Chapter 1:
Introduction to Treasury Risk

Financial risks have always existed wherever trade has been undertaken. However, the extent to which they have been identified, quantified and controlled has varied. Some well-publicised losses incurred by both financial and non-financial organisations around the world in recent years mean that treasury risk management has become increasingly important. Companies are trying to ensure that their own treasury operations, however simple, are properly controlled. This has led to many companies reconsidering the way they have viewed treasury in the past and making sure that in future treasury contributes positively to the overall success of the company in a controlled and structured way.

The most important factors which have been responsible for raising the level of discussion and debate in this area include:

1. Investor/shareholder focus

There is now a greater appreciation by investors, investment analysts and shareholders of how exposed company earnings and net worth can be to volatility in the financial markets. It is becoming increasingly important for companies to be able to demonstrate their expertise in risk management to equity analysts and fund managers.

For example, in the US last year a Wall Street analyst downgraded the earnings per share forecast for a US corporation by five cents, stating in the review that he believed the company had not sufficiently hedged its exposure to changing cotton prices.

2. Corporate governance

A Code of Best Practice issued by the Cadbury Committee* has now assumed regulatory status in Ireland and the UK for listed companies, requiring directors to disclose more information to shareholders. This code also emphasises the need for Board involvement in setting overall treasury policy.

Since 1995, directors of listed companies in Ireland and the UK have had to state in annual reports that they have reviewed the effectiveness of the company's system of internal controls, including treasury controls. Understanding the whole area of treasury risks and how they are managed and controlled, is one of these key areas of Board concern. In relation to treasury activities, directors are being put in the spotlight to some extent in the eyes of shareholders and other interested parties outside the company.

Two cases in the US in recent times illustrate why directors have good reason to involve themselves more fully in the Treasury policy of the Company.

Case 1:
In 1991 a major US firm failed to hedge a large proportion of its currency risk on

*The Report of the Cadbury Committee on the Financial Aspects of Corporate Governance, December 1992.

export sales and subsequently incurred significant foreign exchange losses. A group of shareholders took an action against the company and its officers for failing to protect the net worth of the company by hedging these exposures.

The case failed on a technicality. However, in 1994 another lobby of shareholders once again took the company and its officers to court, this time charging that they failed to disclose to shareholders that the company lacked sufficient and adequate foreign exchange hedging policies in relation to its involvement in foreign trade.

After some months, the charges were dropped, and it is believed that shareholders received an out-of-court settlement of some USD14,000,000.

Case 2:
Again in the US, a company took a bank to court, in relation to a USD20,000,000 loss suffered by the company involving the use of derivatives. The company argued very forcefully that it relied almost entirely on the skills, advice and information supplied by the bank. The company won its case, and the Board of Directors felt vindicated.

Inadvertently, however, the judgement appears to have backfired on the directors, who are being sued by shareholders for breach of their fiduciary duty of loyalty and due care. These shareholders are bringing the action on the company's behalf and are seeking compensation for the company from the directors.

3. Developments in risk management

The science of risk management and of how risks are identified, quantified and ultimately controlled has been demystified and is now directly accessible and available to any company wanting to apply better risk management practices.

Similarly, there is now a broad range of instruments that have been developed and new instruments continue to be engineered by the financial markets to manage almost any conceivable treasury risk.

This means that companies no longer have an excuse for not considering risk management instruments. It should be remembered that not hedging risk is a decision in itself, but not necessarily the right one. Such a decision should be arrived at in a reasoned and justified manner. Increasingly it seems that company directors and senior management are as exposed to criticism for their failure to actively use these risk management instruments as they are for their misuse or abuse.

While these techniques facilitate the management and reduction of risk, they also offer the means to create risk. Because exposures can be created without cash flow movements, they can sometimes totally bypass a company's normal accounting and recording systems. For risk management to operate effectively it is essential that the instruments and techniques themselves are clearly understood and that the circumstances in which they are used are strictly controlled.

4. Failures in internal controls

An effective internal control framework is absolutely essential in ensuring that treasury activities are operating correctly and within policy guidelines. Reviewing some of the more sensationalised problems encountered in this area in recent years suggests that the following weaknesses were present to some extent in most cases:

- Failure to define and adhere to approved activities.
- Failure to adhere to authorised limits for such activities.
- Failure to properly understand the full risk implications and complexities of various risk management strategies.
- Failure to impose suitably robust internal controls.

5. Competitive pressures

A company may have a different risk profile than its competitors as a result of different risk management strategies. These can have a significant impact on competitive position, for example, different levels of exposure to changes in interest, exchange rates or commodity prices.

Summary

It is becoming more apparent that in today's world both business and financial risks are linked to one another. If you can look at effective ways of managing and minimising financial risks, then people are freed up to concentrate on the core business such as manufacturing, marketing, and distribution of products and services.

Recent research findings suggest that many companies, including Irish ones, have not yet grasped this fundamental issue. In 1995, Price Waterhouse conducted an international survey which concluded that there is a lot of scope to improve the control of treasury activities, thereby reducing the potential for financial loss.

