetary threshold, this category of financial product might be expected to present a number of special cases for consideration. For example, deposit accounts may temporarily contain the proceeds of a property settlement, insurance settlement or superannuation fund rollover. Some accounts, such as real estate and legal agent trust accounts may contain funds on behalf of many individuals.

6.67 Rather than a uniformly prescribed set of monetary limits, there may also be a need to accommodate special cases on a discretionary basis. For example, in the event an individual lost the proceeds of a recently arranged loan or asset sale. Such provisions would be difficult to administer and involve additional costs.

Maximum maturity of term deposits

6.68 Many deposit insurance schemes around the world appear to apply some arbitrary limits on the maturity of term deposits that are covered. A commonly imposed cap is five years. This appears to be on the basis that there should not be a guarantee over products where there is a ready risk-free or low risk alternative (such as government bonds) available. Presumably this also reflects an expectation that a consumer who is willing to lock away their savings for such a long period is making an explicit choice. However, there appear no definitive criteria for distinguishing between short-term and longer-term term deposits on such an arbitrary basis.

Modelling

6.69 The Study's modelling has proceeded on the assumption that all household, private unincorporated business and community service

organisation deposits would be insured. The relative proportion of these deposits to total liabilities and total deposits differs across the range of ADIs.

Table 6.2: Retail deposit coverage

	Major banks	Other domestic banks	Foreign subsidiary banks	Building societies	Credit unions
Per cent of liabilities	25	35	29	77	88
Per cent of deposits	53	65	53	79	94

Source: Australian Prudential Regulation Authority, June 2003 (see Appendix 2.1).
Retail deposits are assumed to be those of households, private unincorporated business and community service organisations.

6.70 Further information would be required to extend the analysis and to consider how monetary thresholds, coinsurance and other design features might serve to further reduce the potential scheme costs. Estimates of how thresholds affect costs have not been incorporated into the model at this stage because sufficiently disaggregated data is not available.

6.71 For example, initial analysis based on an APRA survey of a sample of ADIs revealed the following breakdown of deposits.

Table 6.3: Deposit thresholds

Product Coverage	Coverage limits	Per cent of class	Per cent of consumers
All Deposits (excluding Certificates of Deposit (CD))	$250,000 $100,000 $50,000	65-80 of all deposits (excluding CD) 50-60 of all deposits (excluding CD) 35-45 of all deposits (excluding CD)	99.2-99.8 97-99 94-98
Household Transaction Deposits	n/a	10-40 of all deposits (excluding CD) 35-40 of household deposits	n/a
Household Savings and Term Deposits	n/a	30-50 of all deposits (excluding CD) 60-65 of household deposits	n/a
Household Foreign Currency Deposits	n/a	0.03-0.6 of all deposits (excluding CD) 0.1-1 of household deposits	n/a
Small Business Transaction Deposits	n/a	4 of all deposits (excluding CD) 40-75 of small business deposits	n/a
Small Business Savings and Term Deposits	n/a	1-2 of all deposits (excluding CD) 25-60 of small business deposits	n/a

n/a Data not available.
Source: Australian Prudential Regulation Authority, June 2003.

Risk products

Possible coverage

Outstanding claims under 'personal asset and income' insurance policies offered by APRA-regulated life insurance or general insurance companies

6.72 The objective of coverage would be to provide restitution to retail policy holders in accordance with the terms of their policies of insurance.

6.73 Consideration needs to be given to whether to cover outstanding life insurance claims under group policies taken out by an employer on behalf of its employees.

Third-party claims covered by liability insurance policies offered by APRA-regulated general insurance companies

6.74 The objective of coverage would be to provide appropriate restitution either to the policyholders or directly to the third-party beneficiaries of 'liability' insurance products.

Interim cover for unexpired insurance policies

6.75 The objective would be to cover any claims made by policyholders under their existing policies for a specified period of time after the collapse of their insurer, in recognition of the fact that it may not be possible to find alternative insurance immediately. Consideration would need to be given, however, to the possibility that replacement cover may not be available because of a lack of an alternate provider, or because a person may have become uninsurable. In such circumstances both future cover and cover for liability from past (but not yet recognised) events may be unavailable or the cost of effective cover may be prohibitive.

Coverage limits

Monetary limits

6.76 The value of assets and income protected by personal classes of insurance will differ markedly across the spectrum of products. In some cases, such as for home and contents insurance, the protected assets may reflect a large proportion of an individual's or household's wealth. In the context of life insurance, the lump sum or present value of future income may appear large, but this might be expected given the need to provide an income to beneficiaries for a long period.

6.77 Relatively higher monetary limits might therefore be appropriate for the risk products category than for deposit accounts. Alternatively, it may be more appropriate to rely on a combination of coinsurance and eligibility criteria rather than strict monetary caps.

Coinsurance

6.78 In general, coinsurance would be an attractive design feature due to its limited but targeted risk-sharing properties. It is, however, difficult to justify application of coinsurance to third-party beneficiaries of insurance policies who did not take out the cover in the first place.

Eligibility and means testing

6.79 An insurance guarantee scheme might be targeted, or introduced at lower cost, by imposing eligibility and means tests. Scheme administration would be more complex as a result.

Modelling

6.80 The Study's modelling has assumed that only outstanding claims (as reported to APRA) are covered. Insufficient information exists on the profile of household insurance policies to determine the impact of monetary limits and coinsurance, and on the cost of providing interim cover.

6.81 The following inputs have been assumed for modelling purposes at this stage.

Table 6.4: Risk products — proportion of total liabilities covered

Sector	Coverage (per cent of liabilities)
General insurance (provision for outstanding claims)	61
Life insurance (conventional risk products, including group policies)	9[4]

Source: Australian Prudential Regulation Authority, June 2003.

4 The bulk of life insurers' liabilities are superannuation liabilities (86.1 per cent as at June 2003). Life insurers also offer other investment products that are not proposed to be included in a guarantee scheme.

Income products

Possible coverage

'Guaranteed' life insurance annuities and superannuation pensions offered by APRA-regulated entities

6.82 These are a special category of income product which entails a guaranteed income promise on the part of the provider. The purchaser is not exposed to market fluctuations in the value of their asset and may not surrender the policy in the way that allocated or growth annuity or pension products may provide.

6.83 The objective of coverage could be to provide a lump-sum conversion equivalent or an ongoing income stream reflecting the residual principal value of such products. Coverage could be on a per person, per institution basis.

Other providers and products

6.84 It would be necessary to identify and, if appropriate, prescribe coverage of other similar products (that is, where the level income from the annuity or pension or the residual capital value are guaranteed by the financial institution; and where the purchaser is not taking on market risk) offered by other APRA-regulated financial institutions.

Coverage limits

Monetary limits

6.85 These products already have monetary thresholds applied for tax and social security purposes. The current limit on the amounts that may be placed in pensions and annuities, to gain the associated benefits, is twice the 'reasonable benefit limit'.

6.86 Given that the residual value of the annuity reduces as income is paid out, it would be necessary to calculate an appropriate amount of compensation, reflecting residual principal.

6.87 Life insurance and pensions tables exist for calculating values of annuity products (that is, for family law purposes).

Coinsurance

6.88 Coinsurance may be an appropriate feature if it is believed that the initial choice associated with choosing a provider of a guaranteed annuity or pension product might be made on a more informed basis as a result.

Modelling

6.89 It is difficult to differentiate between life insurance savings and income products with available data, as the categorisation appears to depend on the stage in a product's life cycle rather than on terminology. For this reason, life insurance savings and income products have been taken together for modelling purposes. The following table represents those non-investment linked liabilities of life insurers.

Table 6.5: Savings and income products — proportion of life insurance liabilities

Product category	Coverage (per cent of liabilities)
Investment account	7.2
Group investment account	5.7
Term annuity	3.9
Lifetime annuity	3.7
Total	20.5

Source: Australian Prudential Regulation Authority, June 2003.

6.90 Further information is required to establish the proportion of these liabilities that are capital guaranteed; and the proportion of outstanding liabilities associated with 'guaranteed annuities'. Information relating to superannuation pensions is also needed.

Investment products

6.91 There is a broad spectrum of investment products available to retail financial consumers, in some cases by APRA-regulated financial institutions, which would not appear to fall within the logical scope of coverage for reasons discussed earlier in this Chapter.

6.92 Excluded products to which retail consumers are likely to have greatest exposure are superannuation products in both the accumulation and drawdown phases. Prudential regulation of superannuation funds seeks to reduce these risks by measures including the requirement for superannuation trustees to meet fitness and propriety tests and Part 23 of the SIS Act (addressing losses due to fraud or theft).

6.93 APRA-regulated financial institutions also offer a range of investment products to retail customers through subsidiary operations. For example, cash management trusts, managed funds and other collective investments, and securities of the institutions themselves would fall outside the scope of coverage suggested by the design criteria.

CHAPTER 7: COST OF A GUARANTEE

Overview

- Guarantee schemes involve a redistribution of losses due to financial institution failures. This redistribution is not of itself a cost to society, but some participants may perceive that private costs exceed the likely benefits.
- Scheme design variables determine the coverage of any guarantee. The scheme costs depend on the proportion of total liabilities covered. The incidence of guarantee scheme costs depends on the capital structure of the industry, particularly where preference arrangements are in place.
- While there are a number of theoretical possibilities for deriving cost estimates presented, all involve considerable practical problems, particularly given the relatively limited experience with financial institution failure in Australia.
- Estimation of scheme costs in the insurance sectors is made more difficult by the fact that the value of insurance liabilities is more prone than deposit liabilities to uncertainty.
- Further industry data would be required to allow the appropriate calibration of model parameters. Estimates that have been derived for the purpose of the Study do, nevertheless, fall within the (broad) range of estimates derived from international experience.
- Subject to a number of important caveats, on the basis of the evidence and theory available, the 'insurance costs' of a limited explicit guarantee in Australia are expected to be very low.
- Comparison with costs in other countries should take into account that deposit insurance and insurance guarantee premiums often involve a component for prudential supervision, a cost which Australian institutions already bear through supervisory levies.

Background

7.1 This Chapter examines a number of methods for estimating the costs of explicit guarantee schemes. None of the methods presented can provide a definitive estimate of scheme costs. Any estimates of the costs must be strongly qualified, given uncertainties about the probability, magnitude, timing and nature of financial institution failures in the future. The estimates are based upon relatively simple assumptions about the possible scope of institutional and product coverage of a guarantee (examined in Chapter 6).

7.2 A critical point to note is that the losses in insolvency will already have been incurred. A guarantee scheme, like any insurance scheme, simply involves the pooling of risks and redistribution of losses among various parties. Although this will reduce the incidence of loss for a particular group, it does so at the expense of another group of stakeholders. The essential question underlying a guarantee scheme is 'who pays?' A scheme would also involve some additional costs in terms of its administration and possible impact on industry and consumer behaviour.

7.3 Careful scheme design can serve to limit the potential costs. In particular, it is necessary to consider the structure of the sectors in which a scheme might apply. Too generous a scheme may not be sustainable, particularly in a sector with relatively few, large institutions. The viability of a scheme will also depend on the breadth of the funding base (discussed in Chapter 8).

7.4 The estimates derived in this Chapter are consistent with a range of empirical studies and international experience. In comparing the costs to that experienced in other countries, it is necessary to make appropriate allowance for the different functions performed by guarantee schemes. For example, in some countries the scheme administrator has prudential supervision functions. In Australia, these functions are already undertaken by the Australian Prudential Regulation Authority (APRA) and funded by industry, and need not be duplicated.

7.5 Much of the later material in this Chapter on estimating the insurance cost of guarantees (commencing at paragraph 7.31) is technical in nature.

Redistribution of losses and new costs

7.6 One particularly difficult aspect of financial system guarantees is how to appropriately assess their cost. An argument encountered throughout the Study has been that a guarantee scheme will entail an additional cost (to consumers or shareholders) that the industry considers is unwarranted or excessive.

7.7 This view is sometimes based on a misconception. Taken from the perspective of society as a whole, a well-designed guarantee scheme simply alters the distribution of the losses[1] associated with insolvencies which occur.[2]

7.8 The application of the insolvency regime (including preference arrangements) will determine how losses are, in the first instance, distributed among the stakeholders (managers, owners, employees, creditors and customers) of the failed firm. A guarantee scheme, which provides protection to some customers of a failed institution involves redistributing those losses more broadly across the industry and/or society.

7.9 Therefore, the task of estimating the cost of a guarantee involves two elements:

- predicting the probability and magnitude of losses associated with financial institution failure in the future; and
- examining the distribution and timing of loss-sharing among a range of stakeholders.

7.10 The first element can largely be considered independently of any guarantee (provided guarantee design features mitigate moral hazard issues). Competitive market forces will lead to occasional failures and exits from the industry. The various components of the regulatory framework, particularly market discipline and prudential regulation play a central role in determining the magnitude of losses associated with failure. APRA's resolution and closure practices for failed institutions are an important line of defence, mitigating any

1 The term 'losses' is used to reflect the deficiency of assets relative to liabilities in the case of a financial institution's insolvency. The term 'costs', when used in relation to the extent of protection afforded by a guarantee, is taken to reflect the quantum of losses borne by a particular party. This quantum may be changed by redistribution.

2 It should be noted, however, that the size of the losses may be determined by the general effectiveness of, and incentives for risk-taking created by, the regulatory framework (inclusive of any guarantees).

losses that would need to be borne by any guarantee scheme and its contributors.

7.11 The second (redistribution) element is strongly influenced by the relevant insolvency framework and the design of any guarantee scheme. The insolvency framework determines the initial distribution of losses. The design of a guarantee scheme determines how much of the loss otherwise suffered by certain stakeholders is compensated. It also determines how the losses are redistributed across society and over time.

7.12 The annual 'insurance cost' of a guarantee scheme can therefore be thought of as the total amount of compensation paid by the scheme each year to achieve the desired level of redistribution. As in any insurance arrangement, the contributions to and distributions from the scheme serve to share losses resulting from adverse events affecting participants. In the case of a guarantee scheme, the purpose of contributions is to cover the desired redistribution of losses due to financial institution failures.

7.13 A second potential cost is that a poorly designed guarantee could increase the frequency and/or cost of failures due to the behavioural responses of firms, consumers and regulators. The United States (US) Savings and Loans crisis is often highlighted as an example of this, with ineffective market discipline, regulatory forbearance and inadequate supervision leading to exceptionally large losses, in that case ultimately borne by the taxpayer.

7.14 In addition, any guarantee scheme will involve direct costs associated with its administration. From the perspective of contributing institutions, it is also possible that guarantee pricing arrangements, which do not appropriately reflect risk of failure could involve an unfair allocation of costs among participants.

7.15 From the perspective of a guarantee scheme, or those parties required to fund it, the value of compensation to be met by contributions can be viewed as a cost. From a societal perspective, it is better viewed as the 'extent of redistribution'. The term 'costs' is used throughout this Chapter for simplicity.

Box 7.1: Experience with other redistribution mechanisms

In the past, the mechanism for sharing of losses from financial sector insolvencies in Australia has generally involved taxpayer funding. In such cases, governments have arranged to meet the costs associated with financial assistance to some of those who would otherwise have suffered losses.

In the case of the losses associated with the State Bank of Victoria, the motoring public was asked to foot the bill. The response in that case involved the use of public money which was subsequently recouped from Victorian motorists through an additional tax on petrol.

In the case of the scheme costs associated with the failure of the HIH Group of Companies (HIH), a number of different cost-sharing mechanisms were used. The Commonwealth funded the HIH Claims Support Scheme (HCSS), which means that all taxpayers will have proportionately shared the cost. In Queensland, compensation for the Compulsory Third Party (CTP) motor vehicle insurance losses of HIH's subsidiary, FAI, will be recouped from motorists for some time. In NSW, the compensation costs associated with claims on CTP and Builders' Warranty insurance policies are being recovered from the insurance industry over approximately a five-year period.

Scheme costs

7.16 The following discussion analyses the costs of a guarantee scheme across the three categories identified above:

- insurance (or guarantee) costs: the aggregate amount of compensation paid to eligible customers which must eventually be funded from some source;
- administration and compliance costs: the costs associated with establishing, operating and maintaining the bureaucracy to support a scheme and industry's interaction with it (including costs of litigation and settlement); and
- indirect costs: the costs that a scheme might impose on society, if it were to lead to adverse behavioural responses that increased the frequency or size of failure.

Insurance (or guarantee) costs

7.17 Guarantee schemes alter the magnitude, distribution and timing of costs borne by various agents by redistributing the losses associated with financial institution failures. There are a number of relevant parameters to consider in this regard which are listed in Box 7.2.

7.18 The cost impact of some of these parameters will be independent of the scheme, but others can be influenced through scheme design.

7.19 In addition to the aggregate level of insurance-related costs, it is also relevant to consider how choices about scheme funding could impact on the distribution of costs faced by individual scheme participants. A more detailed presentation of some technical issues surrounding estimates of insurance or guarantee costs is presented in a subsequent section. The range of issues surrounding funding and pricing are considered in Chapter 8.

Administration and compliance costs

7.20 Any scheme will naturally entail administrative and compliance costs, although the magnitude of these can be mitigated by design choices. At a broad level, a choice arises as to the appropriate roles and functions of a guarantee scheme administrator. For example, the HCSS scheme and the United Kingdom's (UKs) Financial Services Compensation Scheme (FSCS) both essentially operate as a 'cash box', determining eligibility of claims and administering payouts and levies (in the case of the UK). The US Federal Deposit Insurance Corporation (FDIC) demonstrates a different approach, whereby regulatory, supervisory, resolution and compensation functions are combined — at a higher headline cost.

7.21 The former approach may be suited to Australia's circumstances, given the well-developed prudential framework. Also, reflecting the relatively smaller size of our financial system and fewer firms, it may be attractive for any scheme to be 'brought off the shelf' only when needed, rather than being an enduring part of the regulatory architecture.

7.22 Minimising administrative and compliance costs is a goal which might be achieved by maintaining APRA as the sole prudential regulator and supervisor, with a scheme having no separate supervisory role. This requires clearly defined arrangements for cooperation between APRA and the scheme and well-specified governance arrangements.

Box 7.2: Insurance and guarantee costs — determining parameters

Total loss and loss mitigating parameters

- Market share of the failed firm — a co-determinant of the total loss in insolvency.
- Extent of insolvency — a co-determinant of the total loss in insolvency.
- Generosity of the scheme — determines the proportion of the total loss to be covered (that is, the total cost). This incorporates a number of scheme components, such as institutional and product coverage and thresholds).
- Closure rules — determine the point at which regulatory action is taken to prevent further losses.

Loss-sharing parameters

- Priority arrangements — determine whether, and the extent to which, certain creditors of the failed firm are the first to bear the loss (that is, to avoid a cost to a guarantee scheme).
- Coinsurance — determines the extent to which protected customers share the loss (that is, to avoid a cost of a guarantee scheme).
- Funding — determines how (at an aggregate level) taxpayers, industry or other external parties share the cost of a guarantee scheme.
- Pricing — determines the relative contributions to meeting costs borne by those participating in the scheme.

Timing parameters

- Contribution arrangements — determine when contributions are made, and the rate at which scheme assets are accumulated or scheme debt is retired.

7.23 There would be industry compliance costs in any additional requirements to inform consumers of the status of financial products and in ensuring the appropriate record-keeping and reporting arrangements were satisfied. The latter requirements need not be particularly onerous, but may require some additional information to that currently collected by APRA.

7.24 The clarity of powers and the roles and responsibilities of APRA and any scheme in terms of failure management and resolution processes would also be important determinants of administrative costs. The interaction between APRA, the scheme and the insolvency framework are similarly important. However, it is essential to note that the appropriate assessment of such failure management costs involves comparison with those arising in the absence of a guarantee scheme, and distinguishing additional costs from redistribution of costs.

7.25 These issues are discussed in more detail in the later Chapters addressing governance and accountability issues and regulatory implications.

7.26 Table 7.1 provides some estimates of costs associated with schemes found internationally. It is important to note that in some cases (such as the FDIC in the US) some part of those administration costs will be associated with supervision, inspection and liquidation activities of the guarantee scheme. In Australia, APRA-supervised institutions already pay levies to provide the resources for APRA to exercise its functions under the prudential framework.

Indirect costs

7.27 A guarantee scheme could also have a fundamental impact on the behaviour of financial system participants.

7.28 The practical impact of a limited explicit guarantee scheme would be to create a limited range of default-free (or with coinsurance, low default risk) financial products for certain agents in the economy. As noted in Chapter 4, by diluting the consequences of risk-taking, this can give rise to moral hazard and associated behavioural problems.

7.29 Any such effects must be assessed against the existing perceptions of relevant stakeholders about the safety of those products and whether these would change with the introduction of a guarantee scheme. It may be that some stakeholders already have perceptions of a relatively broad implicit guarantee, or misinterpret the level of protection afforded by the prudential

Table 7.1: International comparison of guarantee scheme administrative costs

			Insurance			
		Banking	Life insurance	General insurance	Investments	Total
Canada						
Financial year to 31/12/2002	Operating expenses	25,662	3,769			
CAN ('000)	Employees	92	N/A			
	Compensation paid	0	-6,200			
	Levies	75,679	0			
	Size of fund	1,102,324	121,999			
United Kingdom						
Financial year to 31/03/2003	Operating expenses	1,160	594	1,657	9,005	12,416
GBP ('000)	Employees					108
	Compensation paid	62	326	130,969	63,023	194,380
	Levies	0	0	-170	56,035	55,865
	Size of fund	9,406	2,653	95,187	10,726	117,972
United States						
Financial year to 31/12/2003	Operating expenses	935,080				
USD ('000)	Employees	5311				
	Compensation Paid	942,143				
	Levies	95,090				
	Size of fund	46,022,260				

Source: Banking: http://www.fdic.gov/about/strategic/report/2003annualreport — (excludes FSLIC resolution fund), Banking: http://www.cdic.ca/bin/cdicar_e.pdf Life Insurance: http://www.compcorp.ca/aboutus/CompCorp2002AnnualReport.pdf, All schemes: http://www.fscs.org.uk/files/documents/pdfs/wthgychlgsbgaor.pdf

framework and pay less regard to risk than those who believe that no such implicit guarantee exists.

7.30 Limiting the coverage of a scheme may mean that the behaviour of the price-setting participants in financial markets, typically involved in higher value transactions, is largely unaffected such that overall effects on the flow of funds and financial intermediation is broadly unchanged.

Estimating insurance or guarantee costs

7.31 The following section explores a number of possible methods for deriving estimates of the potential costs of guarantees. It presents and discusses the results of the approaches taken during the Study.

7.32 More detailed cost estimates would be necessary under any pre-funded scheme in order to determine the required level of aggregate contributions to meet expected payouts (and accumulate a pool of funds of the desired size). It is also desirable to understand cost implications under a post-funded model, in order to estimate the appropriate capital provisioning by covered institutions. Regardless of possible scheme funding arrangements, the necessary debate should benefit from a closer appreciation of how scheme design and other variables can affect the level of protection provided by, and cost of, a scheme. Mis-estimating the costs could also lead to problems with determining appropriate premiums or levies for any guarantee scheme (Laeven 2002).

7.33 The ***costs of a guarantee scheme*** arise from the failure of a financial institution. A useful starting point is thus the ***expected loss*** (EL) to creditors from the possible failure of a particular institution within some defined time horizon (such as a year). The expected loss can be expressed as the product of three factors:

EL = PD x LGD x EAD

Where:

PD is the ***probability of default*** (failure) over the specified time horizon;

LGD is the ***loss given default*** (defined below) and;

EAD is the ***exposure at default*** (or size of the institution as measured by liabilities).

7.34 The ***loss given default*** is an expression of the extent of insolvency, measured per dollar of liabilities, that is, the proportion of the failed firm's liabilities that cannot be met.

LGD = ((Liabilities - Assets)/Liabilities)[3]

7.35 A guarantee scheme has exposure to the possible failure of any of its members. The ***expected scheme cost*** will be less than the expected loss (to all liability holders) because of the interaction of two effects. First, it is necessary to account for the impact of the ***scheme design,*** reflecting the focus of a guarantee scheme towards certain customers rather than creditors generally. In general terms, this can be captured by an estimate of the proportion of liabilities covered by a scheme. That proportion will be determined by the relevant guarantee design variables, including product coverage and monetary thresholds on compensation.

7.36 Second, it is also necessary to allow for relevant ***redistribution factors***, which reduce the external funding requirement for any scheme providing protection to a designated subset of liabilities. These include the depositor preference provisions of the *Banking Act 1959*, any relevant priorities for insurance policyholders and any coinsurance under a guarantee scheme. Preference provisions reduce the likelihood of losses affecting the value of covered liabilities (since other creditors have lower priority as claimants). Coinsurance means that should the value of the covered liabilities be affected, those customers bear part of that loss.

Thus:

Expected Scheme Cost = Expected Loss to all Creditors

- Adjustments for Scheme Design/Coverage

- Adjustment for Redistribution Factors

7.37 The total expected cost of the scheme can be calculated as the sum of the expected cost associated with each member. If contributions from members are set equal to this amount then, ignoring administrative costs, the scheme would expect to break-even each year. (Note, however, that setting contributions this way assumes that the scheme provider should get no

3 This term provides only a technical expression for the point of insolvency. A more accurate legal definition might refer to the inability of an institution to meet its liabilities, 'as and when they fall due'. The simpler approach is taken for modelling purposes.

compensation for bearing the risk associated with actual costs deviating from those expected).

7.38 The expected cost of the scheme is perhaps best calculated as a per annum figure, even though failures may occur quite infrequently (much less than one per year). To do so requires an estimate of the probability of failure within a one year horizon and of the scale of losses involved.

7.39 Both the probability of failure and scale of losses will depend crucially on other aspects of the regulatory framework, including the role of market discipline, the performance of the board and management and the effectiveness of the prudential framework.

7.40 Clearly, estimating expected losses and costs is highly problematic. The probability of default, in particular, cannot be estimated reliably since past experience may be a poor guide to the future. This is especially so in Australia's case where past experience with failure is relatively limited, and there is no basis for expecting that any two failures would be alike or as likely.

7.41 Each country's financial system structure and regulatory framework is generally unique, so overseas experience may provide only limited guidance as to what to expect. There would also be methodological problems with applying parameters from overseas experience in any model in the Australian context.

7.42 Therefore, it appears necessary to consider a range of methods for estimating the costs or expected costs of a guarantee scheme. Some possible methods are as follows:

- scenario analysis;
- expected loss estimates;
- options pricing models; and
- mathematical simulation techniques.

Scenario analysis

7.43 One fairly simplistic method involves assuming that default of a single financial institution has occurred. This involves ignoring, for the time being, the probability or frequency of such an event occurring. It therefore provides a ***cost given default***, encapsulating the loss given default and exposure at default.

7.44 This analysis (explained further in Appendix 6.1) benchmarks costs associated with failure of various sized institutions against the aggregate profile of each industry sector. It can assist in understanding the range and industry level impact of total losses that might be associated with insolvencies in each sector, and how the existing safety net and various scheme design variables might serve to limit the total cost of a guarantee.

7.45 Assumptions are embedded within this analysis, including the priority of claims over the failed firm's assets (if any), the extent to which a scheme limits or targets compensation payouts, and the market structure of the sector or sub-sector in question.

7.46 A weakness of the approach is that it assumes that all firms in a particular sector or sub-sector are homogenous in their profile of assets and liabilities. This is obviously not the case in practice. The approach also assumes an instantaneous failure, rather than some time horizon over which losses accrue.

7.47 The output of this approach is a matrix of cost estimates, varying along the dimensions of market share and extent of insolvency of the hypothetical failed firm. It is not possible for the model to provide guidance as to the probability or likelihood of any particular result being achieved.

7.48 However, the major benefit of using the model is to show how the cost to a scheme is affected by factors such as scheme design and preference arrangements; and the impact of market structure upon scheme viability.

7.49 The model assumes that the following liabilities are covered by hypothetical guarantee schemes for each relevant industry sector or sub-sector.[4]

- Australian dollar deposits of households, private unincorporated businesses and community service organisations repayable in Australia held in transaction, savings, cash management, term deposit and retirement savings accounts with locally incorporated authorised deposit-taking institutions (ADIs).

- Outstanding claims under 'personal asset and income' insurance policies offered by APRA-regulated life insurance or general insurance companies.

- Third-party claims covered by liability insurance policies offered by APRA-regulated general insurance companies.

  – Note that the cost of providing interim cover for unexpired insurance policies has not been incorporated into the model at this stage.

- Savings and income products offered by APRA-regulated entities.

  – All savings and income products are included for modelling purposes, although only a subset of products, such as complying annuities and other capital-guaranteed products would be expected to meet the relevant tests for coverage. Further discussion is contained in Chapter 6.

7.50 The assumptions underpinning this analysis were presented in Tables 6.2, 6.4 and 6.5.

7.51 The results, presented in Table 7.2, demonstrate how:

- Preference arrangements (such as depositor preference) can provide a significant shield for any guarantee scheme, but the extent of protection depends on the financial diversity of the sector in question. In the case of major banks, an asset to liability ratio of 49 per cent must be reached before any scheme costs would arise; whereas for building societies and credit unions, the critical ratio is approximately 95 per cent. In the case of insurers, scheme costs are assumed to arise immediately beyond the point of

4 Note that due to difficulties in obtaining all relevant information, the modelling assumptions do not correspond perfectly with the product coverage discussion in Chapter 6. The key differences are noted as relevant. In addition, thresholds, coinsurance and eligibility criteria are yet to be incorporated into the model as further information is required.

insolvency (100 per cent) as there is not sufficient information to calculate the correspondence between policyholder liabilities and reinsurance assets.

  - The model ignores the fact that a guarantee scheme might still serve an important role in compensating protected customers earlier than would occur through a liquidation, and would subsequently recover such amounts from the assets of the failed institution.

  - The model also assumes that the profile of liabilities remains constant, whereas from international experience it appears quite common for the relative share of subordinate (non-preferred) liabilities to reduce prior to insolvency.

  - The model ignores the reality that, particularly for life insurance and general insurance failures, the costs would be spread over time. For example, compensation payments could reasonably be expected to run for 15 years or more.

- The capacity of a scheme to cope with a given failure is linked to the market structure of the sector in question. Where a sector has fewer, larger participants (that is, the largest firm has a high market share), its (hypothetical) failure would be more destabilising to remaining participants. For example, the market share of the largest building society or credit union is much less (say 10 per cent) than that of the market share of the largest major bank, life insurer or general insurer (say 20 per cent).

7.52 The size of the funding base is also important, with a broader base resulting in lower and presumably more stable premiums expressed relative to the funding base. For example, a general insurance guarantee scheme that is funded by all classes of insurance business is estimated to involve premia per dollar of the business included in the funding base in the order of 60 per cent of a scheme funded only by protected classes of business (that is, personal and liability classes).

7.53 In order to illustrate the different financial composition of the various sub-sectors, the model presents results on the assumption that there would be different schemes for each sub-sector. This should not be interpreted as being a preferred option. Were a single ADI scheme to be created, the financial exposure of a deposit insurance scheme to building societies and credit unions would be very low because of their relatively small size. The Study was not able to obtain the information necessary to run the scenario analysis for a single ADI scheme incorporating all of the component sub-sectors.

7.54 Scheme design variables, which reduce the proportion of liabilities covered by a scheme in a failure, reduce costs in a linear fashion. More restrictive scheme design (that is, incorporating monetary thresholds, coinsurance and other eligibility criteria) would further reduce the estimates.

Table 7.2: Scheme payout — percentage points of remaining industry eligible capital

Major Banks				Other Domestic Banks				Foreign Subsidiary Banks			
Market share	5%	15%	25%	Market share	5%	15%	25%	Market share	5%	15%	25%
Assets to liabilities				Assets to liabilities				Assets to liabilities			
95%	-	-	-	95%	-	-	-	95%	-	-	-
85%	-	-	-	85%	-	-	-	85%	-	-	-
75%	-	-	-	75%	-	-	-	75%	-	-	-
65%	-	-	-	65%	-	-	-	65%	-	-	-
55%	-	-	-	55%	-	-	-	55%	-	-	-
45%	0.9%	2.9%	5.5%	45%	3.0%	10.1%	19.2%	45%	2.4%	7.9%	15.0%

Building Societies				Credit Unions			
Market share	5%	15%	25%	Market share	5%	15%	25%
Assets to liabilities				Assets to liabilities			
95%	0.5%	1.7%	3.3%	95%	-	-	-
85%	5.7%	19.2%	36.3%	85%	4.7%	15.8%	29.9%
75%	10.9%	36.7%	69.3%	75%	10.0%	33.4%	63.1%
65%	16.2%	54.2%	102.3%	65%	15.2%	51.0%	96.3%
55%	21.4%	71.6%	135.3%	55%	20.4%	68.5%	129.5%
45%	26.6%	89.1%	168.3%	45%	25.7%	86.1%	162.7%

Life Insurance				General Insurance			
Market share	5%	15%	25%	Market share	5%	15%	25%
Assets to liabilities				Assets to liabilities			
95%	0.3%	1.1%	2.1%	95%	0.4%	1.5%	2.7%
85%	1.0%	3.3%	6.2%	85%	1.3%	4.4%	8.2%
75%	1.6%	5.5%	10.3%	75%	2.2%	7.3%	13.7%
65%	2.3%	7.6%	14.4%	65%	3.0%	10.2%	19.2%
55%	2.9%	9.8%	18.6%	55%	3.9%	13.1%	24.7%
45%	3.6%	12.0%	22.7%	45%	4.8%	16.0%	30.2%

The results show, for example, that (assuming the existing balance sheet structures prevail), a major bank with a 25 per cent market share would need to experience major losses (an asset to liability ratio (A/L) of less than 50 per cent) before creating costs for a guarantee scheme. In this case, if the A/L is 45 per cent, 5.5 per cent of the remaining sub-sector's regulatory capital would be consumed if the guarantee scheme was industry-funded.

Table 7.2: Scheme payout — percentage points of remaining industry liabilities (continued)

Major Banks				Other Domestic Banks				Foreign Subsidiary Banks			
Market share	5%	15%	25%	Market share	5%	15%	25%	Market share	5%	15%	25%
Assets to liabilities				Assets to liabilities				Assets to liabilities			
95%	-	-	-	95%	-	-	-	95%	-	-	-
85%	-	-	-	85%	-	-	-	85%	-	-	-
75%	-	-	-	75%	-	-	-	75%	-	-	-
65%	-	-	-	65%	-	-	-	65%	-	-	-
55%	-	-	-	55%	0.0%	0.0%	0.0%	55%	-	-	-
45%	0.1%	0.3%	0.5%	45%	0.3%	0.9%	1.4%	45%	0.3%	0.8%	1.3%
Building Societies				**Credit Unions**							
Market share	5%	15%	25%	Market share	5%	15%	25%				
Assets to liabilities				Assets to liabilities							
95%	0.0%	0.1%	0.2%	95%	-	-	-				
85%	0.4%	1.3%	2.2%	85%	0.4%	1.3%	2.1%				
75%	0.8%	2.5%	4.2%	75%	0.9%	2.7%	4.4%				
65%	1.2%	3.7%	6.2%	65%	1.4%	4.1%	6.8%				
55%	1.6%	4.9%	8.2%	55%	1.8%	5.5%	9.1%				
45%	2.0%	6.1%	10.2%	45%	2.3%	6.9%	11.5%				
Life Insurance				**General Insurance**							
Market share	5%	15%	25%	Market share	5%	15%	25%				
Assets to liabilities				Assets to liabilities							
95%	0.1%	0.2%	0.4%	95%	0.2%	0.5%	0.8%				
85%	0.2%	0.7%	1.1%	85%	0.5%	1.4%	2.3%				
75%	0.4%	1.1%	1.8%	75%	0.8%	2.3%	3.8%				
65%	0.5%	1.6%	2.6%	65%	1.1%	3.2%	5.3%				
55%	0.7%	2.0%	3.3%	55%	1.4%	4.1%	6.9%				
45%	0.8%	2.4%	4.1%	45%	1.7%	5.0%	8.4%				

The results show, for example, that (assuming the existing balance sheet structures prevail), a failure of a major general insurer with a 15 per cent market share and an asset to liability ratio (A/L) of 45 per cent would involve scheme costs equivalent to 5.0 per cent of the remaining insurers' liabilities. A 15 per cent market share is representative of the HIH Group of Companies experience, however, in that case the losses appear to have been higher than the scenarios presented, with assets representing perhaps only 20 per cent of liabilities.

Expected loss estimates

7.55 The overall cost of a guarantee scheme could be estimated using forecasts of expected payouts by the scheme. Probability of failure and loss given default of each institution in the scheme could be estimated using various techniques and expected scheme costs derived through aggregation. Alternatively, average data could be used. This might be based on historical information on the proportion of institutions failing each year, the average size of failed institutions, and the degree of insolvency, or estimates of the probability of failure and loss given default of an average size institution.

7.56 Expected loss approaches have two arguable shortcomings. First, they do not allow for the scheme operator to receive any reward for risk-bearing associated with deviations of actual costs from those expected. Second, they do not address the related question of how to create a capital base for the scheme to absorb unexpected losses.

7.57 An approach more aligned to credit risk assessment used by financial institutions is to augment the expected loss by a factor to compensate for the required rate of return on risk (or economic) capital provided by the scheme operator. Since that capital (fund reserves) can be invested in, for example, risk-free bonds, the adjustment factor involves applying the excess of the required return (r_K) over the risk-free rate of interest (r_F) to the scheme capital. The cost of a guarantee (paid at the start of the year) would then be derived as:[5]

$$\textbf{Guarantee Cost} = [\textbf{Expected Loss} + (r_K - r_F) \times \textbf{Economic Capital}]/(1+r_F)$$

7.58 If the economic capital for the scheme has been accumulated from contributions by members, a case may be made for equating r_K and r_F and using expected loss pricing,[6] although this ignores the risk posed by scheme insolvency if losses exceed economic capital. Kuritzkes, Schuermann and Weiner (2002) suggest that since the government is the ultimate guarantor of fund solvency, and can diversify the risk, expected loss pricing is appropriate.

