INSTITUTE OF ACTUARIAL & QUANTITATIVE STUDIES

**Class:** MSc Semester 4

**Subject :** Actuarial Practice 2

**Chapter:** Unit 4 Chapter 12

**Chapter Name:** Managing capital - I

# Table of contents

# Table of contents

# 1 Capital Needs

**Capital management** involves ensuring that a provider has **sufficient solvency** and **liquidity** to enable both its existing liabilities and future growth aspirations to be met in all reasonably foreseeable circumstances. It also often involves **maximizing the reported profits** of the provider.

# 1 Capital Needs

*Individuals*

All individuals and corporations need **working capital**.

For individuals this enables them to survive the **financial consequences** of an unexpected event, such as their car needing repair. Individuals might also wish to **build up capital**, to save for a large future expense, such as a holiday or a child's marriage.

For common masses, the **amount** and **timing** of their income goes hand in hand with that of their expenditures. Hence the availability of capital allows people to overcome any timing differences between their income and expenses.

**Capital** also acts as a **cushion** against unexpected future events such as a sudden illness which involves high medical costs, or the loss of a limb which may lead to temporary periods of unemployment. Without capital, money needs to be **borrowed**. In developed economies **credit** is readily available to individuals through credit cards, with high rates of interest charged for unsecured loans. Even individuals with **poor credit history** can obtain loans, although the interest rate reflects the risk to the lender.

# 1 Capital Needs

***Companies***

Corporations need **capital** for very similar purposes to individuals – to deal with the **financial consequences** of adverse events, to provide a cushion against fluctuating trade volumes, or to **build up funds** within the company prior to a planned expansion.

**Trading companies** need capital for **cashflow management** to finance stock and work in progress, because they usually need to pay suppliers of goods and services before they are paid for the finished product.
In addition, all companies need '**start-up**' capital – to obtain premises, hire staff, purchase equipment etc., before they can start in business.

It is difficult for start ups to obtain capital easily. Usually, the amount of capital required is **underestimated** as well as the timing of the requirement, which is way before the business starts generating income.

# 1 Capital Needs

***Providers of financial services products***

A provider of financial services products has all the **same needs** for **capital** as other companies. However, the **long-term nature** of financial services products, and the **associated risks**, gives rise to additional capital requirements.

Estimating the **solvency** and **profitability** for long-term financial product providers is onerous compared to other companies such as a manufacturing company where assets and liabilities are easily identified and quantified.

For long-term products such as pension products, the pension contributions are received way before their payment commences. As a result, **provisions** need to be setup which is not easily quantifiable because of its subjective nature.

# 1 Capital Needs

***Providers of financial services products***

When a provider agrees to pay benefits on future financial events, there is a possibility that the event leading to payment will arise before the provider has had time to accumulate **sufficient funds** from premiums / contributions to pay the benefits. There is, therefore, a need for capital to support these risks.

For many products, the providers has high **initial expenses**. Matching these high initial expenses with high initial charges may not help as it affects the products marketing as high-up front charges do not attract customers.

Even when **initial expenses are not very high**, they may exceed the initial payment made by the customer, forcing the provider to have mismatched charges to recoup the initial expenses.

# 1 Capital Needs

**Start-up Capital and Development Expenses**

When taking on risks for the first time or when taking on a new type of liability, there will be **costs** for the provider in:

- setting up suitable management systems to administer the liabilities
- collecting premiums / contributions
- paying commission to third parties
- investment expenses
- administration expenses.

Until sufficient premiums / contributions have been collected, the provider will need to meet these **start-up costs from capital**.

If business volumes remain level, this additional capital can be **rolled forward** to the next tranche of business. If volumes increase additional capital will be required, while if volumes reduce some of this capital can be released. Thus, the **level of start-up capital** required depends on the volumes of business written.

# 1 Capital Needs

**Statutory and Solvency Requirements**

Long-term financial products, require the **establishment of provisions**. To get a realistic view of the level of capital required, these provisions could be calculated using **best-estimate** assumptions.

Because of the uncertainties generated by the long-term nature of financial products, most developed countries require financial product providers to hold a **minimum level of capital** in excess of the best-estimate value of the future outgo. This minimum capital requirement is normally defined in **legislation** or **regulation**, and there may also be rules on the required backing assets.