Some of the more pertinent facts that emanated from the survey results were:

- 20% of companies had no formal treasury policy.
- Of the other 80% that did have a policy the real effectiveness of control over the policy was questionable, because:
  - in many instances, the Treasurer was solely responsible for developing the policy and often without formal involvement of the Board.
  - in over 30% of all cases, the Board had not formally approved the treasury policy (this was 50% in Ireland).
  - for over 50% of respondents, the Board was not receiving regular management information on treasury activity (this was 70% in Ireland).
  - in almost 50% of companies, the treasury function was operating without adequate limit controls over its risk management activities.
- Some 10% of Irish respondents confirmed that exposures were not being hedged at all.

- One explanation for why Ireland was lagging behind other countries in some of these areas may be the lower usage level of the more sophisticated treasury products and derivatives. However, the survey suggested that there is an increasing use of instruments by Irish companies, and this growth is expected to continue.

There is also evidence from research showing that companies which stabilise cash flows and bring more certainty to the future cash position of the business, tend to be valued at a premium to others by avoiding earnings shocks which can often lead to share price volatility.

In conclusion, one of the main objectives in compiling this Corporate Treasury Handbook is to help company directors and senior management to address many of the issues raised above and to put them in perspective for their own individual companies. Businesses must take risks, but what financial risk management attempts to do is establish how much risk to take and how to protect the profitability and net worth of the business while taking these risks.

We hope this handbook will serve as a permanent reference manual for those seeking to manage their treasury activities more effectively. The evolving skills and experience of directors and senior management in this complex area will no doubt enhance the company's prospects of delivering both its explicit and implicit obligations to employees, shareholders, banks, customers and all other stakeholders in the organisation.

Chapter 2:
Formulating a Treasury Risk Management Framework

Step 1 Understand how Treasury impacts on the business

Step 2 Identify the treasury risks in the business

Step 3 Select suitable objectives and policies

Step 4 Define the treasury organisation structure

Step 5 Ensure the Board review and approve the formal documented policy

Step 6 Set up appropriate and regular reporting procedures

Treasury management should fit into the overall business strategy and add to the overall success of the company. Consequently, it is important to have a properly developed framework in which treasury activities can be performed. This involves having appropriate objectives for the treasury activities and suitable policies to ensure that these objectives are met. Part of this framework will also include suitable management reporting of the activities undertaken as well as adequate controls over these activities. Set out in this section is a description of how a company might go about developing this framework.

A company should take the following steps in considering how its treasury activities are supporting the business:

1. Understand how treasury impacts on the business.
2. Identify the treasury risks in the business.
3. Select suitable objectives and policies that best suit the company in the light of their risk appetite.
4. Define the treasury organisation structure that will achieve this.
5. Ensure that the Board review and approve the formal documented policy.
6. Set up appropriate and regular reporting procedures.
7. Develop an effective internal control framework (discussed in Chapter 3).

Step 1 - Understand how treasury impacts on the business

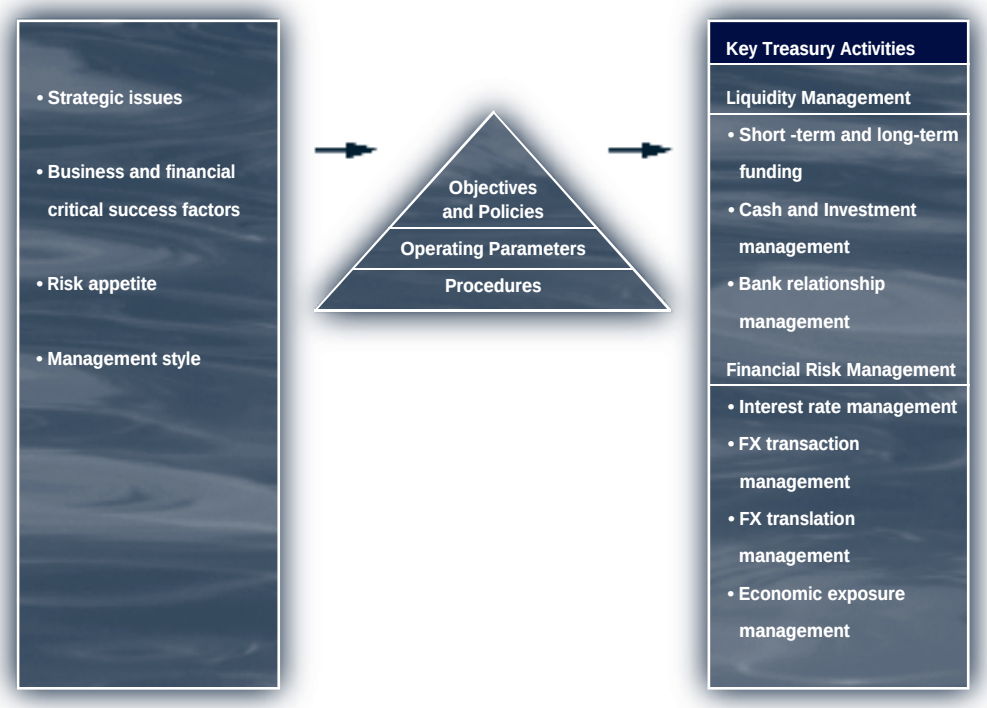
For most companies, treasury is not the main business activity. Companies are involved in manufacturing, retailing, services, or some other business activities. Treasury is just one of the operations that support this main activity. The treasury function should fit comfortably within the overall strategic objectives of the company and help to achieve these objectives. Companies will have different critical success factors (both business and financial). For some companies, the critical success factors may be geared towards maximising share price or earnings per share. Other companies may be focused more on maintaining certain financial ratios that are critical to their debt covenants. All treasury objectives and policies that are developed must be considered in the light of the identified critical success factors.