7.59 Ignoring the cost of capital and using expected loss pricing is controversial, but has the advantage that it avoids problems associated with

5 If the premium (P) is received at the start of the year and invested with the capital reserves (K) at the risk free rate of return (r_F), the expected end of year cash flow (given an expected payout of EL) is: $(P+K)(1+ r_F) - EL$. If the required rate of return on capital is r_K, the zero NPV premium is derived from: $(P+K)(1+ r_F) - EL = K(1+ r_K)$, giving $P = EL/(1+ r_F) + K(r_K - r_F)/(1+ r_F)$.

6 If $r_K > r_F$ annual contributions would exceed expected payouts, generating a surplus requiring repayment to members.

determining the appropriate cost of capital (r_K). Its main deficiency is that it ignores unexpected losses which impose a cost (in the form of the opportunity cost of economic capital) on the scheme and which should therefore be incorporated into pricing.

Expected loss estimates and scenario analysis

7.60 It is possible to apply expected loss approaches to the scenario analysis outlined earlier — although subjective judgement is involved. The first step involves choosing a size of institution and degree of insolvency which is thought to best reflect the 'typical' failure in the industry. By then applying a probability of failure to that typical failure it is possible to derive an estimate of an expected loss and expected cost to the scheme. Given the subjective nature of such an approach it is not pursued further here.

Option pricing techniques

7.61 An alternative approach, favoured by financial economists, is to use an option pricing model to estimate the cost of a guarantee. This approach draws on the conceptual equivalence between providing a guarantee over liabilities of an institution and writing a put option[7] over the assets of the institution. (Further explanation is provided in Appendix 6.1).

7.62 In a simple version of this approach, applied to banks, where it is assumed that insured and uninsured deposits have priority over other creditors, the key parameters are the current market value of the institution's assets, the value of deposit liabilities, the volatility of asset values, the current level of interest rates, and the term over which the insurance applies. Option pricing theory provides a solution for the fair value of an institution's insurance premium, payable to the guarantee scheme, typically expressed as a number of basis points per dollar of insured deposits. A feature of the approach is that the fair value premium, per dollar of insured deposits, is invariant to the proportion of deposits which are insured.

7.63 Fair pricing of deposit insurance means the insurance premium is equivalent to the cost difference between issuing insured deposits at a risk-free rate of interest (possible because of the guarantee) and issuing uninsured

7 A put option is a contract which involves the writer, in return for receiving a premium from the option holder, undertaking an obligation to buy a financial instrument during a given period at a pre-determined price. Source: adapted from <http://www.anz.com.au/edna/dictionary.asp>.

deposits (in the absence of a guarantee scheme) at a higher interest rate which reflects the risk of default.

7.64 The option pricing model can be used to generate an implied estimate of ***probability of default*** and ***loss given default***.

7.65 The option pricing approach is based on the assumption that the guarantor is able to perfectly hedge the risk associated with the guarantee (by using the premium paid for the option guarantee to take a position in the underlying asset). Alternatively, if the option writer does not hedge the position, there is an exposure to risk associated with changes in the value of the underlying asset. This cost is reflected in the fair price calculation and will involve a risk premium over the simple expected loss approach.

7.66 In practice, the option pricing approach is complicated by the following issues.

- It has rather limiting assumptions concerning the term over which the insurance applies. (The simple model assumes a single, for example annual, period).

- It involves complications in terms of what closure rule applies, that is, the point at which regulatory action is taken. (The simple model assumes that closure occurs and the option is exercised at the end of the period if the institution's assets become worth less than the value of insured liabilities).

- It does not readily address the effect of closure on the market value of certain assets. (In particular, 'franchise value' where the market value of the organisation while it continues in operation exceeds its realisable value upon liquidation complicates matters).

- The value of assets and liabilities may behave quite differently to what is assumed in the model. In particular, asset values may exhibit marked instantaneous drops just prior to failure, while uninsured liabilities may be withdrawn by sophisticated investors (reducing the stock of assets and altering balance sheet relativities) prior to a failure. The applicability of the model's assumptions to the behaviour of insurance liability values is also open to debate.

7.67 More generally, a practical difficulty is that the market value of assets and asset volatility of a financial institution are not directly observable and can only, at best, be imputed from observation of the price and volatility of its

traded equity. Therefore, it is not possible to apply it directly to unlisted financial institutions. [8]

Box 7.2: Results from option pricing model

The fair value guarantee premiums derived from an option pricing approach are particularly sensitive to two key parameters, asset volatility (σ) and the ratio of priority liabilities or equivalently basis points per dollar (for example, deposits for ADIs, policyholder liabilities for life companies, all liabilities for general insurers) to assets (d).

Building societies and credit unions have, on average, a value of d in the range 0.85-0.9. Banks have much lower values due to their high level of non-priority liabilities and associated depositor preference buffer. Life and general insurance companies have values of d in the region of 0.7-0.8. The higher is d, the more expensive will be a guarantee, since there is a smaller buffer of non-priority liabilities to absorb declines in asset values (the model assumes the firm's equity buffer will have already been eroded).

Asset volatility (σ) describes the dispersion of possible rates of return on assets around their expected value. Higher values indicate more risky assets. Estimates of bank asset volatility (derived from bank equity price behaviour) in the region of 2-3 per cent per annum are typical, but assuming somewhat higher values may be appropriate to reflect risks not fully captured in the option pricing model. Figures of 2-3 per cent would seem appropriate for ADI's engaging in traditional lending activities. For insurance firms, the volatility concept relates as much to liabilities as to assets, and is best interpreted as a volatility of the capital position. A figure somewhat in excess of 7-8 per cent for general insurance and 4-5 per cent for life insurance is not unrealistic.

The table below demonstrates the fair value premiums for different values of d and σ, derived from a commonly used option pricing model of deposit insurance. The premiums are expressed as cents per $100 of guaranteed liabilities. Thus for an institution with d=0.925, σ = 3 per cent, (such that the fair value premium is 0.6 basis points) and total deposits of $1 billion of which 50 per cent were insured, the premium amount would be: $1,000 million x 0.5 x 0.00006 = $30,000.

8 Falkenheim and Pennacchi (2003) use a 'market comparable' approach to indirectly apply the option pricing approach to unlisted institutions.

Table 7.3: Guarantee costs — basis points per dollar of insured liability

Asset volatility (per cent)	Priority liabilities/assets				
	0.8	0.9	0.925	0.95	0.97
2	0.0	0.0	0.0	0.5	7.1
3	0.0	0.0	0.6	6.5	27.9
4	0.0	0.6	4.6	21.5	56.9
5	0.0	3.7	14.6	43.9	89.9

Mathematical simulations

7.68 Yet another approach is to view the overall exposure of a guarantee scheme as a portfolio of positions involving credit (counterparty) risk to participating institutions. By modelling that credit risk for each institution as some function of underlying economy wide and institution-specific factors, it is possible to derive a distribution of possible losses for the scheme. Such an approach can incorporate correlation effects (due to the role of economy-wide factors) and thus estimate risks to the scheme from the possibility of concurrent multiple failures.[9]

7.69 While this approach provides an estimate of the average (expected) cost of the scheme, its main benefit lies in deriving the probability distribution of actual costs around that average. A target level of fund reserves, which limits the probability of fund insolvency (due to an unexpected level of failures) to some desired small level can then be derived.

7.70 Common results from such modelling include the following:

- the required level of fund reserves will be larger the greater is the influence of economy-wide factors relative to idiosyncratic factors; and
- the greater is the concentration of the industry (when there are a fewer and/or relatively large institutions) the greater is the required level of fund reserves.

7.71 These results are important in considering funding and pricing of a scheme.

9 See Kuritzkes, Schuermann and Weiner (2002) for an application of this approach to the Federal Deposits Insurance Corporation.

Results from other studies and international experience

7.72 In assessing international experience with deposit insurance and insurance guarantee schemes, it is important to recognise that in other countries premiums often involve a component for prudential supervision. In Australia, this cost is already borne by financial institutions which pay annual statutory levies to cover APRA's costs. The additional cost from an Australian perspective would be primarily that associated with the insurance costs of a guarantee scheme rather than the prudential supervision costs.

7.73 A recent paper by the FDIC provides a summary of experiences with the 34 bank and thrift failures experienced in the US between 1997 and 2002 (FDIC 2003). This failure rate is around 0.2 per cent per annum (or 1 in every 500 institutions). While it is not suggested that Australia should expect to replicate this experience, the article provides some useful insights into the incidence and management of failure in practice.

7.74 One key insight from the study is into the loss given default that might be expected for deposit-taking institutions. Asset recoveries involved a write-down of a weighted average of 30.1 per cent of pre-failure assets. After allowing for closure and liquidation expenses, the average loss to non-equity stakeholders was in the order of 38 per cent of claims (shared between unsecured creditors, including the deposit insurance fund and uninsured depositors). Loss rates associated with larger institutions are found to be higher (in contrast to experience of earlier years), in part due to the complexity of their operations. The study also documents the fact that the actual value of assets post-failure might be quite different to that most recently reported.

7.75 It is noteworthy that since the early 1990s the US safety net has included national depositor preference, in addition to deposit insurance. Nonetheless, the balance sheets of failed institutions have not always contained sufficient subordinated liabilities to prevent losses to uninsured depositors or the FDIC, particularly once the costs of resolution are factored in. It should be noted that the balance sheet profile of these institutions may be quite different to that prevailing in Australia.

7.76 Bohn and Hall (1995, 1997) found that the typical resolution costs for failed property and casualty insurers in the US were much higher than those for banks, with deficiencies equal to about half of the pre-insolvency assets (that is, asset to liability ratios of 50 per cent or less). They also found some evidence that the existence of an insurance guarantee scheme embedded moral

hazard within the system, increasing the incidence and costs of insurance failures — with the problem being relatively worse for long-tail classes of insurance.

7.77 Ratings agencies are another potential source of information for the historical default rates and losses associated with corporate bonds. Some attempts have been made to incorporate this, and other financial market data into guarantee scheme cost estimates (FDIC 2000).

7.78 The general conclusion to be drawn from this evidence is that higher-rated institutions should logically pose a lower expected cost to any guarantee scheme, reflecting their lower probability of default and expected losses. Higher rated institutions, however, tend to be the largest competitors in a given industry and can significantly increase the capital base required for a scheme to deal with unexpected losses.

7.79 Applying this approach generally would not be possible, given that only the larger financial institutions obtain a credit rating. Moreover, this form of analysis focuses on the probability of a default in which creditors lose money (that is, an asset to liability ratio of less than one); and not the probability of a default in which depositors or a guarantee scheme experience losses (an even lower ratio). The differences between the two could be considerable given priority arrangements.

7.80 Another place to look in examining the likely cost of guarantee schemes is to the practitioners' experience, gathered from those countries with pre-funded, risk-based systems. The following table documents the estimated premiums which would apply for different categories of banks and thrifts based on expected loss pricing in the US.

Table 7.4: 'Expected Loss' based premiums in the US — 1984 to 1999 (basis points)

Capital	Supervisory rating		
	A	B	C
1. Well Capitalised	3.7	8.9	17.8
2. Adequately Capitalised	10.3	20.7	50.3
3. Undercapitalised	19.8	41.6	96.8

Source: Federal Deposit Insurance Corporation (FDIC), Keeping the Promise: Recommendations for Deposit Insurance Reform, April 2001.

7.81 These figures indicate the sensitivity of required premiums to the financial strength of the insured banks. On average the premium required to equate revenue with fund expenses and insurance losses over the period

1980-1999 was 11.2 basis points (FDIC 2000), compared to 1 basis point over the period 1934-1979. Much of that higher figure for 1980-1999 reflects the effects of the thrift crisis where there were many under-capitalised and poorly rated institutions which failed; and which pre-dated the introduction of depositor preference arrangements as a cost mitigation strategy.

7.82 Where private deposit insurance schemes co-exist with government-sponsored arrangements, such as in the US and Canada, estimates of the premiums range between 10c and 25c per $100 of deposits. The insurance companies offering such cover would usually limit the total amount payable in relation to the failure of an individual institution (FDIC 2000). It is not clear to what extent risk-based premiums may be implemented in private schemes.

7.83 In the academic literature, a variety of option pricing models have been used in estimating the fair value of deposit insurance. Estimates for the fair value of deposit insurance vary widely, depending upon the assumptions, model, bank characteristics and country considered.

7.84 Laeven (2002) documents the range of official premiums and provides estimates of the value of deposit insurance using the same option based approach for a sample of banks across 14 countries using data for the period 1991-1998. This study found that official premiums ranged between 0 and 72 basis points in the countries studied (up to 72 cents per $100 of deposits). Those schemes with premia at the upper end were generally in countries with less developed banking systems.

7.85 The estimated average value of deposit insurance from the option pricing approach across all countries considered was 35.1 basis points. Estimates for developed economies were generally much lower, at 0.18 basis points for Germany, 0.40 basis points for the US, 1.34 basis points for the UK, 2.37 basis points for France, and 12.4 basis points for Japan (0.18, 0.4 cents, 1.3 cents, 2.37 cents and 12.4 cents per $100 of deposits respectively).

7.86 In the case of the US, Laeven's estimate can be compared with other studies such as Pennachi (2000) who estimated an annual average fair premium for deposit insurance for a sample of listed banks of 4.06 basis points (4 cents per $100 of deposits) assuming a one year period between inspections and an initial capital adequacy ratio of 6.58 per cent. While his average fair value estimates range from around 1 to 8 basis points depending on assumptions made, they reinforce the impression that for a well-capitalised ADI sector, fair premiums are relatively low. Pennachi's results also

demonstrate significant variability in fair premiums across institutions, depending upon their risk characteristics (as also reflected in Table 7.3).

7.87 Laeven (2002) notes that assumptions made about frequency and strength of regulatory action in option pricing models generally leads to some underestimation of the value of deposit insurance.

7.88 Cummins (1988) developed an option pricing model for insurance guarantee funds, extending the deposit insurance approach to reflect uncertain insurance liabilities. Estimates of fair premiums depend upon asset to liability ratios and volatility of the capital position, but spanned the average premium charged by US Guarantee Funds between 1970-84 of 2. 5 basis points.

Discussion of results

7.89 The capital structure of financial institutions, together with regulatory actions are key considerations in understanding the potential losses in insolvency and the costs of any guarantee scheme.

7.90 Capital adequacy requirements provide the initial buffer to protect a financial institution's creditors against the unexpected. A large capital buffer should reduce the chance of a guarantee scheme incurring costs, particularly if regulators take action when that buffer approaches zero. In practice, regulatory action may not occur precisely at this point.

7.91 The profile of assets and liabilities of each institution is also relevant. Particularly relevant, given the design of the existing framework, are the physical location of assets and liabilities, the relative proportions of foreign and domestic business, and the extent of subordinated debt. Where applicable, priority arrangements such as depositor preference serve to create a further sizeable buffer against those customers losing money or a limited guarantee scheme incurring costs when an institution fails.

7.92 For example, the US introduced national depositor preference arrangements in the early 1990s and these appear to have been associated with sharp reductions in the costs of the FDIC.

7.93 Coinsurance arrangements, to the extent they were embedded in a guarantee scheme, would also reduce the costs of such a scheme by requiring customers to bear a proportion of losses.

7.94 While Australia's experience with financial institution failure is relatively limited, international experience provides some guide as to what to expect in terms of probability of failure and loss given failure and thus guarantee scheme costs. Nonetheless, even internationally, there have been few failures of highly rated financial institutions, so there is limited information upon which to assess the probability of failure among such institutions (which form a major part of Australia's financial system).

7.95 Loss given default is also difficult to estimate. The losses associated with particular historical instances of insolvency can be observed, as can the costs borne by guarantee schemes operating internationally. This may help in determining appropriate scenarios on which to focus attention. The size distribution of firms in a given sector is a relevant issue in considering the cost to remaining participants of a single failure. The capacity of a scheme to cope with multiple failures is difficult to model, but must not be ruled out.

7.96 An important lesson emerging from international experience for attempts to model guarantee scheme costs is that as an institution heads towards failure, it is common for significant changes in the balance sheet structure to be observed. First and foremost, there is no assurance that the value of assets will correspond with reported values. Australia's own experience with HIH showed that the true value of insurance liabilities can also deviate significantly from that reported.

7.97 The following quote from the FDIC (2000) is instructive in this regard:

> *'Reported information at times has been notoriously inaccurate. The FDIC's most costly bank failures in recent years have occurred rather abruptly among institutions that had consistently reporting strong earnings and profitability.'*

7.98 All of the theoretical models used to estimate guarantee costs rely on the use of accurate information, and concerns about the reliability of accounting data reported by financial institutions which fail serves to reduce confidence in the robustness of estimated results. Similarly, those models face significant practical challenges, such as the appropriate assumptions to make about the probability of failure. Changing assumptions about this probability — for example, from a 1 in every 250 year event per institution to a 1 in every 200 year event — has very significant implications for model estimates of scheme costs.

7.99 Models of guarantee scheme costs also require assumptions to be made about the losses associated with failure. The validity of results clearly hinge upon practical issues such as whether the assets will in fact be available

for distribution, whether the liabilities have been appropriately estimated, or whether possible changes in the balance sheet composition and scale as failure approaches have been allowed for in the modelling process.

7.100 The modelling approaches also tend to assume a gradual slide into failure. This may not adequately reflect the impact of once-off shocks that could affect asset or liability values nor capture the inter-relationships between fortunes of institutions covered by the scheme. In essence, the models tend to assume a world of orderly failure rather than crisis, and thus shed little light on the viability of such schemes in times of systemic crises.

7.101 Recognising all of these caveats, an assessment of evidence and theory suggests that in the current Australian environment, the cost of a limited explicit guarantee scheme would be very low — reflecting the low probability of failures which would involve losses to priority claimants (depositors or policyholders). Some observers may interpret that as indicating little reason for introduction of a scheme. Others, more concerned with clarifying the extent of government support arrangements and wary of statistical projections about the future, may view it as more relevant to the design and funding arrangements for a scheme.

CHAPTER 8: FUNDING AND PRICING

Overview

- International practice in funding and pricing guarantees varies according to the industry and products in question.
- Funding issues relate to the appropriate base from which to collect contributions. Pricing issues relate to the determinants of the relative share of contributions from each contributor.
- Schemes can be pre-funded to varying extents. A growing number of schemes in other countries feature a degree of pre-funding.
- The theoretical differences between pre- and post-funding are minor although there can be some practical differences.
- Some schemes price according to the risk of the provider. This is fairer and more efficient than flat-rate pricing, but it is complex, and the risk of mistakes is considerable. Nevertheless, the arguments in favour of some degree of risk-related pricing are strong.
- Most deposit insurance schemes tend to be industry-funded and do not discriminate according to the risk of the deposit-taking institution. Pre-funded deposit insurance schemes with risk-sensitive pricing are becoming more common.
- Insurance guarantee schemes rely more on post-funding, partly reflecting the difficulty in measuring the quantum and timing of the liabilities of a failed insurer. The incidence of risk-sensitive pricing among these schemes is low.
- Many of the inputs required for pricing decisions in any type of scheme can be inferred from financial market prices, accounting or regulatory data or based on the Australian Prudential Regulatory Authority's monitoring activities.
- Risk-based pricing helps to overcome concerns about the fairness and viability of a guarantee scheme operating in a concentrated sector with a skewed size distribution of participants.

Design choices

8.1 The funding and pricing of explicit guarantees raise two major design issues.

8.2 First, it is necessary to decide whether the guarantee is to be funded via a general system of ongoing levies (pre-funding), by a specific levy on other firms or consumers in the industry after an actual failure (post-funding) or some combination thereof. A related issue is the nature and size of the funding base.

8.3 Next, there is the question of whether to price the guarantee on a risk-sensitive basis or whether to use a simpler system of levies which adopts a less sophisticated model or even disregards the relative risks created for the scheme by different participants. Decisions on both of these issues depend, among other things, on the characteristics of the industry in question, the design of the prudential framework and the ability to precisely measure risk.

8.4 The question of whether to pre-fund or post-fund a system of explicit guarantees is basically about when to collect the funds to meet payments required under a guarantee — before or after they are realised by the failure of one of the participants. In theory, either approach should lead to similar outcomes in terms of the incidence and timing of costs for participating institutions.

8.5 Firms under a post-funded scheme should, in principle, be aware of and, in some way, make provision for the contingent liabilities the scheme imposes on them. Such provisioning would need to be similar in scale to the explicit contributions firms would be required to make under a pre-funded scheme; otherwise the scheme would be under-capitalised relative to its long run needs. The choice between funding regimes, therefore, is partly about whether scheme resources are managed by the participants themselves or a separate entity.

8.6 From that perspective, the differences between pre-funded and post-funded schemes are minor. In fact, it is the rate of annual contributions (under a pre-funded scheme) or annual repayments (under a post-funded scheme) that has a more practical bearing on the impact for institutions. However, there are a number of other considerations that could bear on the question of why one approach might be preferred over the other.

8.7 A decision on the appropriate funding base involves a trade-off between equity and stability. For example, if a scheme were to guarantee only retail deposits, it may be equitable to apply levies to the retail deposit base. The variability in the rate of levy would be greater than for a scheme that applied levies across all deposits. Similarly, if a scheme were to apply to a defined set of insurance liabilities, there would be a question of the appropriate size of the base on which to levy contributions. In general, for a given level of scheme coverage and costs, the broader the funding base the more stable but less equitable the structure of levies is likely to be.

8.8 Risk-sensitivity in pricing raises larger issues. Its chief attractions are that it reduces the chance of moral hazard and maintains a level playing field among participants who provide similar products. Under fully risk-sensitive pricing, firms are charged according to the risks that they pose to the guarantee fund. This would remove any incentives which they would otherwise have to take excessive risks in the knowledge that their liabilities are protected. Achieving that outcome, however, requires that scheme managers have full knowledge of the current risk-taking by the firm and can adjust premiums as risk changes.

8.9 But risk-sensitive pricing is complex. The theory for pricing options provides a starting point for valuing guarantees, but it faces quite a number of practical limitations — especially in insurance, where *ex ante* liability valuation is difficult. In practice, risk-based premiums may need to be linked to some small number of readily available indicators of risk in a simple way which is generally accepted as giving rise to fair and sensible outcomes. The risk of charging inappropriate premiums for the guarantee therefore remains, even under a risk-sensitive system.

Objectives and principles

8.10 There are four principles which a funding and pricing scheme could attempt to enshrine:

- *Cost efficiency*. The administration of funding and pricing arrangements should avoid imposing unwarranted costs on participating institutions, their shareholders and customers.

- *Competitive neutrality.* Funding and pricing arrangements for explicit guarantees should not upset the level playing field in the provision of financial services. That is, institutions providing similar products and with

similar risk characteristics should face similar charges for an explicit guarantee. Equity is therefore a key consideration.

- *Stability*. A scheme should be a source of reassurance to depositors and policyholders of financial institutions during crises; it should create greater certainty over the condition of the financial system. Most importantly, the profile of industry contributions needs to be as predictable and broadly based as possible (given equity considerations) to avoid introducing excessive external shocks to levels of industry capital.

- *Allocative efficiency*. The pricing arrangements should ideally neutralise moral hazard risks. Financial institutions may be subject to less market discipline over their approach to risk management once a portion of their claims is insured, and regulators may also be more prone to forbearing with weak institutions if they know that policyholders or depositors are protected in all circumstances. Pricing systems can have an important role to play in preventing these outcomes.

Funding issues

8.11 In the context of a guarantee, funding issues relate to the timing and rate of contributions or recoveries and the appropriate base from which to collect these.

Pre-funding versus post-funding

8.12 Explicit guarantee schemes can be pre-funded or post-funded, or embrace a mix of both approaches. In theory, the approaches should have virtually identical outcomes. The expected contributions made over time by participants will have the same present value under either approach, provided that the choice of funding arrangement does not affect the incidence or severity of failures. The scheme design may give rise to distributional effects between old versus new or slow versus fast growing participants, but otherwise it is just the timing of contributions which differs and whether assets are depleted (under pre-funding) or liabilities incurred (under post-funding) when a failure occurs.

8.13 Regardless of the funding arrangements, therefore, participating institutions should anticipate having to finance the guarantee at some point in time. The material difference is that in a pre-funded scheme, the resources are transferred to, and managed by, an independent fund via a system of levies or

premiums. In a post-funded system, the same resources remain with the contributing institutions, which may face pressure, from regulators and investors, to allow for their contingent liabilities. Post-funded systems require the capacity to borrow which is usually backed by government as a 'guarantor of last-resort'.

8.14 Following a failure, both approaches may require equivalent transfers of funds from participants if, for example, there is a policy of rapidly restoring reserves of a pre-funded scheme to some target level.

8.15 In practice, nevertheless, this cost equivalence between funding types may break down somewhat, and there are a range of other reasons as to why one approach may be preferable to the other.

8.16 Key points in favour of pre-funding are:

- *Stability and credibility*. There is a high degree of certainty about the value of funds that are available for distribution in the event of a crisis, and payments can be made quickly and efficiently.

- *Risk-sensitivity*. Industry acceptance of risk-based pricing may be greater in the case of pre-funding where it may be viewed more in its true insurance role. In contrast, post-funding may be seen as a levy required to make up for the failures of others, with less apparent rationale for linkage to (current or past) riskiness of survivors. Ensuring industry awareness and acceptance that post-funding arrangements will be risk-based is necessary and also requires that participants are aware of the criteria which will be used to classify institutions into risk categories. To the extent that the industry focuses less on the risk-based pricing mechanism under a post-funded scheme than it would under a pre-funded scheme, the effectiveness of risk-based pricing in reducing moral hazard will be lowered.

- *Perceptions of fairness*. A pre-funded guarantee means that the failed institution will have made some prior contribution.

- *Provisioning*. Pre-funding may reduce the prospect of the burden of failures being borne by taxpayers if governments do not enforce post-funding levies.

8.17 Against that, pre-funding has a number of disadvantages.

- *Uncertainty of failures.* While there is a degree of science that can be applied to estimating probabilities and sizes of institutional failures, in reality the

timing and costs of failures are impossible to predict with any certainty. There is, therefore, a risk that any pre-funding arrangements will levy higher contributions on participating institutions than are actually warranted. While there are ways of ameliorating this problem, such as by targeting a maximum level of accumulated funds, the risk would remain that such funds are never needed. Conversely, the scheme may prove to be under-funded and require increased contributions after failures occur. Under a post-funded arrangement, of course, the size and timing of imposts on institutions would be targeted to a known level of required recoveries and annual limits on levies could be applied.

- *Moral hazard*. A large and highly visible pool of funds may encourage complacency toward risk in both prudential regulators and participating financial service providers. In other words, it may exacerbate the moral hazard that is commonly associated with all guarantees. However, this may be no greater than for a post-funded scheme backed by government operating under statutorily imposed requirements.

- *Equity*. Pre-funded schemes often have a target size that is expressed in terms of the value of insured claims. When the scheme reaches its target size, there are significant questions about how to limit its growth, refund any excess contributions to past contributors and charge new entrants for the insurance provided by the existing pool of funds. Contribution 'holidays' seem an obvious solution, but they give rise to other problems; for example, negating the intended impact of any risk-based premium pricing, and creating discrete and unpredictable jumps in premium rates.

- *Cost inefficiency*. In theory, there should not be much difference between the administrative costs of pre-funded and post-funded schemes. In practice though, pre-funded systems with stand-alone administration present some risk of 'regulatory creep' — the expansion of another arm of bureaucracy beyond economically efficient limits.

8.18 A further argument commonly advanced in favour of pre-funding over post-funding is that post-funding tends to be pro-cyclical in its impact on institutions. In particular, since it will more likely be the case that failures of financial institutions will occur in times of general weakness in economic conditions, the suggestion is that post-funding arrangements will impose costs on institutions at a time when they are least affordable. As noted, however, there should in theory be no difference between the two funding approaches in terms of their timing impact on institutions — any pre-funded scheme would have to be recapitalised after it is utilised, potentially creating a similar profile

of contributions to any post-funded scheme. The difference lies in the timing of payments by the remaining institutions.

8.19 Under either arrangement, however, it would be possible also to smooth the cost imposts, by imposing annual limits. In the case of post-funding, for example, initial costs could be met from taxpayers or borrowings which could then be repaid by the fund over an extended time frame. This would create a similar profile of contributions to pre-funding. There is a risk, however, that governments may decide not to recoup funds (via levies) provided by the government under a post-funded scheme.

8.20 Pre-funding is especially common in the more mature banking systems of the Organisation for Economic Development (OECD) countries; of the 28 OECD countries which have deposit insurance, 21 have pre-funded systems. In the case of insurance guarantee funds, pre-funding is much less common, perhaps reflecting the uncertainty associated with calculating the quantum and timing of policy liabilities. Some schemes (for example, Norway and France) combine pre- and post-funding by requiring members to set aside required contributions each year, but allow the members to manage those funds themselves.

Box 8.1: The Terrorism Risk Insurance Scheme: A model for funding?

In Australia, the Terrorism Risk Insurance Scheme may provide some guidance on the appropriate degree of pre-funding. It suggests that up-front premiums could be charged with a view to accumulating a modest reserve of cash which could be supplemented by callable lines of credit. One advantage of such an arrangement relative to a purely post-funded model is that the up-front premiums, in addition to covering fund administrative costs, can also be applied to funding fixed costs associated with the post-funding elements, especially any stand-by credit facilities. The post-funding elements could also involve scope to escalate premiums if necessary to repay any borrowings within a reasonable timeframe.

Funding base

8.21 Another key issue requiring attention is the appropriate funding base for any guarantee scheme. At the highest level there are questions about the relative proportions of public funding and private funding. Were public (taxpayer) funding considered appropriate, many of the issues would

disappear. This section therefore focuses on those issues to be considered under private funding models.

8.22 The options might be considered against the four principles outlined at the beginning of this section.

8.23 In broad terms there are two issues to consider:

- the extent to which separate schemes or sub-schemes should be established for the various sectors; and
- the nature and size of the funding base within each scheme.

8.24 Establishing separate schemes or sub-schemes for the various industry sectors, for example separate schemes for banks, building societies, credit unions, life insurers and general insurers, would certainly reduce the scope for cross-subsidies between the sectors. The expected cost and contributions to each scheme could be isolated to that sector.

8.25 This might be attractive on the grounds of cost efficiency and competitive neutrality — for the fact that it is less likely that customers or shareholders of strong firms provide benefits to weaker or unrelated firms. It might also allow the different industry risk characteristics to be embedded within each scheme.

8.26 Appropriate pricing mechanisms within a single scheme are an alternative means of pursuing this outcome; and the possibility of cross-subsidy remains within each scheme in any case. Pricing therefore remains important, regardless, particularly in pursuing efficiency objectives.

8.27 On the other hand, establishing multiple smaller schemes would be potentially less financially stable, on the basis that the failure of an individual financial institution within a given scheme would have a relatively greater impact on other members. Multiple schemes would not achieve the maximum benefits available from diversification across institutions and sectors and this would increase the size of the aggregate capital base required to absorb unexpected losses. In addition, mergers between institutions operating in different schemes may create transition problems, and differential charges may create artificial incentives for institutions to convert to a different form to change schemes. Greater correlation of failure within sectors (such that multiple failures may occur) than between sectors would also increase the capital base required to absorb unexpected losses or increase the volatility of contribution rates.

8.28 Apart from the issue of the number of schemes and sub-schemes, a residual question to be addressed is the appropriate base upon which to calculate contributions within each scheme.

8.29 The same questions arise again — but at an intra-sector level. The trade-off will be between equity, efficiency and stability. The practical dimension to this problem is how to appropriately match contributions with beneficiaries.

8.30 In the case of deposit insurance, for example, it is common that contributions are collected on the basis of the total insured deposit base (rather than total liabilities). In the case of insurance, it is not as clear how the appropriate base of insured liabilities might be calculated. For example, efficiency and stability might suggest that total insurance liabilities across all insurance categories be used, despite the scheme only applying to a proportion of these. Pursuing equity, on the other hand, might suggest it was inappropriate to expect contributions from those insurance firms underwriting commercial lines which were not guaranteed.

8.31 Of course, it would be a matter for each financial institution to decide how to share the impost among their customers and other stakeholders.

Pricing issues

8.32 Pricing issues relate to determining the relative share of contributions from each contributor. The key questions are whether it is possible to strike an appropriate balance between simplicity and efficiency by requiring uniform or differential contributions from participants.

International practice

8.33 Some schemes price contributions to the guarantee scheme according to the riskiness of the insured products or institution, whereas others levy a flat-rate, usually on either total deposits or insured liabilities.

8.34 In relation to deposit insurance schemes operating internationally, flat-rate pricing is clearly the more popular option, particularly among OECD countries. This may reflect its transparency or its low implementation and maintenance costs. It is perhaps also more consistent with post-funding. Only three schemes combine post-funding with risk-sensitive contributions.

8.35 Over time, there have been significant changes in the popularity of the two pricing regimes. Most notably, risk-based pricing has become more common. Of the 23 schemes which feature this pricing method, 15 have been introduced since 1990, and a further five of the schemes have been revised since then. The total of 20 represents more than half of all schemes introduced since 1990.

8.36 The rates of insurance among pre-funded deposit insurance schemes vary widely. For recently established schemes which use insured deposits as a base, premiums vary between 0.1 and 0.5 per cent of the base, with a modal value of 0.3 per cent (30 basis points). Several emerging markets have premiums which are considerably higher. Canada — a country with a financial system broadly comparable to Australia's — charges between 0.02 per cent and 0.16 per cent of insured deposits according to a risk assessment of each institution (International Association of Deposit Insurers 2003).

8.37 It is useful to put these figures into some perspective. If deposit insurance premiums were fully passed on to depositors, the effect of the highest 0.16 per cent premium would be reduce the interest rate per annum on an insured term deposit from say 5.00 to 4.84 per cent. However, there is some evidence that some part of the insurance premium is absorbed by bank profits. More importantly, such a change merely makes explicit, and current, a cost of risk-bearing which taxpayers in general, or other stakeholders, would otherwise face (for example, as in the case of the HIH Group of Companies (HIH)).

The mechanics of risk-sensitive pricing

8.38 Risk-sensitive pricing has two major advantages over flat-rate pricing:

- it can ameliorate the moral hazard problems that are commonly associated with financial guarantees; and
- it is more equitable to the participating institutions.

8.39 If a financial service provider is charged fully and fairly for the risks that its activities create for a guarantee scheme, then it will not be complacent toward those risks; nor will it have incentives to seek out excessively risky projects on behalf of its shareholders, investors and customers. In other words, this approach meets the four pricing principles.

8.40 The chief disadvantage of risk-sensitive pricing is complexity. A principal reason for this is simple uncertainty. Neither the scheme operator nor the financial service provider can know what will happen to the future value of the insured institution's assets or liabilities, and this greatly complicates premium setting.

8.41 There are, nevertheless, a number of possible approaches that could be considered in determining risk-based premiums.

8.42 One approach involves the use of option pricing techniques. The rationale for utilising option pricing methodology was discussed in Chapter 7, and is there applied for the purpose of estimating possible **average** premiums required to fund likely future costs of guarantees. The difficulty with the methodology, however, is that much of the input information required is difficult to obtain or estimate, or is simply not available, especially at the firm level.

8.43 A further difficulty with such an approach lies in the need to gain general acceptance of, and be able to credibly defend, reasons for differences in premiums charged to different institutions. It is doubtful that an option pricing approach would currently meet this requirement. More generally, while perfect risk-related pricing may be desirable, it is not clear that it is feasible, nor that some other form of risk-related pricing combined with prudential regulation and risk-based capital requirements would not suffice to manage moral hazard.

8.44 These complications lead towards relying on observable risk indicators, such as financial statement information or market prices, or regulatory risk assessment measures.

8.45 For example, premium calculations could take into account measures of regulatory capital and measures of subordinated liabilities relative to the value of guaranteed products provided by the institution. Regulatory capital requirements are calculated using risk weights, which reflect the riskiness of assets (and other activities) of an ADI, to calculate a measure known as risk-weighted assets. The ratio of the ADI's capital base to risk-weighted assets provides one indicator of financial soundness.

8.46 A possible risk-sensitive pricing source is the Probability and Impact Rating System (PAIRS) and Supervisory and Oversight Response System (SOARS) analysis of the Australian Prudential Regulatory Authority (APRA). Reflecting the confidential nature of the analysis, appropriate disclosure and

administrative review mechanisms would need to be examined, whilst ensuring transparency in risk-rating.

8.47 There are other information and risk measurement techniques which could complement (or substitute for) the assessments of APRA. Some of them rely on financial market data; others rely more on information which the firm itself discloses, or on information provided by international regulators. They include:

- *Yield spreads*. The difference between the yield on a firm's corporate debt and the return on an instrument which is similar, but free of credit risk (such as a Commonwealth Government security) is a measure of credit risk (albeit dependent upon the priority ranking of those claims). That is, the observed premium may be more applicable to claims more junior than deposits. The premiums on a credit default swap over a risk-free rate of return may be informative in similar ways. [1]

- *Ratings*. Ratings published by the major agencies measure credit risk of particular liability classes of institutions. Some approximate a pure probability of default measure; others also allow for the loss that would arise in the event of default. Ratings may rely on subjective assessments of the firm or on information available from financial markets.