Solvency requirements for corporations normally require **sufficient capital** to be held in advance, rather than assuming it could be borrowed later when required.

At the start of an enterprise, or during a time of expansion, additional funding may be needed to maintain the statutory requirements.

Overtime, if the experience turns out to be in tune with the best-estimate assumptions, then the additional solvency capital will be released.

# 1 Capital Needs

However, if the company is expanding rapidly and business volume sold is high, then the rate of release of capital may not be sufficient to meet the **new business strain capital** requirements.

Because the main use of capital is to support risks taken on, a capital requirement regime should reflect the risks in the enterprise. The riskier the business, the greater should be the regulatory capital requirements.

**Investment Freedom**

Risks can be taken on by product providers by means other than issuing contracts.
For example, if a provider makes a decision not to hold a portfolio of assets that replicates its liabilities, its capital requirements will increase. This is because there is a danger that movements in investment markets and particularly in interest rates may result in the liabilities increasing by more than the assets. Capital will provide a cushion to absorb any deficits arising in this way.

**Financial Strength**

The financial strength of providers may be significant in determining **new business levels**. Financial strength may be rated as one of the key determinants used by potential clients and their advisers when deciding whether or not to place business with any particular provider.

# 1 Capital Needs

**Products with Guarantees**

The extent of guarantees in a product impacts the **level of capital** needed to cover the **risk of the guarantees** being in the money at the exercise date.

Higher the guarantee levels, higher the level of provisions required. Capital requirements also increase with the level of guarantees.

Guarantees and capital present have a vice-versa relation. The level of guarantees provided also depends on the capital available.

**Impact of the Accounts**

Companies can manage their capital to **smooth income statements** and improve the **solvency** and **matching position** of their balance sheet. In years with poor profits, capital can be released to pay dividends that match with those paid in the years with good profits. Providers of with-profit business can use capital to smooth bonuses from year to year.

# 1 Capital Needs

**Strategic Aims**

The capital available to a company will have a key role to play in helping the company to achieve its **overall strategic direction**.

As well as being a constraint on the amount of new risks a company can take on in its normal business operations, the level of capital held will impact **acquisitions, mergers and new ventures**.

A **measure of available capital** is thus a key tool in the management of any company, and particularly of a financial product provider.

# 1 Capital Needs

***The State***

The capital requirements of the State are different from those of companies and individuals.

**State- and government-sponsored organizations** do not need to build up capital because, in a developed economy, they can raise **taxes** or **borrow money** so that sufficient funds are available to meet government outgo. The State can **print money** if other methods of raising funds are insufficient, although printing money is inflationary in the long-term.

As a result, printing money is the least favored option. They would prefer borrowing or increasing the taxation in the country.

Private companies can also borrow, but their **cost of borrowing** is higher than that of the government, and the amount borrowed may be limited. Nevertheless, governments tend to build up and try to maintain **reserves** (often in gold or foreign currencies) to support fluctuations in the balance of payments and in the economic cycle.

Governments also need short-term funds because of timing differences between government income and outgo.

# Table of contents

# 2 How Providers Meet, Manage and Match Capital Needs

*Insurance companies*

All companies can increase their **working capital** by retaining **profits or surpluses** within the business and not distributing them as dividends or bonuses.

Paying dividends to shareholders, and bonuses to with-profit policyholders, is a means of transferring profits to them.

**Debt** and **equity capital** are other sources of capital along with retained profits.

- **Proprietary Companies**

A **proprietary company** may raise funds through the issue of shares or debt securities. Issues can be to existing shareholders (rights issues) or to new shareholders (tender offers, etc).

# 2 How Providers Meet, Manage and Match Capital Needs

## ❑ Mutual Companies

A **mutual company** has less access to the capital markets.

To start up, mutuals require someone to lend the **initial capital**, but without any requirement for the loan to be repaid unless profits emerge. There is then no liability for repayment that needs to be taken into account in the mutual society's balance sheet.

Mutual insurance companies can raise capital through the issue of **subordinated debt**, where repayment is subordinate to the calls from all other creditors, including policyholders.