The objectives and policies will also be influenced by the risk appetite of the organisation and by the management style. Where management is conservative, there will be a low risk appetite. Consequently, the treasury policies should reflect this, resulting in a greater degree of hedging. Other companies will accept a higher level of risk and might adopt a more active risk management approach.

The objectives and policies will be affected by whether a centralised or decentralised approach is taken to treasury management for the group. The Price Waterhouse survey referred to in the introduction indicated that 75% of Irish companies have centralised policy setting at group level, with decentralised management at operating company level.

Each of these factors will impact on the objectives and policies proposed and selected as being suitable for the company. The chart overleaf shows how this works.

Treasury Risk Management Policy Setting



Step 2 - Identify the treasury risks in the business

The extent and relative impact of individual treasury risks will vary from company to company. In order to select the treasury objectives and policies that best suit a company, the nature and extent of the treasury risks in the business need to be identified and properly understood.

Typically these risks will be:

(a) Interest rate risk

Interest rate risk is the risk of loss arising from changes in interest rates through higher interest payments or lower interest receipts.

The company will need to understand the effect that a change in interest rates will have on the business and the impact of existing hedging policy, e.g. understanding the effects of any interest rate hedging instruments such as swaps that the company may have.

(b) Exchange rate risk

Exchange rate risk is the risk of loss from changes in exchange rates. Exchange rate risk can be further divided into:

- Transaction risk
  Transaction risk is the risk of receiving a lower amount for the company's foreign currency sales or paying a higher amount for its foreign currency purchases or loans. The volume of cash flows in each currency through the business and the effect of any existing hedging policy will need to be understood.

- Translation risk
  Translation risk is the risk of having a reduced value of foreign currency net assets as a result of changes in exchange rates. The company will need to understand the effect that changes in exchange rates will have on the net assets of overseas subsidiaries.

(c) Liquidity risk

Liquidity risk is the risk that the company will not have enough cash when needed to meet its debts. The following will need to be understood:

- when existing loans have to be repaid
- when committed facilities are available
- the potential cash needs of the business throughout the year and for the foreseeable future.

(d) Economic risk

Economic risk is the risk faced by the company when changes in the market rates (such as interest or exchange rates) favour the company's competitors. This may be difficult to quantify, because the company may not have access to information on the interest or exchange rate risks faced by its competitors or on the actions taken by them to reduce these risks.

The company will need to review these treasury risks on an on-going basis to ensure that the treasury policies adopted remain suitable and continue to meet the overall objectives of the company and that the specific strategies adopted fit within its overall corporate plan or budget. For example, as a business expands greater levels of debt may be needed, resulting in a higher level of interest rate risk. This may necessitate changing the treasury policy in relation to interest rate risk. Similarly, when a company expands into new overseas markets, exchange rate risk may increase and the policy for foreign exchange rate risks may need to be revised.

Step 3 - Select suitable objectives and policies

Once the treasury risks in a business are understood and an assessment of how treasury fits into the overall strategy of the company has been made, the most suitable objectives and policies can then be chosen.

Treasury objectives

Treasury objectives should be set out for each of the areas for which the treasury function will be responsible. For example, the objective for interest rate management might read:

To protect the group profit and loss account from material adverse changes in interest rates by undertaking controlled management of the interest rate structures on group investments and borrowings.

The areas for which objectives will need to be established generally include some or all of the following:

- Foreign exchange transaction management
- Foreign exchange translation management
- Interest rate management
- Long-term and short-term funding
- Cash and investment management
- Economic exposure management
- Bank relationship management

Other areas that are sometimes included within the treasury function are taxation, insurance, and pensions.

Treasury policies

When the company has decided the objectives, these should be used to:

- select the policies for each treasury activity
- decide who is responsible for acting on these policies
- set the parameters within which those responsible are allowed to operate.

