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Impact of Liability Profile on Investment Strategy for Insurers

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Abstract

The paper discusses typical approaches to setting investment strategy within Australian General Insurance, Health Insurance and Life Insurance organisations and proposes an alternative approach. It then comments on the role of the Appointed Actuary within the investment process.

Investment management within an insurance organisation is typically controlled by an investment function (either internal or external) that takes an asset-centric view to investment. The investment function operates within a mandate that defines benchmark asset mixes or performance indices and tolerances for deviation. There is often little ongoing direct consideration (by the investment function) of the liabilities that the assets are intended to cover, although consideration of the liabilities will usually influence the directions given to the investment function (e.g. via benchmark asset mix ranges).

Asset-liability management tends to focus on the capital and/or profit volatility implications of the current investment strategy, and is used as a tool to assist in updating the investment strategy as part of a discrete exercise; it is not often used as a dynamic method of “automatically” adjusting investment strategy as market conditions or the entity’s financial circumstances change. The extent to which asset-liability management influences investment strategy varies greatly amongst insurers.

There has been much discussion of “liability-driven investment” in recent years, although this has not to date made a significant impact on investment practices of Australian insurers. We propose an approach for implementing a true liability-focussed approach to setting investment strategy, that could be assisted by setting up a structure analogous to the treasury function in a bank. Such a structure then facilitates investment decision making within the constraints of the organisation’s risk appetite. Further, the role of investment advice then shifts to focus on how best to meet the liabilities, and how to optimise deviations away from that liability-based benchmark.

Given the suggested shift in focus from an asset-centric view of investment management to a liability-centric view, we discuss the role of the Appointed Actuary within the broader context of an insurer’s investment strategy, and in particular the importance of actuarial input in defining the nature of the liabilities. We also document current regulatory and professional standards, and present publicly available data.

Key words: Investment strategy, liability-driven investment, asset-liability management, general insurance investment, health insurance investment, life insurance investment

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1 Introduction

1.1 Overview

Regulated General Insurers, Health Insurers and Life Insurers in Australia are not subject to direct regulatory controls as to their investments (nevertheless, there are different capital related consequences which are associated with the holding of different classes and amounts of particular investments). Australian insurers essentially have “complete freedom of insurer action in relation to investments, with appropriate additions to solvency where this action results in additional risk” (1999 General Insurance Working Party). Australian accounting standards also generally require insurers to bring to account at each balance date the market price of the insurer’s investments.

The GFC has proven that adverse outcomes in financial institutions can have serious consequences for a country’s “real economy”, and in the case of large economies, even affect the economies of other countries. Policymakers worldwide must now be considering whether there are adequate safeguards (either via explicit restrictions on investment choices or via capital requirements) to ensure prudent investment management within major financial institutions.

In contrast to many other major economies, Australia operates an Appointed Actuary regime covering each registered General Insurer, Health Insurer and Life Insurer. A substantial amount of Australian actuarial endeavour revolves around the Appointed Actuary role, which includes specific responsibilities related to each insurer’s overall financial condition, including assessing and either providing advice or commentary on the insurer’s investment assets. The Appointed Actuary role is one safeguard that may allow Australian policymakers and regulators to conclude that the current framework is broadly adequate, and that there is no need to seek to curtail the investment freedoms that apply.

The arrival of steady amounts of improved economic and financial market news commencing from mid 2009 has allowed insurers in Australia to retreat somewhat from the state of financial alert that had existed from early 2008. Much of that state of alertness was caused by extreme behaviour of investment markets, which in turn led to a need for insurers to consider in more detail the characteristics of their policyholder and other liabilities and how this should impact the insurer’s investment assets.

Internal governance structures for selecting investment assets vary widely across industries (General/Health/Life) and amongst individual insurers within each industry. Nevertheless, it is common for aspects of the investment process to be spread across different parts of an organisation (e.g. Board,

Asset/Liability Committee (either Board or Management), Investment Committee (either Board or Management), Management, Investment Department, outsourced fund manager(s) and custodian). This spreading of the responsibility for investments has led to a situation whereby investment management is “outsourced” by the insurer (either to another department within the organisation or to a fund management specialist) and the investment manager (operating within its mandate) may not have a sufficiently detailed understanding of the liabilities of the insurer to be able to invest in a way which is optimal given the insurer’s liabilities and its tolerance for risk.

In this paper, we argue that a critical input to the investment process is an understanding of the liabilities of the insurer, and that appropriate communication of the liability profile to the different parties involved in the investment process is required. In most insurance companies, we would anticipate that the Appointed Actuary should have a key role to play in this communication (in addition to other roles such as determining the capital implications of the actual investment strategy).

Much of the liability-related commentary below will be second nature and common sense to most actuaries. However, this is not necessarily the case for all investment professionals working for insurance companies, who, in our experience, tend to approach the task of investment more from the “investments side”.

This paper argues that a key element in arriving at an appropriate investment strategy is an understanding of the required characteristics of the portfolio of assets that would, as closely as possible, “match” the insurer’s liabilities. The specific investment strategy should then be set with regard to the insurer’s risk appetite, and tactical decisions must also be made within the constraints of this risk appetite. We also cover the Appointed Actuary’s important role in helping to define the matched portfolio into a benchmark for the investment manager, and then monitoring the appropriateness of the investment strategy from the perspective of its liability matching characteristics, and determining the company’s required capital given the actual investments held under that strategy.

Finally, many insurers have in place governance arrangements and approaches to manage their investment processes that meet or exceed many if not all the principles set out in this paper. However, our experience suggests this is not universally the case. The practical suggestions in this paper should assist particularly smaller insurers to establish robust investment processes.

1.2 Historical examples of investment management failures

Shauna Ferris has maintained an interest in insurance company failures, and provided us with background material about either actual failures of insurers or near failures. Most of the available studies relate to periods some years ago, prior to the strengthening of the regulation of insurance companies in Australia which occurred post HIH. No summarised research material or data is available to our knowledge which covers failings in investment management of insurers which have emerged during the GFC, although to our knowledge the impacts on Australian insurers were generally relatively minor. The available material is as follows:-

1. In Australia, the Institute of Actuaries of Australia's 1999 General Insurance Working Party Discussion Paper, "Determining a minimum solvency standard for general insurers": This paper includes a chapter based on an APRA study of the failures of 18 General Insurers up to 1997. Nine case studies are presented, with the paper concluding that "a commonality of factors contributed to their collapse", with "discounting of the outstanding claims provision without regard to the assets of the insurer", "overvaluation of assets, particularly real estate assets", and "loans and guarantees to related bodies corporate" being asset related reasons which were identified.
2. In the EU, a 2003 paper entitled "Lessons about Risk: Analysing the Causal Chain of Insurance Company Failure" prepared by Ashby, Sharma and McDonnell, based on the work of the London Working Group of the insurance supervisors of 15 European countries analysing the failure or near failure of 21 insurance companies across the EU: The paper presents 12 generic case studies which cover the 21 real cases. Of the 12 generic studies, 7 included asset-related causes for the financial problems which occurred, including inadequate matching, large illiquid assets, high risk investments, assets and liabilities "double geared" (i.e. when the value of liabilities increases, the market price of the assets falls), and inadequate monitoring of outsourced investment management.
3. In the United States, AM Best published studies of financially impaired insurers: An analysis of the impaired Life/Health Insurers, over the period 1976-2002, found that problems in affiliated entities were the primary cause of impairment in 20% of the cases; and investment related problems were the primary cause of impairment in 14%. An earlier study of Property/Casualty insolvencies found that "overstated assets" was the primary cause of 10% of the failures.

The material above generally makes the point that insurance company failures normally have multiple causes, and are seldom caused by market-related investment issues alone; “management or governance issues were at the root of every case” (Ashby page 9) is a good summary of the conclusion of most of the studies which we reviewed.

Investment-related failures in risk management can have a wider impact for the insurer than risk management failures in other areas of an insurer’s operations. This point is illustrated by a major Australian insurer which lost a material amount as a result of investing in an electrical retailer many years ago. While the solvency of the insurer was not threatened and the only immediate effect on the insurer was a reduction in the insurer’s profit for a short period, the loss was substantial in absolute terms, and generated a great deal of public attention. The one official investigation made following this failed investment was by the Insurance Commissioner (APRA’s predecessor). An agreement was made that the insurer would impose a relatively small limit as the maximum proportion of its surplus which would go to the insurer’s shareholders. That limit remained in place for many years, well after the investment loss had been forgotten by the general public. The insurer responded internally by determining to avoid such investment mistakes and public exposure in the future. It became conservative in all its practices. The aftertaste of the investment loss seriously affected the insurer for the next twenty years.

1.3 Terminology

This paper is intended to have application to all types of Australian insurers which have Appointed Actuaries. Therefore, we have adopted the following terminology throughout this paper for the different forms of liability of each type of insurer:-

TABLE 1**Terminology**

Term	General Insurance	Health Insurance	Life Insurance
Other Liabilities	Other Liabilities	Current Liabilities	Other Liabilities
Premium Liabilities	Premium Liabilities	Unearned Premiums	Unearned Premiums
Policy Liabilities	Outstanding Claims	Outstanding Claims	Policy Liabilities
Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt
Regulatory Capital	Minimum Capital Requirement	Capital Adequacy Reserve	Capital Adequacy Reserve
Target Surplus	Target Capital	Target Surplus	Target Surplus
Free Surplus	Excess Capital	Free Surplus	Free Surplus

Further, we have used terminology in this paper as if the insurers were public companies, while the principles are applicable regardless of legal structure. In particular, we use the term “Board” to refer to the governing body of the insurer that oversees management.

1.4 Structure of paper

In the remainder of the paper we cover the following:-

- Section 2: Background to investments within an insurer: covering basic liability, investment and risk management concepts;
- Section 3: Recent experience: covering the implications of some aspects of investment management approaches in recent times;
- Section 4: An approach to investment management: setting out an alternative way to view investment management, and the role of asset-liability management under such a framework;
- Section 5: Role of Appointed Actuary: covering current regulation and professional standards, and the role that Appointed Actuaries do and can perform.

2 Background to investments within an insurer

2.1 Introduction

Simplistically, an insurer collects premiums from policyholders in order to pay future claims. This process leads to the insurer accumulating a pool of assets that must be managed (invested) in order to meet liability cash flows as they arise. Before any investments are made by an insurer, the framework within which investment decisions are made needs to be established. We discuss below a number of issues of relevance in constructing this framework.

2.2 The importance of liabilities

The paramount relevance of liabilities is not always recognised when investments are discussed popularly or even within some publicly available investment plans (e.g. the default investment option for drawdown products in superannuation). It is critical that insurers do not make this common mistake. While most Australian insurers give some attention to liabilities when setting investment policy, we believe that there are opportunities (some greater than others) to enhance the attention paid to the link between liabilities and investment decisions during the ongoing investment process itself.

Insurance entities generally have a legislative or regulatory requirement to satisfy a prescribed Regulatory Capital test at all times. While there are different ways of defining Regulatory Capital, in essence they all imply that the market price of the insurer's assets must at all times exceed the amount of the insurer's liabilities as determined for Regulatory Capital purposes (for a General Insurer, given the structure of the Capital Standards, "liabilities" in this context means balance sheet liabilities plus the Minimum Capital Requirement). The reality of the Regulatory Capital test is that, in the absence of formally guaranteed access to external capital resources, the insurer needs to satisfy the Regulatory Capital test continuously, and from its own resources. This underscores the importance of a regular process for monitoring investment policy.

2.3 The concept of a minimum risk or matching portfolio

It is our view that the primary source of investment risk to an insurer is the extent to which the insurance assets behave differently to the insurance liabilities. It follows therefore that a minimum risk asset portfolio is one which displays identical valuation, cash flow and liquidity characteristics to the insurer's liabilities.

We believe that the starting point in developing the investment portfolio for an insurance entity is to define the minimum risk portfolio – i.e. the hypothetical portfolio of market securities which as closely as possible matches the liabilities. The ease with which this can be done varies substantially amongst insurers and portfolios within an insurer; at one end of the spectrum, an insurer with a single line of business and short tail liabilities (e.g. a simple Australian health insurer) might be able to easily construct the minimum risk portfolio using little more than cash or short-dated sovereign bonds. The situation is much more complex when looking at liabilities with complex financial features (such as super-imposed inflation exposures for long-tailed general insurance liabilities or participating life insurance business).

At this stage of the process, we believe that it is sufficient to define the minimum risk portfolio in terms of its cash flows, interest rate sensitivities, duration, inflation sensitivities, liquidity etc. In many cases, it will not be possible to use market securities to build a portfolio that meets all of the desired criteria. But that is not the point – the minimum risk portfolio gives us the benchmark investment portfolio.

This process may lead to partitioning the insurer's assets into components backing various layers of liabilities (such as Policy Liabilities, Regulatory Capital, Target Surplus, Free Surplus). Different matching portfolios may be appropriate not only for different products, but also for different layers of assets.

Having determined a minimum risk position, in what circumstances might an insurer invest in a different way to the minimum risk portfolio? We can think of three fundamental reasons:

- As noted above, in many cases it would simply be impossible or impractical to construct the minimum risk portfolio. For example, the duration of liabilities may extend for many years longer than the duration of available fixed interest securities, or the market in matching securities may be too thin to allow a sufficiently liquid portfolio to be built (Australian inflation linked bonds are a good example of this). In such cases, the insurer may have no choice other than to accept this fact, and to build a portfolio that is as close to the minimum risk portfolio as possible. In such cases, it will still be very relevant to understand the nature of the minimum risk portfolio and the implications of deviating from it.
- Alternative risk benchmarks may imply different minimum risk portfolios. No single portfolio would be minimum risk for all risk measures, and consequently the actual benchmark “minimum risk” portfolio may reflect a compromise position.

- Where the insurer does have a choice, however, is the extent to which it wishes to take risk (i.e. the extent to which it wishes to, and can afford to, position the assets differently to the minimum risk position in the hope that the assets will outperform the liabilities). This willingness to take on risk via deviations from the minimum risk portfolio represents the insurer's investment risk appetite.