- *The share price*. Shareholders in financial institutions would clearly suffer most from the institution's failure. The price that they are prepared to pay for shares therefore reflects, to some degree, their expectations of the firm's probability of default. This idea has been applied extensively to banks in the United States and Europe and underpins some proprietary models used by banks for measuring default risk of corporate customers.[2]

- *Credit scoring models*. These use balance sheet and income statement data to gauge the probability of default, and they are especially useful for unlisted firms. The Z-score is perhaps the oldest and best known example (Altman, 1968). Adaptations and refinements of the model feature in a number of proprietary credit rating systems. An illustration of its use in deposit insurance is provided in Box 8.2. Since this technique only estimates a probability of default, it needs to be combined with some estimate of loss given default and ultimate cost to a guarantee scheme for use in premium setting.

1 See Reserve Bank of Australia (2003) for details.

2 Merton (1977) is the seminal theoretical article in this area. Gizycki and Goldsworthy (1999) apply the idea to Australian banks.

8.48 Risk-related premiums are a highly desirable feature of any guarantee scheme. Practical issues do dictate simplicity in application and relation of premiums to a relatively small number of acceptable risk indicators. The Federal Deposit Insurance Corporation (FDIC) for example, currently allocates banks and thrift institutions to nine general premium buckets based on a two-way classification of capital adequacy and supervisory assessment rating. Introducing any such approach which relies on supervisory risk assessments does, however, raise concerns about whether and how such information should be made public as part of the premium setting process.

8.49 A concern is often expressed about the viability of a guarantee scheme in a concentrated industry, such as in the Australian financial sector. One argument is that the failure of a very large participant will exhaust the scheme's capital reserves unless these are exceptionally large — and that to achieve such a position, premium rates will be intolerably high. Equivalently, levies imposed under a post-funded scheme in such circumstances would threaten the viability of participants.

8.50 This is undoubtedly a reasonable concern if all liabilities of the institutions involved are covered by the guarantee scheme. However, limiting a guarantee scheme's coverage to a relatively small proportion of liabilities which have first priority over the institution's remaining assets mitigates that problem to a significant degree. In such circumstances, the scale of failure required to impose costs on the fund is of such a large magnitude (see Chapter 7) that probability of occurrence is low, while the loss given failure to the fund may also be quite low.

8.51 Risk-based pricing serves to ameliorate the practical concern often expressed about the viability and fairness of a guarantee scheme in a highly concentrated industry with a skewed size distribution of participants. Large institutions would generally be expected to contribute more to a scheme, reflecting a scale effect, but this would be significantly muted if they pose lower risks to the scheme.

8.52 In the authorised deposit-taking institutions (ADI) sector, concerns that the failure of a large bank would impose unsustainable contribution costs on smaller participants are mitigated due to the interaction of depositor preference, current balance sheet structures, and limits on scheme coverage (as shown in Chapter 7).

8.53 In the insurance sectors, where there is a smaller buffer of non-priority liabilities to limit scheme costs, this may remain an issue of concern (but less so

if firm prudential oversight of solvency trends limits the degree of any insolvency which occurs).

8.54 The extent to which scheme viability due to concentration risk remains a problem is essentially an empirical matter about the probabilities of (and also correlations between) failures of varying scale for large financial institutions — for which there is little data upon which to base firm opinions. Such events would also appear to fall into the category of major crises for the financial system, where it would be expected that systemic stability concerns and other government actions would occur and override the independent operation of the guarantee scheme.

8.55 In general, balancing the considerations of fairness to participants, difficulties in accurately assessing risk and thus risk-based premiums, and efficient scheme administration, suggests that some mix of pre- and post-funding may be optimal. Consideration may also need to be given as to whether different styles of funding arrangements might be applied across different industries.

Box 8.2: Z-Scores

Z-Scores are a simple and common way of using an institution's financial results to measure its probability of default. Statistical analysis of financial characteristics of firms which have failed in the past is used to identify the relevance of various characteristics in predicting failure. Firms currently operating are given a Z-Score which is an indicator of default risk and formed by weighting relevant characteristics for that firm according to an equation such as:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$$

Where: X_1 = working capital/total assets
X_2 = retained earnings/total assets
X_3 = earnings before interest and tax/total assets
X_4 = market value of equity/book value of total liabilities
X_5 = sales/total assets

Z-scores are not an especially sophisticated tool for measuring default risk. But they have been used for some time and are among the best options for assessing institutions which do not issue traded debt or equity.

The French deposit insurance scheme, the *Fonds de Garantie des Dépôts*, includes a ***synthetic risk indicator*** as part of member premium calculations.

'A synthetic risk indicator shall be calculated for all institutions whose deposit base is not nil at the closing date then used as a basis for calculating a contribution. The synthetic risk indicator shall be the arithmetic mean of the following scores:

- a score relating to solvency;
- a score relating to risk diversification;
- a score relating to operating profitability; and
- a score relating to maturity transformation, where relevant.

Scores shall be given on a scale of 1 to 3; the higher the score, the lower the quality.'[3]

3 Fonds de Garantie des Dépôts website.<http://www.garantiedesdepots.fr/reglements_99_06.php#annexe>.

CHAPTER 9: GOVERNANCE AND ACCOUNTABILITY

Overview

- Introducing a limited explicit guarantee would necessitate explicit articulation of the degree of separation, governance arrangements and allocation of powers and functions between a guarantee scheme and existing regulatory authorities.
- Key objectives would include:
  - avoiding duplication and establishing clear lines of responsibility and accountability;
  - avoiding the more serious potential conflicts of interest;
  - minimising the administrative costs of the scheme;
  - minimising compliance costs for industry;
  - harnessing industry expertise and involvement, where appropriate; and
  - ensuring an appropriate incentive structure for regulatory authorities.
- Choices concerning appropriate governance arrangements and the allocation of functions should probably flow from decisions about the scope of any guarantee, particularly the question of whether it will extend across a number of prudentially regulated sectors, and whether it is pre-or post-funded.

Functions and objectives

9.1 In addition to the broad choices about whether to create a public or private scheme, and the nature of the scheme body, there are broadly six key functions relevant to the operation of any industry funded guarantee scheme. These are:

- premium pricing and/or levy setting;
- asset and/or debt management;
- claims assessment and payment;
- prudential regulation and supervision; and
- failure management and managing insolvency.

These are presented in Table 9.1 as a visual guide to the issues discussed in this Chapter.

9.2 In considering the possible allocation of functions, the existing role various entities play in the Australian context must be recognised including:

- the role of the Australia Prudential Regulation Authority (APRA) in providing prudential regulation and supervision and its powers relating to failure management; and
- the role of insolvency practitioners and the Courts in managing insolvencies.

9.3 International practice (see Appendix 7.1) in relation to functional allocation is rather mixed. In some cases the guarantee scheme performs only limited functions in relation to claims assessment or claims payment — in the latter case acting solely as a 'cash box'. In other cases, schemes have broader functions, including aspects of prudential supervision, acting as liquidator or determining the failure resolution process.

9.4 Garcia (1999) identifies a number of best-practice principles for the governance of deposit insurance schemes. These include that the scheme be operationally independent but accountable; that the private sector is not represented on the main board of the body; and that close relations are ensured with other safety net participants.

9.5 Clearly, much depends on how broader aspects of a country's safety net are structured and administered. How guarantee schemes themselves are structured is also important. For example, whether schemes are structured under a single agency administering guarantees across a number of sectors, or multiple bodies operating sector-specific schemes and whether they are government or privately run will potentially influence choices about functional allocations and governance arrangements.

9.6 Another interesting consideration is the extent to which a scheme might be created as a 'standby' arrangement, with all details specified but remaining inactive until being brought 'off the shelf' following a failure.

9.7 Taking these issues into account, the key objectives would include:

- avoiding duplication and establishing clear lines of responsibility and accountability;
- avoiding the more serious potential conflicts of interest;
- minimising the administrative costs of the scheme;
- minimising compliance costs for industry;
- harnessing industry expertise and involvement, where appropriate; and
- ensuring an appropriate incentive structure for regulatory authorities.

Table 9.1: Functions of an industry funded guarantee scheme

	Public Sector Options			Joint Options	Private Sector Options		
	Minister/ Department	New statutory authority	Australian Prudential Regulation Authority (APRA) or new body within APRA	Body combining both public and private sector directors and service providers	Industry service provision of specific functions	Industry body with independent board and member service provision	Industry body with independent board and service provision
Scheme governance	B	A	B	B		B	B
Pricing / levy setting	B	A	B			B	B
Asset / debt management	B	A	B	B		B	B
Claims assessment and payment		B		B	A		B
Prudential regulation and supervision		B	A			B	B
Failure management		B	A				
Insolvency[1]		B	A				B

A The central option reflected in the discussion, which is considered to meet the objectives to a considerable extent.

B Feasible alternatives, some of which have been flagged in the discussion, but which do not appear to be preferable when measured against the objectives.

1 In this context, the issue of which agency or agencies should have the capacity to apply to a Court that a financial institution be wound-up is considered. Under Australian law, the process of managing insolvency is a separate issue.

Legal form of a guarantee scheme

9.8 A guarantee scheme could assume a range of legal forms, and could be either publicly or privately constituted.

9.9 Among the principal options are to establish any scheme:

- as part of an existing independent statutory authority such as APRA, or as an entity under its administration with possibly an independent charter;
- as a government-authorised scheme run by a privately constituted entity. Under this model, for example, the Government could establish the objectives, functions and powers of the scheme through legislation, but may vest operational responsibility in an industry body or private third-party operator;
- as a specific-purpose statutory authority, similar to the recently established Australian Reinsurance Pool Corporation; or
- under an existing agency, for example as a part of an existing government agency such as the Department of the Treasury.

9.10 Obviously there are a range of possible variations to these approaches which could also be considered. In particular, adopting a publicly constituted option would not preclude private sector involvement in aspects of the scheme's operation.

9.11 In choosing among the options outlined, a key factor would be the scope of any guarantee. Applying guarantees across a number of sectors, for example, may provide greater weight to arguments for a single, independently constituted public body than would a decision to implement a single sector-specific scheme. Whether a scheme or schemes are to be pre- or post-funded would also be an important determinant.

Location within APRA

9.12 The principal advantages of locating any guarantee scheme within APRA are that it would eliminate the prospect of regulatory duplication and APRA would already have most of the required information about the relevant institutions.

9.13 A risk with any scheme constituted separately from the prudential regulator, is that the scheme's management will feel obliged to monitor the financial soundness of the entities offering the products that the scheme guarantees, potentially duplicating APRA's role. Such duplication could be reduced through effective cooperation in information sharing between APRA and the scheme's administrators.

9.14 Location within APRA may avoid the need to separately establish and administer many of the information systems required to operate a guarantee scheme. It could also avoid a potential problem of blurring of responsibilities for failure management which could occur where schemes are separately managed.

9.15 There are also potential difficulties with locating any scheme in APRA. Principal among them are that it could give rise to a conflict of interest and encourage greater regulatory forbearance than might otherwise be the case. APRA's responsibilities, in particular, are to all depositors or policyholders in prudentially regulated institutions. The responsibilities of any scheme, on the other hand, would be to a potentially much narrower range of protected consumers.

9.16 Regulatory forbearance can arise because prudential regulators hope or believe that prolonging the life of a troubled institution will ultimately lead to a recovery which protects claims of all stakeholders and the reputation of the regulator. Less palatable is the possibility that regulatory forbearance reflects regulatory capture or private interest benefits to regulators. On the other hand, systemic concerns may cause a different approach to dealing with a large troubled institution than would be adopted by a scheme simply concerned with minimising cost.

9.17 An independent guarantee scheme with a mandate to minimise scheme costs could bring pressure to bear against such regulatory forbearance. To be effective in this role, however, a scheme would require its own investigative/supervisory functions or be able effectively to access information that the prudential regulator gains in performing these functions.

9.18 The effects on regulatory forbearance of locating a scheme within the prudential regulator and thus providing it with access to a pool of resources which can mitigate the consequences of failure for some stakeholders are less straightforward, but have been a concern internationally. In many cases the result has been a separation of guarantee scheme and prudential regulator. In others (such as the United States (US)) an alternative approach of legislating to

mandate least cost resolution of financial failure or impending failure has been taken to inhibit forbearance.

9.19 Given Australia's strong regulatory framework, the risk of regulatory forbearance appears relatively low.

Location within an industry body

9.20 An industry operated scheme may have the advantage that it could readily draw on whatever expertise is needed to assess and pay claims (which is important particularly in the general insurance sector, for example, where assessing long-tail liabilities can be quite complex); and that it could facilitate industry acceptance or 'ownership' of the arrangements. However, private sector expertise can be drawn upon as needed under any management model. This has been demonstrated in the operation of the support scheme for the failure of the HIH Group of Companies, for example.

9.21 An industry operated scheme could, however, give rise to conflicts of interest. For example, there could be less resolve by industry managers to force or support early corrective action in regard to a failing institution in the hope that its recovery will stave off a guarantee levy (*ex post*) or perhaps a rise in premiums (pre-funding).

9.22 From a public policy perspective, industry management means less government control, notwithstanding that the government would almost certainly be required to underwrite a scheme's viability.

Location within a new statutory authority or Government Department

9.23 The principal benefits of either of these options are that they would allow for comprehensive government oversight and control of schemes and would avoid potential conflicts inherent in either the APRA or private sector models. Although any guarantee scheme is likely to be funded by industry participants, the costs are ultimately borne by the consumers, and the government would be expected to underwrite the viability of the scheme. As such, the government would have an on-going, legitimate role in ensuring that any scheme is effectively and efficiently managed.

9.24 Whether it is appropriate that a scheme be administered by a statutory body or an existing government agency with relevant expertise

largely depends on the scope and funding arrangements. There are significant fixed costs involved in operating a statutory authority and these might only be justifiable where a scheme has broad sectoral scope and/or where significant pre-funding is envisaged.

9.25 Under a post-funded model, the administrative responsibilities could reside with an existing agency. This would take into account Australia's long history of infrequent financial institution failures. Under such an approach, the agency would activate a more formal pre-specified arrangement and industry expertise could be drawn on as required. However, for cost and other reasons, it may still be desirable to establish some arm's length 'off the shelf' management vehicle which could be activated as and when required.

Allocation of functions

9.26 The legal form of any scheme would largely determine the governance and accountability arrangements; for example, whether responsibilities and accountabilities would reside in an independent board, with commissioners or directly with government. The principal issue then is how the six broad functions relevant to the operation of a guarantee scheme should be allocated between the scheme and other bodies, particularly APRA.

Pricing/levy setting, asset/debt management and claims assessment and payment

9.27 Premium pricing or the setting of levies, the management of assets or borrowings and claims management are all functions that logically would fall within the responsibilities of a scheme's management. Nevertheless, the performance of these functions would require, or benefit from, close cooperation with the prudential regulator and the liquidator of a failed institution.

9.28 As noted in Chapter 8, for example, if it was intended to implement some form of risk-based pricing, it is likely that a scheme would need to rely on APRA information and institution risk assessments. There might also be scope for any scheme to utilise APRA's existing systems to invoice and collect premiums/levies, similar to the arrangements which apply in the United Kingdom (UK) between the Financial Services Compensation Scheme (FSCS) and the Financial Services Authority.

9.29 Under a pre-funded scheme, contributions would need to be invested in an appropriate portfolio of liquid assets whilst remaining available to pay claims as they accrued. Under a post-funded scheme, it would be necessary to maintain a facility to borrow sufficient funds to pay out eligible claims and to manage the servicing and retirement of these debts over time. It may not be necessary for the scheme to administer this aspect of the arrangements itself. To avoid duplication, an existing body with similar responsibilities could do so (for example, the Reserve Bank of Australia or the Australian Office of Financial Management).

9.30 The assessment and payment of claims would need to be undertaken in accordance with commercial practice and harmonise with the roles and responsibilities of the liquidator. The issues become particularly difficult in relation to claims by insurance policyholders where reinsurance arrangements and valuation difficulties can complicate the payments process. Normally, a liquidator would rely on usual claims management processes to determine the value of claims. Having made payments, the scheme would assume the place of those that it has compensated in the insolvency process. Additional questions relate to whether the scheme might be granted any priority relative to other remaining creditors for those claims that it has assumed.

Prudential regulation and supervision

9.31 As highlighted earlier, a significant risk in constituting any guarantee scheme separate from the prudential regulator is that this could lead to regulatory duplication. At present, APRA is the prudential regulator responsible for monitoring and supervising the institutions that would be covered by any guarantee scheme.

9.32 The best approach therefore, and one that appears to be successful (for example, in the UK) is for any scheme to rely on the information and assessments of the prudential regulator to the extent required for its effective operation. Needless to say, the practical success of such an approach would depend heavily on appropriate communication, coordination and sharing of this information between the two agencies.

9.33 Internationally, a significant proportion of guarantee schemes undertake monitoring and, in some cases, prudentially supervise participating institutions to some degree. This is sometimes in addition to, or complementary to, the role of the prudential regulator. To some extent, this appears to reflect the way guarantee schemes have evolved (the US Federal Deposit Insurance Corporation, for example, was established prior to modern

approaches to prudential regulation of banks). It also suggests that in Australia a very robust framework of cooperation between any scheme and APRA would be needed to avoid additional regulatory compliance costs for participating institutions.

Failure management

9.34 In parallel to the function of prudential regulation and supervision, it would be necessary to address the involvement of the various parties in preventing or managing the failure of a financial institution.

9.35 APRA's failure management powers were documented in Chapter 3 and a discussion of possible implications for its powers is canvassed in Chapter 10. The key issue is whether a separate guarantee scheme should have any special powers to intervene or bring about the winding-up or resolution of a financial institution in financial difficulties.

9.36 Consistent with the premise that there is little justification in the Australian context for any guarantee scheme exercising monitoring and prudential supervisory functions (a necessary prerequisite to failure management), there also seems to be little logic in any scheme having failure management powers additional to those vested in APRA.

9.37 It is important that the allocation of powers to intervene and bring about a resolution or winding-up of an institution in financial difficulty is placed with the organisation which has an incentive structure best suited to achieving the public policy objectives involved. APRA would exercise its powers on behalf of a broader range of stakeholders than those likely to be covered by any limited explicit guarantee. APRA, the relevant external administrator and where applicable, a Court, therefore, appear better placed to consider and balance the broader range of interests involved in a failure management exercise.

9.38 Nonetheless, managers of any guarantee scheme would be concerned that APRA should intervene on a timely basis in the operations of a troubled institution.

To allow for this concern to be addressed, one possibility would be to establish a set of transparent criteria that define the situations where APRA must take particular action, akin to the US 'prompt corrective action' formula. This would be a more 'rules-based' approach than currently exists under the

Australian prudential framework, however, and may undesirably limit APRA's flexibility.

9.39 A less rigid option may entail both APRA and any guarantee scheme being responsible for, among other objectives, minimising the costs to the guarantee fund over time. Other options include a guarantee scheme being given the ability to petition APRA to take supervisory action, or, perhaps as a potential creditor, to independently apply to Court that a financial institution be wound-up.

9.40 As shown in Chapter 7, the degree of insolvency required before a scheme incurs costs from a failure may be quite large whereas APRA's intervention would be triggered by any tendency towards insolvency. Consequently, there may be less reason for concern with a scheme relying on APRA's failure management powers.

Insolvency

9.41 Chapter 5 of the *Corporations Act 2001* governs insolvent corporations including voluntary administration, receivership and liquidation. As noted, APRA has the power to apply for the winding-up of financial institutions and also has powers relating to the external administration of authorised deposit-taking institutions (ADIs), life insurance companies and superannuation funds. A further key question is whether a guarantee scheme should have powers in relation to external administration and liquidation processes.

9.42 In the Australian context, the liquidation of insolvent companies is managed by an insolvency practitioner, who is subject to the direction of the Court.

9.43 The Australian Securities and Investments Commission is responsible for the registration of insolvency practitioners. Under the Corporations Act a person may not undertake the functions and duties of a receiver, receiver manager, administrator or liquidator unless the person is a registered liquidator or has leave of the Court. A person also must be an official liquidator to undertake duties of a provisional liquidator and a liquidator appointed by the Court.

9.44 International practice is diverse. Both the US and Canadian deposit insurance schemes, for example, have powers to act as liquidator, whereas the UK scheme does not. In practice, however, the Canadian scheme has not

exercised its power because it has usually been one of the largest creditors of failed institutions and hence, would have faced a significant conflict of interest had it done so (Canada Deposit Insurance Corporation 2001).

9.45 It is likely that any guarantee scheme constituted in Australia would face a similar conflict, and this presents a very strong case for not providing any scheme with power to manage the external administration/liquidation process, although it could be granted leave to participate as a prospective or actual creditor.

9.46 Nevertheless, as possibly the most significant creditor following the failure of a financial institution, there may be certain roles that a guarantee scheme could play to expedite the liquidation process and improve the level of recoveries.

CHAPTER 10: REGULATORY IMPLICATIONS

Overview

- The viability of any guarantee scheme depends heavily on the prudential framework and its ability to avoid and manage failure. Introducing a guarantee would appear to warrant some improvement of the failure management powers of the Australian Prudential Regulatory Authority (APRA). Regulatory definition of the scope of the guarantee's application would be necessary.

- A guarantee scheme may, in certain circumstances, complement the prudential framework by providing the resources necessary to implement resolution strategies other than closure of a troubled institution. This would need to be carefully considered.

- The cost of any guarantee scheme, and its distribution between internal and external stakeholders of a failed firm, is directly related to the priority in insolvency of insured customers. More effective targeting of stakeholder preference arrangements could be analysed.

- There is merit in addressing the question of whether the State-based insurance regulatory framework could move towards a national approach over time.

- An associated issue is what general rules or principles might need to be satisfied before any guarantee could extend to products associated with statutory classes of State insurance.

- It may be possible for administration of the existing compensation arrangements under Part 23 of the *Superannuation Industry (Supervision) Act 1993* (covering fraudulent conduct and theft) to be vested in any independent body established to administer guarantee schemes.

Regulatory implications

10.1 Introducing an explicit guarantee would raise some complex regulatory issues at the core of the prudential, insolvency and consumer protection frameworks applying to financial institutions. Any decision to introduce a guarantee could also have implications for a range of regulatory matters associated with State and Territory banking or insurance.

10.2 This Chapter broadly assesses the scope of these possible regulatory implications.

10.3 By its nature, a limited explicit guarantee would provide a level of protection for certain products and customers. It would not be designed to protect financially sophisticated customers or other creditors. Non-guaranteed stakeholders would continue to rely on the existing regulatory framework. This Study has not been commissioned to directly assess the effectiveness of the existing regulatory framework. However, it has been requested to consider the implications for the regulatory framework of introducing a limited explicit guarantee.

10.4 The regulatory implications can be assessed in two possible categories – pre-failure and post-failure. The more complex implications for the regulatory framework appear to arise in respect of the post-failure environment, that is, in relation to the insolvency framework. Nonetheless, the introduction of a guarantee would introduce some important issues for consideration in the pre-failure context.

Implications for the prudential framework (pre-failure)

Need to clarify the objectives of prudential regulation and consumer protection

10.5 Considering the introduction of a guarantee requires some assessment of the objectives and best means of delivering prudential oversight and consumer protection.

10.6 The prudential framework provides only an indirect means of delivering consumer protection. In a competitive market, and where responsibility rests with private stakeholders for meeting promises, there can be no certainty in terms of consumer outcomes.

10.7 While the design of the prudential framework intentionally reflects differences in the operating environment for various categories of financial institution; it might equally be argued to provide for a different level of consumer protection for financial promises of a similar intensity.

10.8 As noted in Chapter 3, an objective of the prudential framework is to reduce the probability and associated impact of the failure of financial institutions. Whereas the motivation is to avoid socially undesirable consequences of financial market failure, indirectly, prudential regulation serves to protect customers of those institutions. It generates benefits for other stakeholders (including other institutions in the regulated sectors, other creditors, employees and if one were introduced, a guarantee scheme itself). It is much broader in its objectives and coverage than a safety net designed to protect the most vulnerable consumers.

10.9 The insolvency framework is generally intended to provide an efficient means of dealing with the failure of firms and distributing remaining resources among what is usually a diverse range of claimants. In the case of financial institutions, the insolvency framework can also recognise that there may be relatively homogenous classes of creditors (for example, depositors or policyholders) and that the failure is likely to involve the resolution of a complicated array of financial assets and liabilities. Again, the framework exists to serve a range of interests. It is not designed to deliver particular outcomes to a limited category of consumers.

10.10 A guarantee scheme could ensure resources are available to provide prompt consumer redress and define, more specifically, the impact of a financial institution's failure on particular categories of customers. This could allow prudential and insolvency processes to proceed somewhat independently of these considerations. Additionally, it is possible that the resources available to the manager of the guarantee scheme could be used for some limited prudential purposes, such as in managing failure (for example, in facilitating a transfer of business) if that were possible at a lower cost than liquidation. (See Box 10.1 for an overview of some alternative resolution processes). As noted previously, this may present a preferable course of action, needing to be judged against some specific criteria, to formal liquidation. It would, however, raise a number of complications for scheme governance,

since those responsible for the scheme would need information to assess whether this was, in fact, the least cost response for the scheme.

10.11 A guarantee may achieve more uniform protection for retail customers of different institutions, while allowing the prudential framework to remain tailored to the different risks and characteristics of the component industries and the probability of failure and the impact on the financial system of the component firms. However, the prudential framework needs to include an appropriate range of tools that can be employed to avoid and manage failure to ensure the cost of any guarantee scheme is sustainable.

10.12 The issue of the appropriate scope of any guarantee and its associated delivery of consumer protection might be informed by considering the similarity in the intensity of promise across products and how serious the consequences of a financial institution's failure may be for individuals.

10.13 By focussing on each of these elements separately (the prudential framework, the insolvency framework and any guarantee scheme), the expected contribution and design of each of these components of the regulatory framework could be brought into sharper relief.

Establishment of a new agency or agencies with appropriate powers

10.14 As noted in Chapter 9, implementing a guarantee may well involve the creation of a new agency that could occupy a special position in the overall regulatory system. The Australian Prudential Regulation Authority (APRA) could continue to regulate and supervise financial institutions broadly in accordance with the existing prudential framework.

10.15 The guarantee scheme and those parties who were liable to contribute to it, could rely on APRA's abilities to detect problems in troubled financial institutions, ideally resolving any problems prior to the point of insolvency. In this sense, there could be heightened scrutiny and increased reliance on APRA's effectiveness.

10.16 The guarantee scheme would require appropriate powers to support its dealings with financial institutions, reflecting its likely objectives of protecting targeted consumers whilst minimising the cost to the fund over time. These might include information sharing and gathering powers; the ability to establish appropriate premiums or charges; and possibly the ability

to participate as a prospective creditor in certain aspects of the managing failure process.

Coordination between APRA and the guarantee scheme

10.17 If a separate body were created, the ability of APRA and the guarantee scheme to share and request information of each other and coordinate their respective activities would be critical. It would be necessary to carefully design this aspect of the prudential-guarantee interface to avoid unnecessary duplication of resources, undue complexity or conflict of objectives, thereby avoiding the associated costs.

10.18 At the same time, it could be desirable for each of APRA and the guarantee scheme to pursue independent objectives. For example, the guarantee scheme could have an independent capacity to decide upon whether its resources should be available to assist in prudential resolutions.[1]

Pressure for strengthening the prudential framework

10.19 By reducing the likelihood of costly failure, the prudential framework would be an important source of cost mitigation. The insolvency framework (discussed below) also provides a number of options for reducing the expected costs of a failure to external parties, particularly in terms of the efficiency with which it allows failure resolution. The insolvency framework, through any priority arrangements, also serves to reallocate costs among parties.

10.20 A guarantee, through its funding requirement, has the potential to transmit the cost implications of a financial institution's failure to other participants. This would increase both their dependence on and the importance of the rest of the regulatory system, including the prudential framework.

Implications for specific prudential requirements

10.21 At a more detailed level, the implications for the prudential framework will depend on the actual design of any guarantee. Decisions concerning the scope of coverage across industries and products and associated benefit thresholds could have a number of consequences — particularly in relation to competitive neutrality between similar products.

1 This possibility would appear to depend on a pre-existing pool of funding.

10.22 Another central consideration would be each financial institution's potential liability in funding the guarantee. Under either a pre-funded or a post-funded model, there may be consequences for the amount of capital that financial institutions would be required to either contribute or set aside. Under a post-funded scheme, APRA may find it necessary to reflect this appropriately in prudential standards concerning capital adequacy or risk management. There may also be a need for annual limits on any post-funding arrangement to allow the risk to be managed.

10.23 The fact that a guarantee involves potential costs to other industry participants has, in some countries, led to a more rules-based approach to prudential supervision. This aims to limit the possibility of regulatory forbearance, or excessive costs accumulating to other participants. For example, in the United States (US), the supervisor is required to take action when a member institution's capital ratio falls below a pre-determined level. Resolution procedures are also generally limited to those which present the 'least-cost' to the guarantee fund.

10.24 Finally, consideration would need to be given to the appropriate way of imposing requirements for a financial institution to become a member of, or hold sufficient coverage with, the appropriate guarantee scheme. Such a requirement could be associated with the financial institution's authorisation or mandated by legislation.

Possible need for additional layers of regulation

10.25 The dimensions of a guarantee would need to be explicitly defined according to its preferred coverage, the types of institutions and the types of products captured. An explicit framework would provide certainty. However, this would need to be sufficiently flexible to cope with financial innovation.

10.26 Promoting consumer awareness of the scope of any guarantee's application (and non-application) would be achieved through an appropriate disclosure framework. It is also likely that there would be a need for an educational advertising campaign to promote consumer awareness.

10.27 Critically, consumers will need to understand the distinction between guaranteed products and those falling outside the protection of any scheme.

10.28 In some countries, the introduction of a guarantee appears to have given rise to the need to consider price regulation of guaranteed products. While this is certainly at odds with Australian regulatory philosophy, it

appears to be a relevant consideration. It is possible that the existing prudential framework would be sufficient to cope with the risks of serial under-pricing.

Possible to remove some layers of regulation

10.29 The exercise of defining the scope of a guarantee is one of determining which classes of financial assets should be risk-free (or with a degree of coinsurance, relatively low-risk) in the hands of the retail consumer. The working assumption is that the extent of a guarantee, if any, should be tightly circumscribed.

10.30 If the delineation between risk-free and risky financial assets was clarified by introducing a guarantee, and in an environment of appropriate disclosure, there may be other compensating changes that could be made. There may be arguments for allowing consumers to access a wider range of non-guaranteed products, provided disclosure of the non-guaranteed status is sufficient.

10.31 One possible example would be in removing or reducing the restrictions on foreign authorised deposit-taking institutions (ADIs) accepting deposits from retail depositors (that is, the current restriction on branches of foreign ADIs accepting initial deposit amounts less than $250,000 per customer). The objective of this restriction has been to ensure that institutions that are not subject to depositor preference arrangements are inaccessible to financially unsophisticated investors.

10.32 It would be unlikely that deposits with Australian branches of foreign ADIs would be covered by any guarantee arrangement (with coverage limited to deposits with locally incorporated ADIs — see Chapter 6).

10.33 Since an explicit guarantee would probably be set at some amount less than the $250,000 threshold, it may be possible to lower the limit on initial branch deposits to the maximum coverage of any explicit guarantee.

10.34 Alternatively, were consumers able to readily and effectively identify and discriminate between insured and non-insured products, the introduction of an explicit guarantee could allow for the removal of this restriction.

10.35 This could have significant benefits in terms of the level of competition in deposit-taking, although it would increase the possibilities of consumers being exposed to new risks that they may not readily understand.

Implications for the insolvency framework for financial institutions (post-failure)

10.36 Introducing a guarantee would also require certain aspects of the insolvency framework for financial institutions to be addressed. The insolvency framework may have such objectives as providing legal and financial certainty to creditors; maximising the value of the insolvency estate and promoting efficiency in its distribution; and providing for fair and equitable outcomes among creditors. [2]

10.37 In the context of an industry funded guarantee scheme, the insolvency framework may also achieve the additional objective of minimising the cost to parties external to the failed financial institution (for example, other industry participants) in meeting its guaranteed liabilities. This is often embodied as the principle of a 'least-cost resolution'.

10.38 Possible changes might entail a more rules-based approach to regulatory action. This needs to be considered in terms of the potential to minimise the exposure of other industry participants to a guarantee scheme against the risk that it unduly restricts APRA in the actions that it might take.

10.39 Another consideration is how any changes to the insolvency framework affects the relative share of losses in insolvency between the firm's own non-guaranteed stakeholders (for example, unsecured creditors of the failed financial institution) and industry contributors to a guarantee scheme.

10.40 The applicability of these options needs to be considered against the typical profile of liabilities of the institutions concerned and the implications for ongoing access to and cost of capital.

10.41 Where the losses in insolvency can be passed on to other stakeholders (such as non-guaranteed creditors) of the failed firm, thereby increasing their exposures, this may increase the extent of market discipline over the financial institution.

2 See Bank for International Settlements (BIS), Contact group on the Legal and Institutional Underpinnings of the International Financial System, 2003.

Box 10.1: Open and closed resolutions

In some countries, the resources of the guarantee scheme are available for the purpose of assisting in the resolution of troubled financial institutions. The circumstances in which financial resources are available are usually strictly limited, and the particular courses of action may be mandated in legislation.

An ***open resolution*** entails providing resources to the troubled institutions, in the hope that this may enable it to continue in operation. With the limited exception of liquidity support, this is generally accepted to interfere with the appropriate incentives and risk-taking behaviour of the failed firm and is usually either avoided or tightly restricted to the worst systemic cases. Any open resolution addressing solvency concerns should involve ultimate transfer of ownership and control rights from existing owners.

A ***closed resolution***, on the other hand, entails the use of guarantee scheme resources to facilitate the transfer of the failed firms, assets, liabilities and customers to another healthier financial institution. In this sense, the owners and managers of the failed firm do not directly benefit from the rescue. However, it may be the desirable course of action from the perspective of both customers and the guarantee scheme. In effect, this avoids the need for the scheme to compensate customers directly, which may result in lower costs.

Where the resources of the guarantee scheme are available for such purposes, it is usually associated with a mandate that the funds be used to achieve a ***least-cost resolution.***

Role of regulatory system participants in managing liquidation

10.42 In terms of responsibilities for minimising the possible cost of a failure, a question arises as to the nature of the appropriate role for APRA or the guarantee scheme in managing the liquidation of a financial institution.

10.43 Currently, the Australian insolvency framework relies upon Court oversight to ensure that a range of interests are balanced. A liquidator or other insolvency practitioner is appointed to manage the process.

10.44 APRA is currently provided with standing to petition the Court to initiate the liquidation process. The *Corporations Act 2001* permits applicants

for winding-up to apply to the Court for interim directions that steps be taken before or after the hearing of the application.

10.45 Also relevant are the various provisions that escalate the interests of depositors, life insurance policyholders and general insurance policyholders with respect to particular assets of financial institutions.

10.46 Liquidation of a financial institution is always likely to be a complex and time consuming exercise – requiring many creditors' interests to be balanced. This is reflected in the fact that a number of alternative mechanisms exist to address failure ideally prior to, but also beyond, the point of insolvency.

10.47 Liquidation of certain types of financial institutions, particularly those with long-term liabilities such as insurance companies, presents special challenges.

10.48 For example, policyholders are by no means a generic category of creditor. It is a matter of considerable practical difficulty to ascertain the value of liabilities across all insurance policies, and to provide a fair and equitable distribution among the parties. This is one reason why a Court-managed process may be preferred to one involving APRA's discretion.

10.49 In other cases, such as for ADIs, it is relatively more straightforward to determine the amount of outstanding deposit liabilities and the identity of the depositors. There, however, the value of some assets such as loans may be more difficult to estimate accurately. This should not complicate the task of compensation, but makes estimating funding requirements *ex ante* quite difficult.

10.50 Whereas APRA may have a specific role to play in a liquidation, for example in representing policyholders as a class, it is not clear it is appropriate for it to manage the liquidation process independently of Court direction; in favour of a particular class of creditor (for example, depositors or policyholders).

10.51 Under an assumption of claims approach (see below), the guarantee scheme would become a major creditor of the failed firm. The nature of this position would need to be closely examined to consider whether the fund should obtain any special rights during the liquidation process. At a minimum its status as a creditor, following assumption of claims, may need to be given legal recognition.

10.52 In a number of international cases, once the decision is made to wind-up a financial institution, this is managed by the guarantee scheme itself (rather than the Courts). In effect, the fund becomes both insolvency practitioner and arbitrator.

10.53 The applicability of this approach would need to be considered against the existing insolvency framework and the need to protect the interests of other stakeholders. In some cases, where the stakeholders are relatively homogenous, such as for a specialist retail deposit-taking institution or superannuation fund, there may be arguments for such an approach.

10.54 However, under a limited guarantee scheme, the fact that there would be other uninsured creditors whose interests must be protected in insolvency, appears to weigh against adopting such an approach.

Priority of claims

10.55 As noted in Chapter 3, a number of provisions already exist that serve to escalate the rights of depositors and policyholders above those of other creditors of a financial institution. Chapter 7 demonstrated how these arrangements affect the distribution of losses among the relative stakeholders of a failed institution.

10.56 The possible implications of revising priority arrangements to accommodate a guarantee scheme might be considered in the context of three broad options:

- Leave existing priority arrangements unchanged.
  - This would mean that a guarantee scheme would benefit from prevailing priority arrangements to the same extent as non-guaranteed depositors and policyholders. It would assume the same rights as those depositors and policyholders that it served to protect;
- Narrow the scope of priority arrangements to apply them only to those liabilities covered by a guarantee scheme.
  - This would place a guarantee scheme ahead of all other non-guaranteed creditors and thereby align the position of non-guaranteed depositors and policyholders with that of unsecured creditors; or
- Remove priority arrangements altogether.

