

CHANGES TO THE SYLLABUS AND CORE READING FOR SUBJECT CA1 FOR THE 2008 EXAMINATIONS

1 Changes to the Syllabus and their impact on Core Reading

The following Syllabus objective has been removed:

3.5.7 Describe how asset modelling can be used to project the main features of the behaviour of market price levels and total return.

Along with Section 7 of Unit 7

Syllabus objective 3.6.2 has been changed to:

3.6.2 Discuss the different methods for the valuation of investments and demonstrate an understanding of their appropriateness in different situations.

This has not resulted in any changes to the Core Reading.

2 Changes to Core Reading

Units 1 and 2 have been revised and are attached.

The only other changes that have been made to the Core Reading are to correct typographical errors and improve the style.

UNIT 1 — HOW TO DO A PROFESSIONAL JOB

Syllabus objectives

- 1.1 Describe how actuaries can contribute to meeting the business needs of their clients and other stakeholders.
- 1.2 Describe the statutory roles that may be required of actuaries.
- 1.3 Describe the factors and issues to be taken into account when doing a professional job.
- 1.4 Describe the Actuarial Control Cycle and explain the purpose of each of its components.
- 1.5 Demonstrate how the Actuarial Control Cycle can be applied in a variety of practical commercial situations.

1 How actuaries can contribute to meeting business needs

Actuaries help stakeholders to identify the financial risks they face and to manage and mitigate those risks.

Actuaries need to be able to assess, quantify, manage and monitor the risks inherent in financial structures, products, schemes, contracts and transactions that provide benefits on future financial events. In order to do this, they need to be able to:

- Use economic analyses to form judgements about future inflation and interest rates.
- Use data relating to future liabilities to estimate payments that need to be met.
- Build, parameterise, test and implement models.
- Handle assumptions in a critical manner.
- Build appropriate margins into assumptions and appreciate the impact of such margins.
- Project and discount future cashflows using assumptions.
- Calculate the contributions required to build up a fund over time to meet future liabilities.
- Monitor the progress of the accumulation of a fund.
- Analyse the variation between the actual and expected experience.

- Manage the variation in the progress of a fund to ensure that future liabilities are met.
- Handle data in a critical manner.
- Manage the build up of assets to meet future liabilities.
- Contribute to decisions on investment policies aimed at meeting future liabilities.

As professionals, actuaries have other roles less closely related to risk management and analysis. An actuary should also be able to:

- Participate with the Government in shaping legislation that affects financial structures, products, schemes, contract and transactions that provide benefits on future financial events.
- Work with other professionals to solve problems.
- Understand where and when the expertise of other professionals is needed.
- Operate within an environment that requires professionalism, scrutiny and transparency in the disclosure of information.
- Apply the highest standards of independence and due diligence to protect the public interest. There should be no conflict of interest for an actuary in working for a client and at the same time serving the public interest.
- Communicate the results of all his/her work.

Under the Professional Conduct Standard of the Faculty and Institute of Actuaries, actuaries must not give advice, unless:

- satisfied of personal competence in the relevant matters, or
- acting in co-operation with, or with the guidance of, someone with the requisite competence

2 Statutory roles

In some territories there are statutory roles that can only be taken by actuaries. The statutory roles for actuaries mainly relate to the certification of the adequacy of the valuation of assets and liabilities for a life insurer, general insurer or pension scheme. The actuary is usually required to certify some or all of the following:

- In his or her opinion proper records have been kept for the purpose of the valuation of the liabilities.
- Proper provision for the liabilities has been made.

- The liabilities have been valued in accordance with any legislative rules setting out the method and assumptions for their valuation.
- The liabilities have been valued in the context of the assets, which in turn have been valued in accordance with the appropriate rules.
- In his or her opinion the premiums/contributions for future years will be sufficient, on reasonable actuarial assumptions, and taking into account the free assets of the provider to enable it to meet its commitments in respect of the contracts written, or pensions promised.
- A statement of the difference between the value of the provider's assets and its liabilities.
- He or she has complied with professional guidance notes.