2.4 Risk appetite

An insurer's risk appetite should address all material sources of risk. We can consider a simplified framework that focuses on three core elements namely, liability risk, operational risk and market (or asset-liability mismatch) risk. The capital resources of the company are available to support these risks. If a company were to adopt a significant degree of asset-liability mismatch, then its capital resources could fluctuate materially over short periods of time as markets move. While investment management personnel will generally assess falls in the market price of a "risky" investment as an opportunity for the insurer to increase its holding of the risky investment at a lower price than has applied in the recent past, the insurer (usually via input from the Appointed Actuary) will generally assess the fall in market price of a risky investment as a reduction in the capital available to meet risk, which may lead to a desire to reduce the amount of risk to which the insurer is exposed. This can be achieved through a reduction in investment risk by the sale of risky investments, bringing the potential for conflict between the Appointed Actuary and the insurer's investment personnel.

Risk appetite is a key consideration in setting investment strategy. Risk appetite can be expressed in many ways: "risk" may be a deviation in planned profit, or capital surplus, or changes in a proxy measure of shareholder value (such as embedded value). Risk appetite therefore defines the way in which an insurer will measure its liabilities for asset-liability management purposes. Regardless of the approach taken, however, there will be a measure of liabilities that can be used to define a matched asset portfolio.

However, we note that if risk appetite is not expressed in terms of capital surplus, then there will still be a need to consider capital implications.

Appendix B summarises the high level Policy Liability and Regulatory Capital characteristics of the major types of insurer, and makes it clear that the investment-related characteristics of the different types of insurer differ substantially. Therefore, the material below is general in nature.

An insurer's risk appetite is established by the insurer choosing:-

1. a financial benchmark which the insurer does not wish to breach;

2. a time period over which the risk is to be measured (this time period will usually correspond to a period during which little meaningful remedial financial action can be undertaken by the insurer to address its risk exposures); and
3. a target confidence level for not breaching the financial benchmark.

While the benchmarks may vary by insurer (some may focus on profit, others a measure of capital or economic value), ultimately the insurer will assess its assets and liabilities against its risk appetite.

The extent to which the insurer makes investments which do not align with the financial characteristics of the insurer's liabilities represents financial risk. This investment risk needs to be measured by the insurer, aggregated appropriately with amounts which measure the other risks to which the insurer is exposed (e.g. liability risk, operational risk), and compared to the insurer's risk appetite. Any mismatch between the insurer's risk appetite and its total current risks then needs to be addressed by making changes to the appropriate current policies (e.g. asset allocation policy, operational policies, distribution policy, etc).

An insurer's investment risk appetite may depend on its financial strength. In the absence of significant surplus capital, an insurer will necessarily have a very low appetite for investment risk. (Note that the converse is not necessarily always true – an insurer in a strong capital position may well choose to have a low investment risk appetite, depending on its financial objectives). The point here is that capital is required to support a non-matched investment policy.

2.5 Investment concepts

Most insurers will maintain a policy document setting out its investment policy (which we refer to as an Investment Policy Statement or "IPS") which sets out the roles, responsibilities and reporting of the various governing bodies and departments which are involved in the investment of the insurer's assets. The IPS documents the insurer's investment objectives and the insurer's investment strategy which is designed to achieve those objectives. The IPS is an important document which will be used by the Appointed Actuary to quantify the level of investment risk which underlies the insurer's investments, and to provide advice to the insurer's Board on the implications for capital which arise from the IPS. While the Appointed Actuary may not be involved in preparing the IPS, the Appointed Actuary should provide input on the IPS before it is finalised, and on any significant change to the IPS.

Investment risk can be divided into risk which arises from all of the following:-

1. **Strategic Asset Allocation (SAA):** In our experience, most financial institutions will have an IPS which sets out a SAA, either determined globally, or more likely for investments which relate to particular liability categories of the insurer. The SAA sets out the mix of asset classes (e.g. cash, bonds, equities, and property, with each asset class having both a local and an international component) which are to be used to invest the relevant assets of the insurer. The major risks which arise from the SAA include the risk that market price movements and liquidity characteristics over time for the insurer's investments do not move in line with market price movements and liquidity requirements of the insurer's liabilities.
2. **Active Management** (sometimes referred to as Tactical Asset Allocation if operating over short time horizons or as Dynamic Asset Allocation if operating over medium term horizons): Normally, the IPS will permit those persons who are responsible for the insurer's investment management to vary the SAA within limits set out in the investment policy. Depending on the insurer's IPS, Active Management risks may be more difficult for the Appointed Actuary to assess than SAA risks, as in addition to market characteristics, the ability of the investment personnel who control the Active Management needs to be assessed.
3. **Stock Selection** (the selection of individual investments within a particular asset class): Stock Selection risk will be reduced substantially where the underlying investment portfolio has characteristics which are intended to be substantially similar to the characteristics of the asset class itself. Extreme examples of stock selection risk arise when individual "large" investments are made relative to the size of the relevant liabilities; often such "large" investments can be investments in organisations or assets which are in some way related to the insurer, the insurer's policyholders, or the insurer's shareholders (called "related party investments").

We conclude that SAAs as often written therefore may often miss the point, or rather may often be insufficient on their own, as benchmarks are not expressed in terms of the matched asset portfolio.

2.6 Typical investment approach

While practice varies widely between different entities, a typical approach for setting and implementing an investment strategy can be summarised as follows:

Responsibility for determining the SAA for the insurer's investment assets will typically lie with the Board or a Board Committee (with significant input from the finance executive and ideally also the Appointed Actuary). This SAA will define the target split between various high level asset classes, and will typically be set with the intention of the strategy being sustainable in the long-term in "normal" conditions. In setting the SAA, the insurer will almost certainly have regard to the nature of the liabilities and the insurer's investment risk appetite at a particular point in time. The extent to which liabilities will be taken into account will range from detailed asset liability modelling (or DFA-type analysis) at one end of the spectrum, to purely 'intuitive' or qualitative consideration of liability characteristics at the other end. As noted above, in our view the best practice approach is to explicitly identify a minimum risk investment portfolio which aims to closely match the characteristics of the liabilities (and then choose to deviate from this minimum risk position based on an explicit consideration of investment risk appetite, as well as the expected reward for taking risk).

More often than not, having set the SAA, responsibility for implementing and operationalising the investment strategy will be given to a separate group of individuals – either within the insurance organisation, or external to the organisation (or a combination of both). A typical structure will involve appointing specialists to manage investments within each asset class. Indeed, common practice is to have several managers in each asset class – with each manager seeking to outperform a market-cap weighted index within a risk tolerance specified by the insurer (most often expressed as a 'tracking error' – loosely defined as the expected standard deviation of the difference between actual returns and benchmark returns). For smaller insurers, the most practical way of achieving this outsourcing of investment implementation is by investing in wholesale pooled funds run by professional fund managers.

2.7 Problems with typical approach

We can identify several problems with the approach described above. For example:

- **Changing financial circumstances and/or appetite for risk:** The SAA is set at a point in time, and will have regard to the insurer's current financial position and risk appetite at the time. Of course, these factors can be expected to change over time, often quite quickly. Unless there is a process for changing the SAA as these factors change, there is a danger that the SAA will become sub-optimal, possibly quite quickly.
- **Disconnect between liability-related risk and "risk" as defined by the investment manager:** From the insurer's perspective, the most important risk to be managed (and where appropriate

exploited) is the potential mismatch between the performance of the assets and the liabilities. However, an outsourced investment manager is unlikely to view risk through this lens at all. From the narrow perspective of a specialist investment manager managing assets in a particular asset class, “risk” is the extent to which the manager’s investment portfolio acts differently to the specified benchmark portfolio in that asset class (most often simply a capitalisation-weighted index). This different perspective on risk can have some unwelcome implications. For example, an active bond manager may choose to deliberately shorten the duration of the bond portfolio in anticipation of rising interest rates. While the manager may well have good reasons to do this in order add value above the market benchmark, the manager is unlikely to be aware of the solvency risks this may impose if this gives rise to an increased mismatch between the duration of the asset portfolio and the insurer’s liabilities.

- **Narrow focus:** A manager in a single asset class is focussed purely on the portfolio that they manage, and the benchmark against which they are assessed. A specialist equity manager for example can hardly be expected to raise a red flag if the manager feels that pricing has become excessive in equity markets. The more likely course of action for a manager with this view would be to adopt a somewhat more defensive portfolio. The decision process for making dynamic relative value calls between asset class needs to lie with (or close to) the body that originally had responsibility for setting and evaluating the SAA.
- **Changes in market benchmarks:** As time goes by, the composition of market benchmarks can change quite substantially.

We believe that a best practice investment framework for insurers considers both the minimum risk portfolio, as well as the investment risk appetite *at every stage of the investment process*. The italicised words in the previous sentence are important because we believe that the investment risk appetite can and does vary as the financial circumstances of the insurer, and the financial climate more generally, change. As discussed further below, we believe that the current investment governance models of some insurers fail to consider these issues with sufficient frequency or clarity.

2.8 Asset-liability management concepts

Asset-Liability Management (“ALM”) forms the bridge between liabilities and investments for insurers. Structures used in ALM vary across insurers, but one typical structure involves a cross-functional Asset-Liability Committee (“ALCO”) that receives input on liability profiles and capital implications of alternative investment strategies (ideally from the Appointed Actuary) and sets investment policy (within

its authority, or makes recommendations to the Board). While alternative structures may exist, we will refer to the governing body that effectively sets investment policy as the ALCO throughout this paper.

Where the liabilities of an insurer are short term undiscounted substantially fixed amounts, and all the assets of the insurer are secure at call or short term deposits in the same currency as the liabilities, there is no need for asset-liability modelling, and the investment component of the insurer's risk exposure is negligible. While such a situation can arise for an Australian health insurer, the liabilities of most insurers either include complexity such as being discounted to allow for future assumed investment return to the time of payment of the liability, or uncertainty due to the liability being not fixed in amount. Also, the investments which are held by the insurer to meet these liabilities may not be those investments which most closely match the characteristics of the Premium Liabilities and Policy Liabilities. The insurer needs to allow for all these complexities and uncertainties in carrying out ALM. We recognise that the complexities and uncertainties vary depending on the nature of the insurance liabilities. It is not the purpose of this paper to discuss specific liability issues, but we note that there are a number of more complex issues such as:

- superimposed inflation in long-tailed general insurance liabilities;
- policyholder reasonable benefit expectations impacting the insurer's ability to change asset mix for participating life insurance business; and
- interplays between accounting and capital standards that define how liabilities are measured (and which can introduce disconnects between an "economic value" of liabilities and the assessed value under accounting or Regulatory Capital standards.

Some issues such as the first two listed above may lead to a need for detailed stochastic modelling of asset-liability interactions, reliant on Economic Scenario Generators, as well as standard tools such as scenario and stress tests, in order to carry out effective ALM. The third issue above suggests that it is not always appropriate to focus blindly on a single measure of risk (even where risk appetite is narrowly defined), as there may be implications from other perspectives that merit consideration.

Many insurers in Australia are part of larger financial services groups, where investment management is outsourced to a related party entity within the group. In these circumstances, investment management decisions may be made on a basis which is appropriate for the financial group as a whole, but which may impose investment risk on the insurance entity. We consider it critical that the

insurer retains control of its investments, and that the relevant bodies making investment decisions related to the insurer do so while considering the needs of the insurer rather than the group.

As mentioned above, one critical aspect of management within an insurer is consideration of the capital position. In Australian Life Insurers, it is reasonably common for a “traffic light” system to operate, which assigns a band (e.g. green/amber/red) based on the buffer of surplus above minimum Regulatory Capital. Policies then operate in pre-defined manners depending on the band. From an ALM perspective, “normal” investment policy decisions may apply in the green band, with greater restrictions applied when surplus falls to the amber or red levels.

2.9 Overview of roles of Board and Management

While each insurer is different, this section sets out briefly the typical investment related roles and the Board and Management of a regulated insurer.

We see the primary role of the Board in relation to investments as spanning the following areas:

- **setting the mission** for the organisation – this includes high level consideration of what success (and failure) for the organisation looks like;
- **developing an appropriate governance structure** for the management of the organisation’s investments;
- **developing the organisation’s investment risk appetite**, and communicating this clearly to management and other stakeholders; and
- expressing the organisation’s mission and risk appetite in the form of **clear and measurable financial objectives** (for example relating to profit targets, dividends, volatility of earnings, VaR measures etc).

By contrast, we consider that Management’s responsibility is to operationalise the policies developed and approved by the Board. Of course, we would expect management to provide significant input to the Board in relation to the responsibilities outlined above, but the ultimate responsibility should naturally lie with the Board.

The responsibilities of Management would include:

- **determining the SAA** from time to time (although it is not unusual for Board approval to be required);

- determination of the **minimum risk portfolio**;
- **construction and implementation** of a portfolio that deviates from the minimum risk portfolio to the extent necessary for practical purposes, as well as to comply with the Board's financial objectives, risk appetite and capital requirements;
- **appointment and termination** of investment managers; and
- **ongoing monitoring of the portfolio** to ensure ongoing compliance with Board's financial objectives, risk appetite and capital requirements.

3 Recent experience

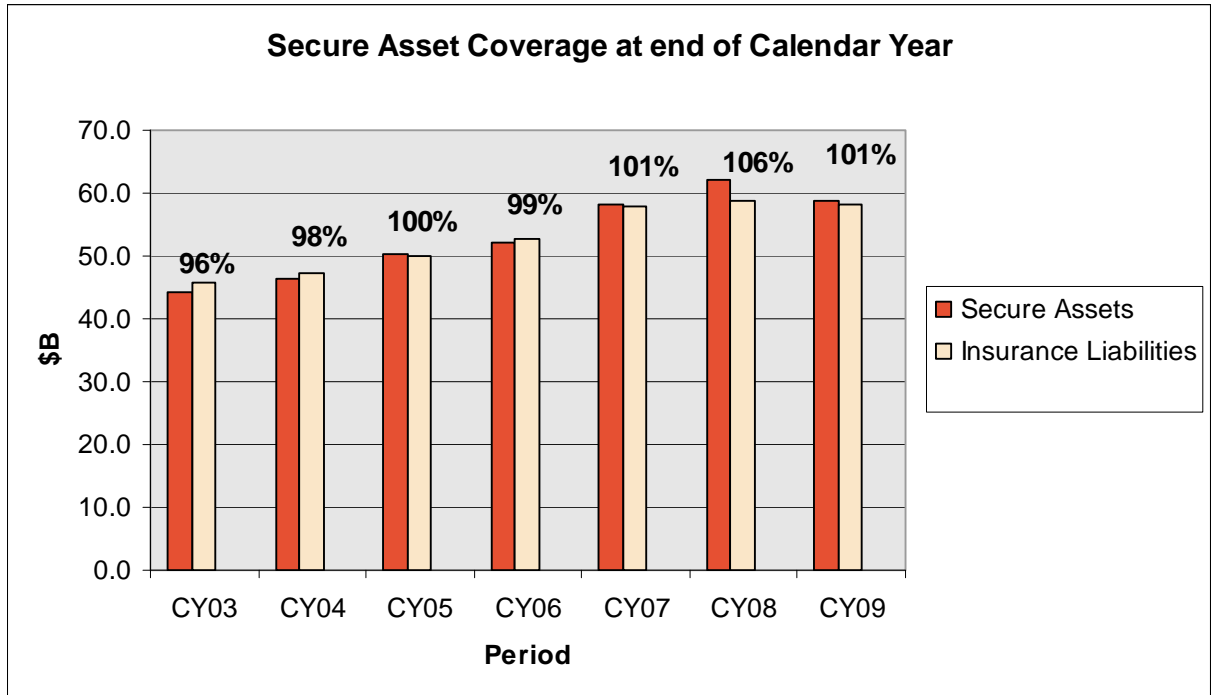
3.1 Introduction

This section presents data and commentary on the liability and asset positions of the three insurance industries over recent years, along with estimated investment returns for General and Health Insurers using publicly available data from either APRA (General) or PHIAC (Health). Data is available for individual Health Insurers, but not for other insurers individually. Comparisons between insurers (particularly Life Insurers) can be inappropriate due to different business mixes which can apply. The business of Health Insurers tends to be reasonably homogeneous, due to regulatory constraints on product design and premium rating.