– This would place all unsecured creditors on an equal footing that is improving the situation of those creditors who are not depositors or policyholders.

10.57 The objectives associated with the existing priority arrangements are to increase the probability that depositors and policyholders claims will be able to be met from the assets of their financial institution. In the context of a guarantee scheme, they might also reduce the likelihood that external stakeholders would need to contribute funding to the guarantee scheme.

10.58 It is axiomatic, nevertheless, that granting priority to one class of creditors to an institution can only be achieved at the expense of other creditors to the institution. The potential economic consequences of relegating rights of other creditors, particularly otherwise secured creditors, therefore, needs to be carefully assessed when contemplating such initiatives. For example, it may not be palatable to force even greater losses onto non-guaranteed policyholders of a failed insurer.

10.59 Due to definitional problems, priority arrangements may not be a particularly direct means of targeting assistance to the most vulnerable customers. For example, applied to all policyholders or all depositors, priority confers a proportional benefit on both retail customers and sophisticated customers alike. In the context of insurance, it would confer a proportional benefit to those policyholders who have lost the benefit of cover associated with premiums already paid and those policyholders with existing claims that cannot be met in full. Chapter 5 demonstrated how the consequences of failure may be quite different among these two categories.

10.60 Assigning priority is (*ex post*) only an exercise in reallocating wealth among creditors, and as such, there is no certainty that the firm's assets will be sufficient for even priority liabilities to be met. Hence, when taken alone, priority arrangements do not provide certainty in terms of the level and timing of consumer protection that they may provide. Priority arrangements may also have *ex ante* incentive effects on creditor behaviour, affecting the cost of funding, and can induce development of legal structures to negate priority.

10.61 The applicability of general priority arrangements also needs to be considered against the profile of a financial institutions' liabilities. In addition, the moral hazard implications of conferring protection on creditors that would otherwise have adequate capacity to monitor a firm and exercise market discipline is a relevant concern.

10.62 A general priority for all depositors or policyholders might be contrasted to a more limited priority for those liabilities covered by a guarantee scheme. The consequences of providing guaranteed liabilities a specific priority, that did not alter the general priority for non-guaranteed liabilities, could be expected to be of a lower order of magnitude than a general priority. In effect, it would entail the shareholders and then the other non-guaranteed creditors of the failed firm bearing losses to meet the costs of the guarantee before any external funding is called upon.

10.63 However, despite the illusion, this is not a costless exercise. Because changing priority would impact directly on those creditors of the firm whose priority is made relatively lower, it may reduce the firm's access to such funding or increase the financing costs.

10.64 Two other issues complicate the operation of priority arrangements in practice. One is that creditors who are also in debt to a failed institution might gain a form of priority if they are allowed to net or set-off their debts against monies owed to them. A second issue is that to the extent that security is taken out over the assets of a financial institution (or other similar arrangements), the position of otherwise non-preferred stakeholders might be improved, thereby circumventing the intent of priority. This problem increases in relevance as financial institutions undertake ever-more sophisticated and complex financial transactions in interbank and wholesale markets.

Provide for assumption of claims

10.65 Despite the preferred priority arrangements, it would appear to be necessary to provide a legal basis for the guarantee scheme to assume protected depositors' or policyholders' rights to claim over the assets of the failed firm and take their position in the insolvency queue.

10.66 To the extent that the guarantee scheme were to pay out certain claims, in return it would assume the right to make recoveries against the failed firm's remaining assets, putting it in the original position of the depositor or policyholder.

10.67 When taken in conjunction with the possibility of coinsurance (that is, paying out less than it assumed the right to claim) and prevailing preference arrangements, such an arrangement might reduce the likelihood of external contributions being needed to meet the scheme's costs in any given failure.

10.68 To the extent that retail customers protected by a scheme also had non-guaranteed or uncovered claims against the failed firm, they would retain the right to claim against remaining assets.

10.69 Another relevant, though more specific consideration, is the potential right of any guarantee scheme to become the beneficiary of reinsurance contracts of a failed insurer.

Establish priority thresholds

10.70 The use of monetary thresholds might be associated with both the extent of priority and level of guarantee coverage provided to certain classes of creditors.

10.71 For example, it may be possible to limit the application of the depositor preference arrangements by determining a threshold value of deposits per customer. This may increase the likelihood that the assets of the failed firm are sufficient to meet those protected liabilities in a failure, and would also reduce the expected cost to external stakeholders under any guarantee scheme.

10.72 Depositor preference raises the cost of non-preferred liabilities. If an explicit guarantee were to replace depositor preference as the primary means of protecting retail investors in ADIs, then holders of non-depository liabilities might have better security over the assets of a failed ADI and might therefore be willing to lend more cheaply.

10.73 The protection provided through 'depositor preference' type arrangements in Switzerland is limited through the use of thresholds. In this case, depositor preference provisions apply to a limit of CHF30,000. For amounts above this threshold, the depositor's liabilities rank equally with those owed to other creditors. When compared to an unlimited application of depositor preference arrangements, this would have the effect of reducing the cost of an insolvency on other creditors of the failed financial institution.

10.74 Similarly, in Hong Kong and the US, the concepts of preference and deposit insurance are taken to be complementary. By aligning the thresholds associated with priority and guarantee benefits, the cost of payout under a guarantee scheme could, in many plausible scenarios, be borne entirely by stakeholders of the failed institution.

State and Territory banking and insurance

10.75 The regulatory system, as explained in the Introduction, does not extend to all forms of financial promises. For example, State and Territory governments continue to provide certain financial services, and in doing so are not captured by the same prudential framework as applies to private financial institutions.

10.76 Some interested parties have suggested that implementing a guarantee could be the catalyst for revisiting the scope of Commonwealth prudential regulation, and providing the potential for reducing duplicative State and Territory involvement — particularly in relation to insurance.

State and Territory government involvement in insurance markets

10.77 There are a number of ways in which the State and Territory governments participate in or influence the operation of certain insurance markets.

10.78 Firstly, the State and Territory governments have enacted legislation requiring certain activities or risks to be insured, thereby creating a market for insuring against certain risks. These are known collectively as compulsory classes of insurance. Some common examples are insurance for personal injury in motor vehicle accidents Compulsory Third Party Insurance, Workers' Compensation, and Builders' Warranty insurance.

10.79 The nature of State regulation reflects a number of policy concerns. For example, the government may be concerned to ensure that insurance cover is available and that premiums are fair and reasonable. Requirements for community rating (that is, cross-subsidies between various sections of the community) may also be embedded.

10.80 Given the element of compulsion, the requirement to hold cover is generally accompanied by an additional level of regulation governing the insurance premia that may be charged, the quantum of benefits that may be paid and the circumstances in which benefits are payable.

10.81 In addition, some governments play a role in directly underwriting the risk associated with these categories of insurance. This may be done through a government business enterprise or directly by the government assuming a proportion of the risk faced by private underwriters.

Commonwealth regulation of insurance

10.82 Section 51 of the Constitution prescribes the scope of the Commonwealth's legislative powers. The Commonwealth's responsibilities for regulating the financial system derive from its ability to make laws in respect of certain corporations, in relation to insolvency and for specific matters such as banking, insurance and pensions.

10.83 In relation to insurance, the Commonwealth does not have the Constitutional power to make laws in respect of State insurance. The Commonwealth does not, as a result, regulate the provision of insurance by state-owned enterprises (for example, insurance underwritten by state-government bodies).

10.84 Where private sector insurers underwrite statutory classes of insurance, even under certain State schemes, the Commonwealth corporations and prudential frameworks generally apply.

10.85 This division of responsibilities between the Commonwealth and the States and Territories has the capacity to add to the complexity of the regulatory framework. For example, there are differences between how the various States and Territories regulate or in some cases underwrite statutory classes of insurance. There is also scope for uncertainty as to whether the provision of insurance is prudentially regulated and subject to the current regulatory framework.

10.86 The Commonwealth has passed legislation that facilitates the transfer of responsibility for prudential regulation within State and Territory insurance schemes to APRA with the Treasurer's approval. In order to effect a formal transfer, however, each State or Territory wishing to participate would need to confer functions upon APRA in its own legislation. Alternatively, a less formal approach might entail APRA performing a consulting role to the scheme in question. The latter approach may not be sustained unless it also involved the creation of effective powers.

Application of a guarantee to State and Territory insurance

10.87 The statutory classes of insurance present a special case in terms of considering the potential application of prudential regulation and a limited explicit guarantee.

10.88 To the extent that a State or Territory government were underwriting the risk of compulsory insurance classes, either directly or through a government business enterprise, there should not be the prospect of a commercial insolvency, hence there would not appear to be an argument for the class to be covered.

10.89 State and Territory governments determining insurance premiums or the benefits payable under statutory schemes impacts directly on the viability of the schemes and any private sector underwriters. This has the potential to result in non-commercial or imprudent outcomes. The form of premium and benefit regulation would be an important consideration in deciding whether to extend the guarantee scheme to cover compulsory classes, in so far as it may present a financial risk to any guarantee scheme.

10.90 To the extent that such schemes were underwritten by private sector entities regulated by APRA and are undertaken on a fully commercial and prudent basis, there would appear to be scope for an explicit guarantee to extend to the statutory classes of insurance.

10.91 Alternatively, given the balance of other policy considerations, there may be an equivalent case for establishing separate guarantee arrangements for compulsory classes of insurance.

10.92 Given the element of compulsion and the circumstances insured, there may also be a case for a guarantee to provide a higher level of protection than under other classes of insurance product. Such a distinction between compulsory and non-compulsory insurance classes is evident in a number of international guarantee schemes.

10.93 It is clear that coverage by a guarantee would not fully replace the existing State and Territory nominal defendant/insurer arrangements (where these cover claims against uninsured or unidentified parties).

10.94 To the extent that States and Territories were to rely on a guarantee scheme to protect against insolvency-related losses associated with compulsory insurance classes, there may be a case for them to make an appropriate contribution into any centralised scheme in recognition of the transferred risk.

Part 23 of the Superannuation Industry (Supervision) Act 1993

10.95 Chapters 5 and 6 reviewed the case for providing guarantees over superannuation accounts. In general, since superannuation is a vehicle for employees (or their employers) to invest their savings in a collective investment and take on market risk but no counterparty risk, the case for a guarantee did not appear to be strong. This was contrasted to cases where an APRA-regulated financial institution uses the strength of its balance sheet to make promises to consumers that are not intended to fluctuate in value.

10.96 Should an umbrella body be created to administer a system of guarantees, one issue that does arise is whether it could also assume responsibility for administering arrangements under Part 23 of the *Superannuation Industry (Supervision) Act 1993.*

10.97 That scheme exists to provide compensation in limited circumstances where fraudulent conduct and theft may present significant losses to members or beneficiaries of a superannuation fund.

10.98 Although it does not appear sensible to consider guaranteeing the contribution or market risk associated with superannuation funds, it may be possible for a body administering guarantee arrangements in other prudentially regulated sectors to assume some of the existing superannuation compensation functions. It thus addresses the issue of protecting against agent risk facing these investors.

APPENDICES

APPENDIX 1.1: TERMS OF REFERENCE

The Government requested that the Technical Study should address the following issues, drawing upon relevant international experiences:

(a) the economic rationales for and against explicit guarantees over certain retail financial products including the implications of explicit guarantees for financial stability and private incentives for monitoring the financial health of financial institutions;

(b) the implications of introducing a limited explicit guarantee for the general design of the Australian prudential framework and any existing compensation mechanisms (for example, state-based arrangements);

(c) the consequences of a financial institution's failure (which may vary by the sector or sectors in which it operates and the kinds of products that it offers) and the current level of consumer protection provided by the Australian prudential framework;

(d) the merits of possible guarantee design variables (whether or not a scheme appears warranted) including general and sectoral applications, private underwriting, product application, capping, benefit limits and co-insurance arrangements;

(e) the potential cost of a guarantee and the impact of key design variables on the cost;

(f) funding arrangements, exploring pre-and post-funding, public funding, industry funding, consumer funding, and co-funding models (and the possibility of purchasing financial reinsurance cover for any guarantee);

(g) governance and accountability arrangements, including the relationships between the various functions (for example, claims assessment, investment management, prudential regulation) and other arms of government; and

(h) other matters considered relevant.

APPENDIX 2.1: OVERVIEW OF AUSTRALIA'S FINANCIAL SYSTEM

Introduction

Table A provides an overview of the Australian financial system. It includes details of concentration ratios and industry weightings as well as an overview of asset and liability profiles and capital adequacy levels across the sectors. These figures are discussed in more detail under the relevant sector.

Table A: Overview of Australia's prudentially regulated financial sector

	Authorised deposit-taking institutions (ADIs)										
	Major banks[1]	Other domestic banks	Foreign subsidiary banks	Foreign bank branches	Building societies	Credit unions	All ADIs	Life insurance[2]	General insurance	Super	Total
Key statistics											
Number of institutions	4	9	13	24	14	187	251	40	143	269,356	269,790
Concentration ratios											
Top 4 as a % of sector assets							66%	70%	35%	-	
Top 10 as a % of sector assets							82%	93%	58%	-	
Industry Weighting											
Top 4 as a % of system assets							33%	6%	1%	-	
Top 10 as a % of system assets							41%	8%	2%	-	
Assets[3]											
$ billion	737.9	146.4	81.2	111.6	13.0	28.5	1,118.6	181.5	73.6	533.9	1,751.3
%							64%	10%	4%	30%	100%
Liabilities[4]											
$ billion	681.0	136.0	75.7	111.1	12.0	26.1	1041.9	155.3	53.9	533.9	1,628.7
%							64%	10%	3%	33%	100%
Capital adequacy (risk weighted)	10.2%	12.2%	12.5%	-	13.9%	14.4%	-	-	-	-	
Solvency	-	-	-	-	-	-	-	1.8[5]	2.05[6]	-	
									1.74[7]		

1 Major banks include National Australia Bank (NAB), Commonwealth Bank of Australia (CBA), ANZ Banking Group (ANZ) and Westpac Banking Corporation.
2 Life insurance data includes the superannuation assets and liabilities of life insurance companies.
3 Percentages sum to greater than 100 per cent due to the double counting of superannuation assets.
4 Percentages sum to greater than 100 per cent due to the double counting of superannuation liabilities.
5 As at March 2002.
6 Solvency coverage for direct insurers.
7 Solvency coverage for reinsurers.
Source: Australia Prudential Regulation Authority.

Authorised deposit-taking institution industry

Overview

As at June 2003, there were 251 authorised deposit-taking institutions (ADIs) operating in Australia. These include 50 banks, 14 building societies and 187 credit unions. Total ADI assets amounted to $1,118.6 billion and accounted for nearly 50 per cent of the total assets in the Australian financial system (prudentially and non-prudentially regulated sectors). Banks accounted for about 48 per cent of financial system assets while non-bank ADIs accounted for about 2 per cent.

As shown in Table B, the ADI sector is dominated by the four major banks. These top four banks accounted for 66 per cent of the industry's assets as at end-June 2003. The top 10 banks accounted for 82 per cent, foreign banks for around 17 per cent, and the non-banks slightly less than 4 per cent.

Table B: Market share of different classes of ADIs (as at end-June 2003)

Classes of ADIs	Number of ADIs	Total assets in Australia (AUD billion)	As per cent of ADI sector	As per cent of total financial system assets[1]
Domestic banks	13	884.3	79.0	39.2
Major banks [2]	4	737.9	66.0	32.7
Other	9	146.4	13.0	6.5
Foreign banks	37	192.8	17.2	8.5
Subsidiaries	13	81.2	7.2	3.6
Branches	24	111.6	10.0	4.9
Other ADIs	201	41.5	3.7	1.8
Building societies	14	13.0	1.2	0.6
Credit unions	187	28.5	2.5	1.2
Total	**251**	**1,118.6**	**100.0**	**49.5**

1 Percentages in the previous table were as a proportion of the prudentially regulated financial system only.

2 Major banks include National Australia Bank (NAB), Commonwealth Bank of Australia (CBA), ANZ Banking Group (ANZ) and Westpac Banking Corporation.

Source: Australia Prudential Regulation Authority.

Asset profiles

Table C shows the break-down of assets between residents and non-residents, the currency composition of assets, and major resident assets categories.

Banks have a majority of their Australian assets in Australia and denominated in Australian dollars. As at June 2003, resident assets denominated in foreign currency accounted for less than 3 per cent of most locally incorporated banks' total assets in Australia.

Foreign bank branches generally have a higher percentage of their assets in Australia denominated in foreign currency, corresponding to a higher weighting of non-resident assets and a higher percentage of resident assets denominated in foreign currency. Loans and advances constitute a major component of ADIs' assets in Australia.

Loans and advances to residents account for more than 65 per cent of the total assets of most locally incorporated banks (while loans to non-residents account for less than 3 per cent of their total assets) and about 80 per cent of the total assets of non-bank ADIs.

Other major resident assets include cash and liquid assets, trading and investment securities, and investment in related entities. Trading and investment securities account for about 6-9 per cent and 2-9 per cent of banks' total assets in Australia respectively. For building societies, investment securities account for about 16 per cent of their total assets and less than 5 per cent of total assets for credit unions. Investment in related entities generally account for about 5 per cent of total assets for most domestic banks and about 1 per cent of total assets for foreign subsidiary banks and non-bank ADIs.

Table C: Asset profiles of ADIs (as at end-June 2003)

	Major banks	Other domestic banks (ODB)			Foreign subsidiary banks	Foreign bank branches	Building societies	Credit unions
		With overseas branches	Without overseas branches	All ODB				
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Australian assets*								
Residents	96	94	99.9	96.1	93.5	71.4	100	100
Non-residents	4	6	0.1	4	7	29	0	0
Overseas operations	1	1	0	0.4	0.2	10	0	0
Loans due from non-residents	1	2	0.1	1	3	7	0	0
AUD	96	95	99.7	97	93	77	100	100
Foreign currency	4	5	0.3	3	7	23	0	0
Resident assets in foreign currency	2	1	0.3	1	3	10	0	0
Major resident assets								
Loans and advances	66	65	80	71	71	34	78	80
Cash and liquid assets	3	4	3	3	3	6	3	14
Trading securities	6	8	6	7	9	9	0	0
Investment securities	2	1	5	2	6	9	16	4
Investment in related entities	4	5	5	5	1	0	1	1
Loans and advances to residents								
Housing	39	40	45	42	35	0.04	66	56
Personal	7	9	5	7	7	0.02	6	21
Commercial	20	16	31	22	28	34	6	3
Number of institutions	5	3	6	9	13	24	14	187

* All items are expressed as a percentage of total assets on Australian books.
Source: Australia Prudential Regulation Authority.

Liability profiles

Table D sets out the liabilities of ADIs. Non-resident liabilities (liabilities due to overseas operations and deposit and other liabilities due to unrelated non-residents) account for about a quarter of the total liabilities in Australia of the major banks and foreign subsidiary banks and about 15-20 per cent of the total liabilities of other domestic banks. In respect of foreign bank branches non-resident liabilities accounted for over 40 per cent of their total liabilities in Australia at end-June 2003, reflecting in part their reliance on funding from foreign bank parents.

As at June 2003, foreign currency liabilities accounted for about 14-20 per cent and 30 per cent of locally incorporated banks' and foreign bank branches' total liabilities in Australia respectively.

Deposits account for about half of the total liabilities in Australia for locally incorporated banks and over 90 per cent of total liabilities for non-bank ADIs.

Other major funding from residents includes issuance of certificates of deposit and other borrowings from the wholesale market which, in aggregate, account for just over 10 per cent of the major banks' total liabilities in Australia and about 20-25 per cent of total liabilities for other banks. Non-bank ADIs have less access to wholesale funding than banks, and deposits are the major (95 per cent) funding source.

Of these other funding sources from residents, certificates of deposit represent the major component and account for about 10 per cent of the major banks' total liabilities in Australia and about 15-20 per cent of total liabilities for other banks. Other borrowings only account for about 2-7 per cent of banks' total liabilities in Australia.

For most domestic banks, non-resident deposits represent only a small proportion of their total deposits in Australia (less than 5 per cent in general). Foreign banks' reliance on non-resident deposits is significantly higher. For most locally incorporated banks, household deposits generally account for about half of their total deposits in Australia. In respect of non-bank ADIs they account for around 80-90 per cent of total deposits. Foreign bank branches, in contrast, source almost all of their resident deposits from non-household sectors (mainly from financial and non-financial corporations). Deposits from small businesses (sole proprietors/partnerships) and community service organisations account for about 7-10 per cent of total deposits of all locally incorporated banks, while deposits from other entities (including financial and

non-financial corporations and government entities) account for about 30-40 per cent of total deposits.

Only a small percentage of locally incorporated banks' resident deposits are denominated in foreign currency and a majority of these are sourced from financial and non-financial corporations. In contrast, foreign currency deposits from households account for around 1 per cent of the total deposits of foreign subsidiary banks.

About 35-40 per cent of household deposits with domestic banks and non-bank ADIs are held in transaction accounts (that is, deposit accounts that provide chequeing or other payment facilities from which payments can be made to third parties). More than half of the deposits held by locally incorporated banks from small businesses, financial and non-financial corporations and government entities are held in transaction accounts, while a majority of the deposits from community service organisations are held in savings and term deposit accounts (that is, deposit accounts with no chequeing or other payment facilities attached to them).

Table D: Liability profiles of ADIs (as at end-June 2003)

	Major banks	Other domestic banks (ODB)			Foreign subsidiary banks	Foreign bank branches	Building societies	Credit unions
		With overseas branches	Without overseas branches	All ODB				
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Australian liabilities[1]								
Residents	76	79	85	81	73	58	100	100
Non-residents	24	21	15	19	27	42	0	0
Overseas operations	7	0.4	0	0.2	1	16	0	0
Non-resident deposit liabilities	2	5	0.5	3	6	11	0	0
AUD	86	83	85	84	80	72	100	100
Foreign currency	14	17	15	16	20	28	0	0
Resident liabilities in foreign currency	1	2	1	2	2	8	0	0
Foreign exchange deposits	0.7	0.1	0.2	0.2	1.2	3	0	0
Other borrowings	0	0.02	0.7	0.3	0.3	1	0	0
Major resident liabilities								
Deposits	46	48	55	51	49	24	96	94
Households	22	30	33	31	27	0.1	77	88
Private unincorporated business	2	2	4	3	2	0.01	-	-
Community service organisations	1	0.2	1	0.5	0.2	0.02	-	-
Other	21	15	17	16	20	24	19[3]	6[3]
Certificates of deposit	9	15	19	16	17	13	0.3	0
Other borrowings	2	4	7	5	3	5	1	4
Due to financial institutions	1	1	1	1	1	2	1	0.3
Resident and non-resident deposit liabilities	49	52	56	54	55	35	96	94

Table D: Liability profiles of ADIs (as at end-June 2003) (continued)

	Major banks	Other domestic banks (ODB)			Foreign subsidiary banks	Foreign bank branches	Building societies	Credit unions
		With overseas branches	Without overseas branches	All ODB				
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Australian deposit liabilities[2]								
Residents	96	91	99	94	88	69	100	100
Non-residents	4	9	1	6	12	31	0	0
Resident deposits								
Households	46	58	59	58	48	0.2	79	94
Private unincorporated business	5	4	8	5	4	0.03	-	-
Community service organisations	2	0.4	2	1	0.3	0.05	-	-
Sub-total	53	62	68	65	53	0.3	79	94
Other	43	29	31	30	35	69	21[3]	6[3]
Resident deposits in foreign currency	1.3	0.3	0.3	0.3	2.2	10	0	0
Households	0.03	0.08	0.03	0.06	0.6	0.01	0	0
Private unincorporated business	0.02	0	0.02	0.01	0.03	0.005	0	0
Community service organisations	0.002	0.0006	0	0.0004	0.0002	0	0	0
Other	1.3	0.2	0.2	0.2	1.6	10	0	0
AUD resident deposits in transaction accounts	43-45	56-59	37-40	48-51	20-56	3-23	30	40
Households	16	39	24	33	10	0	26	38
Private unincorporated business	4	3	4	3	3	0.003	-	-
Community service organisations	1	0.1	0.2	0.1	0.1	0	-	-
Other	22-24	14-17	9-12	12-15	7-43	3-23	4	2
Number of institutions	4	3	6	9	13	24	14	187

1 All items shown under 'Liabilities' are expressed as a percentage of total liabilities on Australian books.
2 All items shown under 'Australian Deposit Liabilities' are expressed as a percentage of total deposit liabilities in Australia.
3 No separate figures available for deposits from private unincorporated business. Such deposits have been included in the 'Other' category.
Source: Australia Prudential Regulation Authority.

Capital adequacy

All locally incorporated ADIs are required to maintain at all times a minimum risk-based capital adequacy ratio of 8 per cent at both the stand-alone and consolidated banking group level, half of which must qualify as 'Tier 1' capital. This is the internationally accepted risk-based capital adequacy framework established by the Basel Capital Accord under which ADIs are required to hold capital against their credit risk (which includes both on- and off-balance sheet risk-weighted credit exposures) and market risk. All newly established ADIs or an ADI judged to have an excessive concentration of credit risk exposures or significant other risk exposures are generally subject to a higher minimum capital ratio.

As shown in Table E, locally incorporated ADIs maintain a risk-based capital adequacy ratio well above the 8 per cent minimum requirement.

Table E: Capital adequacy ratio (as at end-June 2003)

	Major banks	Other domestic banks	Foreign subsidiary banks	Building societies	Credit unions
Eligible Tier 1 capital ($ billion)	45.1	7.8	5.3	0.8	2.4
Eligible Tier 2 capital ($ billion)	25.3	4.3	1.2	0.1	0.2
Capital deductions ($ billion)	7.3	1.1	0.1	0.0	0.1
Total capital base ($ billion)	63.2	11.0	6.5	1.0	2.4
Total risk-weighted exposures ($ billion)	622.3	90.1	52.0	7.1	16.9
Tier 1 capital ratio	7.2	8.6	10.3	11.8	14.0
Capital adequacy ratio	10.2	12.2	12.5	13.9	14.4
Number of Institutions	4	9	13	14	187

Source: Australia Prudential Regulation Authority.

All locally incorporated ADIs (whether Australian- or foreign-owned) are subject to the depositor protection provisions of the *Banking Act 1959* (refer to Chapter 3 and Appendix 3.1 on Australia's existing regulatory framework for a discussion on depositor priority). The depositor priority and protection provisions of the Banking Act do not apply to depositors of foreign bank branches. Foreign bank branches are not permitted to take an *initial* deposit from an individual for an amount less than $250,000 (although account balances and subsequent deposits can fall below this level).

Table F: Asset to Liability Ratios (as at end-June 2003)

	Major banks	Other domestic banks (ODB)			Foreign subsidiary banks	Foreign bank branches	Building societies	Credit unions
		With overseas branches	Without overseas branches	All ODB				
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Total assets:total liabilities	108	107	109	108	107	100	108	109
Australian assets:Australian deposit liabilities (excluding certificates of deposit)	213	191	195	193	182	204	112	116
Australian assets:Australian deposit liabilities (including certificates of deposit)	179	149	146	148	139	148	111	116
Number of institutions	4	3	6	9	13	24	14	187

Source: Australia Prudential Regulation Authority.

As shown in Table F, locally incorporated banks have maintained their coverage ratio of assets in Australia to total deposit liabilities in Australia (excluding certificates of deposit) above 180 per cent, with the major banks having a ratio well above 200 per cent. Including certificates of deposit, the ratio drops to about 180 per cent, 150 per cent and 140 per cent for the major banks, other domestic banks and foreign subsidiary banks respectively. Reflecting their reliance on deposits as the major funding source, non-bank ADIs generally have a lower coverage ratio for their deposit liabilities than locally incorporated banks.

Life insurance industry

Overview

As at June 2003, there were 40 registered life insurance companies in Australia. Total life office statutory fund assets backing Australian policyholder liabilities stood at $181.5 billion. Net premium flows (that is, premiums less policy payments) for the year ending June 2003 were negative $0.6 billion.

The top 3 life insurance groups account for 59 per cent of statutory fund assets backing Australian liabilities and 53 per cent of total premiums for Australian business, while the top 10 groups account for 93 per cent and 91 per cent respectively. The top 4 life insurance groups by assets backing Australian policy liabilities are: AMP 28 per cent, NAB/MLC 18 per cent, CBA/Colonial 13 per cent and ING/ANZ 11 per cent.

The foreign-owned life insurance groups hold a 29 per cent share in statutory fund assets backing Australian liabilities and a 32 per cent share in total premiums for Australian business, while the bank-owned life insurance groups hold a 40 per cent and 44 per cent share respectively.[1]

Asset profiles

At end-June 2003, investment-linked statutory fund assets were $116.3 billion (64 per cent of the total assets in life office statutory funds). The main asset categories were interest-bearing securities (17.4 per cent), equities and units in trusts (51.2 per cent) and assets held overseas (19.7 per cent).

---

1 Australian Prudential Regulation Authority, Life Insurance Market Statistics, June 2003.

Non-investment linked statutory fund assets stood at $65.3 billion. The main asset categories were interest-bearing securities (39 per cent), equities and units in trusts (26.3 per cent), land and buildings (6.1 per cent), and assets held overseas (8.5 per cent).

Both types of funds also invest in cash and deposits, loans and placements and in commodities such as gold.

Superannuation assets (backing Australian policyholder liabilities) accounted for 86.1 per cent ($156.3 billion) of the assets in life office statutory funds as at end-June 2003. This compares to 60 per cent in June 1988.

Liability profiles

Total Australian life insurance policy liabilities underwritten were $155.3 billion as at end-June 2003. Individual policies represent 71.9 per cent of Australian policy liabilities with 28.1 per cent of policy liabilities underwritten as part of a group policy.[2] As a proportion of policy liabilities, the significant categories of business undertaken by life insurers are: investment-linked 41.3 per cent[3], group investment-linked 21.5 per cent, conventional 9.1 per cent[4], investment account 7.2 per cent[5], allocated annuity 6.9 per cent,[6] group investment account 5.7 per cent, term annuity 3.9 per cent[7] and lifetime annuity 3.7 per cent.[8]

Chart A shows the significant categories of business underwritten by the top 4 and top 10 life insurance companies. At end-June 2003, the top 4 life

---

2 This represents life insurance (usually without medical examination) for a group of people under a master policy. A group policy is typically issued to an employer for benefit of employees (for example, superannuation plans).

3 These policies provide a death benefit and an investment account the value of which is directly linked to the performance of a specific investment portfolio. The value of the policyholder's interest will rise and fall with the movements in the value of the portfolio.

4 This generally falls into two categories: (1) Whole of Life (policies which offer immediate and continuing cover payable on death) and (2) Endowment (policies which allow for payment on reaching a specified age or date, or on prior death). These policies normally have a surrender value after 2 years.

5 These policies provide a death benefit and an investment account where the insurer generally determines the earning rate credited to the account.

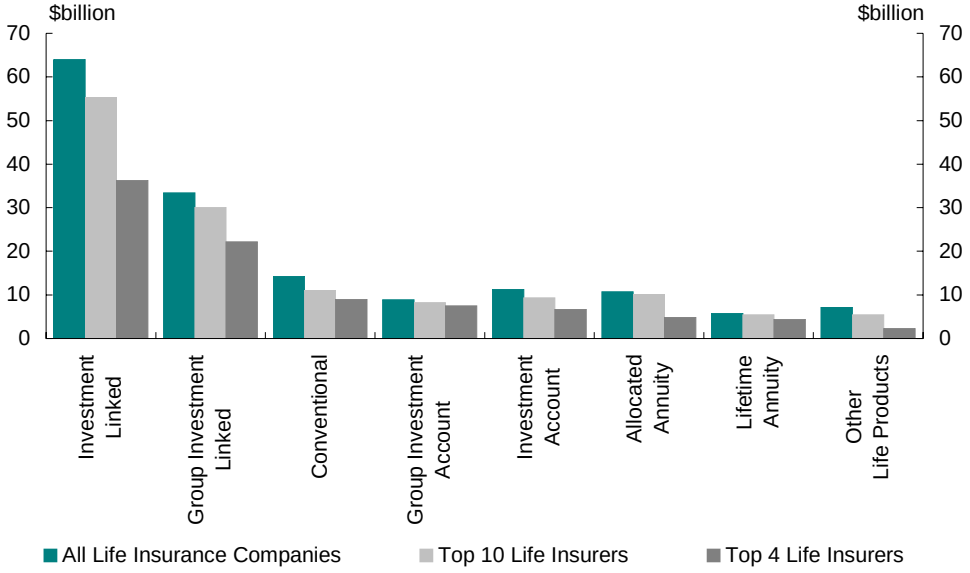
6 An allocated annuity provides an income stream and capital repayments until the capital is exhausted. The policyholder can withdraw lump sums, but there are restrictions on the minimum and maximum withdrawal within a period.

7 A term annuity provides an income stream and capital repayments for a fixed term. These are generally cheaper than a lifetime annuity. Generally there is no residual value.

8 Lifetime annuity provides an income stream and capital repayments while the policyholder is alive. Generally there is no surrender value available on these policies. However, some companies offer a residual capital value to be paid to any dependent. Typically, a lifetime annuity is purchased using a single premium. The income stream for the premium could be guaranteed or indexed.

insurance companies underwrote 59.5 per cent of Australian policy liabilities. The top 10 life insurance companies underwrote 85.6 per cent of Australian policy liabilities.

Chart A: Australian policy liabilities by product type



Source: Australia Prudential Regulation Authority.

Solvency margin

The weighted average of the solvency coverage ratio[9] for investment linked statutory funds was 2.5 and for non-investment linked statutory funds was 1.7 as at March 2002. The weighted average for the life insurance industry was 1.8.[10]

9 The solvency coverage ratio is a measure of the security of a life insurance company relative to the level of risk identified under the solvency requirement as prescribed by Life Insurance Actuarial Standard 2.03. It is calculated as assets available for Solvency Reserve divided by the Solvency Reserve.

10 Australian Prudential Regulation Authority Insight, 2nd Quarter 2003, Table D2 Life Insurers: Statutory-fund Solvency.

General insurance industry

Overview

The Australian general insurance industry is highly concentrated in both the direct and reinsurance sectors. Recent activity has seen the merger of the Insurance Australia Group (IAG) and CGU groups and the initial public offering of the Australian operations of the Royal and Sun Alliance Group (now Promina). These recent changes have followed several years of mergers and consolidation of insurers within the Australian insurance market. All of the top five insurers are listed: four are listed Australian insurers (IAG, Promina, Suncorp Metway and QBE) with Allianz being listed on the German Stock Exchange.

The two largest reinsurers, Munich Re and Swiss Re, account for over 60 per cent of Australian reinsurance premiums. Both are listed overseas.

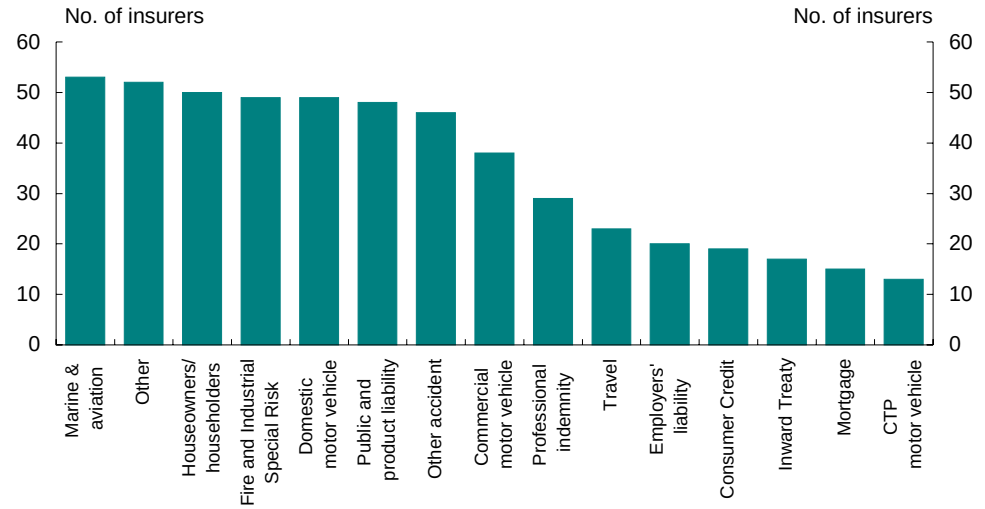
In some geographical markets, there are distinct market leaders within some classes of business, for example, Suncorp Metway dominates short-tail business in Queensland; similarly for IAG in New South Wales and Victoria. New South Wales and Victoria have the most insurers writing policies (94 in each), with the Northern Territory being the smallest with 40 (see Chart B).

Chart B: Insurers by State and Territory (as at June 2002)

Source: Australian Prudential Regulation Authority.

The number of insurers writing each class of business varies significantly: for example, 13 insurers offer Compulsory Third Party (CTP) motor vehicle insurance while up to 53 insurers write aviation and marine business (see Chart C).