3 Factors and issues when doing a professional job

3.1 Being a professional

Professionalism is the way in which an actuary carries out the work and presents the advice resulting from the use of the skills acquired through this course and beyond. As a professional, an actuary will be required to make decisions and take personal responsibility for those decisions. An actuary must act with integrity and with detachment from his or her own personal circumstances. An actuary must also develop a direct, personal and trusting relationship with a client in order to advise on the most suitable solution for that particular client. An actuary must also recognise that the views of others (including other actuaries) may differ from his/her own and that the other views may be valid.

A professional must achieve and demonstrate competence in his/her specialised skill, and its practical application, in order to build the trust of clients and the public in the advice that is presented. Additionally, an actuary should also maintain and improve competence in the skills that are necessary to provide actuarial advice.

An actuary should also be reliable — in particular this means delivering a work product that meets the client's requirements in terms of detail, quality and timeliness. Timeliness is often a major issue. An actuary should not promise to complete work in unrealistic timescales that might prejudice the detail or quality of the output. In the event that it becomes clear that the actuary cannot reconcile the detail, quality and timeliness of the work required, discussions with the client should be started at the earliest opportunity.

3.2 Know your client

When carrying out a professional task it is vital that the actuary knows who the client is. This involves:

- The need to have sufficient background about the client to put the task into context.
- The need to know for whom in the client firm the work is being performed.
- The need to know if there are any conflicts within the client firm — is the actuary advising for one side of an argument.
- What complaints procedures will be in place?

For an employed actuary the client is obvious, but the other issues still need to be considered.

Client agreements are becoming more common. These set out in writing the terms of reference for a particular task and outline the output to be delivered to the client. The terms of reference will then be agreed with the client to ensure that the actuary is carrying out the exact task that the client is looking to see completed, in the required timeframe.

3.3 Conflicts of interest

In many situations, different actuaries will be advising different parties in relation to the same transaction. For example, in a takeover or merger, actuaries may advise the vendor and a number of prospective purchasers. It is important that the different advisers are independent, particularly as they might all be analysing the same data. Ideally this should be achieved by advisors declining to take on work if they or their firm are already engaged in work for another party in the same transaction, or have other knowledge of the transaction, perhaps through an earlier assignment. To achieve this it is essential for consulting firms to keep detailed records of assignments so that actual and potential conflicts of interest can be declared to prospective clients.

Occasions arise where conflicts of interest cannot be avoided. For example, a firm may be a specialist in a particular field, or there may be insufficient firms in a particular territory for each party to a transaction to use a different firm. In this case the actuaries must disclose the conflict to their principals and establish measures to secure independence of teams working for different clients within the firm. These measures are commonly called “Chinese walls”. Originally physical separation of the different teams sufficed, but it is now just as important to ensure that electronic data is also tightly ring-fenced.

3.4 The client’s customers

One of the more frequent conflicts of interest that an actuary may experience is between the interests of the client and the client’s customers. In an insurance scenario this would be between the insurer that the actuary is advising and the policyholders of the insurer; similar conflicts arise in other fields.

In some countries there is legislation or regulation to ensure that providers of financial products consider the interests of their customers. In the UK there is legislation that provides for unfair terms in contracts to be set aside, and a general regulatory requirement on regulated bodies to treat their customers fairly.

Where an actuary has statutory responsibilities, these frequently include the requirement to notify the regulatory authorities if the actuary believes that his client is acting in a way that would prejudice the interests of its customers. This requirement imposes a clear conflict of interest on the actuary. It is generally accepted that this type of requirement is necessary because of the complexity of financial products, their long duration, and the financial impact that unfair treatment could have on customers.

These conflicts are exacerbated by the fact that in many cases financial products and schemes have benefits or charges that can be varied at the discretion of the product provider. It is generally accepted that discretionary benefits and charges should not be too dissimilar from those customers were led to believe that they would receive when they entered into the contract or transaction.

There is no precise method of defining what customers were led to believe at the inception of a contract, but it is generally accepted that the main influences on policyholder expectations are:

- statements made by the provider, especially those made to the client in marketing literature and other communications
- the past practice of the provider
- the general practices of other providers in the market

3.5 The task

When carrying out a professional task an actuary needs to think through the project they are embarking upon. While proceeding through the task the end point needs to be considered:

- How will the results be reported in the business context and to whom?
- What will the implications of the results be and for whom?