The graphs in Appendix B decompose the Liabilities and Assets of direct General and Health Insurers into their major components, based on the regulators' data. We then calculate a "secure asset coverage" ratio, defined as the ratio of the fixed interest, cash and other secure assets divided by the liabilities (as defined, based on the available data). While we recognise the limitations in this analysis, we are effectively considering these assets classes to be a proxy for a minimum risk portfolio for General and Health Insurers (ignoring credit risk and duration/convexity mismatches). Due to the nature of Life Insurance liabilities, we did not consider that a similar analysis would be meaningful.

3.2 General Insurance

A substantial proportion of the liabilities of General Insurers (say about 50% on average over the industry in total) consists of estimated outstanding claims liabilities (gross of reinsurance recoveries), with perhaps a further 20% consisting of Premium Liabilities. It is to be expected that a substantial proportion of the investments of General Insurers are in cash and fixed interest investments. The average term of these liabilities is usually thought to be about three to four years over the industry as a whole (although this term may differ substantially between individual insurers depending on business mix). The "secure asset coverage ratio" for the General Insurance industry in total is as follows (effective at the end of the calendar year shown):-



Because it is not possible to easily obtain data from APRA on the total Regulatory Capital of the General Insurance industry, the “secure asset coverage ratio” for General Insurers does not include Regulatory Capital in the denominator. Nevertheless, the graphs above and in Appendix B illustrate the general stability over time which applies in the General Insurance industry for liability and asset related issues. It appears that there was a modest increase in the holdings of secure investments though 2008 during the GFC, and that investment duration may have been shortened during 2008. While this stability reflects the dominance of a small number of substantial General Insurers in the industry total, enquiries we made in preparing this paper indicated that the majority of smaller general insurers are “conservatively” invested in secure fixed interest investments with terms appropriate to their liabilities.

This conclusion is also supported by the estimated rates of investment return earned on the total General Insurance investment portfolio, again based on APRA’s data as follows (investment returns are gross of tax and for the calendar year shown):

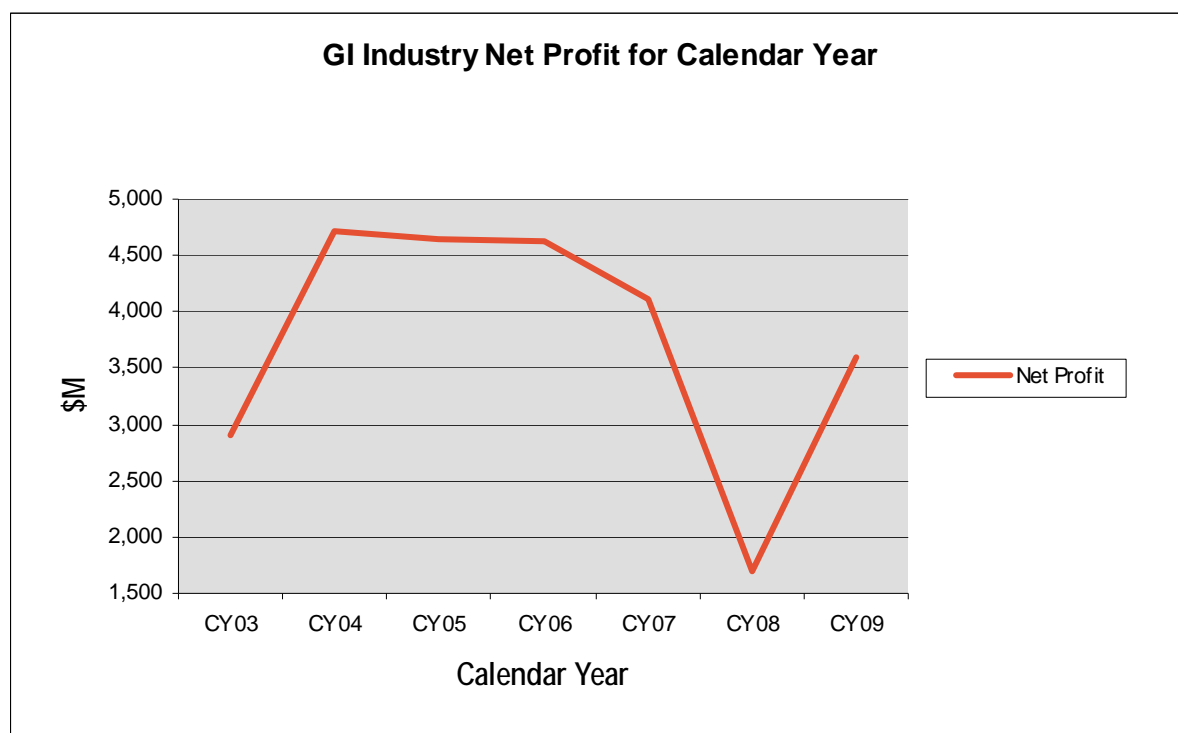
TABLE 2

General Insurance Industry Investment Return (% pa)

	CY03	CY04	CY05	CY06	CY07	CY08	CY09
GI Industry	4.9%	8.4%	7.8%	6.2%	6.9%	7.2%	4.2%
UBS Govt Bond (0-5yr)	3.2%	6.2%	5.2%	3.8%	4.7%	13.9%	2.7%
UBS Inv Grade Credit	5.2%	7.0%	6.1%	3.6%	3.2%	12.5%	4.1%
UBS Aus Bank Bill	4.9%	5.6%	5.7%	6.0%	6.7%	7.6%	3.5%

The table compares the approximate gross of tax investment return earned on General Insurance assets overall with the gross of tax return from a comparable UBS Australian Government Bond index, a Credit Index and a Bank Bill Index. The table appears to show that the General Insurance industry was in aggregate invested shorter than the Government Bond Index, with the result that higher rates of investment return were earned in CY 2006, CY2007 and CY2009, and a lower return in CY2008 than the Bond Index.

It appears that the shorter duration of investment assets when compared to liabilities may have been a contributor to the reduced profitability of the General Insurance industry in CY08, illustrated as follows:-

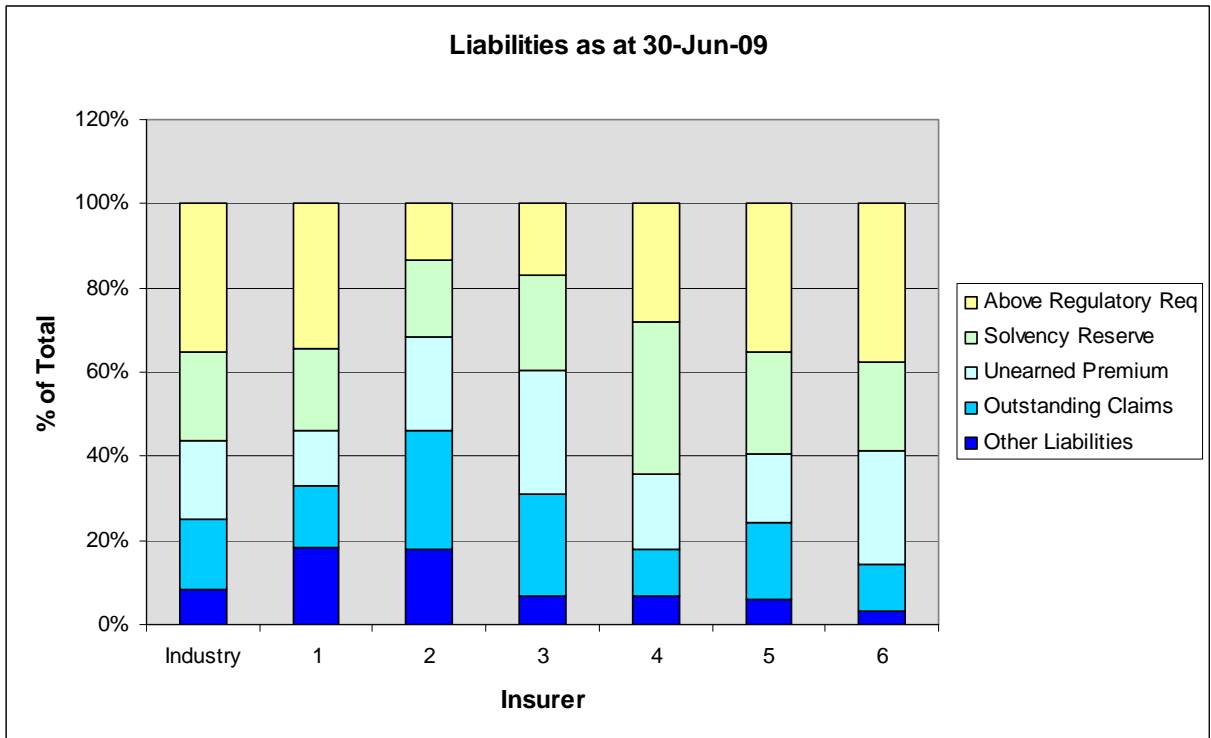


3.3 Health Insurance

The investment-related characteristics of Health Insurers in Australia currently are set out in Appendix B. In summary, the Private Health Insurance (“PHI”) industry is relatively heavily regulated, insurance liabilities are short in term, and there is substantial similarity between insurers in product offerings. Individual insurers can differ substantially both in the policyholders they attract and retain, leading to differences in payment patterns for premiums, and in the speed of claims payment.

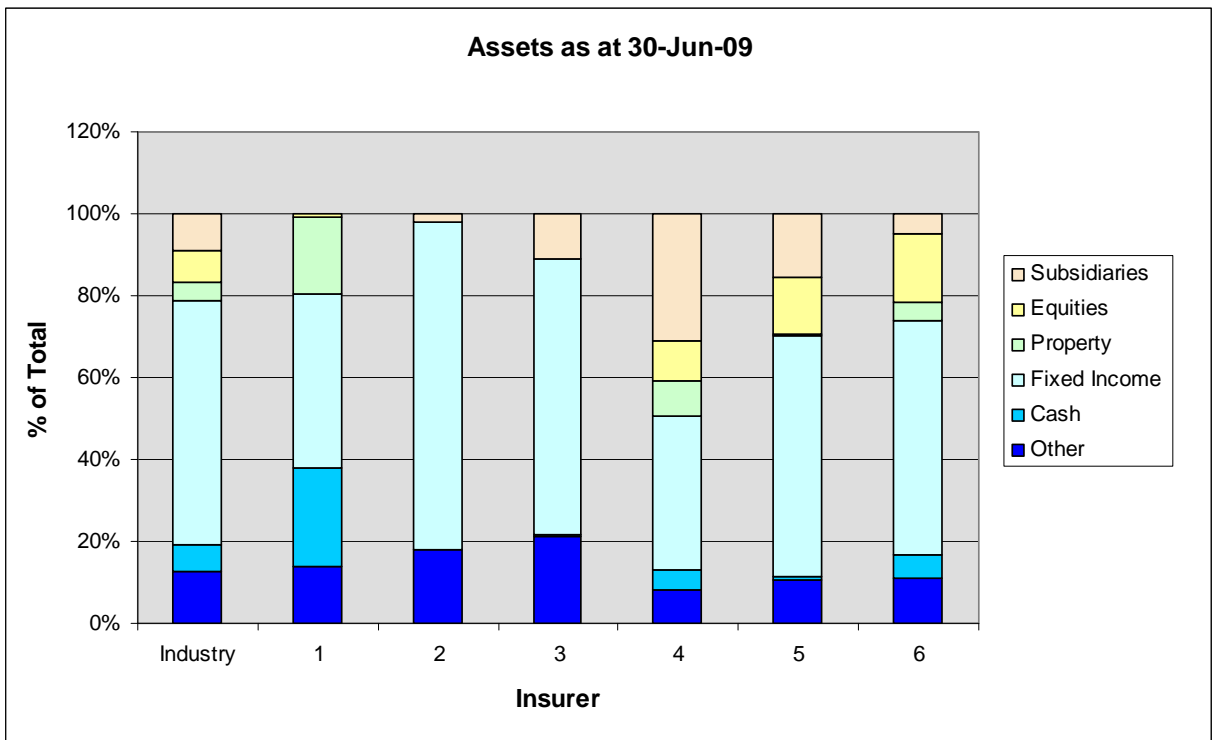
Regulatory Capital is relatively small when expressed as a percentage of annual benefits paid, possibly due to substantial policyholder protection being provided through legislated portability rights for “hospital treatment” cover and through current insurer practice for “general treatment” (i.e. extras) cover. Also, the unfunded nature of PHI and the ability of an insurer to apply to the Health Minister for a premium increase at any time mean that an element of structural protection exists for the insurer itself. Regulatory Capital and liabilities attaching to unearned premiums are linked to future benefit payments, which can be subject to substantial inflation above CPI. The major sources of difference between insurers are that some insurers are for-profit, leading to the need to pay dividends, and some insurers maintain substantial investments in related party or business specific investments (e.g. health related facilities).