Chart C: Insurers by class of business (as at end-June 2003)

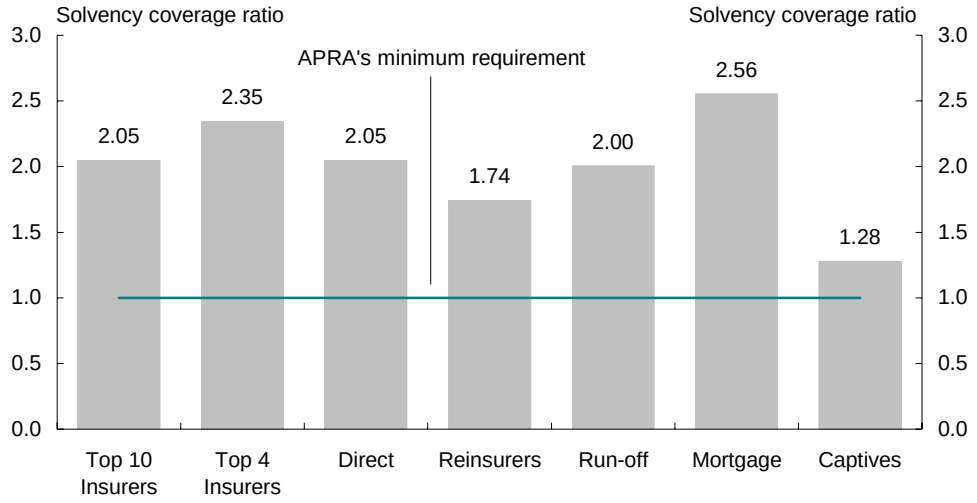


Source: Australian Prudential Regulation Authority.

Capital adequacy

The current solvency levels of general insurers are well above the minimum requirement of 1.0 stipulated by the Australia Prudential Regulation Authority (APRA), with the top 4 insurers holding more than double the required amount of capital between them (2.35). The direct insurers are dominated by the top 10 players and have a solvency coverage of 2.05. This is higher than the reinsurers, mainly due to the dominant reinsurance companies having overseas parents.

Chart D: Solvency coverage



Source: Australian Prudential Regulation Authority.

Captives unsurprisingly have solvency coverage barely above the minimum requirement as they are wholly-owned businesses limited to writing business to the parent company. The parent will therefore ensure that the capital required is available, but would secure any excess for themselves.

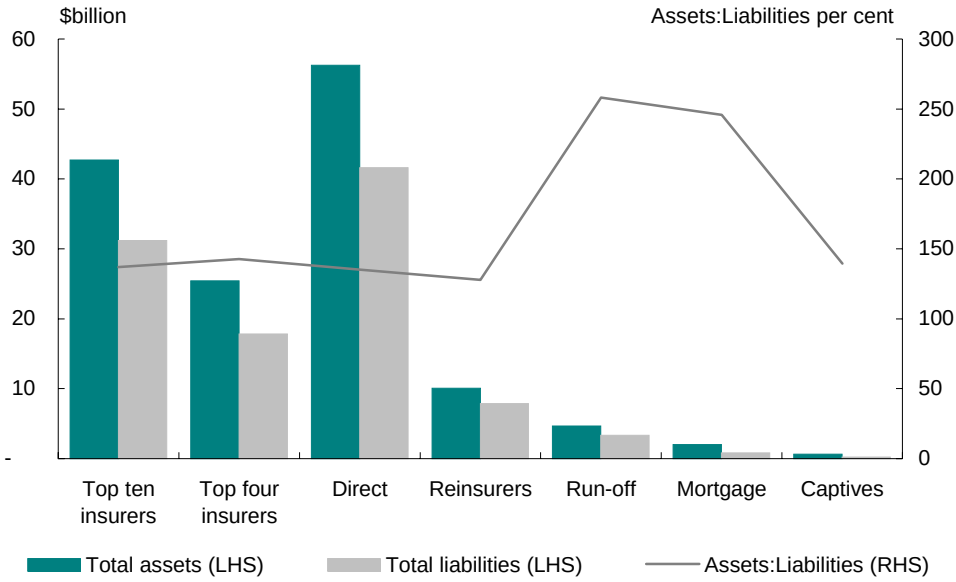
Asset and liability profiles

As at June 2003, total assets of Australian general insurers amounted to $73.6 billion. As shown in Chart E, assets are concentrated in a small number of direct insurers. The top 4 and top 10 insurers accounted for about 35 per cent and 58 per cent of total industry assets respectively. Direct insurers are by far the largest group holding 76 per cent of total industry assets, followed by reinsurers (14 per cent), run-off companies (6 per cent), mortgage insurers (3 per cent) and captives (1 per cent).

Against the $73.6 billion held in assets, the general insurance industry had total liabilities of $53.9 billion as at end-June 2003. These were spread amongst the types of insurers in very similar proportion to the asset base, with the top 10 insurers accounting for 58 per cent of the industry liabilities and the top 4 having just over a third at 35 per cent.

The asset to liability ratio for the industry is 137 per cent. This is higher for the top 4 insurers (143 per cent). Direct insurers and reinsurers have slightly lower ratios of 135 per cent and 128 per cent respectively.

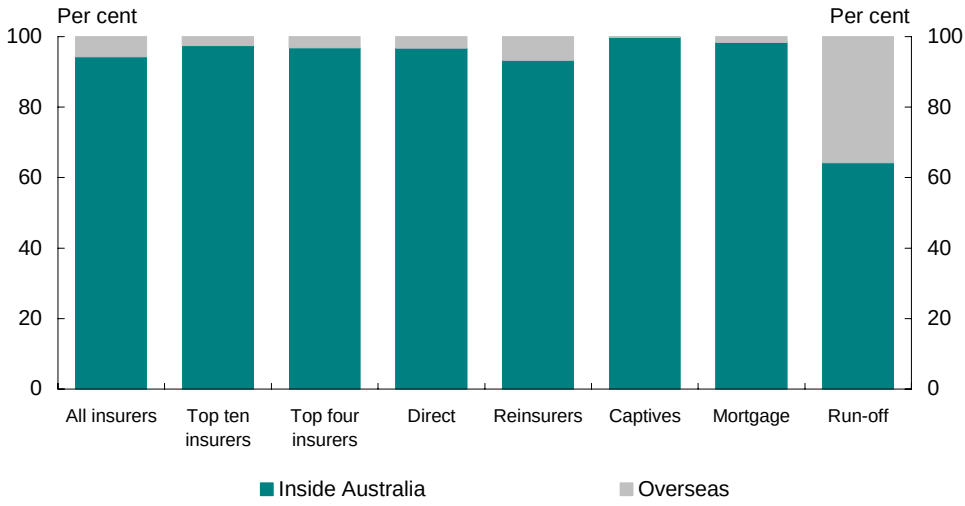
Chart E: Asset to liability comparison (as at end-June 2003)



Source: Australian Prudential Regulation Authority.

Ninety-four per cent of the industry assets are inside Australia (see Chart F). Of the 6 per cent of the industry assets held overseas ($4.2 billion), 39 per cent of these are held by insurers in run-off who are not licensed to write new policies.

Chart F: Asset location (as at end-June 2003)

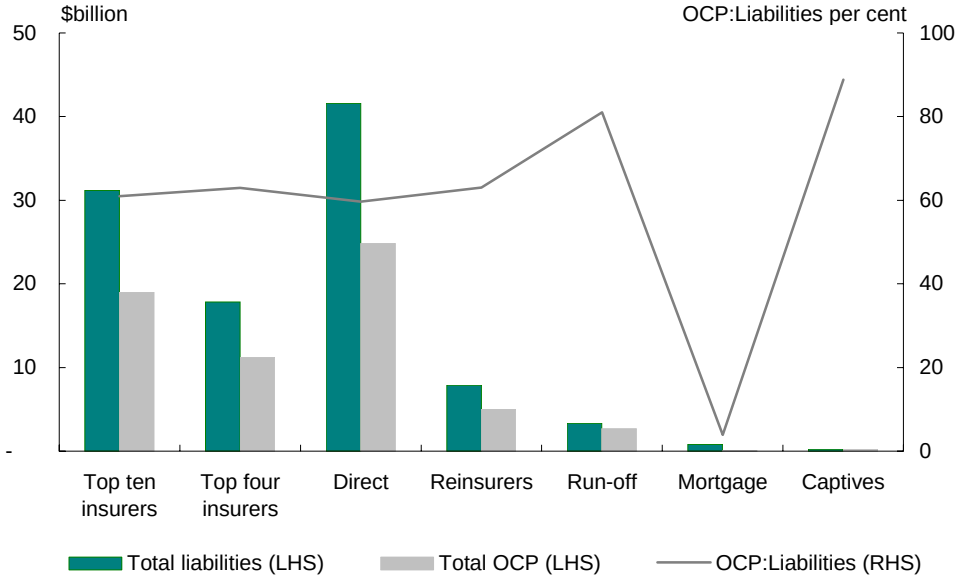


Source: Australian Prudential Regulation Authority.

Outstanding claims provision

Chart G shows of the total industry liabilities, $32.7 billion represent outstanding claims provision (OCP), of which 94 per cent is Australian based. The top 4 and top 10 insurers accounted for 34 per cent and 58 per cent of total industry OCP respectively. Direct insurers, as expected, have the largest OCP at $24.8 billion (76 per cent of total industry OCP), followed by reinsurers with $5 billion (15 per cent) and those insurers in run-off with $2.7 billion (8 per cent). Captives and mortgage insurers have negligible OCP.

Chart G: Outstanding claims provisions (OCP) (as at end-June 2003)



Source: Australian Prudential Regulation Authority.

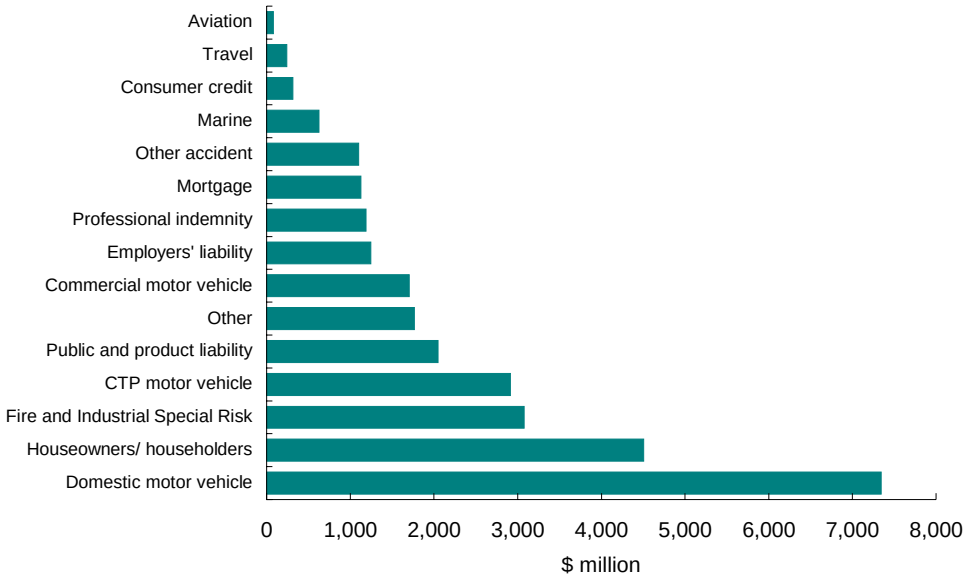
The ratio of OCP to total liabilities is 61 per cent for total industry, and this is fairly consistent across the major players, direct insurers and reinsurers.

Premium income

Chart H sets out premium by class of business. Total gross premium income of the industry in 2002-03 was $35.9 billion, of which the top 4 insurers collected $10.6 billion (30 per cent) and the top 10 insurers collected $20.7 billion (58 per cent). Direct insurers accounted for the bulk of premium income ($29.6 billion), followed by reinsurers ($4.3 billion), mortgage insurers ($1 billion), firms in run-off ($819 million) and captives ($170 million).

Domestic motor vehicle insurance was the dominant class of business accounting for 25 per cent ($7.3 billion) of total industry premium. This was followed by domestic householders with 15 per cent ($4.5 billion), Fire & Industrial Special Risk (ISR) with 11 per cent ($3 billion) and CTP with 10 per cent ($2.9 billion).

Chart H: Premium by class of business (as at end-June 2003)

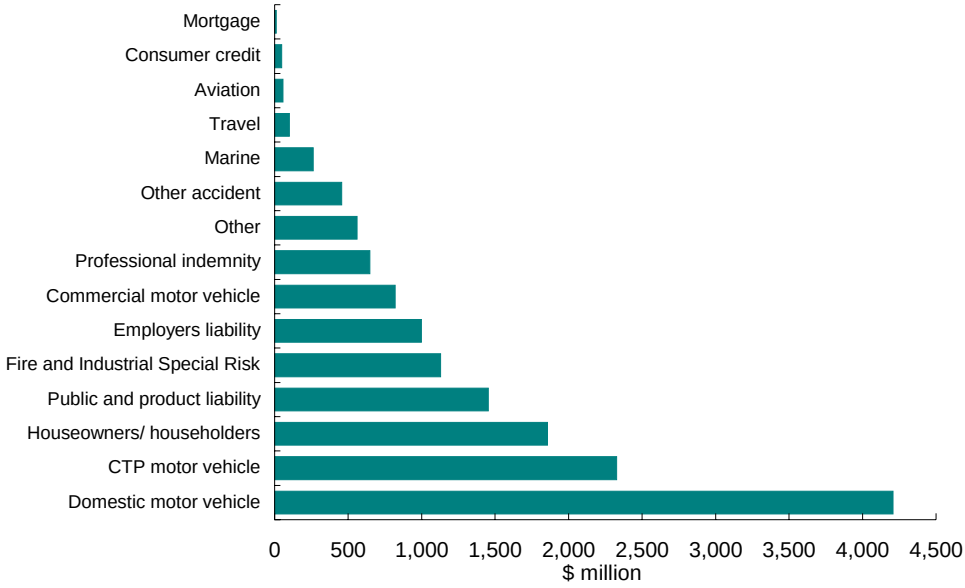


Source: Australian Prudential Regulation Authority.

Claims

Gross claims recognised by the industry in 2002-03 amounted to $27.8 billion, of which the top 4 insurers recognised $9 billion (33 per cent) and the top 10 insurers $16.6 billion (60 per cent). Claims recognised by direct insurers amounted to $23.4 billion, by reinsurers $3.2 billion, firms in run-off $739 million, mortgage insurers $395 million, and captives ($79 million). Chart I shows the breakdown of claims by class of business.

Chart I: Claims by class of business (as at end-June 2003)



Source: Australian Prudential Regulation Authority.

Superannuation industry

Overview

In June 2003, there were around 269,356 separate superannuation funds in Australia managing $533.9 billion in assets on behalf of 25.1 million member accounts. The overall number of funds is very large compared to the rest of the prudentially regulated financial sector (although the vast majority by number are regulated by the Australian Taxation Office (ATO)).

As outlined in Table G, over 99 per cent of superannuation funds are small funds that contain fewer than five members. In late 1999, the ATO took over the regulation of most of these superannuation funds, popularly referred to as small self-managed superannuation funds (SMSFs). Small funds that continue to be regulated by APRA must have an approved trustee and are now known as small APRA funds or SAFs. Overall, small funds represent a total of only 495,000 members, or less than 2 per cent of the number of individual superannuation accounts.

Table G: Australia's superannuation industry (June 2003)

Type of fund	No. of funds	Assets (AUD billion)	Accounts (millions)
Corporate	1,874	57.5	1.1
Industry	112	56.0	7.5
Public Sector	73	106.8	3.0
Retail	231	180.3	13.0
Small funds	267,066	109.1	0.5
Subtotal	269,356	509.7	25.1
Annuities, life office reserves etc	n/a	24.2	n/a
Total	**269,356**	**533.9**	**25.1**

n/a Not available.
Source: Australian Prudential Regulation Authority.

The remaining 2,290 funds are defined in terms of the *Superannuation Industry Supervision (SIS) Act 1993* as either standard employer or public offer funds (often referred to as funds with five or more members). These funds represent over 98 per cent of all member accounts.

In terms of industry structure, however, it is more meaningful to focus upon the categories of corporate, industry, retail or public sector funds. These functional categorisations for the 2,290 funds with five or more members better reflect how the superannuation industry itself operates in commercial reality.

Corporate funds are sponsored by a single employer or group of related employers. Industry funds, often organised through industrial workplace arrangements, cater for members as a result of an agreement between the parties to an industrial award. An individual industry fund usually draws members from a large number of employers operating in a single industry.[11]

Retail funds are publicly offered superannuation funds that members join by purchasing investment units or policies that are sold through intermediaries such as life insurance agents or financial planners. Members of retail superannuation funds typically include self employed people or people wishing to top-up their other employment based superannuation arrangements. Employers may also use retail superannuation products to meet their superannuation obligations in respect of their employees.

11 Some industry funds are open to membership by the public. Accordingly they are classed as public offer funds and operated by an approved trustee however, for some statistical purposes, they are classed as industry funds rather than retail funds.

For the year ending June 2003, aggregate contributions into superannuation funds amounted to $54.2 billion, while benefit payments amounted to $33.4 billion. Table H shows asset allocations as at June 2003.

Table H: Asset allocation (June 2003)

Assets	AUD billion	Per cent
Cash and Deposits	44	8
Loans and Placements	20	4
Interest-bearing Securities	88	16
Equities in Units and Trusts	238	45
Direct Property	31	6
Overseas	94	18
Other	18	3
Total	**534**	**100**

Source: Australian Prudential Regulation Authority.

The numbers of corporate, industry, public sector and retail superannuation funds have been in decline in recent years while the number of small funds continues to grow steadily.

Funds regulated by APRA

Table I: APRA regulated funds by asset size[12] (as at end-June 2003)

Funds with five or more members

	Multi member approved deposit funds	Public offer super funds	Pooled super trusts[13]	Other APRA-regulated funds	Total
> $1 billion	0	48	12	22	82
$500 million - $1 billion	0	31	9	23	63
$100 - $500 million	5	43	41	98	187
$50 - $100 million	0	24	27	80	131
$10 - $50 million	12	65	33	312	422
$5 - $10 million	6	36	9	156	207
$1 - $5 million	11	55	15	533	614
< $1 million	3	35	14	609	661
Total	**37**	**337**	**160**	**1,833**	**2,367**

Source: Australian Prudential Regulation Authority.
Note: Current funds as at end-June 2003 (last annual return lodged).

12 In this breakdown, industry funds are grouped under either public offer or other APRA-regulated funds.
13 Pooled superannuation trusts (PSTs) are wholesale investment management funds, regulated by APRA, and only available to trustees of complying superannuation funds, approved deposit funds (ADFs) and other PSTs (and some life office assets).

Table I: APRA regulated funds by asset size (continued) (as at end-June 2003)

Funds with less than five members

	Small APRA Funds	Single Member Approved Deposit Funds	Total
> $1 million	366	14	380
$500,000 - $1 million	940	22	962
$100,000 - $500,000	4,702	166	4,868
$50,000 - $100,000	859	21	880
< $50,000	1,126	33	1,159
Total	**7,993**	**256**	**8,249**

Source: Australian Prudential Regulation Authority.
Note: Current funds as at end-June 2003 (last annual return lodged).

Approved trustees

Approved trustees (individually approved under Part 2 of the SIS Act and meeting capital or custody requirements) are required for public offer funds, approved deposit funds, eligible rollover funds, small APRA funds and pooled superannuation trusts. There are currently some 160 approved trustees, many of them are subsidiaries of other APRA regulated entities such as life offices and banks. Based on Table I, over 8,500 APRA-regulated superannuation fund entities of varying categories are required to have an approved trustee. Only those approved trustees that meet the $5 million net tangible asset capital requirement in their own right (rather than relying on a parent entity or a custodian) may be trustees of small APRA funds. The top 20 approved trustees are responsible for the management of over 20 per cent of superannuation assets.

Funds categorised by benefit structure

Another noticeable trend over recent years has been the reduction in the number of defined benefit funds as employers close these and move members to accumulation funds. With defined benefit funds, the employer bears the investment risk, as opposed to accumulation funds where members bear all the risk, and their benefit is wholly related to their account balance. Table J shows funds by benefit type as at June 2003.

Table J: Superannuation benefit structure — funds with greater than four members (June 2003)

	Accumulation	Defined benefit	Hybrid	Total
	Number of funds			
Public Sector	42	19	30	90
Private Sector	1,585	261	354	2,200
Total	**1,627**	**279**	**384**	**2,290**
	Members (thousands)			
Public Sector	666	426	1,869	2,962
Private Sector	18,230	98	3,300	21,628
Total	**18,896**	**524**	**5,170**	**24,590**
	Assets ($ million)			
Public Sector	7,556	8,916	90,298	106,769
Private Sector	225,928	6,939	60,983	293,851
Total	**233,484**	**15,856**	**151,281**	**400,620**

Source: Australian Prudential Regulation Authority.

APPENDIX 2.2: SUBMISSIONS TO THE STUDY

A number of interested parties supplied input to the Study. In total, eight formal submissions were received from the following individuals and organisations:[1]

Credit Union Services Corporation (Australia) Limited (CUSCAL)
Insurance Australia Group (IAG)
Insurance Council of Australia (ICA)
International Banks and Securities Association of Australia (IBSA)
Max Kummerow, Senior Lecturer, Curtin University
Motor Accident Insurance Commission Queensland (MAIC)
National Credit Union Association Inc (NCUA)
National Insurance Brokers Association of Australia (NIBA)

Professor Davis also met with a number of key stakeholders to discuss their views and draw on their technical expertise. Details of individuals and organisations met is provided at the end of this summary.

Following is a summary of some of the key views raised in the submissions. This summary is not meant to replace the submissions themselves.

General views

The vast majority of formal submissions did not support the introduction of an explicit guarantee to the Australian financial system on the grounds that a case for change is yet to be made. Many of the submissions cited the rejection of a guarantee by the Financial System Inquiry in 1997. It was argued that throughout Australia's history failures have been rare and that the existence of depositor preference (in the case of the banking sector) provided adequate consumer protection against the adverse effects of failure. The submissions

1 Copies of the submissions are available on the Study's website at: http://fsgstudy.treasury.gov.au/content/Input_received.asp?NavID=4.

noted that if a guarantee were to be introduced, the design features would be an important factor in its success.

The ICA and NCUA support the concept of a guarantee and see merit in enhancing consumer protection through such a system. The ICA, however, would only support a guarantee in conjunction with other general insurance reforms including changes to State and Territory regulation and taxation.

> *'A policyholder protection scheme will provide an additional level of protection for the policyholders who need it most and who are least able to avoid or mitigate the risk of an insurer collapse. These are the relatively unsophisticated purchasers of insurance, such as individuals and small business policyholders who are not in a position to assess the financial strength and solvency of an insurer and its ability to meet the financial promises made.'*
>
> ICA submission, December 2003

Economic rationale

Most submissions noted the existence of strong community attitudes towards government intervention *to protect consumers* in the event of failure.

> *'…it would appear that in this day and age, community expectations of the safety of their savings is extremely high and it is at its own peril that the Government does not adequately address this matter.'*
>
> NCUA submission, November 2003

> *'The ad hoc measures put in place by Commonwealth, State and Territory Governments after the failure of HIH have responded in various ways to the particular needs of policyholders. Ad hoc responses provide greater flexibility to governments in responding to a collapse as it arises. However ICA considers that the uncertainty created by this situation is unsatisfactory particularly as these ad hoc measures are likely to have led to an expectation in the minds of policyholders that the government will provide a form of guarantee or support if another insurer fails.'*
>
> ICA submission, December 2003

There was a consistent theme that *institutions* should be allowed to fail and that Australia's existing prudential and regulatory arrangements provides appropriate frameworks for markets to operate competitively.

> *'The new supervisory framework provides APRA a greater flexibility to intervene early in response to warning signals in the industry and a wider range of powers for such intervention. … Competitive markets experience failures. Regulation of providers of financial services should provide for failures to be infrequent and provide for warnings, rather than guarantee that there will be no failures.'*

IAG submission, December 2003

> *' …the ultimate risk for the failure of a financial institution should lie with those that deal with the institution.'*

NIBA submission, November 2003

A number of submissions also noted the moral hazard implications associated with guarantees.

> *'The moral hazard risk of deposit insurance, which involves a weakening of market discipline, is well understood and experience has shown that this can cause significant economic loss (for example, the US Savings and Loan crisis) and increase the Government's exposure in the event of a failure.'*

IBSA submission, December 2003

> *'The Financial System Inquiry opposed guarantees because they introduce moral hazards and distort market signals. They inevitably involve some form of cross subsidization with the prudent often having to bear an unrealistic burden.'*

NIBA submission, November 2003

Design coverage

The majority of submissions agreed that a well-designed system would be important. While most submissions did not detail specific design features, the unique nature of the Australian financial system was noted as an important factor in the design of a scheme.

> *'In CUSCAL's view, it is important that any guarantee be limited to a maximum amount per depositor and should exclude non-private and interbank deposits. Limiting the amount of funds guaranteed and extending protection to only a per depositor basis helps to ensure that the scheme is only applicable to small depositors who would normally be unable to adequately monitor a bank's performance (and therefore make sound investment decisions).'*
>
> CUSCAL submission, December 2003

> *'A deposit insurance scheme would have to be designed to ameliorate the worst effects of the problems … like moral hazard, and minimise the direct and indirect costs of the scheme.'*
>
> IBSA submission, December 2003

Cost, funding and pricing

Those not in favour of a scheme argued that it would impose an additional cost on consumers as well as 'honest' industry participants.

> *'We are concerned that the introduction of a deposit insurance scheme would impose unnecessary cost on banks and their customers without generating additional public benefit.'*
>
> IBSA submission, December 2003

> *'We believe that the introduction of financial system guarantees to cover the costs of the failure of a general insurer would in effect impose a tax on viable insurance businesses to cover the failures of their competitors. This is inconsistent with a market competing for the delivery of a product to consumers.'*
>
> IAG submission, December 2003

A post-funded system, particularly in light of Australia's limited experience with financial institution failure, was strongly favoured. Issues of adverse effects of cross-subsidisation were also raised.

> *'Post event funding … will also ensure that no funds are actually required unless and until there is another insurer failure.'*
>
> ICA submission, December 2003

> *'Pre-event funding provides some certainty of cost for members of the scheme and allows the smoothing of premiums over the course of a business cycle. It also ensures that financial institutions that subsequently fail have contributed to the cost of their failure …'*
>
> CUSCAL submission, December 2003

> *'If the Government forces all other companies to subsidise the loss of a high-risk company then the stakeholders of other companies are all penalised for being risk averse. This creates a perverse result, as it is in the interest of the community to reward prudence and penalise excesses.'*
>
> IAG submission, December 2003

Governance and accountability

There were no strong views on the governance arrangements of a scheme. As the majority of submissions were presented from an industry perspective, a clear theme emerged that industry specific schemes would be preferable. The ICA provided a comprehensive account of how a guarantee scheme for general insurance could be administered.

Schedule of consultations and advice

Monday 13 October 2003 (Canberra)
Australian Consumers' Association (ACA)
Thursday 23 October 2003 (Sydney)
Australian Bankers' Association (ABA) and member institutions
Investment and Financial Services Association (IFSA) and AMP
Credit Union Services Corporation of Australia Limited (CUSCAL)
Friday 24 October 2003 (Sydney)
Insurance Council of Australia (ICA)
Association of Superannuation Funds of Australia (ASFA)
Thursday 30 October 2003 (Brisbane)
National Credit Union Association (NCUA) & Australian Finance Conference (AFC)
Queensland Motor Accidents Insurance Commission (MAIC) and Queensland Treasury
Suncorp-Metway
Tuesday 18 November 2003 (Sydney)
Australian Securities and Investments Commission (ASIC)
Insurance Council of Australia (ICA)
Mr Bob Glading
Wednesday 19 November 2003 (Sydney)
NSW Motor Accidents Authority (MAA) and NSW Treasury
Insurance Australia Group (IAG)
Monday 8 December 2003 (Melbourne)
Standard and Poors
PwC Acturial
Australian Friendly Societies Association (AFSA)
Friday 12 December 2003 (Sydney)
Australian Association of Permanent Building Societies (AAPBS)
Monday 2 February 2004 (Sydney)
Reserve Bank of Australia (RBA)
Tuesday 3 February 2004 (Sydney)
Australian Securities and Investments Commission (ASIC)
Insurance Council of Australia (ICA)
Australian Prudential Regulation Authority (APRA)
Mr Tony McGrath, KPMG

APPENDIX 2.3: INTERNATIONAL COMPARISON OF DEPOSIT SCHEMES

	Canada	Netherlands	United Kingdom	Italy	United States
Scheme	The Canada Deposit Insurance Corporation (CDIC) was established in 1967 following the failure of some of Canada's second tier institutions in the mid-1960s. CDIC's objectives include: the provisioning of insurance against loss of deposits, promoting standards of sound business practice and contributing to stability. The CDIC has 88 members. As of April 2002, total insured deposits was C$346.8 billion. Membership is compulsory.	The Netherlands has a fund to protect depositors, it operates from De Netherlands Bank (DNB, the central bank). The fund is known as the Collective Guarantee Scheme of Credit Institutions for Repayable Funds and Portfolio Investments (CGS). Membership is compulsory.	The Financial Services Compensation Scheme (FSCS) was established in December 2001 following the implementation of the *Financial Services and Markets Act 2000*. The FSCS merged together the Deposit Protection Scheme, Policy Holder Protection Scheme and the Investment Protection Scheme. The Deposit Protection Scheme was originally established following the 1973-74 banking crises. FSCS's objective is to promote market confidence and consumer protection. There are approximately 450 members. Membership is compulsory.	The Fondo Interbancario di Tutela dei Depositi (FITD) was established in 1987 as a voluntary association. The FITD is now governed by its own legislation. The FITD's objective is to 'prevent and solve bank crises through the diffusion of management systems that are adequate to avoid them'. The FITD has approximately 305 members with about EUR 300 million of insured deposits.	The Federal Deposit Insurance Corporation (FDIC) was created in 1934 during the Great Depression, when banks were unable to meet their liabilities. The FDIC's objectives are to provide deposit insurance, act as the regulator for some banks and act as the receiver and liquidator for some banks. The FDIC has approximately 9,480 members with more than US$3.3 trillion worth of insured deposits. Membership is compulsory.

International comparison of deposit schemes (continued)

	Canada	Netherlands	United Kingdom	Italy	United States
Products covered	The CDIC covers the following deposits: savings and chequeing accounts, term deposits, debentures issued by loan companies, money orders, drafts, certified drafts and cheques.	The CGS covers both deposits and bank investment products.	The FSCS covers deposits that are made by a relevant person of the UK or a branch of a UK firm established under a European Economic Area (EEA) right. The FSCS does not cover bonds issued by a credit institution that is part of the institution's capital, secured deposits, deferred shares or non-nominated deposits.	The FITD covers deposits held in savings accounts and certificates of deposits.	The FDIC covers all types of deposits including: savings deposits, chequeing deposits, deposits in NOW accounts, Christmas club accounts, and certificates of deposits. It also covers cashiers' cheques, officers cheques, expense cheques, loan disbursement cheques, outstanding drafts, negotiable instruments and money orders.
Eligibility	Deposits are only eligible for protection if they are placed in an institution that is a member of the CDIC. Deposits must be in Canadian currency and payable in Canada. Term deposits are eligible for coverage if they are repayable no later than five years from the date of the deposit.	The CGS will only cover products held by persons, foundations and smaller enterprises. The CGS does not cover interbank deposits or products held by insurance companies, pension funds, government bodies and insiders.	The FSCS will cover deposits held by individuals and small businesses. Larger businesses are generally excluded, although there are some exceptions. Deposits held in foreign currency are also covered.	Deposits are eligible for protection if they are held in an Italian bank. Deposits held in non-EU banks operating in Italy are also protected (if the banks are members of an equivalent foreign protection scheme, they are not covered). Deposits held with mutuals are covered under the Mutual Banks Depositor Protection Fund.	The FDIC insures all deposits that are payable in the US. Deposits that are payable only overseas are not insured. Foreign currency deposits are covered.

International comparison of deposit schemes (continued)

	Canada	Netherlands	United Kingdom	Italy	United States
Amount	The CDIC provides coverage up to C$60,000 (this includes the principal and interest) per depositor, per member institution. Joint deposits are insured separately up to C$60,000.	The CGS will cover up to EUR20,000 per depositor per member institution.	The maximum amount that can be claimed is £31,700 (100 per cent of £2,000 and 90 per cent of the next £33,000). Compensation is paid per depositor per institution. Each person in a joint account is eligible to receive compensation up to the maximum amount.	The FITD will provide protection up to EUR103,291 per depositor.	Deposits are covered up to a net insured amount of US$100,000 including principal and interest, per depositor per institution. It is intended that new legislation will increase the coverage limits and link these to inflation.
Funding	The CDIC is predominantly pre-funded by an annual risk-based premium on industry. Premiums are assessed on insured deposits. There are four premium categories determined from a mix of qualitative and quantitative data. The CDIC also has access to additional funding from Government and financial markets.	The DNB provides the first payment on behalf of the CGS to avoid delaying compensation to eligible persons. Industry is required to repay the interest free loan to the DNB. There is no clearly defined system to apportion repayments between the member institutions. Member institutions may reach an agreement amongst themselves as to how proportions will be allocated.	The FSCS is funded by a levy on industry. The levy is split between compensation costs (used to meet the costs of paying compensation) and a management expenses levy (used to meet the running costs of the FSCS). The FSCS also has a revolving credit facility with a UK clearing bank for £50 million to cover any 'unforeseen short-term funding requirements'.	The FITD is post-funded from risk-based premiums. The amount contributed by member institutions ranges between 0.4 and 0.8 per cent of the repayable funds of all members as of 30 June the previous year. The fund evaluates the credit risk of member banks using four indicators: risk, solvency, maturity transformation and profitability.	The FDIC is pre-funded from annual premiums. The premiums go into the 'general' fund of the US. Losses from a failure of an institution are reflected in the government's budget. The fund size is set at 1.25 per cent of insured deposits of the banking system. New legislation will combine both the Bank Insurance Fund and the Savings Association Insurance Fund.

Source: http://www.cdic.ca/?id=100, Garcia and Prast 2003, http://www.fscs.org.uk/, http://www.fitd.it, http://www.fdic.gov/.

APPENDIX 2.4: INTERNATIONAL COMPARISON OF INSURANCE SCHEMES[1]

	Canada (Property and Casualty)	Canada (Life Insurance)	Japan (Non-life insurance)	United Kingdom (Life and non-life insurance)
Scheme	The Property and Casualty Insurance Compensation Corporation (PACICC) was established in 1998. Its objective is to protect policyholders and claimants in the case of an insurance company failure.	The Canada Life and Health Insurance Compensation Corporation (Compcorp) was established in 1990. Compcorp's mission is to mitigate the impact on Canadian policyholders of the financial failure of a life insurance company.	The Non-life Insurance Policyholders Protection Corporation of Japan (the Corporation) was established in December 1998.	The Financial Services Compensation Scheme (FSCS) was established in December 2001. The FSCS was created to administer a number of existing schemes across the financial system, including the Policyholders Protection Board. The FSCS's objective is to promote market confidence and consumer protection.
Products covered	PACICC covers property and casualty insurance products, it does not cover life insurance products.	Compcorp covers a number of products including life insurance, disability income insurance, health expense insurance, long-term care insurance, registered retirement savings plans, pay out annuities and registered retirement income funds.	The Corporation covers compulsory motor vehicle, compulsory earthquake, fire, personal accident, medical and nursing care expense insurance. The Corporation does not provide coverage for reinsurance and life insurance products.	The scheme covers compulsory, general and life insurance products. The FSCS does not cover reinsurance, marine, aviation, transport, business, credit insurance and Lloyds policies. It also excludes risks outside of the European Economic Area (EEA).

1 Policyholder protection schemes are fairly common amongst Organisation for Economic Cooperation and Development (OECD) member countries. At least 21 countries have such schemes. The schemes can be classified into two types. The first focuses on funds of a specific type of insurance, the second is more of a general fund. At least 14 OECD countries have funds that cover compulsory motor vehicle liability insurance exclusively. Nine countries are known to have established a general fund. These include Canada, France, Ireland, Japan, Korea, Norway, Poland, the United Kingdom and the United States (Yasui 2001).

International comparison of insurance schemes (continued)

	Canada (Property and Casualty)	Canada (Life Insurance)	Japan (Non-life insurance)	United Kingdom (Life and non-life insurance)
Amount	PACICC covers up to C$250,000 and will refund 70 per cent (up to C$700) of the unearned/ unexpired portion of the premium calculated from the date of the wind-up order. Under its memorandum of operation, if making payments will cause financial difficulty to PACICC it can negotiate with the appropriate regulator to reach a modification of payment or it can delay making payment.	The amount of coverage differs between the type of products: Life Insurance — C$200,000; Disability income — C$2,000 per month; Health expense insurance — C$60,000; Long-term care insurance — C$2,000 per month; Registered retirement savings plans — C$60,000; Pay out annuities — C$2,000 per month; and Registered retirement income funds — C$60,000.	The Corporation provides 100 per cent coverage of the claims and unearned/unexpired premiums for compulsory motor vehicle, insurance and earthquake insurance. The Corporation provides 90 per cent coverage of the claim for other non-compulsory insurance. The Corporation may provide up to 90 per cent (possibly less) coverage of the premium.	Compulsory insurance, such as third party motor vehicle insurance is covered in full. Non-compulsory insurance, such as home insurance, is covered in full up to the first £2,000 of a claim and 90 per cent of the rest of the claim. Values of unused premium will also be met. Long-term insurance (such as pension plans and life assurance) is covered in full up to the first £2,000. Above this amount the FSCS covers payment to 90 per cent of the value of the policy.
Funding	PACICC is funded by a combination of both pre-and post-event industry levies. PACICC can levy members annually to pay for administrative costs, PACICC can also establish a fund for the purpose of paying compensation, however, this requires the consent of members. Upon the failure of an insurer PACICC can initially borrow from a bank to make payments quickly to eligible persons. PACICC can recover funds from the liquidator and may have early access to estate funds to reduce bank borrowing.	Compcorp maintains a liquidity fund with a minimum of C$100 million funded from an industry levy.	The Corporation is pre-funded and maintains a general fund with a maximum value of Y50 billion. Members are required to contribute Y5 billion per year.	The FSCS is funded from industry levies. Levies are split between compensation costs (used to meet the costs of paying compensation) and a management expenses levy (used to meet the running costs of the FSCS). The FSCS also has a revolving line of credit with a UK clearing bank for £50 million to cover any ‘unforeseen short-term funding requirements’.