The task may end with the reporting of results or the making of proposals. However in many circumstances the actuary will be involved with the implementation and ongoing monitoring of proposals. In this case the following need to be considered:

- How will the implementation of the results or proposals be monitored?
- What can be learnt from the actual outcomes and how they compare with those expected?

- How will the actuary convey the additional insights he or she has gained during the task to the client?
- What resources are required?
- Is the timescale for completion of the task reasonable?

It will be vital to establish whether the outcome of the task taken on is purely advisory or will include any implicit or executive decisions.

3.6 What is the problem?

Discussions will need to be held with the client to establish issues such as:

- Who owns the problem that needs to be addressed?
- A clear statement of the problem to be addressed.
- Can the “big” problem be broken down into a series of smaller problems?
- What are the questions that need to be answered?
- Will the answers be relevant in finding an optimal solution to the problem?

The actuary then needs to consider the following:

- Does he or she understand the questions asked?
- Is he or she competent to answer the questions?
- Have the questions been agreed with the problem-owner?
- How does the problem-owner want the answers to be presented?

3.7 Answering the questions

In answering the questions, the actuary needs to have access to all the relevant facts. Where insufficient facts are available, is there other experience that could be used? If other experience is available what evidence is there to support the relevance of this experience to the current task? The actuary also needs to agree who will review his or her answers to the questions. If possible a peer review of the actuary’s work by another actuary or suitably qualified professional, before submission to the client, should be built into the process.

3.8 Assumptions

Any assumptions to be used will have to be determined. The effect of these assumptions on the answers must be considered. A means of recording the assumptions made will be needed. This will enable testing of them against future experience and may generate a feedback loop into the actuarial control cycle.

3.9 Methodology

The methodology to be used will need to be chosen. If this is not a standard methodology, then justifications for departing from standard methodologies will need to be given. If it is not clear to others how the chosen methodology works this may cause problems later when the results are reviewed and presented.

3.10 Checking the answers

When the answers to the questions have been found they will need to be checked and the following questions considered:

- Do the answers look reasonable?
- Do the sensitivity tests applied to the answers look reasonable?
- What range of answers is consistent with the level of confidence associated with the assumptions made?
- Has a peer reviewed the answers?

3.11 Communication of the answers

When communicating the solutions and the options and issues raised in developing them to the client, the actuary should always be aware who the client is. This may be particularly difficult where a client has more than one role. For example the trustees of a benefit scheme may also be representatives of the sponsor of the scheme. The actuary should make it clear whether the advice is being given to the client as the trustees or as the representatives of the sponsor.

Communication of the answers in a way that is understood by the client is vital. The means of communicating the answers must be designed to reflect the way the problem-owner listens. It is important to check that that the client has fully understood the answers.

The actuary needs to set out the solutions to the client as clearly as possible. Where there are optional solutions they should be presented in an unbiased fashion avoiding pre-judgement as to which is the best solution, unless the actuary is asked to make a clear recommendation.

The background to the solution, the assumptions adopted and any areas of risk and uncertainty should be clearly presented. However, care should be taken to avoid making the presentation of this background information so complicated that it becomes confusing and detracts from the solution.

If any issues arose in the production of the solution which could reduce the effectiveness or validity of the solution, for example difficulties in obtaining accurate data, the impact of these issues on the solutions put forward should be made clear to the client.

In communicating the answers an actuary needs to demonstrate how the answers given help to provide an optimal solution to the problem. Often the answers will give rise to more questions or more problems. The client may need to be guided carefully to the optimal solution. It is important to identify to the client where the original brief ceases and where further questions are giving rise to additional work (and in some cases additional fees).

It may also be necessary to give the output a health warning to the effect that the advice is given for a specific audience and may not be appropriate in other circumstances.

As with any form of communication, the actuary should know the client and the client's interests and pitch the language, tone and form of the communication at the appropriate level.

In reporting the results of an investigation to a client the actuary should take account of any professional guidance on the content and format of such a report.

3.12 Professional Implications

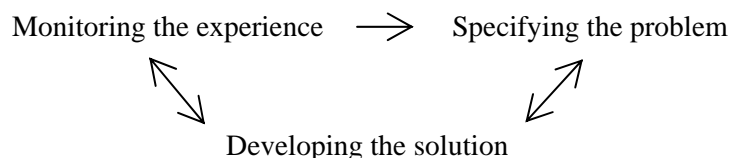
Throughout any task an actuary needs to consider the professional implications of the work being done.