The PHI regulator is PHIAC, which publishes extensive data covering both the overall industry, and individual insurers. Appendix B includes liability type, asset type and investment return data for the last four financial years where comparable PHIAC data is available. Results for the year to 30 June 2009, based on PHIAC’s Operations of the Private Health Insurers Annual Report for the industry as a whole, and for the six largest insurers who dominate the overall market are as follows:-



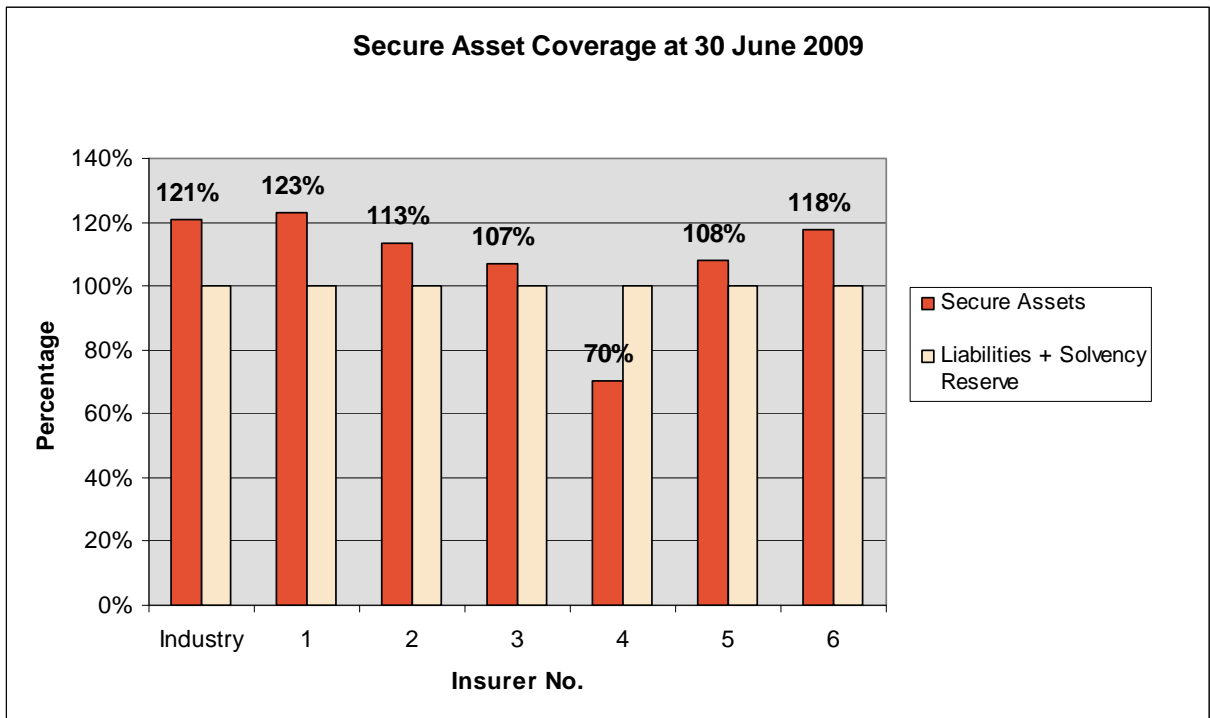
While the liability profiles are broadly consistent across different health insurers (noting the differences above), the surplus held above the regulatory requirement differs substantially. This means that a liability-driven asset allocation might vary substantially between different health insurers.

The graph below shows the allocation of Health Insurer assets between the major investment classes.



The graph shows that while cash and fixed income investments comprise over 60% of investment portfolios of the insurers (except insurer 4), asset allocations do vary between insurers. In theory, the status of the insurer (either for-profit or not-for-profit) could influence the insurer’s investment policy for assets held above the regulatory minimum capital requirement.

The “secure asset coverage ratio” for the industry in total and for each of the insurers is as follows. The chart illustrates the significant differences between insurers in terms of their coverage of liabilities and solvency reserve by secure assets at 30 June 2009.



The table below estimates the gross investment return earned over FY09 by the industry and each of the major insurers, based on PHIAC data.

TABLE 3

FY09 Investment Return (% pa)

Industry	Insurer 1	Insurer 2	Insurer 3	Insurer 4	Insurer 5	Insurer 6
-1.20%	5.1%	5.0%	4.7%	-2.0%	-3.0%	-18.6%

The different asset allocations between insurers are illustrated to some extent by the materially differing FY09 investment returns.

3.4 Life Insurance

ALM practice varies widely across life insurers, reflecting both the nature of liability portfolios and risk appetites of individual insurers.

From a risk appetite perspective, there can be significant differences in approach arising from whether an insurer focuses on profit or capital, as the matching asset position can vary widely depending on whether liabilities are measured per IFRS or per the capital standards. (Individual risk business is a good example, where the IFRS liability is generally an interest sensitive negative number, whereas the capital liability may be a near-zero cash amount).

Annuity portfolios are worth mentioning, as the associated cash flows are more or less known and a matching investment portfolio can be constructed. Insurers generally develop an investment strategy specifically for these portfolios which target largely matched positions, although there are differences in the degree of credit risk taken on when constructing “matching” asset portfolios. The implications of including exposure to credit risk within such portfolios became apparent during the recent GFC.

While it may be possible to match an annuity portfolio, the same is not true for many other life insurance liabilities. As a consequence, Life Insurers tend to be exposed to market risk. Nevertheless, the industry in Australia withstood the GFC remarkably well (compared against international benchmarks), and although profits across the industry were generally down, the industry did remain profitable.

Guaranteed unit linked products (referred to as variable annuities in overseas markets) provide an example where complex hedging processes have been developed to provide a matched (to the extent possible) asset portfolio to manage the liability exposures. While these products are relatively new in the Australian market, the hedging concepts are fairly widely understood, and most players would consider a hedging programme to be an integral part of the management of such a product. Nevertheless, imperfections in such hedging programmes have led to losses for insurers on these portfolios in many overseas markets throughout the GFC, as assumptions underlying the hedging programmes proved incorrect or unhedged exposures produced significant losses.

We have provided some industry statistics for Australian life insurers in Appendix B.3.

4 An approach to investment management

4.1 Overview

We would advocate an explicit consideration of liabilities when setting investment strategy, and we would consider that a governance structure involving an ALCO represents a good template for this.

One concept that is widely used in banking, but which is not common in insurance, is that of a treasury. We believe that there is merit in insurers considering such a structure, as it separates the insurance business and the investment business, and allows appropriate management responsibilities to be defined.

4.2 Defining investment risk

As discussed above, we consider that a critical element of the investment process is the definition of the minimum risk asset portfolio. ALM involves articulating the implications of alternative asset portfolios, and the minimum risk asset portfolio should always be included in such analyses.

The ALCO then manages deviations in actual asset mix away from the minimum risk asset portfolio. The ALCO's mandate to control investment decisions should be expressed in terms of deviations from the minimum risk portfolio (rather than a benchmark asset mix with limits), and may include greater discretion to move towards that minimum risk portfolio than away from it. The intent is to facilitate a more dynamic process of adjusting the targets that are set for individual investment managers than a relatively static benchmark asset mix.

4.3 Role of ALCO

The ALCO is the critical link in the governance framework that requires as input:

- definition of risk and a measure of risk appetite;
- details of the liability profile both in terms of the key risk measure of the organisation (e.g. P&L measure of liabilities) and alternative measures that will be relevant to the organisation (e.g. regulatory capital measures of liabilities); and
- investment expertise.

It is important that the ALCO not be narrowly focussed on a single measure of risk. For example, if risk appetite is not measured in terms of Regulatory Capital, it is essential that an insurer establish a capital

monitoring process that triggers an override of normal investment decision making if the capital position is threatened. Insurers must continuously meet their Required Capital, and if the capital position is under threat, the insurer should not be making investment decisions that result in a deterioration of the capital position.

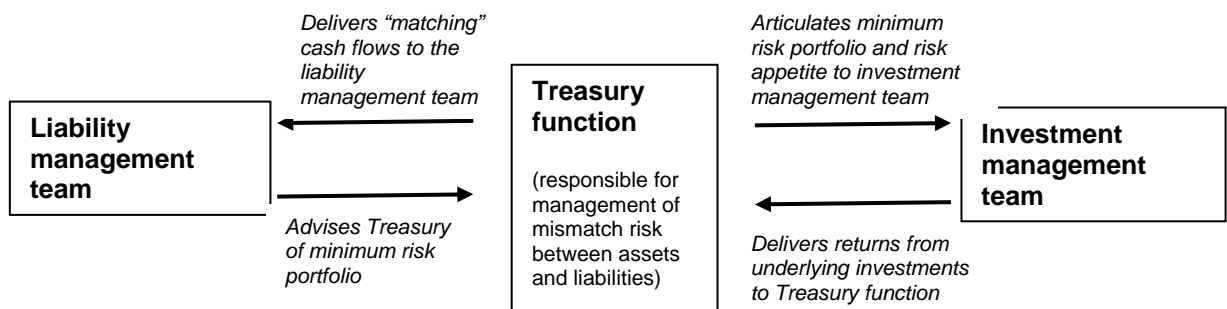
The ALCO is then responsible for setting the parameters within which “Treasury” (as discussed below) operates – the degree of risk taking that Treasury is allowed to assume, and any other constraints that may be appropriate.

One role of the ALCO is to consider the trade-offs between greater (asset-liability mismatch) risk and greater expected profitability. As Regulatory Capital requirements generally impose additional capital associated with particular “risky” asset classes, with asset-liability mismatches. If the insurer operates a return on capital framework, the additional investment return from a particular investment which requires additional capital (compared to an investment for which no additional capital is required) can be compared against the insurer’s return on capital target.

4.4 Treasury function

In the same way that a Treasury operates within a bank, the Treasury function of an insurer would essentially set a transfer price that would allow the insurance side of the business to manage its insurance exposures and (largely) ignore investment issues. Under this model, the Treasury function would provide a “matched” investment return to the insurance side of the business, and Treasury would then assume responsibility (under the guidance of the ALCO) for dynamically managing the insurer’s investment risk. This type of approach would be relatively easy to implement for General Insurers and Health Insurers (although arguably the management structures in place in some of these organisations approximates our suggestion). The approach does pose more challenges for Life Insurers, particularly where products are dependent on investment returns (for example traditional participating business). Nevertheless, the concept can be applied to almost any insurer.

The diagram below indicates how the Treasury function would operate.



4.5 Role of investment management

Under the Treasury model, the objective of specialist investment managers continues to be to add value relative to the manager's asset class benchmark, subject to the risk tolerances articulated by the Treasury to the manager from time to time.

In this regard, it is important to recognise that any deviation from the benchmark portfolio within a given asset class represents a risk to the insurer, and the impact of this incremental risk should therefore be incorporated into the aggregate risk appetite of the insurer. (From a technical perspective, we would expect risk associated with Stock Selection within an asset class to be relatively uncorrelated with other risks in the portfolio. This means that the incremental increase in total portfolio risk as a result of introducing active Stock Selection will typically be relatively small.)

It should also be noted that in almost all instances, provided portfolios are well diversified, the role of Stock Selection can be expected to be of second order importance relative to impact of SAA and Active Management. The great majority of the risk and return in the investment portfolio will be dictated by the SAA and Active Management decisions rather than by the Stock Selection decisions made.

4.6 Benefits of approach

The approach to investment management outlined above is designed to facilitate a more dynamic approach to setting asset mix that responds to the changing position of the insurer, rather than being reliant on a discrete exercise to update a benchmark asset mix expressed as target percentages in particular asset classes. In practice, this may be how many companies effectively operate, with actual asset mix adjusted within approved bands until a limit is reached, prompting a need to reassess the base benchmarks. However, a more explicit dynamic approach that defines the target in terms of a (constantly changing) matched portfolio may allow insurers to more closely align their actual risk exposures to their target risk exposures.

The use of a Treasury function separates responsibilities, allowing insurance business managers to focus on the insurance business, while investment managers can take full responsibility for the investment management. The Treasury (under the guidance of the ALCO) has responsibility for dynamically managing the asset liability mismatch risk to reflect the insurer's risk appetite, current solvency position, market outlook, etc. This enables a clearer separation of responsibilities for internal performance management, and for communicating results both internally and externally. Such a structure can also lead to better pricing decisions, by reducing the risk of a form of pricing error

whereby the profits anticipated from taking on mismatch risk can be inadvertently given to policyholders (whereas they should be earned by the shareholder as compensation for bearing the risk in the first place).

5 Role of Appointed Actuary

5.1 Current standards

Generally, the role of the Appointed Actuary is to provide actuarial advice, often in prescribed circumstances, but sometimes in circumstances which are determined by the Appointed Actuary.

Appointed Actuaries perform their functions in accordance with the enabling legislation, the regulatory requirements, and professional standards and guidance provided by the Institute of Actuaries of Australia ("IAAust"). Appendix C summarises these provisions in turn for each type of insurer.

This section of this paper provides comments on, and contrasts each of these structures for the provision of Appointed Actuary services, focusing on investment related issues in the context of the concepts set out in this paper.

The IAAust's regulation of the conduct of Appointed Actuaries is contained in the Code of Professional Conduct, and in Professional Standards and Guidance. Section 4.3.2 of the Code states that "In providing a Professional Service, a Member must take reasonable steps, taking into account the nature of the Professional Services to be provided, to ensure that they have appropriate knowledge and skills in the relevant area and at the level required in order to provide competent Professional Services" (Professional Services are defined to include "Prescribed Actuarial Advice"). Appropriate knowledge and skill needs to be available in the context of both the regulatory and professional requirements for the work of the Appointed Actuary.

Generally, the Appointed Actuary's actuarial advice is provided to the Board of the insurer, but may also be provided to the Management of the insurer in the appropriate circumstances. General Insurance, Health Insurance and Life Insurance legislation also all require the Appointed Actuary to report directly to the regulator in prescribed circumstances, and provide the Appointed Actuary with indemnity if the Appointed Actuary reports to the regulator within the legislative constraints.