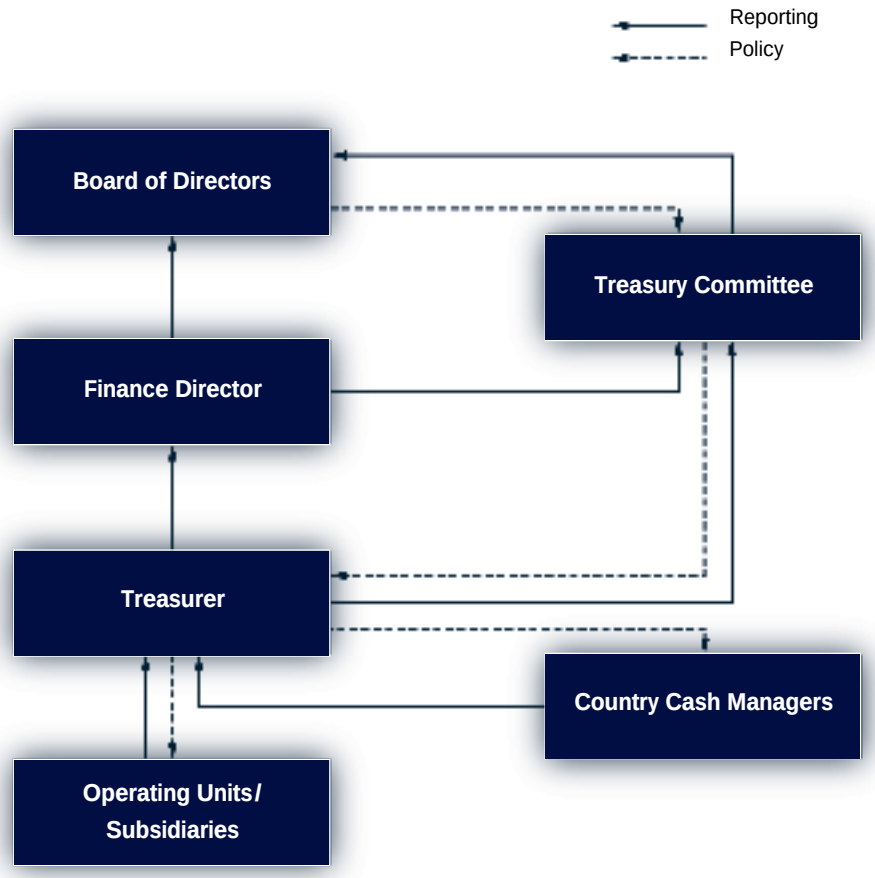
Examples of parameters

- A target of 60% debt at fixed interest rates.
- At any time not less than 50% nor more than 70% may be at fixed rates.
- Plain vanilla interest rate swaps and FRAs (as well as fixed-rate debt) will be permitted for interest rate management.
- The Group Treasurer will be responsible for implementing the policy and reporting performance against targets.

The Price Waterhouse survey indicated that only 40% of all corporates apply formal control parameters. Policy statements without supporting control parameters are generally ineffective.

Step 4 - Define the treasury organisation structure

The organisation structure should make sure the policies are implemented, monitored and amended as appropriate and that the activities are properly controlled. Set out below is one possible structure and a description of the principal roles and responsibilities for each of these individuals. Ultimately, whatever structure is adopted it will need to reflect the specific circumstances of the company.



Notes:

- The Treasury Committee might comprise a small number of non-executive Directors, the Finance Director, and the Treasurer.
- Country Cash Managers will be applicable only for multinational organisations.

Principal Roles and Responsibilities
Board of Directors
• Approve treasury objectives and policy • Approve treasury organisation structure • Authorise Treasury Committee to approve operating parameters, specific instruments, counterparties, and limits • Receive report from Treasury Committee
Treasury Committee
• Recommend treasury policy to Board for approval • Report to Board on a regular basis • On-going review of treasury performance and risks • Review compliance with policy • Review compliance with internal controls • Annually approve operating parameters, specific instruments, counterparties, and limits
Finance Director
• Review activities of Treasurer • Approve transactions and payment instructions (above certain levels)
Treasurer
• Implement approved policy at group level • Report to Treasury Committee • Recommend policy changes to Treasury Committee • Recommend operating parameters, specific instruments, counterparties and limits to Treasury Committee • Bank relationship management • Monitor operating units and subsidiaries compliance with treasury policy
Country Cash Managers (where appropriate)
• Manage cash surpluses and short-term funding requirements on a country basis • Report to Treasurer
Operating Units/Subsidiaries
• Implement approved policy at local level • Report to the Treasurer

More detailed descriptions of the roles and responsibilities that suit the organisation should be determined.

Step 5 - Ensure the Board review and approve the formal documented policy

The role of the Board should be to set and approve the policies of the company. The Board is ultimately responsible for the direction of the organisation. Treasury policy is one of the specific responsibilities that the Cadbury Code of Best Practice recommends should be reserved to the Board. However, the Price Waterhouse survey indicated that in more than 50% of Irish companies the Board do not formally approve treasury policy.

The Board should ensure that an effective policy for the use of derivatives is established and approved. The Board should ensure that this policy is consistent with the strategy, commercial objectives and risk appetite of the business and should approve the specific types of instruments to be used and the circumstances in which they are to be used.

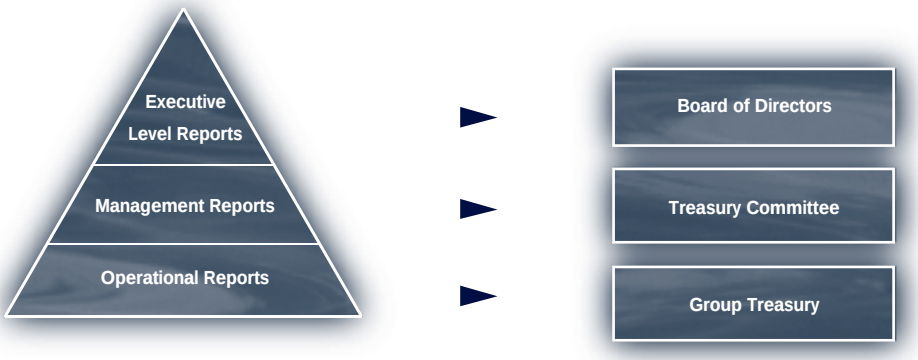
The treasury policy should be formally reviewed at least annually, revised as appropriate, and resubmitted to the Board for approval.