# 2 How Providers Meet, Manage and Match Capital Needs

***Sponsors of benefit schemes***

The sponsor of a benefit scheme may be prepared to put up the **initial capital** for the arrangements, particularly those required to cover the **expenses** of setting up the scheme.

This is more like a voluntary altruistic gesture, by the employer running a scheme for his employees

# 2 How Providers Meet, Manage and Match Capital Needs

### *Microinsurance providers*

Microinsurance schemes may have capital support from the **State**, given their usual purpose of supporting individuals on low incomes.

### *Reinsurance*

Reinsurance helps with:

- Reducing the **amount of capital required**
- **Providing capital**

A provider can limit the amount of capital it needs by passing its liabilities to another provider through **reinsurance**.

Reinsurance helps with removing certain uncertainty associated with **claim payments**. Lower the uncertainty, lower is the capital required for backing the claim payments. The need for reinsurance usually decreases as the amount of free assets held by the provider increases.

# 2 How Providers Meet, Manage and Match Capital Needs

This is because the higher the number or value of free assets, the higher is the cushioning available against worsening of claims experience.

For example, a provider with assets worth $250m has a lesser need for reinsurance than someone who has assets worth $200m

Reinsurance companies can also contribute towards the **initial capital strain** of selling a block of life insurance business by contributing to the initial expenses by means of reinsurance commissions.

# 2 How Providers Meet, Manage and Match Capital Needs

*Matching and managing capital needs*

Matching and managing capital requirements is an area where actuaries are frequently called on to give advice.

The primary tool needed to do this is a model of both the **existing business** and also the **projected new business**. The model can generate the amount of capital needed for the provider's business plans to be achieved at a given **ruin probability**.

A **sophisticated model** will also consider any statutory or regulatory minimum capital requirements for the business throughout its lifetime.

# Table of contents

# 3 Capital Management Tools

***Financial reinsurance (FinRe)***

FinRe typically consists of **less transfer of risk** than other forms of reinsurance and is, as its name suggests, more motivated by **financial aims**.

Generally, the main aim of FinRe is to **exploit** some form of **regulatory arbitrage** in order to manage the **capital**, **solvency** or **tax** position of a provider more efficiently.

It frequently relies on the regulatory, solvency or tax position of a reinsurer, which may be based in an overseas state, being different from that of the provider. This is done in the form of a reinsurance contract between the reinsured and the reinsurer.

Financial reinsurance arrangements have historically been used to improve the **balance sheet** of a company by **crystallizing** the value of **future expected profits**.

However, the viability of such arrangements is much reduced (or eliminated) under regulatory regimes, such as Solvency II, which take credit for future profits.

# 3 Capital Management Tools

***Securitization***

Securitization involves converting an **illiquid asset** into **tradable instruments**. The primary motivations are often to achieve **regulatory** or **accounting** 'off balance sheet' treatment.

Typical transactions will be structured with an element of **transfer of the risk** associated with the value of the asset. This will result in any **potential loss** in value of the asset being capped.

Certain illiquid assets that can be securitized are:

- **Future profits** – on a certain product of in-force insurance policies
- **Mortgages**

These assets can be securitized into tradable instruments and can then be sold to investors in the form of **bonds to raise capital**. The issuer then uses **future cashflow streams** generated by the secured assets to meet the interest and capital payments when the bond matures.

# 3 Capital Management Tools

In practice a **separate legal entity** or **vehicle** is formed between the owner of the assets and the investor. This vehicle claims ownership of the securitised assets, to provide better **security** and **transparency** to the investors in the securitisation.

The repayments on the bond are subject to future profits made by the asset owner and the mortgage payments he receives. Thus, the risk here is transferred to the investor.

Securitizations are less effective in regulatory regimes which take credit for future profits in the regulatory balance sheet, for example under Solvency II.

# 3 Capital Management Tools

***Subordinated debt***

A provider can **raise capital** through issuing **subordinated debt** in the capital markets. The main aim of subordinated debt is to generate additional capital that improves the **free capital position** of the provider, as the debt does not need to be included as a **liability** in the assessment of solvency.

The subordinated debt can only pay **interest** if regulatory solvency capital requirements will continue to be met after the interest is paid or, in some countries, if authorized by the regulator.