Appendix C shows that both the regulatory requirements and professional standards and guidance which apply to Appointed Actuaries differ substantially depending on the type of insurer, as summarised in the following table:-

TABLE 4**Professional Standards & Regulatory Requirements for Appointed Actuaries**

Practice Area	Professional Standard or Guidance covering FCR	Legislation & Regulation
General Insurance	<ul style="list-style-type: none"> – Matched perspective – Investment strategy perspective – Risks from investments covered (but not specifically mismatch risk) 	<ul style="list-style-type: none"> – No specific asset related duties
Health Insurance	<ul style="list-style-type: none"> – Asset perspective (matching not mentioned) – Investment policy perspective – Except for investments in like businesses to health insurance, risks not mentioned 	<ul style="list-style-type: none"> – Specific duty to provide actuarial advice if a significant change is made to the investment policy of the insurer (ability to specify other investment related duties determined by the actuary)
Life Insurance	<ul style="list-style-type: none"> – Matched perspective – Investment policy perspective – Risks from investment policy to be covered (although the word “risk” is not used as such) 	<ul style="list-style-type: none"> – Appointed Actuary has asset related duties in determining regulatory capital, relating to investment concentration, credit, liquidity and overall

If the concepts set out in this paper were to be implemented in IAAust professional standards and guidance, substantial changes would be required for Health Insurance, minor additional wording would be required for General Insurance, and no changes seem to be required for Life Insurance. The work of the Appointed Actuary for Australian insurers is performed currently in accordance with Standards and Guidance prepared by the IAAust (by contrast, standards for actuarial practice in a number of overseas jurisdictions are now promulgated by Actuarial Standards Boards which are separate to the profession in that jurisdiction). The legislative requirements for the work of the Appointed Actuary generally reference the IAAust materials. Australia may be able to retain standard setting within the profession due to the good recent outcomes. For example, there have been no failures of General Insurers since the Appointed Actuary regime was introduced after HIH, no failures of Health Insurers since the Appointed Actuary regime was introduced for FY05 (in response to several failures occurring in immediately prior years), and no failures of Life Insurers after Occidental / Regal in the early 1990's. However, for the profession to retain that role, it will need to ensure that its standards are appropriate to changing circumstances by continuously maintaining them (and involving regulators in that process).

The analysis above indicates that there are a number of potential gaps in the current framework. However, in performing the Appointed Actuary role, the actuary must look further than the wording of the professional standards and regulatory requirements, and perform that role based on the circumstances of the particular insurer.

5.2 Performing the Appointed Actuary role

An insurer's Appointed Actuary is required to provide advice on the insurer's financial condition, which we suggest includes (as just one aspect of that advice) comment on the matching of the insurer's assets in relation to the insurer's liabilities. We suggest that this advice can be summarised as follows:-

1. communicate the capital implications of investment decisions arising from the insurer's Regulatory Capital requirements;
2. communicate the investment-related implications of the insurer's liability profile, including articulation of the minimum risk asset portfolio;
3. develop appropriate trigger points, including the actions which need to occur at those points;
4. communicate any cash flow patterns and liquidity constraints which have implications for investments (including taxes, dividends, transfers, etc);
5. calculate and communicate the investment component of the insurer's total risk budget; and
6. regularly monitor the suitability of the insurer's overall investments in the context of the insurer's investment risk appetite (frequency of monitoring will depend on the insurer's capital position and investment market circumstances).

To perform these functions, an Appointed Actuary needs to establish a working relationship with those who are responsible for investing the insurer's assets, such that the Appointed Actuary is able to discuss the characteristics of the insurer's investments on a two way basis, recognising the role of investment personnel in the selection of individual investments.

Trigger Points

The requirement for insurers to continuously comply with Regulatory Capital requirements requires that the insurer is able to estimate its capital position at any time. During the GFC, insurers were performing regular estimates of their capital position, to allow for the substantial market movements which were then occurring. The capital management plan for an insurer will often include a range of capital ratios, along with the associated actions which are to occur if that capital ratio is breached. Examples of

investment-related actions include effecting derivative protection, selling particular assets, changing asset mix, etc.

Monitoring of Investments by the Appointed Actuary

One of the most important investment-related roles of the Appointed Actuary is to regularly monitor the insurer's investments, from a risk appetite perspective. Elements of this monitoring could include:-

- being aware of current financial market and economic conditions as they relate to the insurer's investments, particularly changes in market conditions which may affect the basis on which the insurer's risk appetite was calculated;
- receiving monthly (or more regular) investment management reports which are discussed with those who are directly responsible for making the insurer's day-to-day investment management decisions;
- receiving all Board or Investment Committee reports related to investment matters (the Appointed Actuary should be able to attend such meetings at the actuary's request at least for particular items which are relevant to the insurer's risk appetite; and
- monitoring those aspects of the investment manager's performance which are relevant to the investment risk appetite of the insurer (e.g. tracking error, movements away from SAA, etc), although the Appointed Actuary's role need not extend to monitoring the relative performance of the investment manager against the investment manager's performance benchmarks.

Ideally, the need for the role of the Appointed Actuary in communicating the characteristics of the insurer's liabilities will be recognised by those who are directly responsible for making the insurer's day-to-day investment management decisions.

Other Aspects of the Appointed Actuary's Advice

The Appointed Actuary will often need to use stochastically prepared investment scenarios for the purposes of asset-liability modelling. While an understanding of the methods and assumptions which have been used to derive the scenarios is important, it is also important for the Appointed Actuary to examine the scenarios, to measure their distributions, and to test these results against long term data for actual investment market returns. This analysis will assist the actuary in determining whether the characteristics of the scenarios are suitable for their purpose.

The Appointed Actuary may have either specific legislative duties in relation to the values which are used for investments, or a general responsibility to ensure that the approach used by the insurer's Board to value its investments is appropriate for the purpose for which the Appointed Actuary is using the values. The Appointed Actuary should review the values used by the Board for all material non-listed investments. Valuation of investments is outside the scope of this paper.

One of the most difficult roles of the Appointed Actuary is to provide advice on related party investments. These investments are often unlisted (which creates valuation issues), and may be correlated with the business of the insurer (e.g. health care facilities in the case of health insurers). While the size of individual related party investments will in practice be constrained by the concentration limits which are included in the regulatory capital standards, scope remains for substantial financial damage to occur. The insurer's IPS should address the issue of the maximum size of individual investment holdings, and this provides a basis for the assessment of related party investments.

The appointed actuary will also stress and scenario test the performance of the liabilities and the investments as part of the work for each Financial Condition Report.

In providing advice, where policyholder benefits include a component based on investment returns, the Appointed Actuary needs to take into account policyholder expectations. There are a number of complex issues around the management of participating life insurance business that we have not attempted to address in this paper, but regardless of the complications, the concepts covered in this paper remain valid. For unit linked business, investment management is largely a compliance exercise, to ensure that the unit linked assets are invested as per communications to policyholders. Nevertheless, investment management decisions are required in respect the shareholder capital backing the business.

In all lines of business, Other Liabilities require some consideration, to ensure that no inadvertent asset-liability mismatches arise.

Finally, the Appointed Actuary can play an important role in identifying "alternative" asset classes that address particular liability risks. For example, a longevity swap (as an alternative to traditional reinsurance) could reduce risk in a lifetime annuity portfolio.

Appendix A - References

Understanding Actuarial Management and the actuarial control cycle (Chapters 12, 13 and 14)

Richard Fitzherbert : Investment Principles for Actuaries (Chapters 6 to 9 inclusive)

Actuarial Practice of General Insurance (Chapters 32, 33, 35 & 36)

IAAust's 1999 General Insurance Working Party Discussion Paper (Determining a minimum solvency standard for general insurers)

Ashby, Sharma and McDonnell : Lessons about Risk: Analysing the Causal Chain of Insurance Company Failure 2003

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Barton Waring : Liability-related Investing II : Journal of Portfolio Management January 2005

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IAAust : Code of Professional Conduct

HMD Kemp ; Risk Management in a Fair Valuation World : Institute of Actuaries (London) 25 April 2005

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AM Best Publishes 27-Year Life/Health Insolvency Study, Best's Insurance News, 30 December 2004

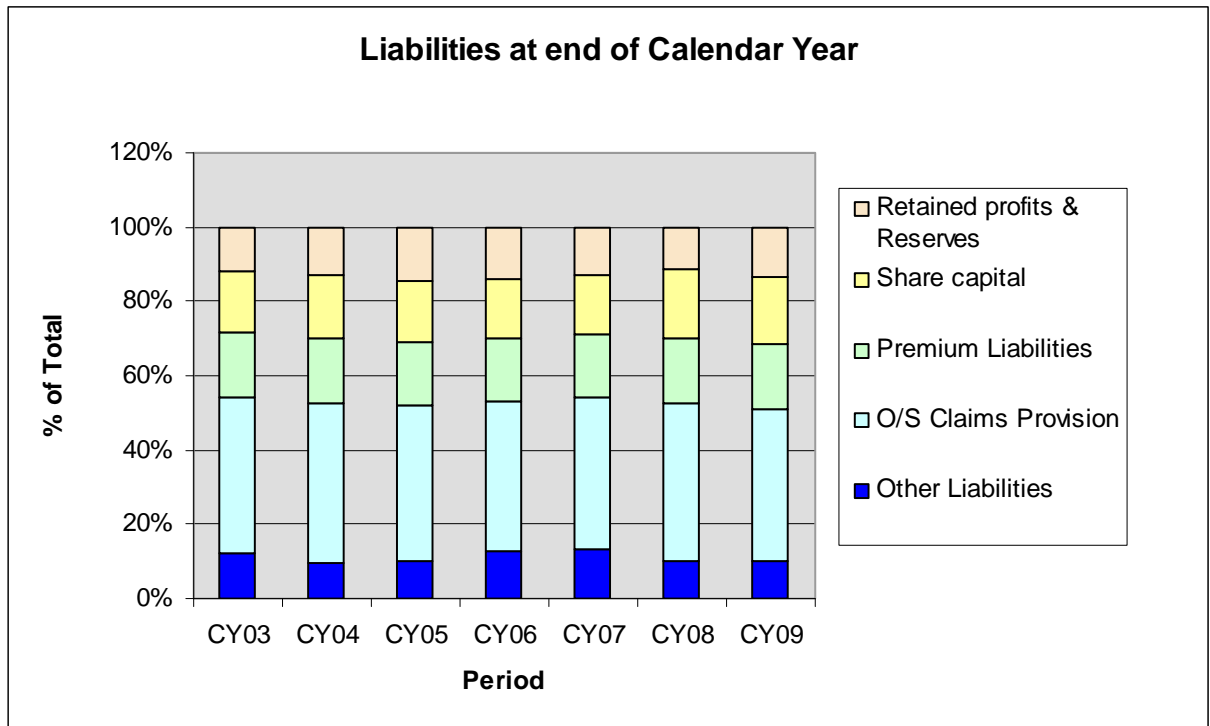
Best's Insolvency Study: Property/Casualty Insurers 1969-1990, Best's Review, 1 August 1991

Appendix B - Investment-related characteristics of the major insurance classes

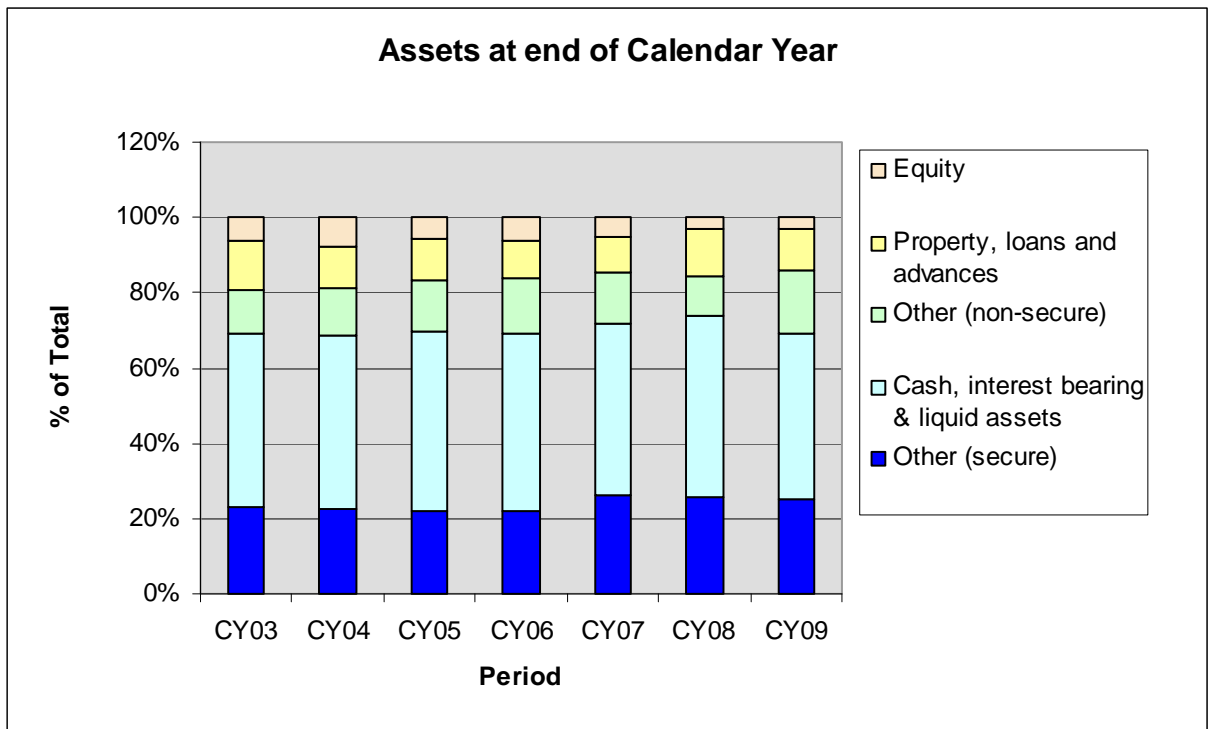
B.1 General Insurance

The policy and premium liabilities of General Insurers are outstanding claims (which can vary between insurers substantially both in term and the nature of the payment, but perhaps average about 3 years over the whole industry) and unearned premiums (which generally average about 4 months of earned premium income in term). Reinsurance recoveries and premiums payable can constitute material balance sheet amounts for some General Insurers. Outstanding claims in some classes of General Insurance can increase by both inflation, and super-imposed inflation, which create issues for matching of these liabilities.