Step 6 - Set up appropriate and regular reporting procedures

Treasury reporting (exposures, performance and positions) and compliance monitoring is an area that has been neglected by many companies in the past. The Price Waterhouse survey indicated significant scope for improvement in the quality of reporting on treasury activities and the distribution of such reports to Directors and management. Accurate and timely information is required to monitor treasury activities at all levels within the organisation.

In each company, decisions need to be made about:

- the information that is to be reported
  - cashflow and liquidity
  - currency exposure
  - borrowings and facilities
  - cash and investment
  - counterparty exposures
- who the information is to be reported to
  - executive level reports
  - management reports
  - operational reports



- how often such reporting should occur
  - on an annual basis
  - on a monthly basis
  - on a daily basis

The following table sets out one possible basic reporting structure for regular reporting to company directors and senior management. This would be in addition to reporting routine cash-flow forecasts. The amount and frequency of reporting will need to be tailored to reflect the particular circumstances of the company. More extensive and frequent reporting may be required than indicated in the table.

Reporting Structure		
Reporting of	Reporting to	
	Board of Directors	Treasury Committee & Finance Director
Policy update (for approval)	Annually	n.a.
Treasury strategy: • linking to corporate and financial objectives • compliance with policy	Annually	Semi-annually
Summary of treasury activities for the year	Annually	n.a.
Summary of currency and interest rate unhedged exposures with sensitivity analysis of the impacts that changes in rates may have on the company	Monthly	Monthly
Mark to market value of all outstanding (i.e. un-matured) derivative transactions	Monthly	Monthly
Debt and committed facilities compared to targets	Annually	Monthly
Analysis of debt between fixed and variable, before and after taking into consideration any interest rate hedges such as interest rate swaps	Annually	Monthly
Analysis of debt by currency before and after taking into consideration any currency hedges such as currency swaps	Annually	Monthly
Details of significant transactions maturing in the next period	n.a.	Monthly
Details of deals done in month	n.a.	Monthly
Counterparty exposures compared with limits	Annually	Monthly
Any breaches in internal controls during the period, including dealing limit breaches	Annually	Monthly
Performance measures	Monthly	Monthly

Chapter 3:
Developing an Effective Internal Control Framework

3.1 Authority limits

3.2 Confirmation controls

3.3 Reconciliation of bank accounts

3.4 Controls over payments

3.5 Segregation of duties

3.5 Audit

–The possibility of a large loss happening in a company from treasury operations, whether through fraud, unauthorised activity, or error, is often much higher than in its more conventional activities. Many of the losses that have happened in the last few years have their origin in a breakdown in controls of some form or other.

As with all transactions entered into by a company, internal controls are needed to make sure that treasury activities are properly supervised. Controls over treasury transactions are part of the overall system of controls in the company. Treasury activities, and particularly derivative activities, should be subject to an effective framework of internal controls and audits to ensure that transactions are in compliance with both external regulations (including the capacity to enter into derivative transactions) and internal policy (including procedures for the execution, confirmation, recording, processing and settlement of transactions). Under the Cadbury Code of Best Practice, Directors of public companies must report in their financial statements on their review of the effectiveness of the company's system of internal financial controls (including treasury controls).

Clearly, the extent and nature of the controls required will vary from one company to another. However, there are a number of basic controls that should be in place in all companies that use treasury products.

Chapter 2 outlines the importance of having a formal treasury policy that is approved by the Board. However, documented policies are of limited use on their own. While documented policies set the framework for control, they need to be supported by more detailed procedures and internal controls. These are considered further below. Similarly, the underlying procedures and controls should be designed in the context of the identified treasury risks.

An internal control system can only provide management with reasonable confidence that their objectives are reached, because of inherent limitations such as:

- The potential for human error due to carelessness, distraction, mistakes of judgement, and the misunderstanding of instructions.
- The possibility of circumvention of internal controls through collusion with parties outside or inside the company.
- The possibility that a person responsible for exercising an internal control could abuse that responsibility.
- The possibility that procedures may become inadequate because of changes in conditions or that compliance with procedures may deteriorate over time.

3.1 Authority limits

Setting appropriate limits is important in ensuring that people are given responsibilities that are consistent with their level of knowledge and experience. Limits should be set for all aspects of treasury activities, outlining what each person involved is allowed to do and to what extent, including:

- The maximum amounts and maturities that each individual can arrange.
- The types of instruments that may be used and the banks and other financial institutions that the company may deal with.
- The maximum amounts that can be dealt with each specified bank or institution for all transactions.

For example, a company might decide that it wants to set the following limits over forward foreign exchange transactions:

- Contracts up to IEP50,000 can be entered into by the Group Treasurer without obtaining further authorisation.
- Contracts between IEP50,000 and IEP150,000 require the additional authorisation of the Finance Director.
- Contracts in excess of IEP150,000 require additional authorisation from the Finance Director and one other Director.

Having limits of this kind over transactions helps to ensure that one person is not given too much authority and that more than one person in the company is aware of all significant transactions.

The Board should only approve types of instruments that they are satisfied are appropriate given the company's circumstances and the level of treasury skills within the company. Placing limits over the types of instruments that can be used helps to ensure that the company only enters into types of transactions that they understand and that suit the treasury risks being managed. For example, some companies may decide that they will only use "vanilla" interest rate swaps. Similarly, some corporates will exclude the use of option-based instruments from their list of approved instruments.