Source: http://www.pacicc.com/english/sub_contents.htm, http://www.compcorp.ca/index.asp, http://www.sonpo.or.jp/english/e_index.html, http://www.fscs.org.uk/.

APPENDIX 3.1: AUSTRALIA'S PRUDENTIAL FRAMEWORK

A general justification for prudential regulation and supervision is that the community's tolerance for financial institution insolvency is lower than may be accepted for firms operating in other parts of the economy. It may serve to add to the stability of the financial system.

Some financial institutions have a large number of retail customers unable to make informed and sufficiently accurate judgements about the capacity of an institution to meet its promises, now and in the future. The consequences of failing to meet promises may be considerable. Other justifications include that the financial system is prone to other forms of market failure, such as externalities or contagion effects where a problem in one institution may spread to other institutions or sectors.

Instances of widespread contagion and market failure need to be distinguished from the occasional failure of an individual firm. Insolvency is a perfectly normal occurrence in competitive markets. For financial institutions, however, there is a concern to ensure that failure does not transmit to other financial participants or give rise to undue complexity or cost as it is resolved.

When it comes to dealing with the insolvency of a financial institution, the prudential framework tries to ensure that there is capacity to identify and manage the exit of a troubled institution before significant losses to certain stakeholders accrue. This is not always possible and the customers and other creditors of a financial institution may not always be repaid in full.

Australia's prudential regulation framework is designed around the distinct industries, with the requirements for deposit-taking institutions, life insurance companies, general insurance companies and superannuation funds established under separate legislation. Some legislation, for example the legislation underpinning the regulator, the Australian Prudential Regulation Authority (APRA), and that relating to shareholdings in financial institutions (except superannuation funds), applies across the sectors.

This reflects both an underlying principle of prudential regulation, that regulatory intensity should vary according to the type of market failure and risk involved; as well as the historical development of the legislation in

question to suit formerly distinct but increasingly convergent markets for financial products.

The following discussion emphasises those aspects of the prudential framework considered most relevant to the concept of a limited explicit guarantee. This section is not intended to provide a comprehensive description of the prudential framework. In particular, the generally applicable aspects of the prudential framework, concerning authorisation, information gathering, monitoring and standards setting are not covered.

Instead, the most relevant components of the framework in the current context include the capital adequacy, liquidity and related prudential requirements, the prudential regulator's powers of intervention for either avoiding or managing failure, and the industry-specific rules for dealing with insolvency of financial institutions.

Authorised deposit-taking institutions

Capital adequacy and liquidity requirements

The prudential framework for deposit-taking institutions is established by the *Banking Act 1959* and a number of related instruments, including a range of prudential standards. The two standards considered most relevant in the current context are described below.

ADI Prudential Standard 110 (APS110) applies to all locally incorporated authorised deposit-taking institutions (ADIs) which includes banks, building societies and credit unions. Under APS110, an ADI is required to 'hold capital as a buffer to absorb unanticipated losses from its activities and, in the event of problems, enabling the ADI to continue to operate in a sound and viable manner while the problems are addressed or resolved'.

Capital adequacy requirements may be measured and applied at a number of levels, depending on the choice of corporate structure made for the ADI, its parent entity or subsidiaries. Capital adequacy requirements must be met at each of the stand-alone, consolidated banking group and conglomerate group levels (as relevant).

Under APS110, APRA requires ADIs to meet a minimum risk-based capital adequacy ratio of 8 per cent at both the stand-alone and consolidated banking group level, half of which must qualify as 'Tier 1' capital. This is the internationally accepted risk-based capital adequacy framework established by

the Basel Capital Accord. In many cases APRA requires an ADI to hold capital in excess of the 8 per cent minimum international standard.

APS210 relates to liquidity requirements for ADIs. This standard 'aims to ensure that all ADIs have sufficient liquidity to meet obligations as they fall due across a wide range of operating circumstances'.

Under APS210, APRA requires an ADI to demonstrate an appropriate liquidity management strategy, and to demonstrate it has the capacity to meet its obligations under normal and particular adverse scenarios. Where an ADI does not demonstrate this capacity, APRA may require it to meet certain minimum liquidity standards.

Both of these requirements place primary responsibility on the board of the ADI to systematically assess and manage the risk that it faces according to the scope of its operations. For example, the risks of an ADI that operates as part of a conglomerate group require special consideration.

A range of other prudential requirements apply to how capital is measured, to liquidity management and lending practices (including large exposures, exposures to related entities, classification of impaired assets and provisioning policy) and to deal with a diverse range of business situations faced by ADIs. APRA is also able to require an ADI or class of ADI to meet higher minimum requirements.

In practice, an ADI facing financial difficulty should normally be identified by APRA as having breached prudential requirements before it reaches the point of insolvency or illiquidity.[1] ADIs are required to report quarterly on their capital adequacy levels and liquidity scenario results. In addition, the board of the ADI has a standing obligation to inform APRA of any breach or potential breach of the capital adequacy requirement.

APRA's failure management powers

APRA has powers at its disposal for dealing with a range of circumstances including actual or prospective breaches[2] of the Banking Act, its prudential standards or prudential regulations. APRA also has the capacity to issue directions for a number of reasons, including if this is considered necessary in the interests of depositors of an ADI. The range of directions that APRA may

1 Section 62A of the Banking Act sets out statutory provisions for failure to notify APRA of a breach of a prudential standard.
2 'Prospective breaches' applies to ADIs only.

give allow it to effectively influence the operations of the ADI with the objective of returning it to a prudentially sound position.

APRA also has powers to assume control of an ADI in certain circumstances. Under Section 12 of the Banking Act, it is APRA's duty to exercise its powers and functions for the protection of depositors. In addition to its general monitoring, investigation and enforcement powers, APRA may exercise its power to take control of an ADI or appoint a statutory manager (under the direction of APRA) to replace the board and management of an ADI if:

> '(a) the ADI informs APRA that the ADI considers that it is likely to become unable to meet its obligations or that it is about to suspend payment;
>
> (b) APRA considers that the ADI is likely to become unable to meet its obligations or is about to suspend payment; or
>
> (c) the ADI becomes unable to meet its obligations or suspends payment.'

Importantly, APRA or the statutory manager must retain control of the ADI until:

> '(a) the ADI's deposit liabilities in Australia have been repaid or APRA is satisfied that suitable provision has been made for their repayment; and
>
> (b) APRA considers that it is no longer necessary for it or an administrator to remain in control of the ADI's business; or
>
> (c) APRA considers that the ADI is insolvent and is unlikely to be returned to solvency within a reasonable time, and APRA has applied for the ADI to be wound up under the *Corporations Act 2001*.'

However, the most convenient and practical means of dealing with the prospective failure of a financial institution, however, is to find a willing buyer or buyers of the assets and liabilities. In the prudential context, this is often known as a transfer of business (or transfer of engagements). Ideally such a step would be taken while the realisable assets of the company are worth more than the liabilities; that is, prior to insolvency.

The *Financial Sector (Transfers of Business) Act 1998* provides APRA with the capacity to make a determination that certain business of an ADI or life insurance company is to be transferred to another regulated body of the same type. APRA is required to consult with various parties and to consider a range of factors before settling on such a course.

This course of action would generally be taken on prudential grounds, where the future prospects for the transferring body appear such that it would be unlikely to meet its obligations or would suspend payment at some point in the future.

In deciding upon such a course of action, APRA would need to be satisfied of a number of criteria. These include that it would be in the interests of the customers of the transferring body; that the receiving body has consented to the transfer; that it would be in the interests of the customers of the receiving body; and in the interests of the financial sector as a whole.

The Transfers of Business Act provides a convenient legal mechanism whereby the assets and liabilities of the transferring institution can be vested in the receiving institution with minimum disruption to depositors, policyholders and other creditors.

Except as provided for by the Banking Act, the winding-up of an ADI would occur under the Corporations Act according to any direction provided by the Federal Court.

APRA is given significant discretion in terms of the point at which intervention should take place and in terms of criteria for choosing between resolution methods. This can be contrasted with some overseas examples such as the United States where 'prompt corrective action' and 'least cost resolution' have been mandated by legislation.

Depositor preference provisions

In the event that the capital adequacy and failure management powers were proven to be insufficient, and an insolvent ADI needed to be liquidated, an additional level of protection exists for Australian depositors.

Subsection 13A(3) of the Banking Act provides that:

> 'If an ADI becomes unable to meet its obligations or suspends payment, the assets of the ADI in Australia are to be available to meet that ADI's deposit liabilities in Australia in priority to all other liabilities of the ADI'.[3]

In addition, subsection 13A(4) provides that:

> 'An ADI is guilty of an offence if:
>
> (a) it does not hold assets (excluding goodwill) in Australia of a value that is equal to or greater than the total amount of its deposit liabilities in Australia;
>
> (b) APRA has not authorised the ADI to hold assets of a lesser value; and
>
> (c) there is no order in force under Section 11 determining that this subsection does not apply to the ADI.'

These provisions supplement the capital adequacy and managing failure powers by ensuring that in the event that an ADI is not able to meet its obligations, the remaining assets of the ADI in Australia are first used to repay the ADIs deposit liabilities in Australia.

The profile of liabilities of ADIs is considered in Appendix 2.1. This shows that most ADIs have a variety of liabilities — and in general, deposit liabilities account for between 50 and 95 per cent of total liabilities.

The relative importance of deposits in balance sheet liabilities varies across the ADI sector and among institutions. This implies that, in practice, the effectiveness of the depositor preference provisions would differ according to the differing buffers provided by the subordination of non-deposit liabilities.

The assumption behind the depositor preference provisions is that there will be a pool of assets in Australia that exceeds the value of deposit liabilities in Australia. Those assets cannot be used to repay other creditors until all deposits have been repaid. All deposits in Australia, regardless of type, (for example, whether retail or wholesale, of foreigners or residents, in Australian dollars or foreign currencies) or amounts are covered by these provisions.

---

3 This power is available to APRA prior to the point of formal liquidation.

Subordination of non-deposit claims also has implications for market discipline, potentially increasing monitoring by creditors other than Australian depositors. For institutions, however, with few non-deposit or offshore liabilities, depositors are perhaps the major source of market discipline.

The depositor preference provisions do not apply to deposits with foreign bank branches.[4] However, foreign bank branches are not permitted to take an initial deposit from an individual for an amount less than $250,000 (although account balances and subsequent deposits can fall below this level).

Life insurance companies

Capital adequacy requirements

The life insurance prudential framework is established by the *Life Insurance Act 1995*. The Life Insurance Act prescribes some generic requirements applicable to writing life insurance business and relies upon a number of subordinate instruments to give effect to its broad objectives.

The primary objective is to protect the interests of the owners and prospective owners of life insurance policies in a manner consistent with the continued development of a viable, competitive and innovative life insurance industry.

A life insurance company is restricted to the extent that it can mortgage or encumber the assets of a statutory fund. It is also restricted in the extent to which it may invest the assets of a statutory fund in a related company. Transfers of assets between statutory funds are also restricted. In relation to investment-linked products, the extent of any investment performance guarantee able to be offered is also restricted.

The Life Insurance Act also creates an obligation on life insurance companies to hold sufficient capital outside of the statutory funds. A separate Actuarial Standard, known as the Management Capital Standard, imposes this requirement.

4 Although depositor preference does not apply to deposits with foreign bank branches, Section 11F of the Banking Act provides that if a foreign ADI (whether in Australia or not) suspends payment or is unable to meet its obligations, the assets of the ADI in Australia (where applicable) are to be available to meet the ADI's liabilities in Australian in priority to all other liabilities of the ADI.

Box 3.1: Statutory funds and the management or shareholders fund

Part 4 of the *Life Insurance Act 1995* establishes the concept of the statutory fund. A life insurance company is required to establish at least one statutory fund in which it must report its assets — and premium revenue, investments and earnings — for the purpose of ensuring its life insurance product liabilities associated with that fund are able to be met. Every life insurance policy issued must be referenced to at least one statutory fund.

Actuarial standards relating to solvency and capital adequacy apply to statutory funds. The Solvency Standard seeks to ensure that the policy and other liabilities of each fund will be able to be met from the assets of the fund as they fall due. The Capital Adequacy Standard seeks to ensure that there are sufficient assets in each fund to provide adequate capital for the ongoing business of the fund.

Separate statutory funds must generally be created in respect of investment-linked life insurance business and life insurance business written outside of Australia. Section 30 of the Life Insurance Act provides that the principal requirements of a life insurance company in relation to statutory funds are as follows:

> '(a) all amounts received by a life company in respect of the business of a fund must be credited to the fund;
>
> (b) all assets and investments related to the business of a fund must be included in the fund;
>
> (c) all liabilities (including policy liabilities) of the company arising out of the conduct of the business of a fund must be treated as liabilities of the fund;
>
> (d) the assets of a fund are only available for expenditure related to the conduct of the business of the fund;
>
> (e) statutory funds may not be restructured or terminated without the approval of APRA; and
>
> (f) profits and losses of a statutory fund may only be dealt with in accordance with Divisions 5 and 6 (the object of those Divisions being to ensure that such profits and losses are dealt with in a manner that protects the interests of policy owners and is consistent with prudent management of the fund).'

The purpose of the Management Capital Standard is to ensure, as far as practicable, that:

(a) the financial position of a life company reflects an appropriate capital commitment, outside the statutory funds of the company, to the life insurance business of the company; and

(b) a life company will be able to meet its obligations in respect of any business it carries on that is not life insurance business as those obligations fall due.

The purpose of statutory funds and the various capital standards is to underpin the insurer's ongoing ability to meet their promises to policyholders and other creditors even though they may experience a range of adverse conditions.

Protection is provided primarily by ensuring that there are sufficient statutory fund assets to match estimated policy liabilities and ensuring assets are used for this purpose. An additional protection is that sufficient capital is required to be available, external to the statutory funds, to be used to support them if necessary.

Prudential Standard 3, made under the Life Insurance Act, imposes an additional prudential capital requirement on life insurance companies. Under the Standard, a life insurance company must hold more than $10 million outside of its statutory funds as a reserve capital commitment to its life insurance business.

The Standard notes that 'it is ultimately the responsibility of the life company's board and senior management to ensure that the life company has, at all times, capital resources that are appropriate to the scale, complexity and mix of its business'.

Friendly societies

Friendly societies are regulated by APRA under the Life Insurance Act. As part of the Financial System Inquiry reforms, friendly societies, along with credit unions and building societies were brought under the responsibility of the national regulator. Prior to this they were subject to State regulation.

Box 3.2: Life insurance concepts

This box provides an introduction to a number of concepts relevant to the life insurance industry.

Risk products — these are similar to ordinary insurance products, but typically provide a benefit in the event of death, disability or injury. Policyholders pay a premium for insurance cover and receive a lump-sum benefit contingent upon a particular event. Such policies may also involve a long-term savings component, such as in the case of endowment policies in which premiums paid over a number of years provide both death cover and entitlement to a cash payment at some future date.

Income products — in return for payment of a lump sum, the customer receives a stream of income for a specified period. These are also referred to as annuities. They are similar to, but more flexible, than pensions available through superannuation funds.

Investment-linked products — these may be based upon either risk or income products. The benefit payable to the customer is subject to market risks and investment performance.

Guaranteed products — these are a specific form of risk or income product. The benefit payable to the policyholder is underwritten by the life insurance company. For example it might promise to pay an income stream for life rather than for a fixed period; or promise to deliver an indexed rate of return despite actual market performance. The policyholder would pay a higher premium or receive a lower income in return.

Surrender value — some life insurance products may allow the customer to redeem some of the value of a future benefit. Penalties would usually apply.

Immediate, allocated, deferred annuities — these terms relate to the timing and flexibility in the income stream customers receive from annuity products.

To the extent that friendly societies conduct life insurance business,[5] they are regulated in the same way as life insurance companies. Specific provisions applying to friendly societies are contained within the Life Insurance Act.

5 Some friendly societies provide health insurance products.

Similar to the concept of statutory funds for life companies, friendly societies are required to quarantine assets in approved benefit funds. Unlike statutory funds, however, approved benefit funds can only offer one product per fund and may not invest in physical infrastructure. Friendly societies are required to manage the supporting capital of the approved benefit fund within stringent guidelines. Approved benefit funds are also subject to strict rules of application on investment strategies and payment of returns. Friendly societies offer products ranging from low-risk (effectively capital guaranteed) to purely investment linked products. They do not offer annuity products.

Friendly societies are subject to similar prudential requirements, capital adequacy standards and actuarial standards as life insurance companies offering investment-linked products.

APRA's failure management powers

In addition to providing APRA with general abilities to monitor, investigate and direct life insurance companies, the Life Insurance Act establishes a framework for managing the failure of life insurance companies. This framework reflects the long duration of a typical life insurance company's liabilities and the associated complexity involved in dealing with its run-off.[6]

APRA has at its disposal a range of directions powers that allow it to require compliance with the prudential framework or in the interests of policyholders. These directions powers allow APRA to influence the operations of a life insurance company and to return it to a prudentially sound position.

The Life Insurance Act also governs situations where it proves necessary to restructure or terminate the statutory funds of a life insurance company. Such an action requires the approval of APRA to ensure that, in the case of a transfer, the interests of policyowners of either the transferring or receiving funds are not unfairly affected. APRA's approval is required in the case of a termination of a statutory fund in order to ensure an appropriate distribution of assets and settlement of liabilities.

External administration of a life insurer would proceed in accordance with the Judicial Management provisions of the Life Insurance Act. APRA and the life insurance company (if it has given required notice) have the capacity to petition the Court for the appointment and direction of a Judicial Manager.

6 In addition, the *Financial Sector (Transfers of Business) Act 1998*, described above, can apply to the business of life insurance companies.

Applications by other parties to wind-up life offices can be made but are suspended should APRA seek appointment of a Judicial Manager.

The Judicial Manager assumes control of the company but must apply to the relevant Court for instructions. APRA is entitled to be heard and to make its own submissions in these proceedings. The general courses of action the Judicial Manager may recommend to the Court include for the transfer of all or some of the business to another company, to allow the company to continue trading (potentially having made adjustments to its policy liabilities) or to wind-up the company.

Only the Judicial Manager or APRA may apply to the Court for an order that a life insurance company be wound-up. Except as provided for by the Life Insurance Act, the winding-up of a life insurer would occur under the Corporations Act according to any direction provided by the Court.

To date, there has been no usage of the liquidation arrangements, and thus no experience of how they would work in practice.

Policyholder preference provisions

Statutory funds and benefit funds create 'firewalls' between funds that protect investments in one fund from movements in the value of assets in another fund or the life insurer itself. The funds do not ensure that the value of the assets are sufficient to meet policy liabilities. Assets contained in the management fund (outside the statutory funds) of a life insurer are not available to meet any particular liability, but may be used to make additional injections of capital into statutory or benefit funds from time to time.

In liquidation, statutory or benefit fund assets are quarantined to service the relevant fund liabilities. The order of preference in the Corporations Act applies, such that liquidation costs and employee entitlements attributable to the fund (if any) are met first, and then those liabilities to policyholders above other creditors. Life insurers are restricted in the extent to which they may mortgage statutory fund assets.

General insurance companies

Capital adequacy requirements

The prudential framework for General Insurance is established by the *Insurance Act 1973* and related instruments. Significant changes to the Insurance Act, including the ability for APRA to make prudential standards, took effect from 1 July 2002. The Insurance Act requires an insurer to hold assets in Australia of a value greater than or equal to the total amount of its liabilities in Australia with a minimum capital requirement of $5 million.[7] The Prudential Standards (for example, GPS 110) provide guidance as to how these amounts should be calculated, and about acceptable risk management practices.

General insurers have a choice between developing an in-house capital measurement model (approved by APRA) or a prescribed approach in order to calculate their minimum capital requirement.[8]

In either case, an insurer's minimum capital requirement is determined with reference to a range of risk factors that may impact on its ability to meet its obligations to policyholders and other creditors. At a minimum, these approaches should ensure that an insurer's exposure to insurance risk (insurance liabilities being greater than anticipated), investment risk (exposure to market fluctuations and credit risk) and concentration risk (exposure to catastrophes) are adequately understood and managed. Other relevant risk factors would be incorporated into an in-house capital measurement model.

An insurer is required to hold eligible capital in excess of its minimum capital requirement. The approach adopted by APRA is somewhat similar to that for ADIs, where the quality of capital used to meet requirements is assessed according to the nature of subordination and cash flow rights which the financial instrument included in the capital base gives to its holders.

Foreign insurers operating in Australia as branches are subject to modified capital adequacy requirements, such that they must hold assets in Australia in excess of their liabilities in Australia at least equal to their minimum capital requirement.

---

7 The Insurance Act also provides some definition of such assets and liabilities — see Section 116A of the Insurance Act.

8 At this point no general insurance company has elected the in-house model approach.

A general insurer is encouraged to disclose the components of its eligible capital, the basis of calculation and estimate of its minimum capital requirement to the market in the interests of transparency.

APRA's failure management powers

In addition to providing APRA with general abilities to monitor, investigate and direct insurance companies, APRA has a number of powers for managing the failure of insurance companies, although these are more limited than for ADIs and life insurers. Subject to meeting certain prerequisites, APRA has the power to issue directions to a general insurer to effectively exert control over its operations and to return it to a more prudentially sound position.

Such directions can prevent the insurer from renewing or issuing new policies or undertaking additional liabilities. They may also restrict the insurer's ability to dispose of or deal with its assets. Directions may also relate to the way in which assets and liabilities are provisioned in the accounts of the insurer, which may precipitate a need for it to raise additional capital.

As with other financial institutions, the preferred means of managing failure is to find a willing buyer of the assets and liabilities of a failing entity.

Under Sections 15 and 17 of the Insurance Act, APRA may commence proceedings leading to the revocation of the authority of an insurer to operate in Australia. This may be done on a variety of prudential and national interest grounds including breaches of the prudential requirements, that capital adequacy requirements have not been met, or that the insurer is insolvent. APRA may direct a general insurer to assign its liabilities to another company to facilitate the revocation of its authority to operate as a general insurer.

Part III of the Insurance Act also contains a regime for enabling the voluntary transfer and amalgamation of insurance companies. Any such restructuring of a general insurance company in Australia must be done in accordance with a scheme of arrangement confirmed by the Federal Court. Unlike for ADIs and life insurers, there is no special regime for external administration of general insurers.

The requirement for the Federal Court to confirm a voluntary restructure of an insurance company is designed to ensure that a range of interests are balanced, including those of policyholders, and that an appropriate actuarial assessment has been made of the viability of the transfer.

APRA's ability to apply for an order to wind-up a general insurer is contained in Division 4 of the Corporations Act. APRA may take this course of action when a general insurer is insolvent or when it has appointed an inspector to investigate and report on the affairs of the company and the liabilities of the company (calculated in accordance with the prudential standards) exceed its assets.

Preference provisions

Liquidation of a general insurer would proceed in accordance with the Corporations Act. Section 116 of the Insurance Act specifies that an insurer's assets in Australia are first applied to the discharge of its liabilities in Australia (policy and other liabilities) in preference to its liabilities elsewhere. However, policyholders do not rank above other creditors, in contrast to the case for ADIs and life insurance companies.

Superannuation

Capital adequacy and operating standards

The focus of the prudential framework applying to superannuation, as established by the *Superannuation Industry (Supervision) Act 1993* and Regulations, is somewhat different to that for ADIs, life insurance and general insurance. A major difference in the case of superannuation is that the trustee does not provide any form of capital promise to members. Where capital guarantees do exist (for example, defined benefit funds), they are provided by the employer.

The discussion which follows addresses the generic concept of superannuation. However, it is worth briefly noting that financial institutions may also feature in the superannuation sector. Life insurance companies, registered annuity providers and retirement savings account providers are some relevant examples. For example, some 30 per cent of superannuation business involves life insurers.

Whereas the focus in these other sectors is on the financial institutions holding sufficient capital and engaging in appropriate risk management practices, the primary concern of the prudential supervision of superannuation is the fiduciary relationship between the trustee and the ultimate beneficiary of a superannuation fund (member). In this way, superannuation is more akin to funds management, as is investment-linked life business.

This relationship centres around the trustee's management and investment of superannuation monies on behalf of and in the best interests of the members. In essence, the trustee is entrusted to receive, invest and generate financial benefits in retirement for members.

The design of the regulatory framework reflects both the compulsory nature of superannuation and the preferential taxation treatment of monies invested in the superannuation environment. Accounting for each member's monies in the superannuation environment is essential from both perspectives. It is important to note that the element of compulsion applies only to some superannuation monies – the superannuation guarantee or award component. Members may also wish to make additional (non-mandatory) contributions towards their retirement savings, for example, through salary sacrifice arrangements or as un-deducted contributions (personal contributions out of after-tax-income). A significant part of the rationale for doing so relates to the preferential taxation treatment of such forms of saving.

A number of capital adequacy-type standards apply in relation to superannuation funds, including a requirement that mainstream funds must maintain sufficient assets to cover any benefits that are defined as minimum benefits of fund members. There are also a range of operating standards and other rules that establish a framework for the accumulation and investment of and payments of benefits from the assets of superannuation funds.

In general the Standards relate to the operation and governance of superannuation funds, create rules around investment, borrowing and lending, establish an accounting and reporting framework, and apply Standards to the various parties involved in managing, investing and accounting for superannuation monies.

Additional safeguards apply where access to a fund is open to participation by the general public and lacks the scrutiny of having member participation in the trustee entity. For public offer funds, capital adequacy and other prudential requirements applying to their approved trustees are designed to ensure the integrity of the trustee's operations.

The regulations define what is meant by the solvency of a superannuation fund. This varies according to the type of fund, particularly in terms of the nature of the retirement benefits that it promises to support. In general, a fund would be considered insolvent at the point that its assets were insufficient to cover the promised benefits or obligations to members or unit holders. The value of promised benefits or obligations to members or unit holders would

differ between defined benefit and accumulation funds, and on a case-by-case basis.

APRA's failure management powers

In parallel to the situation for financial institutions, the primary responsibility for managing the financial position of a superannuation fund rests with the trustee. The trustee's obligations in respect of managing the fund are set out in the legislation and regulations. These obligations apply from the inception of a fund and acceptance of monies through to managing any period of technical insolvency or ultimately winding-up a fund. A trustee is potentially subject to a range of civil and criminal sanctions for failing in their duties.

A trustee is obliged to notify APRA in a range of situations, including an obligation regarding significant adverse events. When facing insolvency or technical insolvency, the trustee is required to either initiate a program to return the fund to solvency within five years or commence winding-up proceedings.

APRA has a number of powers to deal with the possibility that a trustee is not managing a superannuation fund (or like vehicle) in the interests of its members.

Under Part 17 of the Act, APRA may, with Minister's consent, suspend or remove a trustee if there are substantiated grounds for the trustee's disqualification, if there are grounds for the revocation of approval as an approved trustee, or if the trustee's conduct has posed or may pose an unsatisfactory risk to the financial position of the fund. Where a trustee is suspended or removed, APRA must appoint an acting trustee. APRA may terminate the appointment of an acting trustee at any time, and may provide directions to the acting trustee.

Also under Part 17 of the Act, APRA may formulate a scheme leading to the winding-up or dissolution (or both) of a superannuation fund. In essence, this may entail the transfer of a fund's assets and liabilities to another fund, or placing the assets and liabilities within the control of an alternative trustee.

Priority arrangements

In the winding-up of a superannuation fund, the fund's assets are to be distributed in accordance with the Superannuation Industry (Supervision)

Regulations. In general, this provides that the costs of administration and winding-up are met in priority to liabilities to members.

Additional rules relate to the distribution of remaining assets to members, in accordance with the nature of the fund. Relevant considerations include whether it was in surplus or not when winding-up commenced, and the nature of benefits promised to members (for example, if it was a defined-benefit fund or an accumulation fund).

APPENDIX 3.2: SUMMARY OF PRUDENTIAL, ACTUARIAL AND OPERATING STANDARDS

Requirement	Authorised Deposit-taking Institutions (ADIs)[1]	Life insurance companies[2]	General insurance companies[3]	Superannuation trustees
Capital adequacy and solvency	Standards relate to: • minimum capital adequacy requirements; • the measurement of capital base; • capital requirements for credit risk; and • capital requirements for market risk.	Statutory Fund standards relate to: • solvency in a run-off situation; and • ongoing capital adequacy requirements.	Standards relate to: • minimum capital requirements; • measurement of capital base; and • measurement of risk: – insurance risk; – investment risk; and – concentration risk.	Part 2 of the *Superannuation Industry (Supervision) Act 1993* provides for approved trustees (of public offer entities) to meet prescribed capital requirements**.**
Liquidity	Standards relate to: • liquidity management requirements; • scenario analysis; and • minimum requirements.			
Other	Standards include: • conglomerate structures; • association with related entities; • risks from non-deposit taking activity; • large exposures; • credit quality; • credit card activities; • securitisation and funds management; and • operational risk (outsourcing).	Standards include: • capital adequacy of the management fund; • valuation of policy liabilities; • calculating surrender values and paid-up values; and • cost of investment performance guarantees.	Standards include: • asset valuation; • liability valuation; • other risk management practices; • reinsurance arrangements; and • transfer and amalgamation of insurance businesses.	

Notes

1 Authorised Deposit-taking Institutions (ADIs)

- The *Banking Act 1959* (Section 13A) requires ADIs to inform Australia Prudential Regulation Authority (APRA) of distress and hold assets in Australia in excess of deposit liabilities in Australia.
- APRA has standing to determine a compulsory Transfer of Business.
- Only APRA has standing to act as a Statutory Manager or appoint an Administrator. APRA may direct an Administrator. Other parties may seek appointment of receivers should APRA not choose to act.
- If a Statutory Manager has been appointed, only APRA has standing to seek winding-up of an ADI which occurs under the Corporations Act 2001.

2 Life Insurance

- The *Life Insurance Act 1995* requires life insurance companies (LICs) to maintain statutory funds, to maintain solvency, capital adequacy and management capital and restricts encumbrance of fund assets.
- APRA has standing to determine a compulsory Transfer of Business.
- APRA or the LIC (having provided notice to APRA) may seek Court appointment of a Judicial Manager. The Court may direct a Judicial Manager, and APRA may apply to Court for direction. The Court decides upon its orders upon the recommendation of the Judicial Manager.
- APRA (after investigation) and the Judicial Manager have standing to seek winding-up of a LIC which occurs under the Corporations Act.

3 General Insurance

- The *Insurance Act 1973* requires insurance companies to hold assets in excess of liabilities.
- APRA must pre-approve a scheme for a voluntary Transfer of Business before Federal Court consideration. Other parties may seek appointment of receivers should APRA not choose to act.
- APRA may not seek appointment of an Official Manager, but may appoint an inspector and direct an insurance company.
- Section 562A of the *Corporations Act 2001* provides that the proceeds of reinsurance assets is available to policyholders above other priority claims.
- APRA has joint standing to seek winding-up of an insurance company under the Corporations Act (Section 462(3)) — on the grounds that an Inspector has been appointed or liabilities exceed assets.

APPENDIX 3.3: SUMMARY OF APRA'S MANAGING FAILURE POWERS

Power	Authorised deposit-taking institutions (ADIs)[1]	Life insurance[2]	General insurance[3]	Superannuation
Directions	APRA has a broad range of directions powers at its disposal aimed at ensuring compliance with prudential standards and protecting the interests of depositors. The directions powers allow APRA to exert control over the company with the objective of returning it to a sound prudential position.	APRA has a broad range of directions powers at its disposal aimed at ensuring compliance with prudential standards and protecting the interests of policyholders. The directions powers allow APRA to exert control over the company with the objective of returning it to a sound prudential position.	APRA has a more limited range of directions powers at its disposal aimed at ensuring compliance with prudential standards and protecting the interests of policyholders. The directions powers allow APRA to take action in relation to breaches by insurers.	APRA may suspend or remove a trustee and, if it does so, it must appoint an acting trustee. APRA may direct an acting trustee.
External administration	APRA or a body under its control may, in certain circumstances, assume control of an ADI.	APRA may apply to the Court to appoint a Judicial Manager to assume control of a life insurer. It remains subject to the control of the Court. APRA may apply to the Court for instructions to be given to the Judicial Manager.	APRA may apply to the Court for directions to be given to a liquidator.	APRA may suspend or remove a trustee and, if it does so, it must appoint an acting trustee. APRA may direct an acting trustee.
Transfer of business	Compulsory transfer of business power is available under the *Financial Sector (Transfers of Business) Act 1999*.	Compulsory transfer of business power is available under the *Financial Sector (Transfers of Business) Act 1999*.	APRA may direct a company to assign its liabilities to another company if APRA is revoking an authority.	APRA may formulate a scheme leading to the winding-up or dissolution of a superannuation fund.

Summary of APRA's managing failure powers (continued)

Power	Authorised deposit-taking institutions (ADIs)[1]	Life insurance[2]	General insurance[3]	Superannuation
Wind-up	APRA may apply to the Federal Court for an order that an ADI be wound-up. The distribution of assets would be subject to the *Banking Act 1959* and the liquidator would be subject to direction by the Court.	APRA or the Judicial Manager may apply to the Court for an order that a life insurer be wound-up. The distribution of statutory fund assets would be subject to the *Life Insurance Act 1995* and the liquidator would be subject to direction by the Court.	APRA may apply to the Court for an order that a general insurer be wound-up. The distribution of assets would be subject to the *Insurance Act 1973* and the liquidator would be subject to direction by the Court.	APRA may formulate a scheme leading to the winding-up or dissolution of a superannuation fund.

Notes

1 Authorised Deposit-taking Institutions (ADIs)

- The *Banking Act 1959* (Section 13A) requires ADIs to inform Australia Prudential Regulation Authority (APRA) of distress and hold assets in Australia in excess of deposit liabilities in Australia.
- APRA has standing to determine a compulsory Transfer of Business.
- Only APRA has standing to act as a Statutory Manager or appoint an Administrator. APRA may direct an Administrator. Other parties may seek appointment of receivers should APRA not choose to act.
- If a Statutory Manager has been appointed, only APRA has standing to seek winding-up of an ADI which occurs under the Corporations Act 2001.

2 Life Insurance

- The *Life Insurance Act 1995* requires life insurance companies (LICs) to maintain statutory funds, to maintain solvency, capital adequacy and management capital and restricts encumbrance of fund assets.
- APRA has standing to determine a compulsory Transfer of Business.
- APRA or the LIC (having provided notice to APRA) may seek Court appointment of a Judicial Manager. The Court may direct a Judicial Manager, and APRA may apply to Court for direction. The Court decides upon its orders upon the recommendation of the Judicial Manager.
- APRA (after investigation) and the Judicial Manager have standing to seek winding-up of a LIC which occurs under the Corporations Act.

3 General Insurance

- The *Insurance Act 1973* requires insurance companies to hold assets in excess of liabilities.
- APRA must pre-approve a scheme for a voluntary Transfer of Business before Federal Court consideration. Other parties may seek appointment of receivers should APRA not choose to act.
- APRA may not seek appointment of an Official Manager, but may appoint an inspector and direct an insurance company.
- Section 562A of the *Corporations Act 2001* provides that the proceeds of reinsurance assets is available to policyholders above other priority claims.
- APRA has joint standing to seek winding-up of an insurance company under the Corporations Act (Section 462(3)) — on the grounds that an Inspector has been appointed or liabilities exceed assets.

Appendix 3.3: Summary of APRA's managing failure powers

APPENDIX 3.4: SIMPLIFIED REPRESENTATION OF DEPOSITOR AND POLICYHOLDER PRIORITIES

Claimants ranked in order of priority					
Authorised deposit-taking institutions[1]		**Life insurance[2]**		**General insurance[3]**	
Claimants	**Legislation**	**Claimants**	**Legislation**	**Claimants**	**Legislation**
Deposit liabilities in Australia	Part 2 Division 2 — *Banking Act 1959*	Secured creditors		Secured creditors	
Secured creditors		Priority claims	Part 5.6 Division 6 — *Corporations Act 2001*	Priority Claims (including policyholders against reinsurance assets)	Part 5.6 Division 6 — *Corporations Act 2001*
Priority claims	Part 5.6 Division 6 — *Corporations Act 2001*	Policyholders	Part 8 Division 2 — *Life Insurance Act 1995*	Floating charges	
Floating charges		Floating charges		Australian Unsecured Creditors (including policyholders against other assets)	Subsection 116(3) — *Insurance Act 1973*
Unsecured creditors		Unsecured creditors		Foreign unsecured creditors	
Shareholders		Shareholders		Shareholders	

Notes

1 Authorised Deposit-taking Institutions (ADIs)

- The *Banking Act 1959* (Section 13A) requires ADIs to inform Australia Prudential Regulation Authority (APRA) of distress and hold assets in Australia in excess of deposit liabilities in Australia.
- APRA has standing to determine a compulsory Transfer of Business.
- Only APRA has standing to act as a Statutory Manager or appoint an Administrator. APRA may direct an Administrator. Other parties may seek appointment of receivers should APRA not choose to act.
- If a Statutory Manager has been appointed, only APRA has standing to seek winding-up of an ADI which occurs under the Corporations Act 2001.

2 Life Insurance

- The *Life Insurance Act 1995* requires life insurance companies (LICs) to maintain statutory funds, to maintain solvency, capital adequacy and management capital and restricts encumbrance of fund assets.
- APRA has standing to determine a compulsory Transfer of Business.
- APRA or the LIC (having provided notice to APRA) may seek Court appointment of a Judicial Manager. The Court may direct a Judicial Manager, and APRA may apply to Court for direction. The Court decides upon its orders upon the recommendation of the Judicial Manager.
- APRA (after investigation) and the Judicial Manager have standing to seek winding-up of a LIC which occurs under the Corporations Act.