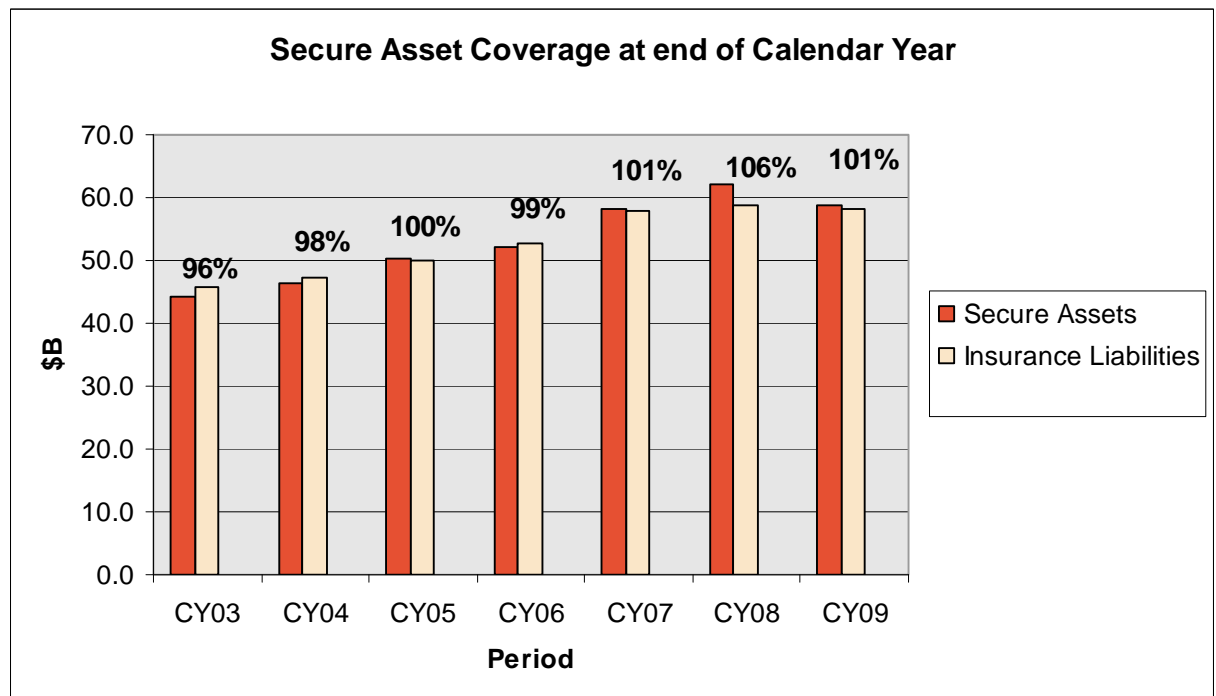
The General Insurance industry’s liabilities, assets matched position and approximate annual investment return over the last seven calendar years is as follows (based on publicly available APRA data):-



The chart shows that the liabilities of the direct General Insurance industry have been composed consistently over the past seven years. On average, premium, policy and other liabilities constitute about 70% of total liabilities, with share capital and retained profits accounting for the other 30%.



The chart shows that about 70% of the General Insurance industry’s assets can be classified as “secure investments”, closely in line with the premium, policy and other liabilities.



The chart shows that the General Insurance industry’s coverage of its premium, policy and other liabilities by its assets has been close to 100% over the last five years, increasing to 106% at 31 December 2008, the height of the GFC. These liabilities do not include regulatory capital.

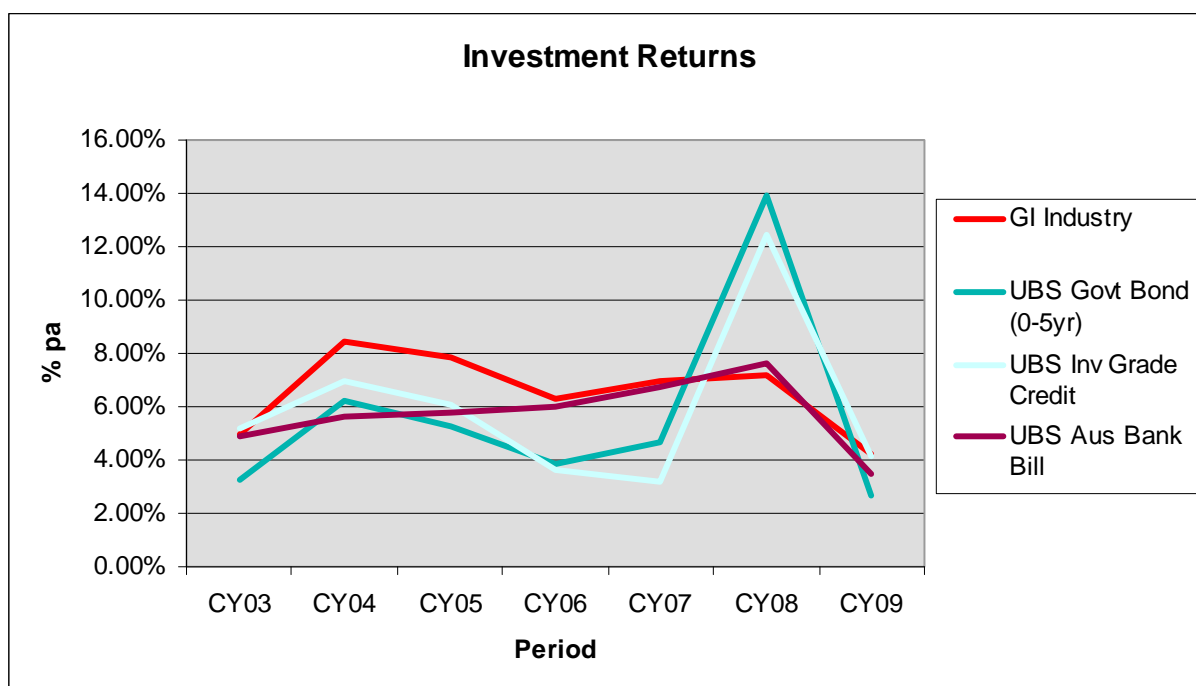
Based on the available APRA data, we have estimated the rate of investment return earned on the investments of General Insurers for the calendar years shown.

TABLE B.1

General Insurance Industry Investment Return (% pa)

	CY03	CY04	CY05	CY06	CY07	CY08	CY09
GI Industry	4.9%	8.4%	7.8%	6.2%	6.9%	7.2%	4.2%
UBS Govt Bond (0-5yr)	3.2%	6.2%	5.2%	3.8%	4.7%	13.9%	2.7%
UBS Inv Grade Credit	5.2%	7.0%	6.1%	3.6%	3.2%	12.5%	4.1%
UBS Aus Bank Bill	4.9%	5.6%	5.7%	6.0%	6.7%	7.6%	3.5%

The table compares the approximate gross of tax investment return earned on General Insurance assets overall with the gross of tax return from a comparable UBS Australian Government Bond index, a Credit Index and a Bank Bill Index. The table appears to show that the General Insurance industry was in aggregate invested shorter than the Government Bond Index, with the result that higher rates of investment return were earned in CY 2006, CY2007 and CY2009, and a lower return in CY2008 than the Bond Index. The estimated rates of investment return and the indices are graphed below.



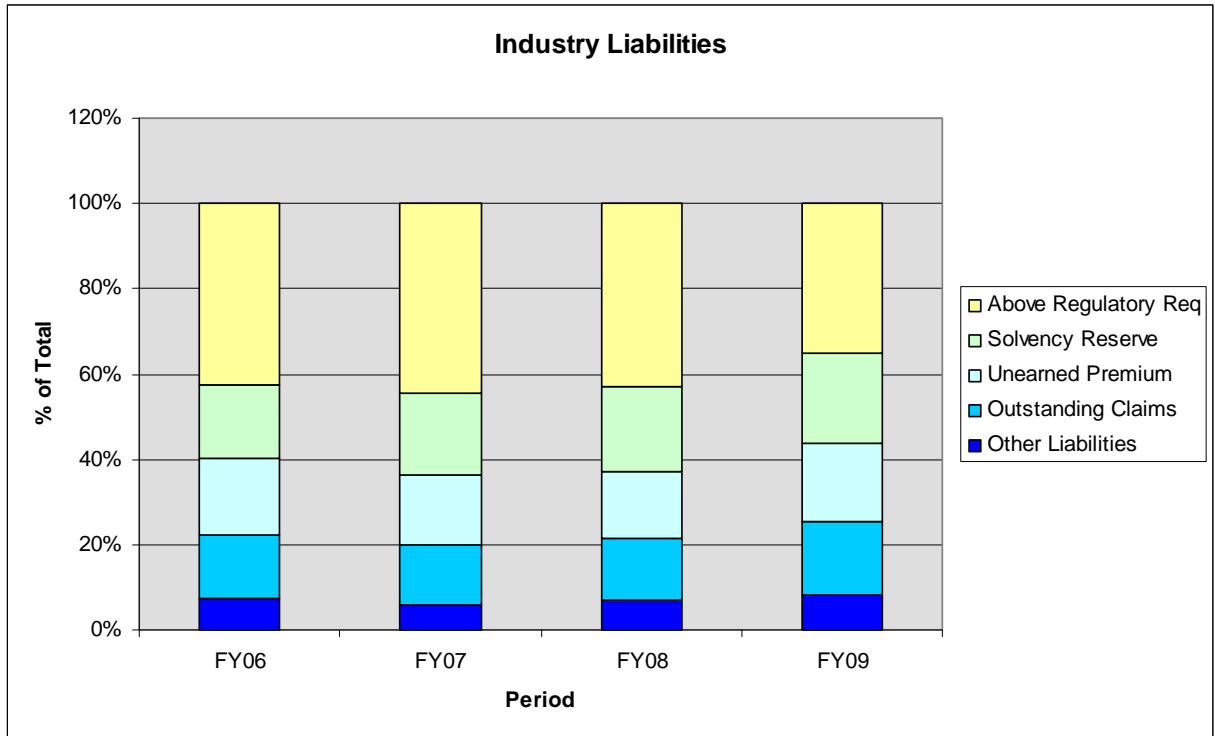
The graph contrasts the stable estimated rates of investment return for General Insurers with the relatively stable Bank Bill index, and the less stable Bond Index. We understand that, due to the listing of the major General Insurers (either in Australia or overseas) and the associated need to avoid profit volatility from investment related causes (there's sufficient volatility from underwriting events, underwriting cycle and business strategy), the major General Insurers are managed with the objective of achieving stable investment profits (and to a less extent of matching investments with liabilities).

B.2 Health Insurance

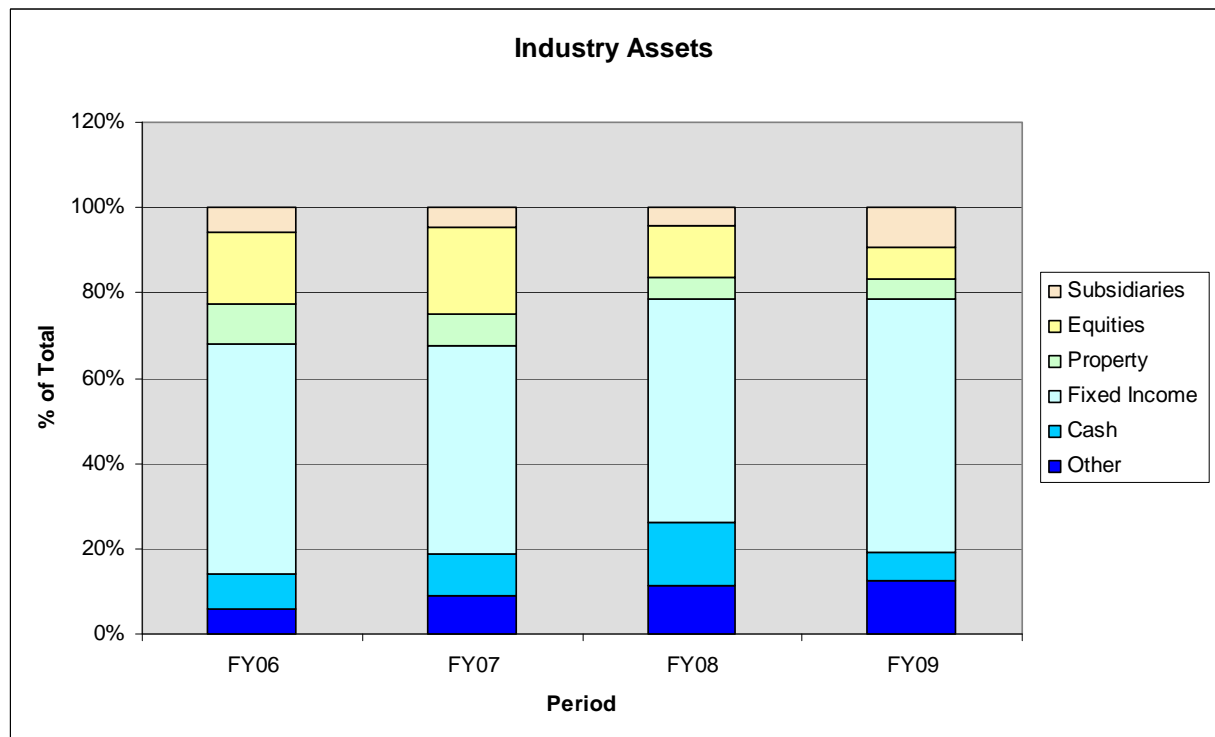
The policy and premium liabilities of Health Insurers are outstanding claims (the majority of which are paid within three months of the service date, and all of which must generally be paid within four years of the service date) and unearned premiums (which generally average about one to three months in term, and generally cannot be longer than 12 months). Private health insurance (PHI) is both unfunded, and community rated, with increases in claims arising from all of age based, service cost and age standardised utilisation needing to be funded by increases in (community rated) premiums, which are increased from April each year under a Government run "verification" process. Assets are valued at market price for both financial statement and regulatory purposes.

PHIAC data shows that the industry's underwriting margin for FY09 was 3.2% of annual earned premiums, with claims costs being 86.8% of premiums, and management expenses 10.0% of premiums (PHI is substantially retail, non-intermediated). While nominally 71% of insurers are "for-profit", only one insurer is owned by "for-profit" shareholders (the listed NIB), as other "for profit" insurers either reside in not-for-profit group structures, or are Government owned (Medibank Private).