In addition to limiting the range of treasury instruments that they are happy to use, many companies will also specify limits to the amount of business that they can transact with individual banks. Generally companies will have a core bank or a small number of core banks that are used for funding, operational and other banking business. In practice these limits seek to ensure that companies will not be overexposed to the risk of default from any particular bank.

Having established limits in each of these areas it is vitally important that an effective reporting framework is implemented that will alert management to situations where limits are breached, so that the appropriate action can be taken.

3.2 Confirmation controls

Banks usually send a letter to the company to confirm the details of each deal. These confirmations should be received by someone independent of those authorised to deal and compared with the company's understanding of the deal. Any differences should be clarified immediately. Companies should also prepare their own confirmation letters and send these directly to the bank, asking them to check if their understanding of the deal is correct. Confirmations that are not returned by the bank should be followed up without delay.

Strong confirmation controls are very important, especially since many treasury transactions are conducted by telephone and often do not involve the transfer of funds for some time, often for many months. There is a risk that such transactions will not be recorded by the person who entered into the transaction, either through oversight or otherwise.

Since the initial deal may have resulted from a telephone conversation, it is important to ensure that both parties to the transaction have a consistent understanding of the details of the deal. For these reasons it is important that any discrepancies between the company's records and incoming confirmations are followed up and resolved in a timely manner.

As a double check and to cater for situations where a confirmation letter is not received from the bank, companies should also send their own confirmations to the bank for each transaction. Developments in electronic banking will automate this process for many companies in the future.

3.3 Reconciliation of bank accounts

The importance of bank account reconciliations is generally widely recognised. However, for accounts that are used for treasury transactions it may be appropriate to perform the reconciliations more frequently than for other accounts, perhaps weekly or daily. This is because the risk of financial loss that may result either through error or fraud is generally higher. Such reconciliations should be reviewed by management, preferably independently of the treasury function.

3.4 Controls over payments

There should be controls over all payments, irrespective of how they are made. This should cover any form of payment, whether the payment instruction is sent to the bank electronically, by fax, by telephone, or by other means. These controls should include:

- Having adequate protection by means of passwords and other ways of checking identity.
- Having current bank mandates.
- Making sure suitable authorisation limits are in place.
- Only using bank accounts that have been specified in advance.

It is important that only authorised individuals have the ability to access or transfer cash. This is especially true where large amounts can be transferred, whether to settle foreign exchange transactions, make loan repayments or for other reasons.

Where electronic funds transfer systems are used there must be strong physical and logical access controls. Physical access controls involve keeping the system under 'lock and key' (restricting physical access), while logical access controls involve having proper password and other system controls to prevent unauthorised access.

Where funds are transferred following telephone instructions, call-back facilities (where the bank will phone back to confirm the authenticity of the transfer) can be utilised. Similarly, the use of frequently changed code words over the phone can help prevent unauthorised transfers.

The bank should have clear and unambiguous instructions regarding who in the organisation is authorised to transact business with the bank.

3.5 Segregation of duties

There should be segregation of duties between key people in the company to make sure that no one person can enter into a transaction without another knowing about it. In determining the appropriate level of segregation, particular regard should be had to:

- Those responsible for entering into the deals.
- Those responsible for making or receiving payment.
- Those responsible for confirming, recording and accounting for the deal.

It is important to segregate authorised personnel entering into transactions from those who are responsible for payments, reconciliations, or record keeping. The reason for this is to ensure that one person could not enter into an unauthorised deal and then avoid detection by manipulating the confirmation, recording or reconciliation processes.

3.6 Audit

Companies should also consider the extent to which their internal and external auditors specifically include checks on treasury controls and their effectiveness and operating efficiency. Having an independent review of the controls can provide:

- Assurance that the controls are adequate for the company.
- Comfort that the controls were operating effectively over a period.
- A source of recommendations on how enhancements can be made to the control framework.

Chapter 4:
Financial Markets and Economics - A Treasury Perspective

4.1 Exchange rates

4.2 Interest rates

4.3 A guide to market abbreviations and economic jargon

4.4 The main data releases and their market - moving potential

In the context of financial markets, the application of economics has a fairly tight focus. First and foremost it is used to identify likely movements in interest rates and exchange rates. In this section we identify the fundamental factors that drive changes in the value of currencies and the level of interest rates. Discussion of specific events such as EMU is outside the scope of this handbook. Instead it is intended to offer a quick and easy guide to the significant data items and their likely effect on the markets.

4.1 Exchange rates

At any time, exchange rates are determined by demand and supply conditions for the relevant currencies in the market. Daily changes in these factors create volatility in the markets and allow exchange rates to vary over the smallest periods. However, over the longer term, currencies have an equilibrium value. The most popular means of assessing the long-term value of a currency is a theory known as purchasing power parity. This argues that exchange rates move over time to offset inflation differentials. In other words, the currency of a low-inflation country will appreciate in the long term against the currency of a high-inflation country.

No single model has yet been developed that perfectly explains the movements of exchange rates. There are many factors that cause currencies to fluctuate around their long-term equilibria on a day-to-day basis. On many occasions a number of factors are at work simultaneously. They may reinforce or counteract one another and their exact impact is difficult to ascertain. Some of the most important factors and their effects when they arise in isolation, are outlined below.