4 The Actuarial Control Cycle

The Actuarial Control Cycle is a model that can be applied to many aspects of actuarial work. Like all models, it does not necessarily always fit the problem under consideration at all times or in all circumstances. However, like all good models, it is simple, and it helps the user to obtain a clearer understanding of the situation.

The Actuarial Control Cycle is a fundamental tool of risk management — the process of analysing, quantifying, mitigating and monitoring risks, and forms the overall structure of the bulk of this course.

The Actuarial Control Cycle can be represented diagrammatically, as:



The Actuarial Control Cycle is a “control” cycle for the following reasons:

- actuarial work usually includes all phases of the cycle
- actuarial work objectives, strategies, plans or standards are established, and

- subsequent performance can then be measured against these, to enable earlier decisions to be revised as appropriate

The term “cycle”, and the use of two-way arrows in the diagram, highlights the importance of monitoring and feedback, and the inter-relationships between elements of the cycle. In actuarial work, the feedback mechanism within the cycle is not an automatic process resulting in a pre-determined, unconscious adjustment, as happens in some engineering systems. The feedback mechanism in the Actuarial Control Cycle requires the actuary to exercise personal, professional judgement.

The Actuarial Control Cycle is “actuarial” because, although the underlying problem solving model is completely general, the Actuarial Control Cycle incorporates the following basic elements, which are common to all actuarial and risk management work:

- the estimation of the financial impact of uncertain future events
- a long-term rather than short-term horizon
- the recognition of stakeholders’ requirements and risk profiles
- decisions need to be made in the short term in the light of likely future outcomes
- the use of models to represent future financial outcomes
- the use of assumptions based on appropriate historical experience
- the need to allow for the impact of legislation, regulation, taxation, competition
- interpretation of the results of modelling to enable practical strategies to be developed
- monitoring and periodically analysing the emerging experience
- modifying models/strategies in the light of this analysis of the emerging experience

Additional inputs to the Actuarial Control Cycle are:

- the general commercial and economic environment
- professionalism

4.1 The general economic and commercial environment

This can be considered to be setting the overall scene so that the actuary is fully familiar with the context in which she or he is going to operate. It is likely that this context, or parts of it, will evolve over time.

4.2 Professionalism

Professionalism is also essential in setting the scene for the context in which the actuary will operate.

The basic principles of professionalism will determine the suitability of solutions to the problems raised.

General written guidance is provided in the “Professional Conduct Standards” (PCS). Also most of the main Guidance Notes themselves sum up the flavour of how various issues should be tackled and the way in which professional actuarial advice should be given. A reading of the PCS, and a variety of any of the other Guidance Notes, is therefore likely to

aid in the consideration of solutions. Knowledge of the technical content of Guidance Notes is not required until the Specialist Application Subjects.

Detailed consideration of the professionalism issues that may arise is not contained within the Core Applications course. It is however discussed in a two-day participative course that actuaries are required to attend within one year of completing the examinations.

4.3 Purpose of each of the components of the Actuarial Control Cycle

The central part of the model is based on a simple approach to problem solving — firstly, define the problem, then design and implement a solution, then monitor the effectiveness of the solution and revise it if necessary. The Actuarial Control Cycle must of course be considered in the context of the specific economic and commercial environment in which it is being used. For example, in a particular scenario it might be necessary to consider legislation, taxation, and economic trends. In addition the requirements of professionalism must be recognised at all stages of the cycle.

The following sections discuss the individual components of the Actuarial Control Cycle.

4.4 Specifying the problem

The first stage of the Actuarial Control Cycle is to analyse the risks of the various stakeholders in detail, and to set out clearly the problem from the point of view of each stakeholder.

This stage of the control cycle considers the strategic courses of action that could be used to handle the particular risks in question. It gives an assessment of the risks faced and how they can be managed, mitigated or transferred. This will reflect the desire of most institutions to manage their risk both in their core business and in activities incidental to their core business.

This stage also provides an analysis of the options for the design of plans that transfer risk from one set of stakeholders to another. These plans provide various benefits, normally in exchange for a cash premium or contribution. The Actuarial Control Cycle is used to determine the prices of the plans.