The PHI industry's liabilities, assets, matched position and approximate annual investment return over the last 4 financial years is as follows:-

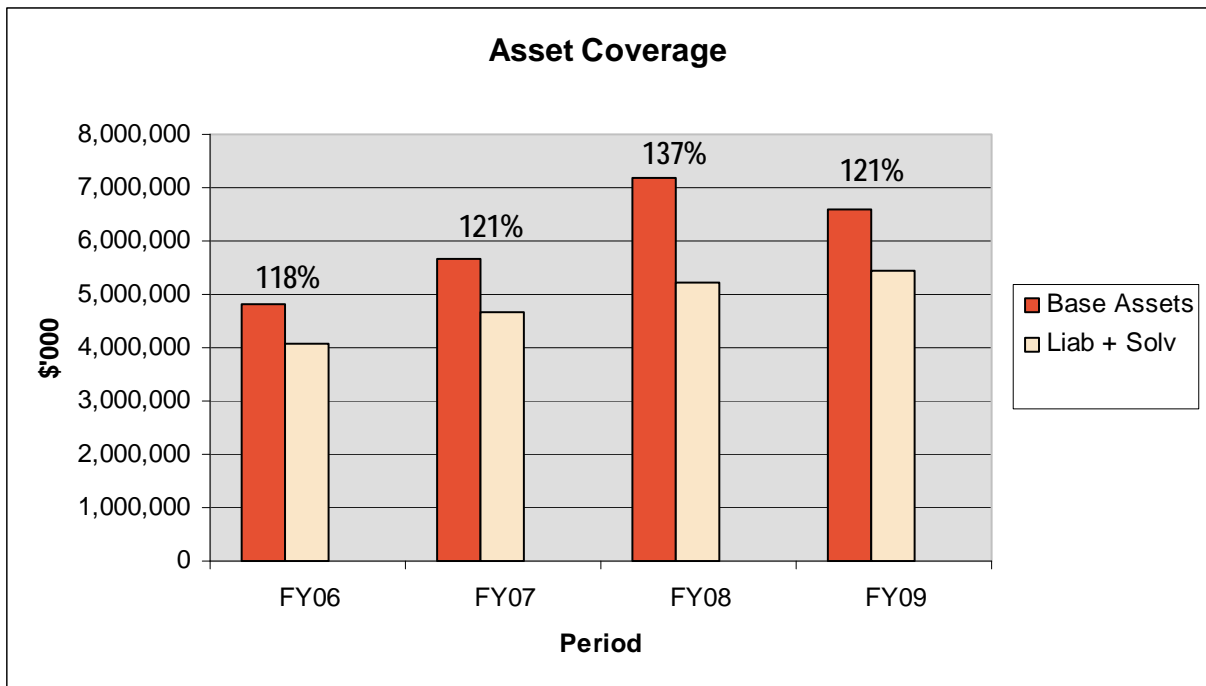


The chart shows that the health insurance industry has had a relatively consistent liability structure over the last four years, except that capital above the regulatory requirement decreased in FY09. The percentage of total liabilities made up by premium and policy liabilities has been in the range 30-35% of total liabilities over this period. Regulatory capital is required as a result of the premium setting process which involves insurers setting premiums which are forward guaranteed for between 18 and 30 months.



On the assets side, it is interesting to see the industry’s allocation to equities investments consistently dropping from FY07 to FY09, the build up of cash to FY08, and the investment of FY08 cash in fixed income which has occurred in FY09. This indicates that some insurers are engaging in tactical asset allocation, at least at the margin. The allocation to property investments also seems to have reduced over this period.

The chart below illustrates the coverage of the industry’s Liabilities plus Solvency Reserve by “Secure Assets” which we have defined as “other assets, cash and fixed income”.



The industry’s liabilities have been well covered by its secure investments, particularly due to its substantial fixed income investments. While Liabilities plus Solvency Reserve have been increasing at about 10%pa over the last four years, Secure Assets increased in FY08 when substantial amounts were held in cash, and have shown a significant decline in FY09.

TABLE B.2

Estimated investment return for industry (% pa)

FY06	FY07	FY08	FY09
7.7%	10.5%	0.7%	-1.2%

Investment returns for the industry as a whole have varied substantially over the last four years, and between insurers in individual years. These rates of investment return (although related to financial

years rather than to calendar years which are used for the estimated investment returns for General Insurers) show increased volatility when compared to the General Insurance industry overall.

The PHI industry's major (end of financial year) balance sheet items (expressed as a % of annual earned premiums), are as follows:-

TABLE B.3

PHI industry balance sheet items as a percentage of earned annual premium

	FY06	FY07	FY08	FY09
Outstanding Claims	10.3%	10.6%	10.7%	10.8%
Unearned Premium Liability	12.2%	12.1%	11.7%	11.8%
Solvency Reserve	11.9%	14.7%	15.1%	13.7%
Investments	60.7%	65.2%	63.4%	50.1%

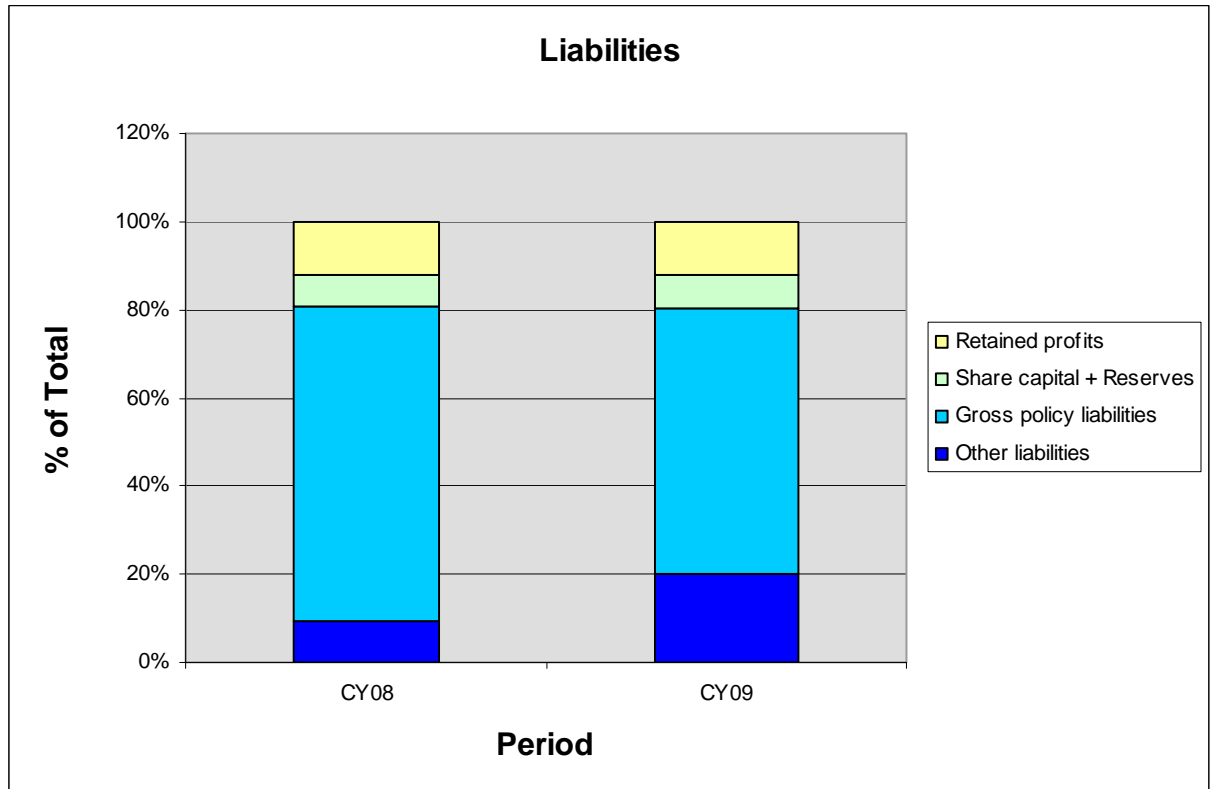
The table shows that the industry's outstanding claims and unearned premiums have been stable over the last four years (expressed as a percentage of annual earned premiums). Solvency Reserves (expressed as a percentage of annual earned premiums) increased substantially from FY06 to FY07. Investments can generally be expected to be around 50% of earned annual premiums. Therefore an additional sustained 1% annual return on those investments is equivalent to about a 0.5% reduction in annual premiums.

B.3 Life Insurance

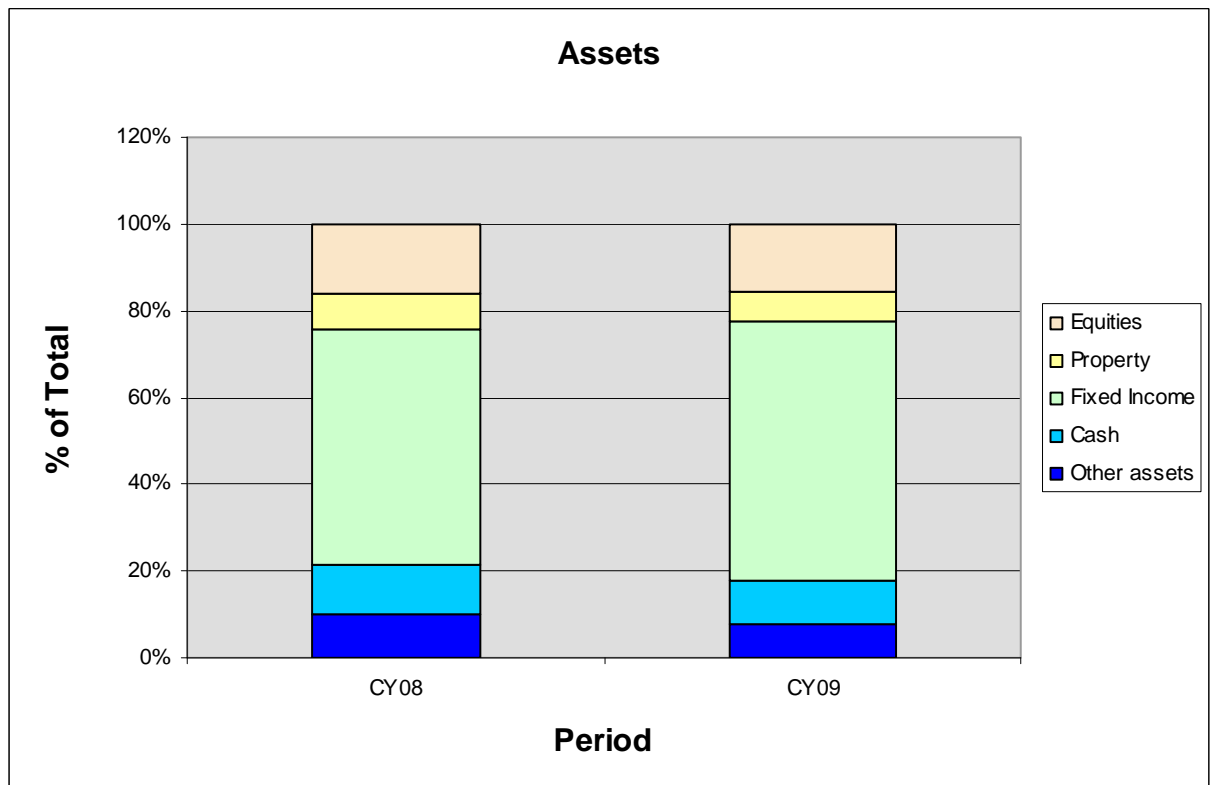
Life Insurance industry statistics published by APRA prior to the June 2008 quarter did not provide details of investment return or breakdown revenue account data by shareholder funds / linked statutory fund / non-linked statutory fund. This limits the ability to meaningfully analyse industry investment performance.

Commencing with the June 2008 quarter, however, the format of quarterly statistical reporting changed. Below we set out some key measures based on the latest release, which includes data up to the December 2009 quarter. Here, we have focussed on the non-linked statutory fund segment of the industry.

The Life Insurance industry's liabilities, assets, "matched position" and approximate annual investment return for the last calendar year is as follows:-

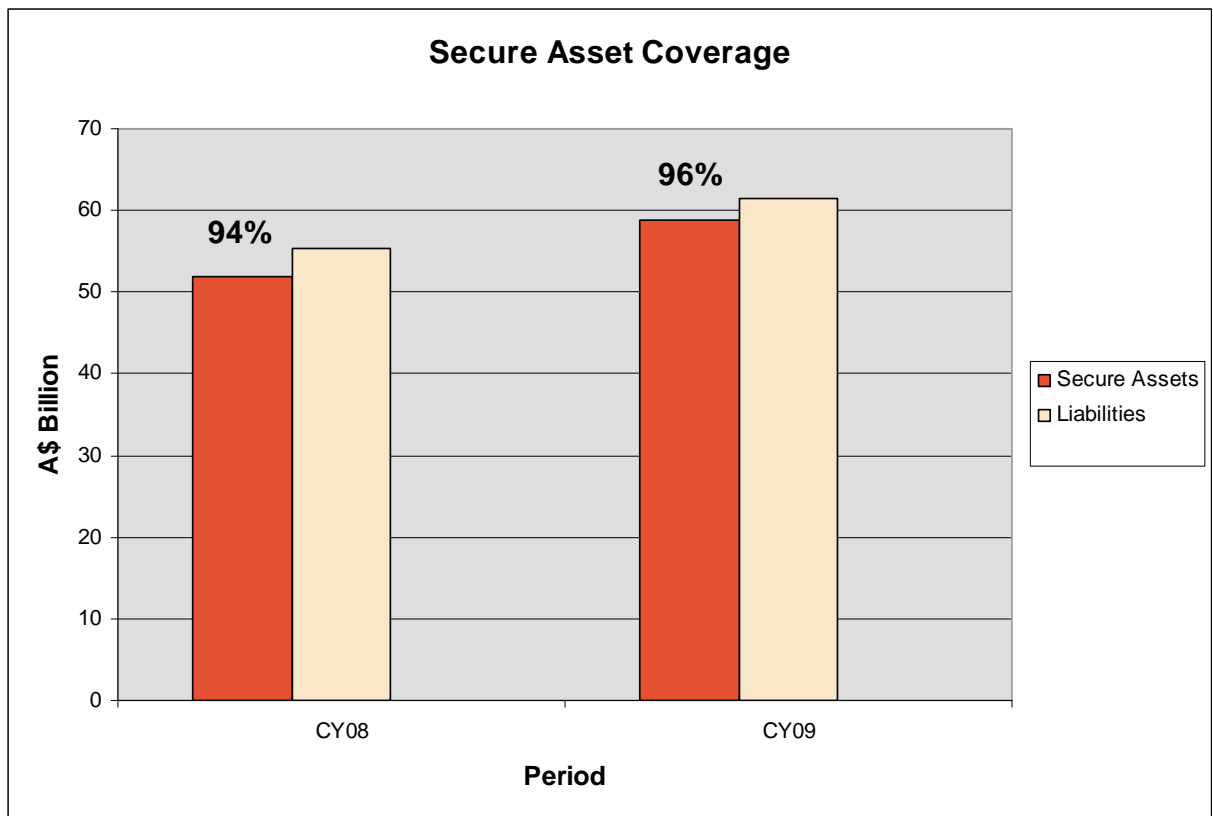


Apart from a very large increase in Other Liabilities (which occurred between the June and September quarter ends), the mix has been relatively stable over the year.