Politics: A domestic or international development that upsets political stability or increases uncertainty in a country will tend to undermine that country's currency. For instance, an event such as a by-election or a parliamentary defection that threatens the life of a government and a potential change of economic policy will weigh on a currency and may cause an outflow of funds. A number of the world's leading currencies, in particular the US dollar and the Swiss franc, have reputations as safe-haven currencies, in that they tend to appreciate during periods of international political uncertainty.

Growth: Strong but sustainable economic growth tends to cause an appreciation of a currency. An economy with good future prospects will attract overseas investment interest, leading to an inflow of capital funds.

Inflation: A currency will suffer if the general price level in the economy increases too rapidly. The exchange rate adjusts to compensate a holder of foreign currency for the loss of the currency's purchasing power. This adjustment will take the form of a currency depreciation in a country burdened with relatively high levels of inflation.

Interest rates: Higher relative interest rates will tend to benefit a currency. As funds move in from overseas, demand for the local currency increases, causing it to appreciate.

Balance of payments: If a country supplies more goods and services to the world than it imports and attracts net investment from abroad, its currency will normally appreciate.

Momentum: A currency that appears to be moving steadily in one direction may continue to do so in the absence of other influences.

4.2 Interest rates

Real interest rates, i.e. the nominal rate adjusted for inflation, have arguably the greatest impact on economic activity. In such times as those we are experiencing in Europe at the moment, where many governments are attempting to improve their fiscal position, there is increased reliance on monetary policy (i.e. reduced interest rates) as a tool of economic management. The following issues are decisive in the determination of interest rates.

Economic cycle: This is the most important single factor. During recessionary periods, interest rates will be pushed down in order to boost economic activity, while during a boom the cost of finance will be increased so that the economy can return to a sustainable, non-inflationary growth path.

Credibility: A country with a reputation for low inflation and a strong currency will tend to have lower interest rates than other countries. Central Banks with a track record of securing low inflation and that are fully independent of the influence of the government, earn the greatest credibility in the markets. The Bundesbank is a good example.

Inflation: Interest rates are set to contain or reduce inflationary pressures and expectations within an economy. If the authorities are intent on responsibly managing an economy, they will set interest rates at a level that will over time reduce inflation below, say, 2% in a developed economy. Because expectations have an important influence on inflation, high interest rates may be needed for longer than is necessary to convince market participants that the authorities are intent on keeping inflation subdued.

Policy stance: The setting of interest rates should reflect the government's budgetary or fiscal policies. If economic activity levels are in need of neither a boost nor a restraint, interest rates will be set to neutralise the effect of fiscal policy. For example, if a government decides to cut taxes excessively, an independent monetary authority would raise interest rates. In effect, monetary policy is used as a stabiliser on the economy.

4.3 A guide to market abbreviations and economics jargon

The indicators of most importance to the financial markets are those that come from the world's leading economies. The following list offers a short explanation of some of the most frequently used terms in financial market analysis and economic commentaries.

Base Rate (UK):

The interest rate that forms the basis for the setting of all other rates within the UK. It is determined as a result of regular (usually monthly) monetary meetings between the Chancellor of the Exchequer and the Governor of the Bank of England.

Beige Book (US):

Provides the economic and inflation background throughout the United States for each meeting of the Federal Open Market Committee (FOMC - see below). It is prepared by each of the twelve Federal Reserve districts in turn, is published in advance of each FOMC meeting, and sets the agenda for discussions.

Bundesbank Council (Germany):

Main decision-making body for German monetary policy. Meets every two weeks. Can also be referred to as the Buba.

Cost of Living Index (Germany):

This is the German equivalent of the US Consumer Price Index and the UK Retail Price Index.

Discount Rate (Germany):

The Bundesbank's interest rate floor. The lowest rate that the repo rate can be set at.

European Currency Unit (ECU):

The ECU was introduced as a unit of account on the formation of the European Monetary System (EMS - see below) in 1979 and is a basket currency. Its value is determined by a weighted average of the currencies of most of the member states of the EMS. The composition of the ECU was frozen in 1993 before Austria, Finland and Sweden joined the EU.

European Monetary System (EMS):

Introduced in 1979, it is the umbrella entity that contains a set of European monetary arrangements including the ECU, the ERM, and a credit mechanism.

Exchange Rate Mechanism (ERM):

A system designed to keep the member-currencies within specified fluctuation bands in relation to one another. The mechanism specifies a central ECU rate for each member currency and by implication a grid of bilateral exchange rate parities. Since the 1992-93 currency crisis, all member-currencies apart from the deutschemark and the guilder are allowed to fluctuate by up to 15% on either side of their central rates. A fluctuation rate of 2.25% applies to the German and Dutch currencies. Not all member-currencies of the EMS are members of the ERM.

Federal Open Market Committee (FOMC):

The key monetary decision-making body in the United States. Its policies are intended to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.

G7:

The world's seven leading industrial countries: US, Japan, Germany, France, Italy, UK, and Canada. Summits attended by the heads of government are held annually. The Finance Ministers meet three times yearly.

G10:

G7 countries and Belgium, Sweden, the Netherlands, and Switzerland. Formal meetings at head of government level are not held. Although Switzerland became the eleventh member of the grouping in 1984, the G10 name was retained.

Gross Domestic Product (GDP):

A measure of the total output produced by an economy over a specified period.