4.5 Developing the solution

This stage involves:

- An examination of the major actuarial models currently in use and how they may be adjusted for the particular problem to be solved.
- Selection of the most appropriate model to use for the problem, or construction of a new model.

- Consideration and selection of the assumptions to be used in the model. The assumptions used in a model are critical and it is necessary for the actuary to have a good understanding of their sensitivities.
- Interpretation of the results of the modelling process.
- Consideration of the implications of the model results on the overall problem.
- Consideration of the implications of the results for all stakeholders.
- Determining a proposed solution to the problem.
- Consideration of alternative solutions and their effects on the problem.
- Formalising a proposal.

4.6 Monitoring the experience

It is critical that the models used are dynamic and reflect current experience where that is relevant. This stage deals with the monitoring of experience and its feedback into the problem specification and solution development stages of the control cycle i.e. updating the investigation.

An important part of this monitoring will be the identification of the causes of any departure from the targeted outcome from the model and a consideration as to whether such departures are likely to recur.

5 Application of the Actuarial Control Cycle

Each of the common actuarial issues set out below are representative of the practical problems that arise in the areas in which actuaries work. Solving these problems is likely to involve the use of techniques and concepts introduced in the Core Technical subjects.

- Identifying the alternative investment and reinsurance options.
- Asset liability management.
- Defining the level of profit or solvency and future solvency.
- Assessment of the need for capital to protect against the consequences of risk events.
- Assessment of the need for and calculation of provisions.
- Determination of the contributions/premiums required to ensure that benefit promises payable on future financial events can be met.

- Determination and monitoring of mortality, expense and persistency assumptions for use within the design of and reserving for contracts or schemes.
- Monitoring the effect of investment mismatching.

Example

A life insurance company is about to enter the annuity market for the first time. It intends to sell without profits immediate annuities with higher annuities for those lives in ill-health.

Describe how the actuarial control cycle can be used in the pricing and ongoing financial management of the product. It is not necessary to discuss how the product might be administered.

Solution

Specifying the problem

The client will be transferring risk to the insurance company:

- Longevity risk will be transferred, as the annuity will be paid to the client however long he lives.
- Investment risk (including credit and market risk) will be transferred, as the client will receive a fixed income, irrespective of market conditions.

The problem is to determine appropriate premium rates that:

- deliver an acceptable profit to the company
- are competitive in the market place otherwise little business will be written,

bearing in mind that the company is new in the market and has little or no experience of the product.

Developing the solution

The company will need a pricing (or profit testing) model that can project the future development of this line of business in various circumstances. The model needs to be developed or acquired, or an existing model modified.

The first stage in pricing the product is to determine the initial assumptions about future experience.

The actuary will need to discuss the mortality basis with the underwriter to ensure that the underwriting decisions are consistent with the pricing basis.

The actuary will need to discuss investment returns and the appropriate matching assets with the investment managers.

Judgement will need to be applied as to the extent of any margin for prudence included in the reserving basis. The assumed reserving basis will also be an input to the profit testing of the product.

As this is a new development, the model will be run several times to test the sensitivity of premium rates and profit emergence to changes in assumptions. This is important data to have available for the monitoring stage.

The resultant rates will be compared with those available elsewhere in the market.

Monitoring the experience

After the launch of the annuities the experience will be monitored regularly to determine how it compares with the assumptions made at launch.

It may take time for significant volumes of data to build up, particularly if mortality experience is being monitored by type of illness. The smaller the volume of business, the greater the likely volatility of the experience.

If the experience differs markedly from the initial assumptions then revised assumptions may be determined. The product will be profit tested once more, which may lead to a change in premium rates. The experience may also lead to a change in reserving basis.

The experience should be discussed with the underwriters as it may indicate inconsistencies between the approaches taken by the underwriters and that assumed in the pricing assumptions.

Changes to the premium rates offered by competitors will also be monitored to ensure that the rates do not become uncompetitive. This may also lead to a change in the premium rates. The monitoring of the ill health enhancements offered by competitors may be difficult as the approach taken to grouping illnesses may vary significantly between companies.

It is possible that the company may find that it cannot offer premium rates that are both competitive and profitable, in which case it may withdraw from the marketplace. If the rates appear too competitive it may be an indication that the standard mortality assumption or ratings used are inappropriate, or that the market is not competitive, in which case larger profits can be made.