Repayment of capital can only be made if, after repayment, **regulatory solvency capital** requirements continue to be met and if they are authorized by the regulator.

In the event of **wind-up,** the subordinated debt in all cases ranks behind policyholder liabilities, including non-guaranteed bonuses. So here the provider's capital position has increased, but because subordinated debt ranks below policyholder liabilities, they are not categorized as liabilities.

# 3 Capital Management Tools

***Banking products***

The banking sector provides some capital management solutions for the insurance industry directly (rather than as intermediaries as with securitization). These include:

- liquidity facilities
- contingent capital
- senior unsecured financing.

# 3 Capital Management Tools

- Liquidity Facilities

Liquidity facilities can be used to provide **short-term financing** for companies facing rapid business growth.

- Contingent Capital

**Contingent capital** can be a cost-effective method of protecting the capital base of an insurance company.

Under such an arrangement, capital would be provided as it was required following a deterioration of experience (ie it is provided when it is needed).

Although these arrangements clearly improve the financial strength of an insurer and can be given credit for by a rating agency, they lack visibility.

Explain why lacking visibility can be a disadvantage.

# 3 Capital Management Tools

- Senior Unsecured Financing

**Senior unsecured financing** directly for an insurance company would not have capital benefits as the loan would be treated as a **liability** on the company's balance sheet.

This is a straightforward loan and does strengthen the **company's capital position** as it increase assets as well as liabilities, unlike subordinated debt which increases only assets.

However, financing at the group level can be used within a group structure to provide capital to insurance subsidiaries. It can be more **cost effective** than other forms of capital but clearly has financial strength implications at the group level.

Capital can be moved around within a group of companies. Even though the insurer's capital position is strengthened, the total capital amount of the group is unaltered, thus worsening the capital position elsewhere.

# 3 Capital Management Tools

***Derivatives***

The magnanimity of the derivates market, enables them to be termed as a **separate asset class**.

**Prudent** management requires that any provider entering into derivative contracts must exercise **caution**. The provider needs to ensure that its derivative strategy assists in the **efficient management** of its business and serves to reduce risk.

Derivatives can be used to:

- Reduce risk (**hedging**)
- To increase risk so as to achieve higher returns (**speculation**)

Prudent financial management calls for hedging but does not involve speculation. Hedging reduces risks and thereby the **level of capital** required for protection against future unexpected events.

# 3 Capital Management Tools

***Equity capital***

An obvious source of capital is simply to **increase equity**, which increases assets without increasing regulatory liabilities.
The equity may come:

- from a **parent company**
- from **existing shareholders** by a rights issue
- directly from the **market** by a new placement of shares.

# 3 Capital Management Tools

***Internal sources of capital***

There may be ways to simply reorganize the existing financial structure of an organization in a more efficient way. Some of these are as follows:

- Merging funds

Merging funds would help if, for example, some of the regulatory liabilities or the solvency capital was calculated as a monetary or fixed amount per fund or had a fixed minimum.

- Changing Assets

The regulatory capital position could be improved if a non-admissible asset is sold for an admissible one. Also, by changing an asset might enable better matching with the liabilities thus reducing any **mismatching reserve** required and releasing capital.

Also, inertly the **discounting rate of future liabilities** is dependent on expected future returns on the assets held. Changing the assets may change this discounting rate.

# 3 Capital Management Tools

- Weakening the Valuation Basis

Weakening the valuation basis that is shifting from a cautious basis to a more relaxed basis , might reduce the value of the liabilities relative to the assets.

- Deferring Surplus Distribution

When bonus payments to with-profit policyholders is deferred, it reduces the level of guaranteed policyholder benefits and hence the capital required.

- Retaining Surplus

When dividends are not paid or the amount paid is reduced, it enables capital to be retained within the company. This may however affect the share price negatively.

# Topics covered

**Capital needs**

- Individuals
- Companies
- Providers of financial services products
- The State

**How providers meet, manage, and match capital needs**

- Insurance companies
- Sponsors of benefit schemes
- Microinsurance providers
- Reinsurance
- Matching and managing capital needs

**Capital management tools**

- Financial reinsurance
- Securitization
- Subordinated debt
- Banking products
- Derivatives
- Equity capital
- Internal sources of capital