3 General Insurance

- The *Insurance Act 1973* requires insurance companies to hold assets in excess of liabilities.
- APRA must pre-approve a scheme for a voluntary Transfer of Business before Federal Court consideration. Other parties may seek appointment of receivers should APRA not choose to act.
- APRA may not seek appointment of an Official Manager, but may appoint an inspector and direct an insurance company.
- Section 562A of the *Corporations Act 2001* provides that the proceeds of reinsurance assets is available to policyholders above other priority claims.
- APRA has joint standing to seek winding-up of an insurance company under the Corporations Act (Section 462(3)) — on the grounds that an Inspector has been appointed or liabilities exceed assets.

APPENDIX 4.1: FINANCIAL FAILURE IN AUSTRALIA SINCE 1980

2000 to 2003

Time	Authorised deposit-taking institutions (ADIs)	General insurance	Life insurance	Superannuation
2003				
2002		United Medical Protection/Australasian Medical Insurance Limited (UMP/AMIL)		
2001		HIH Group of Companies (HIH)		Commercial Nominees of Australia PTY LTD (CNAL)
2000				
Events	General insurance: There were two major general insurance collapses during this period. HIH, Australia's second largest insurer and UMP/AMIL, providers of medical indemnity insurance. A hardening of the general insurance market also occurred resulting in problems of affordability and availability particularly in liability lines of business. Decreases in asset values internationally also impacted on global reinsurance capacity. There was domestic pressure to introduce tort law reform stemming from a perception of an increasing level of litigation and the high cost of claims payouts. In the cases of both UMP/AMIL and HIH the resulting collapses, however, were due to underprovisioning, particularly in the long-tail classes.			
Reform measures	General insurance: The Government specifically designed financial support measures to assist in both collapses. The major policy reform measures resulting from HIH included: replacing APRA's non-executive board with a full-time three person executive group who would carry the responsibility and be accountable for the operation and performance of APRA and enhancing of the role of the Council of Financial Regulators. Other general insurance reforms had already commenced prior to the release of the HIH Royal Commission report including: increased entry level capital requirement from $2 million to $5 million; minimum capital requirements more closely linked to the risk profile of individual insurers; improved consistency and reliability in measuring and reporting liabilities; and the introduction of a Risk Management Standard designed to ensure that an insurer is well-managed, has access to appropriate independent expertise and has systems for identifying, managing and monitoring risks. It also requires the board and senior management of an insurer to be subject to a 'fit and proper' test to ensure they are suitable to hold office. The major reform measures resulting from UMP/AMIL included bringing all Medical Defence Organisations within the prudential framework and a concerted effort by the Commonwealth to pursue nationally consistent tort law reform.			

Financial failure in Australia since 1980 (continued)

1990s

Time	Authorised deposit-taking institutions (ADIs)	General insurance	Life insurance	Superannuation
1990s	State Bank (Victoria) Tricontinental (Victoria) State Bank (South Australia) Pyramid Building Society	Greatlands General Insurance Motor Accident Insurance Mutual SSORC Insurance (QLD) New Cap Reinsurance Corp CEASA International Specialist Underwriters Property Marine Insurance Trans Pacific Insurance Trinity Insurance Greater Midwest Insurance National Employers Mutual (foreign-owned)	Occidental and Regal	One case of loss of majority of assets when employer sponsor went into receivership.[1]

1 Senate Select Committee on Superannuation.

Financial failure in Australia since 1980 (continued)

1980s

Time	Authorised deposit-taking institutions (ADIs)	General insurance	Life insurance	Superannuation
1980s	Moe Credit Union Western Australian Teachers' Credit Society (taken over by State-owned Rural and Industries (R&I) Bank of Western Australia) Bank of Adelaide (taken over by ANZ)	Trans Tasman Insurance Intercontinental Reinsurance (Pacific) Crest Insurance Company of Aust LTD Bishopgate China Underwriters Life and General Fleet Motor and General Insurance Co Consolidated Insurances of Australia Sapphire Insurance Palmdale Insurance Dominion Insurance Company Service Extension Insurance TAB Agents' Company		
Events	Bank: Deregulation in the mid 1980s resulted in strong credit growth secured against increasingly overvalued commercial property. The late 1980s saw a combination of high interest rates and softening of commercial property market exposing poor credit quality of some risky loans. Public confidence deteriorated in 1990 and 1991 with some runs on small banks. While some of the large banks experienced losses, these were internally absorbed. State Banks, however, suffered the most. Life insurance: Occidental & Regal failed due to the aborted sale of two companies (Occidental and Regal) and the apparent misappropriation of policyholder's funds.			

Financial failure in Australia since 1980 (continued)

1980s (continued)

Reform measures	Bank: Policy reform of the banking and non-banking sectors generally reflected the changing nature of the sectors and both State and Federal governments withdrew from direct ownership of financial institutions throughout the 1990s. Prudential standards and capital adequacy requirements increased, as was occurring internationally at the time. The bringing together of all ADIs under the one regulatory umbrella following the Financial System Inquiry was a significant reform for the non-banking sector. Life insurance: Reforms were designed to improve supervision of companies and disclosure to the public. Measures included: disclosure requirements in respect of regular premium contracts and updating of promotional statement guidelines; introduction of quarterly returns whereby life insurance companies report on their investment risk exposures; and legislation to increase capital requirements, improve investigatory powers and provide for pre-vetting of changes in ownership or control of life companies. Superannuation: In 1992 the Government introduced a new supervisory framework emphasising that the primary responsibility for the prudential management of superannuation funds rests with the fund trustees and that the Government does not guarantee superannuation benefits.

APPENDIX 4.2: FINANCIAL INSTITUTION FAILURES IN AUSTRALIA — SOME CASE STUDIES

State-owned banks

The two most significant banking failures in the 1990s were the failures of the State Bank of Victoria (SBV) and the State Bank of South Australia (SBSA). The banks were owned by the respective State governments and experienced pre-tax losses exceeding three times the 1989 level of shareholders' funds.

State Bank of Victoria

The primary source of SBV's problems was losses in its subsidiary, Tricontinental, which were more than 3.5 times greater than the value of SBV's capital. The SBV lost around $3 billion. The State Government invested $2.7 billion in the SBV Group largely in connection with Tricontinental. The Reserve Bank of Australia (RBA) was prepared to offer short-term emergency liquidity support to the State Bank (provided the Victorian Government indemnified it against any losses) if the bank were to exhaust its stock of liquid assets. The RBA also offered to help the State Bank sell its portfolio of Commonwealth Government securities if the need arose, either by assisting the sale of those securities in the market or by buying them itself. In the event, no such arrangements were required. In August 1990, the State Bank was sold to the Commonwealth Bank (Fitz-Gibbon and Gizycki 2001).

A Royal Commission was set up by the State Government in early 1990 to investigate the collapse of Tricontinental.

State Bank of South Australia

The State Government of South Australia was forced to bail out the SBSA when it lost $3.3 billion. The cost to taxpayers was in the vicinity of $2.2 billion. A Royal Commission into the failure was also conducted.

Rural and Industries (R&I) Bank of WA

The Rural and Industries (R&I) Bank, then owned by the Western Australian Government, became the subject of a brief run in January 1992. The run ended when the RBA Governor issued a statement pointing out that deposits with the R&I Bank were guaranteed by the State Government of Western Australia, and giving reassurance that the RBA would take whatever steps necessary to ensure the bank had adequate liquidity.

Pyramid Building Society

The Farrow Group was founded in 1959 with the establishment of the Pyramid Building Society. Over the course of the early 1970s and 1980s, the Farrow Group purchased and/or reconstructed two other building societies: the Geelong Building Society and the Countrywide Building Society. These three institutions became known as the Pyramid (or Farrow) Group.

The problems of the Pyramid Group stem from the freedom afforded by the deregulation of the 1980s. The Group went into commercial lending soon after deregulation and grew rapidly from that point. Between 1981 and 1989 assets grew from $260 million to $2,900 million. Particular actions by the Group further contributed to its problems. These actions included: borrowing at higher rates than the major banks (between 2 to 4 per cent higher), charging large upfront fees (the fees provided the Group's cash flow), capitalising interest on loans when borrowers were unable to meet repayments and having in place complex lending structures that allowed the Group to lend outside of the State. The most significant action, however, was the misused provision of the 'free tranche'[1] which was permitted by regulations. The Group created a 'free tranche trust' which allowed the top-up of commercial loans beyond the prudential lending limits. This had the effect of exposing the Group to risky commercial borrowers.

The Group began experiencing liquidity problems in late 1989 and early 1990 with a run on deposits throughout February/March 1990 with more than $200 million being withdrawn. A second run in May/June 1990 led to its ultimate close on 22 June 1990. Two weeks prior to its eventual failure, the Victorian Government assured the public that the Pyramid Group was financially sound.

---

1 Societies were permitted to acquire an asset or make an advance not otherwise authorised subject to these assets or advances not exceeding 6 per cent of the society's total value of assets the previous financial year. This discretionary 6 per cent of assets or advances became known as the 'free tranche'.

The estimated total of all deposits of the Group prior to the collapse was $1,473 million. The Victorian Government ultimately provided financial assistance equivalent to 25 cents in the dollar to depositors to ensure that they received the full value of their deposits. However, some investors, who had non-withdrawable shares, did not receive assistance and lost money. The final cost to the Victorian taxpayer was over $900 million. The funds were raised through a 3 cent levy per litre on petrol. The levy lasted for 5 years.

Credit Unions[2]

Since the 1980s the number of credit unions in Australia has declined from over 700 to just under 200. Most of that decline is the result of voluntary mergers between credit unions. Some, however, involved transfers of business required by State regulators in cases where credit unions were in breach of legislative requirements or, in a small number of cases (primarily in the 1980s), were insolvent. In those latter cases, the existence of State-based stabilisation funds (based on contributions from credit unions) provided one mechanism for ensuring that no members of failed credit unions lost money. In another case, the Western Australian Government arranged a take-over of a failed credit union by the Government owned R&I bank at a cost to taxpayers estimated to be in the order of $220 million. The State based stabilisation funds which operated in several States under State regulators, evolved in some cases from co-operative schemes established by the credit union movement and which had previously operated to stabilise and resolve credit unions in difficulty. The stabilisation funds were wound-up after the introduction of the Australian Financial Institutions Commission (AFIC) as a national regulator in 1992.

Western Australian Teachers' Credit Society

At the start of the 1980s, Western Australian (WA) Teachers' Credit Society was one of the largest credit unions in Australia and grew rapidly in the first half of the 1980s partly based on commercial lending. In 1987 after several years of difficulty, State government assistance was sought and the Government-owned R&I bank acquired the credit union. That takeover ensured that member's deposits were protected, ultimately by the WA taxpayer. Several other credit unions in WA also experienced problems and experienced runs by depositors. Support by credit union associations from

2 This section is primarily sourced from G Lewis *People before Profit: The Credit Union Movement in Australia*, Wakefield Press, Kent Town, 1996.

outside the State enabled the problems to be overcome, and subsequent legislation saw the development of a savings protection (stabilisation) fund.

Moe and District Community Credit Union

In 1989 the Moe community credit union was placed under administration by the State regulator following discovery of large losses due to inappropriate lending practices. Other credit unions were required to inject additional funds into the State stabilisation fund to meet the losses, and the Moe community credit union was merged with the SEC Credit Union. Shortly thereafter, in the wake of this publicity and that surrounding the Pyramid collapse, several credit unions experienced liquidity problems due to member withdrawals. The Victorian government commissioned a review of credit union legislation, which was ultimately overtaken by the introduction of AFIC.

Occidental Life and Regal Life

Occidental Life was a medium-sized life insurance company which specialised in term and disability insurance and investment products, both capital guaranteed and investment linked. Investment business was predominantly superannuation for individuals and small schemes. The company had experienced strong growth in its term, life and disability portfolio and had a single market share in this area ranking in the top five life companies. Risk insurance was its core business and its primary source of income.

Regal Life was a Melbourne-based, small life insurance company which had previously been Royal Life Insurance Limited but had changed its name to Regal when it was acquired beneficially by Battery Group Limited. Battery Group Limited was also the beneficial owner of Occidental. The removal of $65 million of statutory funds occurred during the aborted sale of the two companies in 1990. The ISC had inadequate powers to take any action to interfere with or forestall completion of the transaction. Following the transaction, a Judicial Manager was appointed to report on the course of action most advantageous to the general interest of policyholders. An examination of the Judicial Manager's various reports during the course of the judicial management indicated a number of problems with the companies, particularly in relation to the investment of assets, the preservation of policyholder funds in statutory funds and dealing with those funds.

To ensure that consumers were protected, the Government introduced legislation to impose a levy to recover 90 per cent of policyholder benefits.

In 1991 the Mercantile Mutual Life Insurance Company Limited bought Occidental Life's risk insurance portfolio. Following the successful transfer of the portfolio, most policyholders received full value for their investments. Some of the Regal policyholders, however, did not. Payments by the Bank of Melbourne to remedy the problems which occurred in the settlement process during the aborted sale substantially eliminated any shortfall in assets.

The Government's levy legislation was not required and the levy legislation was subsequently repealed.

HIH Group of Companies — HIH Support Scheme

On 15 March 2001 the HIH Group of Companies (HIH) was placed in provisional liquidation. In May 2001 the Australian Government announced a package of up to $640 million to assist eligible policyholders.

In July 2001, the Commonwealth entered into agreements with HIH Claims Support Limited (HCSL), a wholly owned subsidiary of the Insurance Council of Australia, to administer the Government's HIH Claim Support Scheme (HCSS). In turn, HCSL entered into tripartite agreements with the Liquidator of HIH and insurer managers. Under the scheme, policyholders assign their rights under their HIH policy to HCSL.

Eligible policyholders are individuals who meet an income test based on family taxable income, small business (of less than 50 employees) and charitable enterprises.

The Scheme pays 100 per cent of the amount which the insurer would have been obliged to pay, under the relevant policy (the policyholder must still pay the excess, where applicable, and all of the terms, conditions and limits of the policy will still apply) in the case of salary continuance, disability or income protection claims made by Australian citizens or permanent residents; personal injury claims where the insured is an Australian citizen, permanent resident or small business; claims under home building or home contents policies where there is a total loss involving a primary place of residence where the insured is an Australian citizen or permanent resident; and claims where the policyholder is an Australian not-for-profit organisation.

HCSS pays 90 cents in the dollar support for other claims where the insured is subject to an income test as follows. Where the family taxable income is less than $77,234 (increased by $3,139 for each additional child), a policyholder qualifies regardless of the size of the claim. Where family taxable income is

more than $77,234 (increased by $3,139 for each additional child), a policyholder qualifies for assistance if the claim is more than 10 per cent of family taxable income. Eligible claims also include those where the insured is an Australian small business that has 50 employees or less.

By March 2004, over $340 million had been paid out to, or on behalf of, policyholders.[3]

Commercial Nominees of Australia Ltd (CNAL)

Commercial Nominees of Australia Limited (CNAL) was the trustee of 22 corporate and public offer superannuation funds, around 500 small APRA Funds (SAFs) and 13 non-superannuation funds.

CNAL established the Enhanced Cash Management Trust (ECMT) in the second half of 1998. The assets of the ECMT included loans which would not normally be the investments of a cash management trust. This raises the concern that these transactions may not have been negotiated on an arm's-length basis. In March 2000, two newly appointed directors of CNAL advised APRA that there was a possibility that assets held by the ECMT and the Enhanced Equity Fund (EEF) were impaired. APRA was informed that at least three superannuation funds (the Network Superannuation Fund, the Midas Superannuation Fund and the Australian Workforce Eligible Rollover Fund), of which CNAL was the trustee, had invested in ECMT and/or the EEF, and were, as a result, exposed to the impaired assets.

In April 2000, APRA required CNAL to engage an investigator (PricewaterhouseCoopers (PWC)) to undertake an independent review of the financial position of the three affected funds. It was anticipated that attempts to recover these loans from the related parties, coupled with the inquiries of the investigator, would produce the required evidence of any transactions undertaken at non-arm's length. In November 2000, PWC reported on the financial position of the three funds. The Board of CNAL froze all withdrawals from the ECMT on 7 November 2000.

In February 2001 APRA revoked CNAL's approval as an APRA-approved trustee, and removed CNAL as the trustee of around 500 SAFs.

---

3 A number of State-based schemes were put in place for the compulsory classes of insurance which are regulated by the States. The overall cost of the HIH 'bailout' by the Australian taxpayer therefore is greater when combined with State financial responses.

The failure of CNAL in 2000 resulted in an estimated 25,000 investors losing some proportion of their superannuation saving, which together amounted to a loss in the order of $25 million to $30 million or around 8½ per cent of CNAL's funds under management.[4] Applications for payments under Part 23 of the *Superannuation Industry (Supervision) Act 1993* are still being processed.

4 The estimated cost to date of rehabilitating CNAL's funds is around $17.5 million.

APPENDIX 4.3: GOVERNMENT RESPONSES TO FINANCIAL FAILURES

	Part 23 *Superannuation Industry (Supervision) Act 1993*	HIH Group of Companies (HIH) Support Scheme	United Medical Protection /Australasian Medical Insurance Limited (UMP/AMIL)[1]
Date	Legislation enacted 1993. Not used until 2001.	March 2001 (date of HIH collapse).	May 2002.
Cause/Event	As a result of fraudulent conduct or theft by anyone involved in fund.	Collapse of HIH.	UMP/AMIL placed in provisional liquidation.
Impact	Funds previously not recoverable.	Policyholders with claims outstanding required to meet the cost of manifestation of risk.	60 per cent of doctors indemnified by UMP/AMIL. Major threat to private health system as doctors potentially left uninsured against negligence.
Response type	Formal and targeted. Only instigated when required (industry favours this approach).	Ad hoc and targeted. Only applies to HIH policyholders. Not envisaged to extend to other general insurance collapses if required.	Two ad hoc responses. One targeted at UMP/AMIL only and one at all Medical Defence Organisations (MDOs) with unfunded incurred but not reported (IBNR) liabilities.
Criteria for response	Consumer protection.	Policyholder protection. Hardship.	Industry protection, consumer protection and indirectly, protection of public health system.

1 The key elements of the Government's financial response to the failure of UMP/AMIL was a guarantee for a limited period in order that UMP/AMIL could continue to meet payments under the cover provided to its members and legislation allowing the Commonwealth to assume unfunded incurred but not reported (IBNR) liabilities of UMP/AMIL and other MDOs. In addition, prudential requirements were strengthened. The remaining package of measures such as premium subsidies, high claims cost recovery scheme and exceptional claims cost scheme, were in response to wider issues occurring in the medical indemnity insurance market at the time.

Government responses to financial failures (continued)

	Part 23 *Superannuation Industry (Supervision) Act 1993*	HIH Group of Companies (HIH) Support Scheme	United Medical Protection /Australasian Medical Insurance Limited (UMP/AMIL)
Coverage	Regulated super funds and approved deposit funds.	Policyholders subject to income test based on the family taxable income (as defined for Family Tax Benefit purposes). [2] Small business (based on small business definition, less than 50 employees) and not for profit organisations (no hardship criteria).	Two key forms of financial support: (i) Guarantee for UMP/AMIL for a limited period in order that UMP/AMIL could continue to meet payments under the cover provided to its members. Guarantee ended when UMP/AMIL exited provisional liquidation in November 2003. (ii) Legislation allows the Commonwealth to assume unfunded IBNR liabilities of any MDO. So far only assumed those of UMP.
Eligibility	Must result in substantial diminution in funds and difficulty in administering payments to beneficiaries. Public interest test.	Policyholders with outstanding claims and IBNR claims as at 11 June 2001. Australian residents only. Small business. Not for profit organisations.	(i) UMP/AMIL (and member doctors). (ii) All MDOs with unfunded IBNRs as at 30 June 2002.
Exclusions	Self-managed funds and exempt public sector funds (some States covered by nominal defendant arrangements).	Policyholders with income in excess of hardship level. State-mandated insurance. Small business that is a related entity of a larger organisation.	No specific exclusions. Some medical practitioners are exempt from reimbursing the Commonwealth for its assumption of their IBNR liabilities.

2 Where the family taxable income is less than $77,234 (increased by $3139 for each additional child), a policyholder qualifies regardless of the size of the claim. Where family taxable income is more than $77,234 (increased by $3139 for each additional child), a policyholder qualifies for assistance if the claim is more than 10 per cent of family taxable income.

Government responses to financial failures (continued)

	Part 23 *Superannuation Industry (Supervision) Act 1993*	HIH Group of Companies (HIH) Support Scheme	United Medical Protection /Australasian Medical Insurance Limited (UMP/AMIL)
Administration	Legislative basis. Ministerial approval required, Treasury makes recommendation to Minister. Payments made by Commonwealth from consolidated revenue in the form of a grant to the fund.	Semi-legislative basis (only appropriation). Company established to administer payments and assess eligibility. Claims management outsourced to various insurance companies.	(i) Deed of Indemnity. (ii) Legislative basis for IBNR levy/UMP support payment. UMP support payment replaces IBNR levy. Limited to 6 years. Amount paid depends on length of membership of UMP, past premiums and gross medical income
Payment	Government policy has to date been to cap at 90 per cent cap of actual loss.	100 per cent of claims for salary continuance, disability or income protection claims, personal injury claims, loss of primary residence and not-for-profit organisations. 90 per cent for all other claims.	(i) Guarantee ensured ongoing financial viability of UMP/AMIL. No payments required. (ii) Commonwealth meets cost of unfunded IBNR liabilities as they arise.
Funding	Post-funded by private levy on all eligible funds. Collected in following year and based on asset levels in the year of the event. Minimum and maximum[3] levy set in regulations. Any recovered funds following successful prosecution to be held in Super Protection Reserve and used to offset future claims.[4]	Tax funded.	(i) Guarantee was underwritten by budget with full *ex post* recovery through a levy if necessary (distinct from IBNR levy). (ii) IBNR scheme/UMP support recoverable through pre-funded levy on medical practitioners not specifically exempt. Duration and rate of levy is dependent on size of MDOs unfunded liabilities. Duration of support payments is limited to 6 years.

3 Maximum for 2001-2002 at $33,000 and minimum at $100.

4 To date no funds have been successfully recovered.

Government responses to financial failures (continued)

	Part 23 *Superannuation Industry (Supervision) Act 1993*	HIH Group of Companies (HIH) Support Scheme	United Medical Protection /Australasian Medical Insurance Limited (UMP/AMIL)
Cost recovery	Levy funded as a percentage of fund assets.	Budget funded.	Budget and levy funded.
Tax implications	Payments are income tax exempt.[5]	Payments are defined as 'grants'.	IBNR levy is tax deductible.
Duration of response	Ongoing.	Scheme ceasing to accept applications from 27 February 2004.[6] Outstanding claims may take some time to settle, in particular liability classes.	Guarantee ceased once UMP/AMIL exited provisional liquidation. UMP support scheme ongoing. The Commonwealth has fully assumed certain unfunded IBNR liabilities.

5 Payment is taxable for GST purposes.

6 There will be a facility for policyholders to make a late application where a relevant fact relating to the policyholders right to claim under an insurance policy issued by a company in the HIH Group was not known to the policyholder until after the cut-off date of 27 February 2004.

APPENDIX 5.1: INTERNATIONAL COMPARISON OF COVERAGE FEATURES (DEPOSIT INSURANCE)

Design variables	International comparisons											
		Canada[1]	France[2]	Germany[3]	Hong Kong[4]	Italy[5]	Japan[6]	Korea[7]	Netherlands[8]	Switzerland[9]	UK[10]	US[11]
Entry	Compulsory	x	x	x	x	x	x	x	x		x	x
	Voluntary									x		
Eligibility	Per deposit	No	No	No	No	No	No	No	No	No	No	No
	Per depositor	x	x	x	x	x	x	x	x	x	x	x
Coverage	Capped	x	x		x	x	x	x	x	x	x	x
	Coinsurance	No	No	x[12]	No	No	No	No	No	No	x	No
	Principal	x	x	x	x	unknown	x	x	x	x	x	x
	Interest	x	unknown	unknown	x	unknown	x	unknown	unknown	unknown	unknown	x
	Domestic deposits	x	x	x	x	x	x	x	x	x	x	x
	Includes Foreign currency deposits	No	x[13]	x	x	x	No	No	x	x	x	x
	Netting	unknown	unknown	unknown	x	unknown	x	x	x	unknown	x	x

International comparison of coverage features (deposit insurance) (continued)

Design variables	International comparisons										
		Canada[15]	France[16]	Germany[17]	Hong Kong[18]	Italy[19]	Japan[20]	Korea[21]	Netherlands[22]	Switzerland[23]	UK[24]	US
Funding	Pre				x		x	x				
	Post		x			x			x	x		
	Combination	x		x							x	x[25]
	Private		x	x	x			x[26]		x	x	x
	Public					x						
	Joint	x					x[27]		x[28]			
Premium setting	Risk based premia	x		x	x	x				x[29]		x
	Flat premia		x				x[30]	x	x	x	x[31]	
Administered	Private			x						x	x	
	Public	x			x			x	x			x
	Joint		x[32]			x	x					

Source: World Bank 2000, http://www.cdic.ca/?id=100, http://www.garantiedesdepots.fr/reglements_99_06.php#annexe, Beck 2001, http://www.info.gov.hk/hkma/index.htm, http://www.fitd.it, http://www.dic.go.jp/english/e_soshiki/e_soshiki.html, http://www.kdic.or.kr/english, Garcia and Prast 2003, http://www.swissbanking.org/en/home/akteure.htm, http://www.fscs.org.uk/, http://www.fdic.gov/

Notes

1 The Canadian Deposit Insurance Corporation (CDIC).
2 The Fonds de Garantie des Depots.
3 Private scheme run by the German Banks Association.
4 Hong Kong Deposit Protection Board.
5 The Fondo Interbancario di Tutela dei depositi (FITD).
6 Deposit Insurance Corporation of Japan (DICJ).
7 Korea Deposit Insurance Corporation (KDIC).
8 Collective Guarantee Scheme of Credit Institutions for Repayable Funds and Portfolio Investments (CGS), implemented by the Netherlands Bank (the central bank).
9 The scheme is run by the Swiss Bankers Association.
10 Financial Services Compensation Scheme (FSCS).
11 Federal Deposit Insurance Corporation (FDIC).
12 The coverage is equal to 30 per cent of equity, which equates to approximately EUR 90 million, which is effectively a complete guarantee.
13 The Fonds de Garantie des Depots excludes foreign currency deposits outside of the European Economic Area.
14 The Canadian Deposit Insurance Corporation (CDIC).
15 The Fonds de Garantie des Depots.
16 Private scheme run by the German Banks Association.
17 Hong Kong Deposit Protection Board.
18 The Fondo Interbancario di Tutela dei depositi (FITD).
19 Deposit Insurance Corporation of Japan.
20 Korea Deposit Insurance Corporation (KDIC).
21 Collective Guarantee Scheme of Credit Institutions for Repayable Funds and Portfolio Investments (CGS), implemented by the Netherlands Bank (the central bank).
22 The scheme is run by the Swiss Bankers Association.
23 Financial Services Compensation Scheme (FSCS).
24 Federal Deposit Insurance Corporation (FDIC).
25 Predominantly pre-funded, but may levy on post-funded assessment. Premiums paid go into the 'general fund of the United States' and losses incurred by the fund will be reflected in the Government's budget.
26 The KDIC is authorised to borrow from the Government or Central Bank with the Minister for Finance approval.
27 DICJ can raise funds from the capital market through borrowings and bond issues with a Japanese government guarantee.
28 The central bank provides interest-free bridge financing.
29 Contributions include a basic and variable contribution.
30 Deposits are separated into separate deposit categories, each category is charged a different premium rate.
31 Funding is spilt between a management expenses levy and a compensation payments levy. Management expenses is made up of base costs, specific costs and establishment costs. All firms are required to contribute to base costs and establishment costs. For the specific costs and compensation payments, levies are allocated to Contribution Groups. This means that levies are only raised against firms that are authorised to carry out the same type of business as those failed firms that have caused the payment of compensation claims.
32 Created by legislation. Member institutions elect the supervisory committee and the managing board. The Minister for Finance approves the President of the managing board.

APPENDIX 6.1: COST MODELS

Deriving the fair value of guarantees

Scenario analysis

The scenario analysis presented in Chapter 7 takes as its starting point an industry group with an aggregate balance sheet of the following form:

Assets in Australia	A_a		Insured deposits / Policy liabilities	$D_i = xD$	
Assets overseas	A_o		Uninsured deposits / Policy liabilities	$D_u = (1-x)D$	
Total assets		A	Total deposits/ Policy liabilities		D
			Other liabilities	OL	
			Total liabilities		L
			Equity		E

It considers the effects of the failure of one institution in that industry and considers a number of cases for the characteristics of that institution.

Specifically:

- $y = A_i / L_i$ is the total assets/total liabilities ratio of the institution post-failure and a range of values less than unity are considered.
- m = market share of the institution pre-failure.

It is assumed that failure arises from a decline in asset value from a pre failure value of $A_i^0 = mA$ to post failure value of A_i. Liabilities are assumed unchanged, although because the results are driven by the ratio $y = A_i / L_i$, they can also be interpreted as arising from an increase in liabilities (as might occur in the case of insurance).

Total dollar losses to non-equity stakeholders in the failed institution are given by:

Shortfall ($) = $L_i - A_i = mL - yL_i = mL - ymL$

Shortfall ($)= mL(1 - y)

(Note that total losses to all stakeholders, including equityholders, are $A_i^0 - A_i$, which is greater than $L_i - A_i$. The focus here, however, is upon losses faced by other stakeholders including a guarantee scheme).

Total losses as a proportion of the equity capital of the remaining institutions is of interest because it illustrates the severity of the failure and indicates the ability of the industry to contribute to the cost of the failure. The shortfall as a percentage of equity of surviving institutions is given by:

Shortfall (% of capital) = Shortfall ($)/(Capital of surviving institutions)

Shortfall (% of capital) = mL(1-y)/((1-m)E)

If a guarantee scheme is in operation, the net payouts involved depend upon the extent of the fall in asset values, the nature of depositor (or policyholder) preference arrangements and the proportion of deposit (policyholder) liabilities covered under the scheme. Denote the proportion of total liabilities covered by the scheme by x. If the ratio of total liabilities/(deposits (policyholder liabilities)) is denoted by z then the proportion of deposits (policyholder liabilities) covered by the scheme is xz. If depositor preference applies, such that all depositors rank ahead of other creditors (and the guarantee scheme assumes the place of insured depositors), payouts are given by:

Payout ($) = Max [0, P]

where $P = xzD_i - xzA_i$.

In this expression, xzD_i is the payments made to depositors and xzA_i is the amount recovered by the guarantee fund from the failed institution's assets (which are A_i and of which the guarantee scheme is entitled to a share of xz).

Noting that $D_i = mD$ and $A_i = yL_i = ymL = ym(D+OL)$

$P = mxz (D - y(D+OL))$

Payout ($) = Max [0, mxz(D - y(D+OL)] = Max [0, mxz(D-yL)]

It is also instructive to calculate the payout as a percentage of equity of surviving institutions, in order to consider the ability of scheme participants to fund such payouts and the impact of contributions on their capital position.

The net payout can be expressed as a proportion of the equity of surviving institutions as:

Payout (% of remaining equity) = Payout($)/(Equity of surviving institutions)

Payout (% of remaining equity) = Max [0, mxz(D - y(D+OL)]/ ((1-m)E)

Option pricing

The option pricing approach uses the equivalence between cash flows of a guarantee and of a put option written on the assets of the scheme member to estimate a 'fair value' for the guarantee. (Merton (1977) pioneered this approach). If the liabilities are fixed (as is often assumed in the application to deposit insurance), this approach requires as inputs the market value of assets, and the volatility of assets. Neither of these is directly observable, but can be estimated in the case of institutions for which share price data is available.

If liabilities are themselves stochastic, as is particularly relevant for insurance, but also applicable for depository institutions, the approach is more complicated. However, interpreting the volatility estimate as the volatility of net capital (assets minus liabilities) incorporates, in an *ad hoc* way, some of these complications. Because asset and liability values are less than perfectly correlated, it may be expected that a higher volatility figure applies to insurance firms (particularly general insurance) than to depository institutions. (Cummins (1988) applied the option pricing approach in a more rigorous fashion to insurance guarantee funds, and also allowed for the possibility of one-off catastrophic events).

The option pricing approach provides a 'fair value' estimate of guarantees, typically expressed as a fraction (basis points per dollar) of guaranteed liabilities. Unlike the expected loss approach, it assumes that the writer of the option is compensated for the systematic risk associated with the return on the option. This occurs because the option price is calculated by using the fact that the option is a derivative product based upon the underlying asset, and the systematic risk characteristics of the underlying asset will be reflected in the option price and expected rate of return on the option. Unless there is no systematic risk associated with the option, the 'fair value' will exceed the expected loss value. The option pricing approach also assumes no possibility of default risk of the guarantor (option writer).

It is also possible to 'back out' probability of defaults (PDs) and losses given defaults (LGDs) from the option pricing model. The option pricing model

provides an estimate of the PD under an assumption of risk neutral pricing. To convert this into an estimate of the actual PD, it is necessary to adjust the risk neutral PD by a factor related to the excess return (over the risk free rate) of the underlying asset.

In what follows, the option pricing approach is applied to a 'typical' institution within each financial intermediary group. While this ignores important differences between institutions within each group, which is at heart of risk-based pricing, this approach provides 'ball park' estimates of the average cost of guarantees for different intermediary groups. In essence it assumes that there is no systematic difference in the risks associated with large and small institutions within the same group. The approach also highlights some of the problems associated with constructing and funding guarantee schemes for certain classes of intermediaries.

An important feature of the option pricing approach in estimating the cost of guarantees for coverage of part of deposit liabilities should be noted. Assume that x per cent of deposit liabilities are guaranteed, that the guarantee scheme has equal priority with uninsured depositors, and that all other creditors have junior status. Failure of the bank involves the guarantor in a net payout equal to x per cent of the gap between assets and total deposits. Hence, the partial guarantee G_p has total value equal to x per cent of a guarantee over total deposits (G_t), ie $G_p = xG_t$. If the guarantee is expressed as a proportion of the value of insured deposits D_p, where $D_p = xD_t$, it can be seen that $g = G_p/D_p = G_t/D_t$. The fair value per dollar of insured deposits is independent of the proportion of deposits guaranteed. In aggregate terms, the total value of the guarantee will change in direct proportion to changes in the coverage ratio.

Deposit insurance pricing with limited coverage and preference rules

Consider a bank with the balance sheet shown below.

Assets	A	Insured deposits	D_i
		Uninsured deposits	D_u
		Other creditors	C
		Equity	E

Letting r,ρ, and μ represent the interest rates promised to insured depositors, uninsured depositors, and other creditors respectively means that $B_i = D_i e^{rT}$,

$B_u = D_u e^{\rho T}$, and $B_c = Ce^{\mu T}$ are amounts promised by the bank for payment at date T.

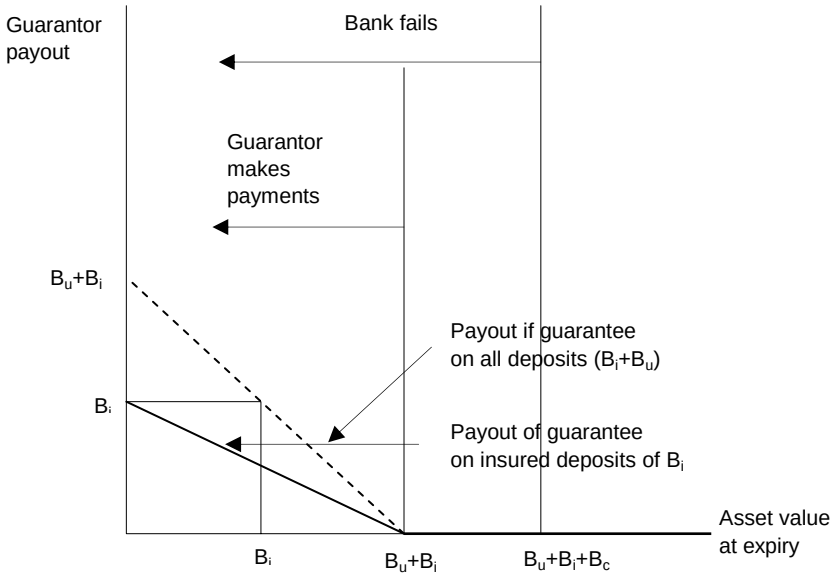
There exist depositor preference rules which mean that depositors have priority over other creditors. In the event of failure, the deposit insurer pays out insured depositors and takes over their claim on the assets, with equal priority to uninsured depositors.

The payout by the deposit insurer (depicted in Figure 1) is thus:

$$\text{Payout} = Max[0, B_i - \frac{B_i}{B_i + B_u} A] = \frac{B_i}{B_i + B_u} Max[0, B_i + B_u - A] \quad (1)$$

Note that the bank could 'fail' in the sense that total liabilities (B_i+B_u+B_c) could exceed assets, but there may be no net payout by the deposit insurer, since assets still exceed deposit liabilities.

Figure 1: Payouts on Limited Guarantee



Equation (1) corresponds to a proportion of a put option on the bank's assets with a strike price equal to total deposits. The proportion is the ratio of insured deposits to total deposits. Note that the payout per insured deposit (Payout/B_i) is unaffected by the proportion of deposits covered (and hence the value of the guarantee per dollar of insured deposits is also unaffected). In contrast, the total payout (and total value of the guarantee) is affected by the proportion of

deposits covered. These results reflect the assumption that the guarantee scheme has equal priority with uninsured depositors and seniority over other creditors. If uninsured depositors had preference over the guarantee scheme (which was still senior to other creditors) the cost of the guarantee would increase. The case where depositors (and the guarantee scheme) rank equally with other creditors is considered later.