END

UNIT 2 — STAKEHOLDERS

Syllabus objectives

- 2.1 Identify the stakeholders actuaries advise.
- 2.2 Describe how stakeholders other than the client might be affected by any actuarial advice given.
- 2.3 Describe the functions of the clients and potential clients that actuaries can and may advise and the types of advice that actuaries might give to their clients.
- 2.4 Distinguish between the responsibility for giving advice and the responsibility for decisions.

1 The stakeholders actuaries advise

1.1 Possible stakeholders

There are many stakeholders whom actuaries can advise including:

- policyholders
- prospective policyholders
- members of benefit schemes and their dependants
- employers
- insurance company — board of directors
- insurance company — shareholders
- insurance company creditors
- trustees of benefit schemes
- sponsors of benefits schemes
- employees
- auditors of insurance companies
- auditors of the sponsors of benefit schemes
- government
- regulators
- investment fund managers
- members of investment schemes
- sponsors of capital projects
- banks

1.2 Risk Appetites and Markets for Risk

Different stakeholders will have different appetites for risk. This is true between the various classes of stakeholders listed above, but is also a feature within a particular class of stakeholder. For example one individual may have a speculative attitude to market risk, while another might be highly cautious. The speculative individual will be relaxed about

investing in emerging markets or highly geared funds, while the cautious individual would avoid any equity investment at all.

Risk appetite may be linked to other features of the individual or company, such as their existing exposure to the risk, but it may also be a feature of the culture of the company or the type of individual. In advising clients, it is important that the actuary has a good understanding of the client's risk appetite in all the relevant areas.

The fact that different entities have different appetites for risk enables there to be a market in risk, and for risk to be transferred between entities with a small appetite to those with a larger appetite. Almost all financial transactions can be simplified to a transfer of risk from one entity to another in exchange for a payment of money.

For example an individual is likely to have an appetite for theft of contents from his home that is lower than the value of the contents that might be stolen. The individual consequently pays a premium to an insurance company to transfer the risk to the insurance company. The insurance company has a greater appetite for the theft risk both because it is larger, and also because by pooling of risks the company can still have stable returns and make a profit from the premiums it charges.

2 Others affected by any actuarial advice given

It is important to identify all the stakeholders involved when any actuarial advice is given. In most circumstances different categories of stakeholder have different interests. In the majority of situations one or more stakeholders will remunerate the actuary, but there will be a number of other stakeholders with significant interests who do not contribute directly to the actuary's remuneration. In many cases the advice given to a client by an actuary will impact on other stakeholders. The actuary needs to consider the interests of all stakeholders, and not only those who seek (and pay for) advice.

It is important to consider all stakeholders because omitting a stakeholder will distort the context e.g. one stakeholder's risk can be a source of another stakeholder's gain. It is also necessary to retain a sense of proportion in considering who else may be affected by advice given.

The following three scenarios exemplify the range of stakeholders who might be involved in what initially seems a simple situation.

Where an actuary is advising the board of directors of an insurance company, which is planning a large expansion in business, that advice may have an impact on:

- The level of benefits that the company's policyholders receive.
- The level of premium charged to the company's new and existing policyholders.
- The level of dividend that the shareholders of the insurance company receive.
- The volume of new business the company can write.

- The level of taxes that the Government receives on the profits earned by the company.
- Other insurance companies that are competing in the same market.
- Reinsurance companies through the level of reinsurance business that the company requires.
- The employees of the insurance company through the employment benefits they receive.
- Job security for the employees of the insurance company.
- The work of the regulatory authorities that monitor the insurance company.
- Other insurance companies who may be required by legislation to contribute to a compensation scheme that pays benefits to the policyholders of insurance companies that fail.
- Employed sales staff and independent intermediaries.