On the assets side, again the position was relatively stable with the most significant change (in dollar terms) being an increase in Fixed Income (which occurred between the June and September quarter ends and roughly matched the increase in Other Liabilities mentioned above). Equity holdings also increased in dollar terms, but with total asset increasing by over 10% in the year the proportion remained broadly unchanged. (In the chart, “other assets” include reinsurance policy liabilities.)

The chart below illustrates the coverage of the industry’s Policy Liabilities (net of reinsurance) plus Other Liabilities by “Secure Assets” which we have defined as “other assets (excluding reinsurance policy liabilities), cash and fixed income”. We recognise that this is less meaningful than the equivalent analysis shown above for General Insurers and Health Insurers, but have included the results for information.



This shows that the industry’s “liabilities” (as defined) have been broadly covered by its secure investments.

Finally, we note that investment return for the industry as a whole, again looking at non-linked statutory fund business only, was 4.0% in 2009.

Appendix C - Legislative duties of Appointed Actuaries in investment-related matters

This Appendix summarises the prescribed investment related duties of Appointed Actuaries to General Insurers, Health Insurers and Life Insurers. The duties arise under Institute of Actuaries of Australia (IAAust) professional standards and guidance, and under the relevant insurance legislation and associated regulatory requirements. Appointed Actuaries may have wider investment-related duties arising from common law or other legal requirements, or as part of their job descriptions. These additional requirements are not covered in the material below.

C.1 IAAust Professional Standards

General Insurance

APRA Rules (GPS310) require the Appointed Actuary to “undertake an investigation to enable the preparation of a financial condition report...in respect of each authorised general insurer”, but do not include any specific investment related matters which need to be considered by the Appointed Actuary in preparing that report. Professional Standard 305 covers the provision of such advice, and mentions both liability related and asset related risks in Section 5.8 specifically as follows:-

5.8 Asset and liability management¹

5.8.1 An FCR must outline, consider and comment on Material issues arising from the Entity's approach to asset and liability management.

5.8.2 In undertaking this assessment, the Actuary must outline, consider and comment on Material risks arising from:

- a) the Entity's liability profile and liquidity needs;*
- b) the Entity's investment assets, in particular its investment strategy and the nature, quantum and performance of those assets;*
- c) the Entity's other assets, in particular reinsurance and non-reinsurance recoveries;*
- d) the Entity's insurance liabilities;*
- e) the Entity's non-insurance liabilities*
- f) the Entity's net assets; and*
- g) the methods for valuing assets and non-insurance liabilities, particularly, changes in those methods.*

¹ <http://www.actuaries.asn.au/NR/rdonlyres/0A2FF56A-1489-404F-BBF3-CB7D916B269E/2434/PS305FinancialConditionReportsforGIMarch06.pdf>

Interestingly, PS 305 does not specifically cover asset / liability mismatch risk.

PS 300 (Valuations of General Insurance claims) requires the actuary to adopt a discount rate based on the redemption yields of a replicating portfolio.

For work providing premium rate certification, in arriving at an appropriate assumption as to the rate of investment return, GN351 states that the actuary should consider matters including prospective market rates and the risk-free rate, the assets likely to be held by the insurer and the insurer's investment policy, and the investment management costs of that policy.

Health Insurance

The Insurer Obligations Rules under the Private Health Insurance Act 2007 require the Appointed Actuary to prepare a financial condition report in accordance with Guidance Note 670, which states as follows:-

INVESTMENTS²

46. The Appointed Actuary should provide some general comments on the appropriateness of, and any recent changes to, the health insurer's investment policy.

47. Where appropriate, the Appointed Actuary should report and comment on:

- *inadmissible assets*
- *mix of assets by sector type*
- *mix of assets by quality (level of security)*
- *mix of assets by category and sub-category*
- *asset concentrations – by investment type*

48. The directors are responsible for the values to be placed on the assets in the health insurer's balance sheet. The Appointed Actuary should consider and comment on the methods by which those values have been obtained and their appropriateness for the purpose of the investigation. The Appointed Actuary should comment on any significant changes in the method of valuation of the assets.

49. Particular care needs to be taken when assessing the value of assets dependent on income from the health insurance business. In times of adversity for health insurers, the realizable value of a private hospital asset, for example, may fall substantially.

Except in the case of related party investments, GN 670 makes no reference to risk in relation to a health insurer's investments, and does not link the insurer's assets to its liabilities.

² <http://www.actuaries.asn.au/NR/rdonlyres/000E9320-92CD-4495-BD19-2F56FFD96AF5/2497/GN670FinancialConditionReportsforHealthInsurersJul.pdf>

Other IAAust guidance requires the Appointed Actuary:-

- under GN 650, to be familiar with the insurer's assets and investment policy (when estimating outstanding claims and projecting the insurer's future financial experience); and also
- under GN 660, when projecting the insurer's future financial experience to understand the current investment mix of the Health Insurer and any likely changes to the mix (assumed earning rates for each asset class should be obtained from relevant personnel and assessed for appropriateness).

Life Insurance

APRA Rules (LPS310) require the Appointed Actuary to provide advice on the financial condition of the life insurer but do not include any specific investment related matters which need to be considered by the Appointed Actuary in providing that advice. Professional Standard 200 covers the provision of such advice, Section 7.4 specifically links the insurer's investments to its liabilities as follows:-

7.4 Assets³

7.4.1

Subject to any statutory regulations, the responsibility for investment policy rests with the directors of the Entity. However, the Actuary must decide whether, in his or her judgment, the investment policy pursued by the directors is, or could become, inappropriate having regard to the nature and term of the Entity's liabilities. The Actuary must, in the report to the Entity, advise what constraints on investment policy he or she regards as necessary to protect policy owners.

7.4.2

The financial condition of an Entity depends fundamentally on the relationship between the nature and term of the assets and the corresponding liabilities. In considering this relationship, the Actuary must assess and report on the financial consequences of:

(a) the mismatching of assets and liabilities;

(b) any guarantees and options (including surrender) available under policies and the likely effect of the exercise of these options on the Entity;

(c) the marketability/liquidity of the assets in circumstances when they may be called upon to meet policy proceeds, especially when exercised under a guarantee or option;

(d) any asset default/credit risks; and

(e) any financial derivative exposures held.

7.4.3

The Actuary must also report and comment on:

(a) the inadmissible assets (for capital purposes) of each statutory fund;

³ <http://www.actuaries.asn.au/NR/rdonlyres/CAF576BB-80D8-42E8-BCDC-4C2298414515/3635/PS200March2008.pdf>

(b) the mix of assets by sector type for each statutory fund; and

(c) the mix of assets by quality (level of security),

having regard to the nature and term of the liabilities. The Actuary must comment on the reserves to cover any of the above and must comment on whether or not those reserves have been determined in accordance with the requirements of the APRA Rules.

7.4.4

As in the case of investment policy, the responsibility for the values to be placed on the assets in the Entity's balance sheet rests with the directors. The Actuary must consider and comment on the methods by which those values have been obtained and their appropriateness for the purpose of his or her investigation. The Actuary must comment on any significant changes in the method of valuation of the assets. Where the Actuary considers that the values are unsuitable in any respect, reasons must be given and an appropriate liability adjustment and capital reserve established in accordance with the APRA Rules.

In preparing economic valuations of life insurance business (GN 252), the actuary is required to consider the consistency between the economic model and risk allowance model, for example inconsistent investment return assumptions and risk discount rates, or between investment return assumptions and asset values.

Apart from the requirements above for financial condition reports and economic valuations, there are no other investment related requirements for life insurance related actuarial advice which are specified in IAAust standards or guidance.

C.2 Legislative & Regulatory Standards

General Insurance

The scenario under which solvency is tested under the regulatory capital standards for General Insurance is when the assets of the insurer are insufficient to meet their insurance obligations. The prudential standards for capital adequacy, GPS 110, for general insurers dictates that insurers must hold a minimum capital requirement ("MCR") to meet their insurance obligations under a range of scenarios. In addition, they must hold a capital buffer ("eligible capital") to ensure insurance obligations can be met under a going concern basis.

Prudential Standard GPS 310⁴

Other than in relation to preparation of the FCR, the Appointed Actuary has no asset related responsibilities for a General Insurer (other than a run-off insurer).

⁴ <http://www.apra.gov.au/General/upload/Final-GPS-310-July-2008.pdf>

For a run-off insurer, the Appointed Actuary “must review the insurer’s run-off plan and provide a report indicating the Appointed Actuary’s opinion as to whether the run-off plan and the supporting financial projections are reasonable and adequate having regard to the nature of the insurer, its historical performance and expected future trends in the industry. Where the Appointed Actuary believes the assumptions made in the run-off plan and the supporting financial projections are not reasonable or adequate, the Appointed Actuary must propose recommendations designed to address the issues.”

Health Insurance

The scenario under which solvency is tested under the regulatory capital standards for Health Insurance is the termination of the Health Insurer, which is a prescribed process covered in the Private Health Insurance Act (Section 149).

Private Health Insurance (Insurer Obligations) Rules 2009

The detail of the obligations of the Appointed Actuary are set out in the Insurer Obligations Rules which in turn refer to GN 670 covering financial condition reports. These Rules include the concept of Notifiable Circumstances, which are circumstances that the insurer is required to notify to the Appointed Actuary for the Appointed Actuary to consider if actuarial advice to the insurer is required. “Significant changes to the investment policies of the insurer” are a specified notifiable circumstance in the Rules. The Rules permit the Appointed Actuary to specify additional notifiable circumstances, as determined by the Appointed Actuary.

Life Insurance⁵

The scenario under which solvency is tested under the regulatory capital standards for Life Insurance is when the insurer’s assets are insufficient to meet their obligations to policyholders and other creditors.

The regulatory capital standards, LPS 2.04 and LPS 3.04, for Life Insurance dictate that the insurer must hold a minimum capital requirement to ensure obligations to policyholders and other creditors can be met under a range of adverse outcomes. In addition, they must hold a capital buffer to ensure reasonable expectations (as well as obligations) of policyholders and creditors are met in the context of a viable ongoing operation.

In Life Insurance regulation, actuaries have substantial additional investment related duties beyond those that apply when the FCR is prepared.

⁵ http://www.apra.gov.au/Life/upload/LPS-3-04_Nov2007.pdf

Section 2 of the Capital Adequacy Standard for Life Insurers (LPS 3.04) covers the scenarios of adverse conditions the Appointed Actuary must consider when establishing the Capital Adequacy Requirement. This is outlined below:-

SECTION 2 Scenarios of Adverse Conditions

...

2.3 In considering scenarios of adverse experience and adopting a basis for the Capital Adequacy Requirement, the Actuary must allow for all material risks associated with both the liabilities and the assets of the fund, including the interdependencies between these risks that the Actuary considers might apply under such adverse conditions. This is regardless of whether such risks are discussed in the rest of this Standard or not.

2.4 Where the particular combination of risks affecting a company is not explicitly considered within this Standard, the Actuary must establish additional amounts within the Capital Adequacy Requirement, beyond the amounts prescribed. The additional reserve must reflect the purpose and principles of the Standard. It must provide a level of reserving that is consistent with that applying under this Standard in respect of the risks explicitly considered under this Standard. For this purpose the Actuary may regard the prescribed requirements set out within this Standard, AS3.04: Solvency Standard 7 30 March 2006 when applied to a typical life company with the combination of risks explicitly considered in this Standard, as designed to provide a level of reserves which broadly meets the following requirements:

- a) Able to cover a combination of adverse circumstances that would be expected to arise once every 400 years;*
- b) Allowing a general time frame of 12 months in which the circumstances arise and the actions under (c) and (d) below follow;*
- c) Allowing a general time frame of 12 months in which the circumstances arise and the actions under (c) and (d) below follow;*
- d) The reserve required at the end of the period in (b) is able to be determined in accordance with the Capital Adequacy Requirement of this Standard, but allowing for the implementation of plausible risk reduction actions by management at, or after, that time (for example, raising premium rates, exiting risky asset positions or other arrangements as would be permitted). This includes allowance for discretions in line with paragraph 3.2. For those risks that cannot be eliminated, sufficient reserve will still be required as set out in this Standard; and*
- e) Allowance for management corrective action during the period in (b) is considered to be limited to highly reliable actions only, with conservative response time allowances.*

Section 5 of LPS 3.04 covers the asset risks the Appointed Actuary is expected to assess, an excerpt from this section is set out below:-

Section 5 Asset Risks

...

Holdings in Associated and Subsidiary Financial Services Entities

Associated and subsidiary Financial Services entities may be exposed to essentially the same environmental and systemic risks as the life insurer. The value of such an entity in excess of its net tangible assets cannot therefore be relied upon to meet the capital requirements of the life insurance company under adverse circumstances. Furthermore, the value taken for such a holding is not to double count any legislated capital requirement of the entity itself.

Asset Concentration

Diversification is an important principle of prudent investment. To the extent the asset exposure of a statutory fund is excessively concentrated in a particular asset, or with a particular obligor, a reserve is required against the part of the value of that exposure considered by the Actuary to be excessive.

Credit Risks

In general, it is considered that the combined effect of adopting the net market value of the assets and the reserves for asset concentration would address the average costs of default and marketability/liquidity risks. Where a fund has significant exposure to non-sovereign credit risks, the Actuary is to provide an appropriate reserve allowance for such credit risks, along with any other asset risks.

Liquidity Risks

The Actuary's general responsibility in assessing and advising management on the financial operations of the company would include consideration of liquidity risks.

Overall Asset Risks

Notwithstanding the prescribed limits of this Standard, the Actuary must have regard to the particular circumstances of the company. If in the opinion of the Actuary the overall portfolio of assets of the statutory fund has too little diversification, is too illiquid or has too great an exposure to one obligor of low credit standing, the Actuary must increase the reserves appropriately.

The IAAust Code of Professional Conduct requires that the Appointed Actuary has “appropriate knowledge and skills” in each of these specified areas.