If the value of a put option on the bank's assets with strike price equal to total deposits is denoted by P, the present value of the deposit insurer's guarantee, denoted by G, is:

$$G = \frac{B_i}{B_i + B_u} P \qquad (2)$$

and the required premium per dollar of insured deposits $g = \frac{G}{D_i}$ is:

$$g = \frac{G}{D_i} = \frac{e^{rT}}{B_i + B_u} P \qquad (3)$$

It is well known that P can be expressed using the Black-Scholes formula as:

$$P = (B_i + B_u)e^{-rT} N(d_2) - AN(d_1)$$

where

$$d_1 = \frac{\ln \frac{B_i + B_u}{A} - (r + \frac{1}{2}\sigma^2 T)}{\sigma \sqrt{T}}, and\ d_2 = d_1 + \sigma \sqrt{T}$$

σ is the volatility of assets per annum, T is the term of the option, r is the risk-free interest rate, and N(x) is the cumulative normal distribution evaluated at x.

Hence,

$$g = N(h_2) - \frac{N(h_1)}{d}$$

where $d = \frac{(B_i + B_u)e^{-rT}}{A} = \frac{D_i + D_u e^{(\rho - r)T}}{A}$

$$h_1 = \frac{\ln d - \frac{1}{2}\sigma^2 T}{\sigma \sqrt{T}}, and\ h_2 = h_1 + \sigma \sqrt{T}$$

If it is assumed that uninsured deposits also pay the risk-free interest rate (that is, ρ = r), then d is the ratio of (total deposits/assets).

This approximation (adopted by Ronn and Verma (1986) in their widely followed approach) does not substantially affect the resulting estimates. If, additionally, it is assumed that the institution pays a dividend equal to δA just prior to the end of the year, the value of the guarantee becomes:

$$g = N(y_2) - (1-\delta)\frac{N(y_1)}{d}$$

where $d = \frac{D_i + D_u}{A}$ is the deposit/asset ratio

$$y_1 = \frac{\ln[d(1-\delta)] - \frac{1}{2}\sigma^2 T}{\sigma \sqrt{T}}, and\ y_2 = y_1 + \sigma \sqrt{T}$$

This is the model used for the estimates contained in Chapter 7.

Implementing the approach requires estimates of the market value of assets (A) and the volatility of assets (σ). Ronn and Verma (1986) demonstrated a method for calculating these values from stock market information about the value and volatility of bank equity prices.

It is well known from option pricing theory that $N(y_1)$ can be interpreted as the 'risk neutral' probability of the option finishing in the money (the institution defaulting and the guarantee being used). That risk neutral probability is calculated on the assumption that all assets have the same expected rate of return regardless of risk. To calculate an actual probability of default, it is necessary to make an adjustment to reflect the fact that risky assets have a higher expected return than risk-free assets. (In the context of the Black-Scholes model, the drift rate of the underlying asset's value will be higher than the risk-free rate.)

Calibrating that adjustment requires, in principle, an estimate of the systematic risk (the beta) of the underlying asset. Assuming bank equity betas of

around 1.2, and a ratio of assets to equity of around 16, the bank asset beta would be in the order of 0.08. Assuming an equity market risk premium of 6 per cent per annum, this would give an excess return on bank assets of around 0.5 per cent per annum. As an alternative approach, it can be noted that the reported (accounting) return on assets of Australian banks is around 1 per cent per annum. This is the excess return, after operating costs, over deposit interest costs, and corresponds to the excess return on assets in the option pricing framework.

For convenience, a risk premium on bank assets of 1 is used later for converting risk neutral to actual probabilities.

Some alternative deposit insurance models

Merton (1977) argues for interpreting the maturity of the put as the length of time until the next audit of the bank. Ronn and Verma (1986) model the bank equity as a call option on the assets and simultaneously estimate the asset volatility (σ) and the deposit guarantee (g), assuming a maturity of one year for both the call option (equity) and the put option (g). Their model also allows for forbearance on the part of the regulator. Merton (1978) models the insurance premium as a perpetual American put option with possible exercise at discrete intervals. Allen and Saunders (1993) also assume an infinite maturity American put option, and further extend the model to account for forbearance in the form of the insurer forcing exercise of the put option (at a different exercise price from that at which the bank would voluntarily close). They model the deposit guarantee as a callable put option. Dermine and Lajeri (2001) argue that if bank assets are loans with credit risk, there will be a non-symmetric distribution of returns on bank assets. They argue that the limited upside for bank asset values means that standard option pricing approaches can significantly understate the fair value of deposit insurance, particularly so for concentrated loan portfolios involving exposures to highly leveraged borrowers.

The effect of removing depositor preference rules

Suppose that it were the case that depositor preference were removed and (for simplicity of exposition) that other creditors ranked equally. Then failure of the institution would mean that available assets (A) would be shared proportionally among the guarantee scheme (with a claim of B_i), uninsured depositors (B_u), and other creditors (C). In terms of equation (1) this would

mean that the strike price of the option was now (B_i+B_u+C). Essentially, other creditors and uninsured depositors can be aggregated for the purposes of valuing the deposit guarantee. Hence the only change is to redefine d as the ratio of deposits and other creditors to assets. The value of the guarantee will increase accordingly.

Calculating fair premiums for Australian financial institutions

Authorised deposit-taking institutions

Applying the option pricing approach to ADIs requires estimates of the deposit/asset ratio (d) and asset volatility (σ).

Banks

The ratio of Australian Assets/Australian Deposit Liabilities (both measured using book value) is generally in excess of 2, or higher if only household deposits are considered. The market value of assets and volatility of assets can be calculated for each bank using stock market data on bank equity prices. For current purposes, however, where a figure is required for an 'average' bank, and because of the balance sheet structure of the banks, it is adequate to use a range of estimates derived from other sources.

For the volatility of assets, estimates in the range 2-5 per cent per annum are used. This range is compatible with (the lower end of) estimates made for Australian banks by Gizycki and Goldsworthy (1999) and recent estimates of bank asset volatility for a sample of banks in the United States (Pennachi 2002).

The market value of assets can be calculated as book value of liabilities plus market value of equity, with the latter being calculated as book value of equity multiplied by an estimate of price/net tangible assets (NTA).

While a bank would 'fail' if liabilities exceeded assets, it is only if deposits exceed assets that the guarantee involves net payments in excess of recoveries to the guarantor. In this regard, estimates of probability of default from an option pricing model relate not to probability of failure of the bank, but to probability of a failure in which asset value has fallen below deposit liabilities.

Several caveats should be noted regarding the option pricing approach.

First, the implicit assumption that non-deposit liabilities (or uninsured deposits) would not decline as a bank approached failure is open to question.

If market discipline is effective, it would be expected that suppliers of such funds would, where possible, withdraw them as a bank's financial position deteriorated. Shibut (2002) cites several studies which demonstrate a decline in uninsured liabilities prior to bank failures in the USA. The likely size of the buffer provided in failure situations by the level of uninsured liabilities may thus be somewhat overstated by using data from normal situations.

Second, the market value of assets used in the option pricing model incorporates both tangible assets (for example loans and securities) as well as intangible assets such as the value placed by the stock market on bank charter value (as reflected in price/NTA ratios in excess of unity). In a failure situation, the value of those intangible assets shrinks markedly or disappears. Precise modelling of this effect could be undertaken at significant cost of complexity, but can be adequately captured for current purposes by examining results for higher volatility and/or lower price/NTA assumptions.

Third, the option pricing approach assumes that estimates of asset values found in bank balance sheets are correct. As the Federal Deposit Insurance Corporation (2000, p 17) notes,

> 'Reported information at times has been notoriously inaccurate. The FDIC's most costly bank failures in recent years have occurred rather abruptly among institutions that had consistently reported strong earnings or capital.'

To the extent that such reported misvaluations are possible, the option pricing model, which takes the figures at face value, will understate the probability of failure and the fair value of the guarantee.

Using asset volatilities in the range of 2-5 per cent and deposit/asset ratios of 0.8 or less, the fair value of deposit insurance as estimated using the option pricing approach, **given their current balance sheet structures**, is negligible (consistently less than one basis point per dollar of insured deposits). This reflects the strong buffer of equity and claims junior to insured (and uninsured) depositors. However, the results do hinge upon the validity of the model applied, which is not particularly well suited to incorporating the impact of a one-off, unimagined, crisis event, since it models failure as the cumulative outcome of a continuing sequence of small events.

These results do not imply that introduction of a limited guarantee should not occur. Imposing a limited guarantee provides protection to taxpayers and/or other banks as contributors to a scheme should a bank fail. It can increase the credibility of statements that other deposits are not guaranteed.

What the results indicate is that on a risk based pricing approach, the current rate of contribution from banks would be expected to be quite small. Capital adequacy requirements, firm prudential supervision (implicit in the one year horizon used in the calculation of the guarantee value) and depositor preference combine to reduce the probability of failures of a magnitude which would involve costs to the guarantee fund to virtually zero.

It should, however, be noted that the model results hinge crucially upon the assumptions contained therein, which do not really allow for the possibility of a catastrophic one-off fall in bank asset values (perhaps combined with an exodus of funds due to other creditors) as opposed to more gradual deterioration. Building in some probability of such an event would increase the probability of failure and the value of any guarantee — but such modelling would involve a degree of arbitrary judgement. Under current depositor preference rules, and with reasonable assumptions, it is unlikely that fair value figures in excess of a few basis points would result. Also relevant is the fact that even if such contributions were made under a pre-funded scheme it would take significant time before reserves accumulated which were sufficient to meet the costs of an unexpected failure.

The effect of removing depositor preference

If depositor preference were removed, the strike price of the option involved in deposit insurance now becomes the sum of deposits and other creditors. This makes a significant difference. For example, using an asset volatility (σ) of 3 per cent per annum, and equity/assets of 8 per cent such that d = (deposits and other creditors)/assets = 0.92 the actual probability of failure calculated is around 0.002 (1 in 500), and the fair value of the guarantee per dollar of insured deposits is around 6 basis points per dollar of insured deposits.

Note that removing depositor preference does not *ceteris paribus* alter the probability of bank failure (liabilities exceeding assets) but increases the probability that the guarantee fund and uninsured depositors would lose money. This is offset by other creditors experiencing smaller losses in the event of failure.

It could be expected that, were depositor preference removed and limited guarantees put in place, other creditors would lower the promised return demanded on their investments in reflection of the smaller loss-given-default they face. Whether this reduction would be of a scale (relative to the higher cost of deposit insurance) to be a net benefit to Australian banks is a matter for conjecture. Also important from a public policy perspective is the impact such

a change would have on market discipline and external monitoring of banks. It could be anticipated that, if anything, market discipline exerted by other creditors may fall marginally, while uninsured depositors would increase monitoring.

Building Societies and Credit Unions

Building societies and credit unions have significant capital buffers, but relatively little in the way of other liabilities junior to deposits. Moreover, it is generally not possible to use stock market data to estimate asset value or volatility. Given the particular specialisation of lending business (primarily to retail customers), it is arguable that the volatility of assets would be at the lower end of the range assumed earlier for banks. Given the mutual status of most of the industry, it seems appropriate to take book value of assets as the best estimate of market value of assets.

These institutions have a strong capital position and some (but a much lower level of) other junior liabilities, such that the ratio of 'priority resident liabilities'/assets is in the order of 0.85-0.9. This means that the fair value of guarantees (for reasonable parameter values) is again quite small. Even assuming a high asset volatility estimate of 5 per cent per annum, the fair value estimates are below 2 basis points per dollar of insured deposits.

Insurance

The option pricing approach is more complicated for insurance companies because of the need to allow (*inter alia*) for stochastic liabilities, (imperfect) correlation of asset and liability values, and greater possibility of one-off catastrophic events. A further complication is that the promised (liability) amount cannot be assumed to increase over time at the nominal risk free rate of interest. Finally, the underlying premise of the option pricing approach that a perfectly hedged position is possible for the writer of an option is called into some doubt by the nature of insurance liabilities. Nevertheless, some insights into approximate costs can be obtained by *ad hoc* adjustments into the deposit insurance pricing model.

General insurance companies

For general insurance companies, asset and liability values may exhibit relatively low correlation. Assuming a volatility of the capital position higher than that for banks, perhaps of around 7 per cent, would thus seem appropriate. At the same time, the ratio of priority liabilities/assets for the

industry is in the order of d = 0.7 due to capital adequacy and solvency requirements. For those assumed values, the fair value calculation again gives extremely small results of less than 1 basis point. The strong capital position assumed is the dominant factor driving such results; assuming instead that d = 0.9 leads to a fair value premium of around 23 basis points. Simultaneously assuming a higher volatility leads to significantly higher values. International experience of significant shortfalls in cases of general insurance failures and discrepancies between reported and eventual values of liabilities (and assets) illustrate difficulties in appropriately calibrating the option pricing approach.

Life insurance companies

Analysis of life insurance companies is complicated by the existence of statutory funds which hypothecate assets related to certain sets of policy liabilities. In considering policyholder protection it is thus appropriate to focus on the position of a typical statutory fund. Compared to general insurance, life offices have a higher ratio of priority assets/liabilities such that d = 0.8. At the same time, there is likely to be less volatility in the value of liabilities, such that an assumption of a lower volatility of the capital position is appropriate. Again, because of the strong capital adequacy and solvency conditions, the fair value of premiums are also extremely small.

APPENDIX 7.1: INTERNATIONAL EXAMPLES OF GOVERNANCE ARRANGEMENTS

	Canada Deposit Insurance Corporation	United Kingdom Financial Services Compensation Scheme	United States Federal Deposit Insurance Corporation	Canada Property and Casualty Insurance Compensation Corporation
Legal Form	Federal agency, established by legislation in 1967 as an independent entity.	The Financial Services Compensation Scheme (FSCS) was established in 2001 under the *Financial Services and Markets Act 2000* (FSMA) as an independent entity.[1]	Federal agency established in 1933 by legislation as an independent entity.	Private corporation established under a by-law in 1998.
Governance	Board of Directors consisting of a Chairperson, four ex-officio members and up to five external directors appointed by the Minister.	FSCS is governed by a Board appointed by the Financial Services Authority (FSA). The Chairman is appointed by HM Treasury. The Board is independent of the FSA.	Governed by a Board of Directors appointed by the President. The board consists of five members, two of which are ex-officio.	Board is elected by representatives of member institutions. The Board must create a Memorandum of Operation to establish the rules and procedures of making payments to policyholders. The memorandum is subject to approval from regulators.
Accountability	Accountable to the Canadian Parliament.	Accountable to the FSA and ultimately HM Treasury.	Accountable to Congress.	Accountable to the superintendent and its members through an annual report.

1 The FSMA provides a unified legal framework for the financial sector and the powers and functions for the FSA. Included in this legislation is the requirement for the FSA to establish a single financial sector compensation scheme.

International comparison of governance arrangements (continued)

	Canada Deposit Insurance Corporation	United Kingdom Financial Services Compensation Scheme	United States Federal Deposit Insurance Corporation	Canada Property and Casualty Insurance Compensation Corporation
Funding and funds management	The Canada Deposit Insurance Corporation (CDIC) has powers to make by-laws relating to annual risk-based premiums. The CDIC invoices institutions and collects premiums. The CDIC has access to additional funding from Government and financial markets up to C$6 billion. CDIC has powers that allow it to manage its funds.	The FSCS has appointed the FSA as its agent to collect data, raise and issue levy invoices and collect payments. This approach was adopted to reduce duplication of activities and costs. Additionally, the FSCS has a revolving credit arrangement with a UK clearing bank for £50 million to cover 'unforeseen short-term funding requirements.'	The FDIC has the power to issue invoices, raise and collect levies. FDIC operates two funds and is required to invest the funds in obligations of the US. This is done through the Treasury. The fund balances are recorded against consolidated revenue, therefore fund payments and levies affect the budget balance (Eisenbeis and Wall 2002). FDIC has authority to borrow from a line of credit from the Treasury.	Property and Casualty Insurance Compensation Corporation (PACICC) has the power to raise and collect levies to cover administrative costs (pre-funding) and to recover costs from the failure of an insurer. PACICC can also establish a fund, however, this requires agreement amongst members.
Claims management	CDIC conducts all claims assessment and payout functions. The CDIC may transfer deposits to another institution or make payments directly to the depositor.	In the case of deposits the FSCS assesses claims and determines the compensation payable. In the case of policyholders the FSCS may transfer policies to another insurer or make payments. The FSCS will determine the compensation payable. For life assurance the liquidator determines the value of the policy.	FDIC conducts all claims management and payout functions.	The liquidator handles claims management, including, determining the value of a claim following the failure of an insurer. PACICC makes the payment of compensation.

International comparison of governance arrangements (continued)

	Canada Deposit Insurance Corporation	United Kingdom Financial Services Compensation Scheme	United States Federal Deposit Insurance Corporation	Canada Property and Casualty Insurance Compensation Corporation
Monitoring and prudential supervision	CDIC has established 'Standards of Sound Business and Financial Practices' that provide additional prudential monitoring and supervisory functions above those performed by the Office of the Superintendent of Financial Institutions (OSFI). OSFI and CDIC have in place a 'guide to intervention' to clarify each agency's role in supervisory activities and imminent insolvency.	The FSCS provides no additional prudential supervision or monitoring role above that provided by the FSA.	The FDIC is the prudential regulator of some institutions. The FDIC has powers to set standards and guidelines, often done in conjunction with other regulators.	PACICC has no explicit prudential regulatory functions.
Managing failure	CDIC works with OSFI. Under certain circumstances CDIC may investigate an institution with OSFI. CDIC may provide financial assistance for a restructuring transaction through acquiring assets from the institution, making or guaranteeing loans or making or guaranteeing a deposit institution.	The FSCS may be heard at a winding-up petition or bankruptcy petition. The FSCS may protect policyholders of long-term insurance by arranging transfers of business or assistance to the insurer.	The FDIC has the power to facilitate and commence transfers of business, insured deposit transfers, direct depositor payout or open bank assistance. The FDIC has policy requirements to ensure prompt corrective action and minimise the costs of deposit insurance.	Fund may take steps (prior to a winding-up order) to assist an insurer including, transfer or reinsurance of book business, issue guarantees or provide financial support. May also monitor and gather information on a member.

International comparison of governance arrangements (continued)

	Canada Deposit Insurance Corporation	United Kingdom Financial Services Compensation Scheme	United States Federal Deposit Insurance Corporation	Canada Property and Casualty Insurance Compensation Corporation
Insolvency	CDIC has the power to act as a liquidator and receiver. The CDIC has not used this power because it is usually the largest creditor and would have conflicts of interest if appointed in this capacity (CDIC 2001).	No powers allowing it to act as liquidator or receiver.	Bank insolvency process in the US is different from corporate insolvency. FDIC has a central role as liquidator and in the winding-up process. The chartering body (the entity that licenses the bank) has the authority to revoke the charter (effectively close the bank). The chartering body would then usually appoint the FDIC as receiver.	No powers allowing it to act as liquidator or receiver. PACICC works with the liquidator to facilitate quick payment

Source: http://www.cdic.ca/?id=100, http://www.fscs.org.uk/, http://www.fdic.gov/, http://www.pacicc.com/english/sub_contents.htm.

Abbreviations and acronyms

ABS	Australian Bureau of Statistics
ADI	Authorised deposit-taking institution
AFIC	Australian Financial Institutions Commission
AMIL	Australasian Medical Insurance Limited
APRA	Australia Prudential Regulation Authority
ARPC	Australian Reinsurance Pool Corporation
ASIC	Australian Securities and Investments Commission
ASIC	Australian Securities and Investments Commission
ASX	Australian Stock Exchange
ATO	Australian Taxation Office
CDIC	The Canada Deposit Insurance Corporation
CFR	Council of Financial Regulators
CNAL	Commercial Nominees of Australia
CTP	Compulsory Third Party
CUFFS	Credit Union Financial Support System
ECMT	Enhanced Cash Management Trust
EEA	European Economic Area
EEF	Enhanced Equity Fund
FDIC	Federal Deposit Insurance Corporation

FSA	Financial Services Authority
FSCS	Financial Services Compensation Scheme
FSF	Financial Stability Forum
FSI	Financial System Inquiry
FSMA	*Financial Services and Markets Act 2000*
HCSL	HIH Claims Support Limited
HCSS	HIH Claims Support Scheme
HIH	HIH Group of Companies
IAG	Insurance Australia Group
ICA	Insurance Council of Australia
IFSA	Investment and Financial Services Association
IMF	International Monetary Fund
ISR	Industrial Special Risk
LGDs	losses given defaults
MDOs	Medical Defence Organisations
NATSEM	National Centre for Social and Economic Modelling
OECD	Organisation for Economic Cooperation and Development
OCP	outstanding claims provision
OSFI	Office of the Superintendent of Financial Institutions
PACICC	Property and Casualty Insurance Compensation Corporation
PAIRS	Probability and Impact Rating System

PDs	probability of defaults
PWC	PricewaterhouseCoopers
R&I	Rural and Industries
RBA	Reserve Bank of Australia
RBL	reasonable benefit limit
RSA	retirement savings account
SBSA	State Bank of South Australia
SBV	State Bank of Victoria
SMSFs	small self-managed superannuation funds
SOARS	Supervisory and Oversight Response System
UMP	United Medical Protection

BIBLIOGRAPHY

Acharya, S., 'Charter value, minimum bank capital requirement and deposit insurance pricing in equilibrium', *Journal of Banking and Finance*, 20, 1996, pp. 351-375.

Allen, L and Saunders, A., 'Forbearance and valuation of deposit insurance as a callable put', *Journal of Banking and Finance*, No. 17, 1993, pp. 629-643.

Altman, E., 'Financial ratios, discriminant analysis, and the prediction of corporate bankruptcy', *Journal of Finance*, 23(4), 1968, pp. 589-609.

Australian Bureau of Statistics, Australian System of National Accounts, 5204.0, 2002-03.

Australian Bureau of Statistics, Financial Accounts, 5232.0, June Quarter, 2003.

Australian Financial System Final Report of the Committee of Inquiry (Campbell Committee), September 1981

Australian Prudential Regulation Authority (APRA), Life insurance market statistics, June 2003.

APRA Insight, 2nd quarter 2003, Table D2 Life Insurers: Statutory-fund solvency.

Australian Prudential Regulation Authority, submission to the HIH Royal Commission, 2003.

AXA Media release, 'Low level of insurance cause for concern', 22 September 2003.

Bank for International Settlements, 'Contact group on the legal and institutional underpinnings of the international financial system: Insolvency arrangements and contract enforceability', September 2003.

Beck, T., 'Deposit Insurance as Private Club: Is Germany a Model', The World Bank, 2001.

Beck, T., Demirguc-Kunt, A. and Levine R., 'Bank supervision and corporate finance', May 2003.

Benston, G.J., and Kaufman, G.G., 'Is the Banking and Payments System fragile?,' *Journal of Financial Services Research*, 1995, pp. 9, 209 – 240.

Berger, Allen N., DeYoung, Robert, Genay, Hesna and Udell, Gregory F., 'Globalization of Financial Institutions: Evidence from Cross-Border Banking Performance' Working Papers Series, Research Department WP 99-25, Federal Reserve Bank of Chicago, <http://www.chicagofed.org/publications/workingpapers/papers/wp99_25.pdf>.

Bohn, J.G. and Hall, B.J., 'The moral hazard of insuring the insurers', National Bureau of Economic Research Working Papers, *Working Paper 5911*, 1997. <www.nber.org/papers/w5911>.

Bohn, J.G., and Hall, B.J., 'Property and Casualty Solvency Funds as a Tax and Social Insurance System', National Bureau of Economic Research, *Working Paper 5206*, August 1995. <www.nber.org/papers/w5206>.

Canada Deposit Insurance Corporation website, <http://www.cdic.ca/?id=100>.

Canada Deposit Insurance Corporation, 2003 Annual Report, <http://www.cdic.ca/bin/cdicar_e.pdf>.

CDIC, 'CDIC and you: Preventing member institution failure', 2001.

Clarke, F., Dean, G., and Oliver, K., 'Corporate collapse: Accounting, regulatory and ethical failure', Cambridge University Press, UK, 2003.

Commonwealth Treasury, 'Compensation for loss in the financial services sector, Issues and options paper', September 2002.

Commonwealth Treasury, 'Review of Part 23 of the Superannuation Industry (Supervision) Act 1993', *Public Consultation Paper*, 3 June 2003.

The Canada Life and Health Insurance Compensation Corporation (Compcorp) website, <http://www.compcorp.ca/index.asp>.

Compcorp, 2002 Annual Report, http://www.compcorp.ca/aboutus/CompCorp2002AnnualReport.pdf.

Cummins, D.J., 'Risk based premiums for insurance guarantee funds', *Journal of Finance*, 43, 4, September 1988, pp. 823-840.

Demirguc-Kunt, A. and Detragiache E., 'Does deposit insurance increase banking system stability? An empirical investigation', *IMF Working Paper*, January 2000.

Demirguc-Kunt, A. and Kane, E. J., 'Deposit insurance around the globe: Where does it work?' in *Journal of Economic Perspectives*, Vol. 16, No. 2, 2002, pp. 175-195.

Demirguc-Kunt, A. and Sobaci, T., 'Deposit Insurance Around the World: a Database', The World Bank, May 2000, <www.worldbank.org/research/interest/confs/upcoming/deposit_insurance/data.pdf>.

Deposit Insurance Corporation of Japan website, http://www.dic.go.jp/english/e_soshiki/e_soshiki.html.

Dermine, J. and Lajeri, F., 'Credit risk and the deposit insurance premium: A Note', *Journal of Economics and Business*, 53, 5, Sept-Oct 2001, pp. 497-508.

Diamond, D.W. and Dybvig, P. H., 'Bank runs, deposits insurance and liquidity', *Journal of Political Economy*, 91(3), 1983, pp. 401-419.

Duan, Jin-Chuan. and Min-Teh Yu., 'Cost to insurance guaranty fund with interest rate and catastrophe risks', University of Toronto, Rotman School of Management (Research Paper), 2002, <http://www.rotman.utoronto.ca/~jcduan/guaranty.pdf>.

Edwards, V., 'Regulation and its circumvention — The Farrow (Pyramid) Group of building societies case study 2', School of Banking and Finance, University of New South Wales, <http://www.johnwiley.com.au/highered/mfi/case2.pdf>.

Eisenbeis, R. and Wall, L., 'Reforming deposit insurance and FDICIA' Economic Review, Federal Reserve Bank of Atlanta, First Quarter, 2002, pp. 1-16

European Commission, 'Insurance guarantee schemes', *Discussion paper for the III meeting of the Working Group*, January 2003.

European Commission, 'Working paper on insurance guarantee schemes', 2003.

Falkenheim, M. and Pennachhi, G., 'The cost of deposit insurance for privately held banks: A market comparable approach', *Journal of Financial Services Research* 24:2/3, 121-148, 2003.

Federal Deposit Insurance Corporation (FDIC) website, <http://www.fdic.gov/>.

Federal Deposit Insurance Corporation (FDIC), 2003 Annual Report, <http://www.fdic.gov/about/strategic/report/2003annualreport>.

Federal Deposit Insurance Corporation (FDIC), 'Costs associated with bank failures,' 2003.

Federal Deposit Insurance Corporation (FDIC), 'Keeping the promise: Recommendations for deposit insurance reform', 2001

Federal Deposit Insurance Corporation (FDIC), 'Options Paper', August 2000, <http://www.fdic.gov/deposit/insurance/initiative/OptionPaper.html>

Financial Services Authority (FSA), 'Reasonable expectations: Regulation in a non-zero failure world', September 2003, <http://www.fsa.gov.uk/pubs/other/regulation_non-zero.pdf>.

Financial Services Compensation Scheme (FSCS) website, <http://www.fscs.org.uk/>.

Financial Services Compensation Scheme (FSCS), 2002/03 Annual Report, http://www.fscs.org.uk/files/documents/pdfs/wthgychlgsbgaor.pdf

Financial Services Compensation Scheme (FSCS), 'How we handle your claim for compensation', Information for consumers.

Financial Services and Markets Act 2000 (FSMA), FSCS website: <http://www.fscs.org.uk/>.

Financial Stability Forum, 'Guidance for developing effective deposit insurance systems', Financial Stability Forum, September 2001.

Financial System Inquiry, *Final Report*, March 1997.

Fitz-Gibbon, B. and Gizycki, M., 'A history of last-resort lending and other support for troubled financial institutions in Australia', Research Discussion paper, System Stability Department, Reserve Bank of Australia, 2001.

Flood, M. D., 'On the use of option pricing models to analyze deposit insurance', Federal Reserve Bank of St. Louis, January/February 1990, pp. 19-35.

Fondo Interbancario di Tutela dei Depositi, Italy deposit insurance website, <http://www.fitd.it>.

Francesco, P., 'International Deposit Insurance Systems', Fondo Interbancario di Tutela dei Depositi research, 1999, pp. 43-46.

Fonds de Garantie des Dépôts, France deposit insurance website, <http://www.garantiedesdepots.fr/reglements_99_06.php#annexe>.

Garcia, G., 'Deposit insurance: A survey of actual and best practices', International Monetary Fund Working Paper, WP/99/054, August, 1999.

Garcia, G., 'Deposit insurance: Obtaining the benefits and avoiding the pitfalls', IMF, WP/96/83, August, 1996.

Garcia, G. and Prast, H., 'Depositor and Investor protection in the Netherlands: An assessment', 2003.

General Insurance Association of Japan, 'Establishment of non-life insurance policyholders protection corporation of Japan', 1998/99, <http://www.sonpo.or.jp/english/e_index.html>.

Gizycki, M. and Goldsworthy, B., 'Australian banking risk: The stock market's assessment and the relationship between capital and asset volatility', Reserve Bank of Australia Research Discussion Paper No. 1999/09, November 1999.

Gizycki, M and Lowe, P., 'The Australian financial system in the 1990s', Reserve Bank of Australia, 2000.

Goodhart, C.A.E., 'Are central banks necessary?', in Capie F and GE Wood (eds), Unregulated banking, chaos or order?, 1991.

Gorton, G and Pennacchi, G., 'Financial Intermediaries and Liquidity Creation', Journal of Finance, XLV, 1 March 1990, pp 49-71.

Gropp, R., and Vesala, J., 'Deposit Insurance and Moral Hazard: Does the Counterfactual Matter?', European Central Bank Working Paper No 47, March 2001, <http://www.ecb.int/pub/wp/ecbwp047.pdf>.

Hall, Brian J., 'Regulatory Free Cash Flow and the High Cost of Insurance Company Failures', *NBER Working Paper 6387*, December 1998, <http://www.nber.org/papers/w6837>.

The HIH Royal Commission, 'The Failure of HIH Insurance, Volume 1 A corporate collapse and its lessons', April 2003, p Ixxv.

Hong Kong Monetary Authority website, http://www.info.gov.hk/hkma/index.htm.

IADI, 'International deposit insurance survey', CDIC submission, 2003.

IADI, 'International deposit insurance survey', Italy submission, 2003.

IADI, 'International deposit insurance survey', KDIC submission, January 2002.

Insurance Council of Australia, 'Report on Non-Insurance and Under-Insurance in the Home and Small Business Portfolio.', 2002.

Investment and Financial Services Association, 'Submission in response to Productivity Commission Issues Paper and Review of Disability *Discrimination Act 1992*', June 2003.

Kane, Edward J., 'Financial safety nets: Reconstructing and modelling a policymaking metaphor', *Journal of International Trade and Economic Development*, Vol. 10, No. 3, September 2001, pp. 237-273.

Kane, E J. and Kaufman, G. G., 'Incentive conflict in deposit-institution regulation: Evidence from Australia', in *Pacific-Basin Finance Journal* I, 1993, pp. 13-29.

Kim, D. and Santomero, A. M., 'Risk in banking and capital regulation', *Journal of Finance*, 43(5), December 1988, pp. 1219-1233.

Kindleberger, C. P., Manias, panics and crashes: A history of financial crises, 2000, John Wiley and Sons Inc, New York.

Korea Deposit Insurance Corporation website, <http://www.kdic.or.kr/english/>.

Kuritzkes, A., Schuerman, T. and Weiner, S., 'Deposit insurance and risk management of the US banking system: How much? How safe? Who pays?', 2002, <http://fic.wharton.upenn.edu/fic/papers/02/0202.pdf>.

Laeven, L., 'International evidence on the value of deposit insurance' in The Quarterly Review of Economics and Finance, Vol. 42, 2002, pp. 721-723.

Lewis, G., 'People before profit: The credit union movement in Australia', Wakefield Press, Kent Town, 1996.

Lewis, M. K. and Wallace, R. H., 'The Australian Financial System', (Longman), (eds), 1997.

Llewellyn, D., 'The economic rationale for financial regulation', Financial Services Authority, Occasional Paper Series, No. 1, April, 1999.

Marshall, D. A. and Prescott. E. S., 'Bank capital regulation with or without State-contingent penalties', Federal Reserve Bank of Chicago, September 2000.

Maude, D. and Perraudin, W., 'Pricing deposit insurance in the United Kingdom', Bank of England Working Paper Series No. 29, March 1995.

Merton, R. C., 'An analytic derivation of the cost of deposit insurance and loan guarantees: An application of modern option pricing theory', *Journal of Banking and Finance* No. 1, June 1977, pp. 3-11.

Merton, R. C., 'On the cost of deposit insurance when there are surveillance costs', *Journal of Business*, 51, July 1978, pp. 439-452.

Merton, R. C., 'On the pricing of corporate debt: The risk structure of interest rates', *Journal of Finance*, 29, 1974, pp. 449-470.

Merton, R. C. and Bodie, Z., 'Deposit insurance reform: A functional approach', Carnegie-Rochester Conference Series on Public Policy, No. 38, 1993, pp. 1-34.

Miles, D., 'Some economic issues in the regulation of financial markets', London School of Economics, Financial Markets Group Special Paper Series, Special Paper No. 013, 1992.

Miller, G.P., 'Is Deposit insurance inevitable? Lessons from Argentina', International Review of Law and Economics, No. 16, 1996, pp. 211-262.

National Centre for Social and Economic Modelling, 'Levels, patterns and trends of Australian household saving', A report prepared for the Financial Planning Association of Australia, 2002, University of Canberra.

OECD Insurance and private pensions compendium for emerging economies, 2001.

OECD Workshop on insurance and private pensions in the Baltic States, February 2002.

Osterberg, William, P., 'The impact of depositor preference laws', Unknown source.

Property and Casualty Insurance Compensation Corporation (PACICC) website, <http://www.pacicc.com/english/sub_contents.htm>.

PACICC By-Law.

PACICC Memorandum of Operation (March 2003).

Pennachhi, G. G., 'A re-examination of the over — (or under) — pricing of deposit insurance', *Journal of Money, Credit and Banking*, 19(3), August 1987, pp. 340-360.

Pennachhi, G. G., 'Bank deposit insurance and business cycles: Controlling the volatility of risk-based premiums', Research Paper, 2002.

Pennachhi, G. G., 'Estimating fair deposit insurance premiums for a sample of banks under a new long term, insurance pricing methodology', Federal Reserve Bank Of Chicago, Conference on Bank Structure and Competition Proceedings, May 2001, pp. 756-776, <http://www.chicagofed.org/newsandevents/bankstructureconference/2001/Pennacchi.pdf>.

Pennachhi, G. G., 'The effects of setting deposit insurance premiums to target insurance fund reserves', *Journal of Financial Services Research*, 17:1, 2000, pp. 153-180.

Phillips Fox and KPMG submission to the Wallis Inquiry, <http://fsi.treasury.gov.au/content/downloads/suppsubs/66.doc>.

Reserve Bank of Australia, Liquidity Management, Prudential Statement D1, April 1998, <http://www.rba.gov.au/MediaReleases/1998/prudential_statement_d1.pdf>.

Reserve Bank of Australia, 'New measures of credit risk', Bulletin, July 2003, pp. 10-14.

Reserve Bank of Australia, 'Supplementary submission to the Financial System Inquiry', *Occasional Paper*, No. 15, January 1997.

Ronn, E. I. and Verma, A. K., 'Pricing risk-adjusted deposit insurance: An option-based model', *Journal of Finance*, 41(4), September 1986, pp. 871-895.

Roy Morgan Research, ANZ survey of adult financial literacy in Australia: Final Report, ANZ Banking Group, May 2003.

Santomero, A.M., 'Deposit insurance: Do we need it and why?', Wharton Financial Institutions Center, 1997, pp. 97-35.

Senate Select Committee on Supervision of Financial Services, 30 August 2001.

Shibut, Lynn., 'Should bank liability structure influence deposit insurance pricing', Federal Deposit Insurance Corporation Working Paper Series, 2002-01.

Swiss Bankers Association website, http://www.swissbanking.org/en/home/akteure.htm.

Sykes, T., 'The bold riders: Behind Australia's corporate collapses', Allen & Unwin, St Leonards, 1994.

Sykes, T., Two centuries of panic: A history of corporate collapses in Australia, Allen & Unwin, Sydney, 1988.

Tudela, M. and Young, G., 'Predicting default among UK companies: A Merton approach', Financial Stability Review, Bank of England, June 2003, pp. 104-114.

World Bank Deposit Insurance Database, 2000.

Yasui, T., 'Policyholder protection funds: Rationale and structure' in Insurance and Private Pensions Compendium for Emerging Economies, OECD 2001. <http://www.oecd.org/dataoecd/39/57/1813504.pdf>.