Where an actuary is advising the trustees on the investment policy for the assets of a pension scheme that advice can have an impact on:

- the employer who sponsors the scheme
- the providers of capital to the sponsoring employer
- the members of the scheme
- the dependants of the members of the scheme

Where an actuary is advising an insurance company (A) that is taking over another insurance company (B) that advice can have an impact on:

- the shareholders of (A)
- the shareholders of (B)
- the policyholders of (A)
- the policyholders of (B)
- the employees of (A)
- the employees of (B)
- future policyholders

3 The interests and functions of the clients

The stakeholders listed above have a wide range of interests and functions that actuaries can provide advice on including:

- **Policyholders**
 - personal protection against death and illness
 - protection of property
 - investment
- **Members of benefit schemes and their dependants**
 - provision of benefits on future events such as death, retirement, illness, withdrawal
- **Employers**
 - protection against financial loss arising from the death or ill health of employees
 - protection of tangible assets
 - protection of intangible assets
 - provision of work related benefits that will attract and retain good quality staff
 - meeting legislative requirements
 - managing the costs of running their business
 - quantification of the amount of surplus capital in the business
 - investment of surplus capital
 - raising additional capital
- **Insurance companies — board of directors**
 - meeting legislative requirements for the management of the business
 - investing and managing the assets of the company
 - managing the liabilities of the company
 - determining the levels of provisions to hold to meet future liabilities
 - setting premium rates
 - ensuring that policy proceeds are paid
 - meeting policyholders' reasonable expectations
 - meeting the demands of shareholders
 - good corporate governance
 - obtaining appropriate and adequate reinsurance to protect the business
- **Insurance company — shareholders**
 - obtaining a good return on their investment commensurate with risk
- **Insurance company creditors**
 - certainty that the monies owed to them will be paid

- **Trustees of benefit schemes**
 - managing the assets of the scheme
 - paying the benefits promised under the scheme as they fall due
 - maintaining solvency
- **Sponsors of benefits schemes**
 - providing protection benefits that meet the needs of the members and their dependants
 - providing retirement benefits that meet the needs of the members
 - managing the cost of providing the benefits
 - meeting legislative requirements
- **Employees**
 - provision of protection benefits on death
 - provision of pension benefits on retirement
 - investment of surplus personal funds
- **Auditors of insurance companies**
 - assessment of long-term liabilities for life insurance companies
 - assessment of long-tail claims reserves for general insurers
- **Auditors of the sponsors of benefit schemes**
 - assessment of the future liability to pay benefits
- **Government**
 - setting legislation that impacts on the provision of financial products, schemes, contracts and transactions that provide benefits on future financial events
 - monitoring the adherence to this legislation
 - funding benefit provision by the state
 - monitoring the funding of benefit provision by the state
- **Regulator**
 - ensuring that regulatory requirements are met

Almost all the above relate to risk transfer of one form or another.

4 Advice vs decisions

There are different types of advice that can be given. These include:

- indicative advice — giving an opinion without fully investigating the issues - for example in response to a direct oral question
- factual advice — based on research of facts e.g. legislation
- recommendations — researched and modelled forecasts, alternatives weighted, recommendations made consistent with requirements.

There will also be occasions when other professionals need to be involved in providing the advice, such as accountants or lawyers.

Often in their work actuaries are giving advice to a client with a particular problem. Such advice will often set out alternative solutions and the implications of each solution.

The actuary will have made specific assumptions in reaching the advice and recommendations that are given. Part of the process of advising the clients will be to explain the reasons for making those specific assumptions to the client. The actuary should also explain the implications of the alternative solutions that may not have been recommended on both the client and other stakeholders who may be affected by them,

However at the end of any discussions it will be the client who decides which solution to adopt.

At all times the actuary should be aware of any conflict of interest. An example of when a conflict of interest could arise is when an actuary is advising both the trustees and the sponsor of a benefit scheme. The primary concern of the trustees will be the security of members' benefits whereas the employer will also be concerned about costs.

An example of where an actuary would only be giving advice would be in the recommendation of bonus rates on with profit policies to the Board of Directors of an insurance company in the UK, who will make the final decision on the level of bonuses to be declared. However, the actuary may have made some implicit decisions in formulating the advice, for example the grouping of policyholders for the purpose of bonus allocation. These implicit decisions should be disclosed as part of the process of giving advice.

Sometimes the actuary may be responsible for making a business decision. An example of where an actuary may actually make the decision is in the determination of surrender values under life insurance policies, where the policy wording permits.

Sometimes, an actuary may also have an executive role within an organisation and may be making decisions on matters such as provisioning, reinsurance programmes, asset allocation, etc. In such situations there is a danger that the actuary will take decisions based on his or her own conclusions and the actuary should seek further advice or peer review of the decision made.

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