Gross National Product (GNP):

The total output of goods and services that actually accrues to residents of a country over a specified period. The difference between GDP and GNP is net factor flows which mainly take the form of profit repatriations and investment income. In Ireland's case the main factor outflows are multinational profit repatriations and interest on the foreign component of the national debt.

IFO Survey (Germany):

A survey of business sentiment that can prove influential in terms of market-moving ability. The survey is produced monthly.

Lombard Rate (Germany):

The Bundesbank's interest rate ceiling. The highest rate at which the repo rate can be set.

Monetary aggregates:

Refers to measures of the supply of money within an economy. High money supply growth tends to lead to higher inflation, and these aggregates are regarded by some as important predictors both of future inflation and interest rates.

NAPM (US):

The National Association of Purchasing Managers' Index is a useful guide to the performance of the US economy. It is a compilation of responses by purchasing executives to questions about monthly changes in eight categories. These are new orders, new export orders, imports, production, supplier deliveries, inventories, employment, and prices. The NAPM provides the first indication each month of the US economic situation. It is a statement of current activity rather than a forecast.

Non-farm payrolls (US):

The number of jobs created by the US economy excluding the agricultural sector. It is released monthly as part of the Employment Report and can have a major impact on market activity.

OECD:

The Organisation for Economic Co-operation and Development is an international forum for 27 industrialised economies to study and formulate optimal economic and social policies.

Repo rate (Germany):

The main tool for controlling short-term interest rates. It must lie between the Lombard and Discount rates.

Seasonal adjustment:

A statistical technique that modifies data to remove distortions arising from the effects of holidays, working days, and weather.

Tankan (Japan):

An influential survey of Japanese business sentiment that is produced quarterly.

4.4 The main data releases and their market moving potential

Taken in isolation, each data release and news item can affect the financial markets in a reasonably predictable way. The size of the market impact depends on a comparison between the actual data release and what was expected. However, it is worth remembering that there may be other factors at play at any time that can reduce or counteract the effect of a data release on currencies or interest rates. Nonetheless, the following tables summarise the major data releases in the four most important markets for Irish business and their likely impact on interest rates and exchange rates. In the currency impact class a + sign implies that the domestic currency should appreciate, while in the interest rate category a + sign means that upward pressure should be exerted on interest rates.

United States			
Factor	Headline	Currency impact	Interest rate effect
Beige Book	Buoyant economic outlook	+	+
GDP growth	Expanding above trend	+	+
NAPM	Above 50 and rising	+	+
Non-farm payrolls	Strong growth in employment	+	+
Leading indicators	Pointing to increasing growth	+	+
Average earnings	Increasing in real terms	-	+
Consumer prices	On an upward trend	-	+
Producer prices	On an upward trend	-	+
Industrial output	High growth rate	+	+
Retail sales	Strong and rising	+	+
Federal budget	Deficit below expectations	+	-
Housing starts	Higher than expected	+	+
Durable goods orders	Rising	+	+
Trade balance	Falling	-	+
Capacity utilisation	Reaching constraints	-	+

Germany			
Factor	Headline	Currency impact	Interest rate effect
IFO survey	Buoyant economic outlook	+	+
GDP growth	Expanding above trend	+	+
M3 money supply	Above target and rising	-	+
Cost of Living Index	On an upward trend	-	+
Wholesale prices	On an upward trend	-	+
Unemployment	Continuing to rise	-	-
Retail sales	Consumers are spending more	+	+
Industrial production	Below expectations	-	-
Industrial orders	Reporting growth	+	+

United Kingdom			
Factor	Headline	Currency impact	Interest rate effect
CBI Survey	Things are looking up for industry	+	+
GDP growth	Expanding above trend	+	+
Purchasing Managers' Survey	Prospects are brightening	+	+
Consumer credit	Personal borrowing is rising	-	+
M0 & M4 money supply	Above target and rising	-	+
Cyclical indicators	On an upswing	+	+
Average earnings	Increasing at an unsustainable rate	-	+
Retail prices	On an upward trend	-	+
Producer prices	On an upward trend	-	+
Unemployment	Fewer people are drawing benefits	+	+
Retail sales	Consumers are actively spending	+	+
External trade	Imports are growing faster than exports	-	+
Public sector borrowing requirement (PSBR)	Below expectations	+	-
Unit wage costs	Wages are rising faster than productivity	-	+
Monetary minutes	Chancellor & Governor disagree	-	+

Ireland			
Factor	Headline	Currency impact	Interest rate effect
Industrial output	Positive growth	+	+
Consumer prices	On an upward trend	-	+
Unemployment	Fewer people are out of work	+	+
Retail sales	Shop tills are ringing louder	+	+
Private sector credit	Ongoing growth above trend	-	+
Exchequer borrowing requirement (EBR)	Below expectations	+	-

Chapter 5:
Treasury Risk Arising from Changes in Foreign Exchange Rates

5.1 Spot foreign exchange
The spread
Cross-currency calculations

5.2 Forward contracts
The forward rate

5.3 Currency swaps

5.4 Options
Types of options
Option premiums
Choosing the best strike rate
Effective strike rate
Break - even rate
Making the most of options

5.5 More examples on foreign exchange risk management strategy

Companies involved in international trade face the possibility that future currency movements will have an adverse impact on profits. A company can deal with its exchange rate exposure in two ways:

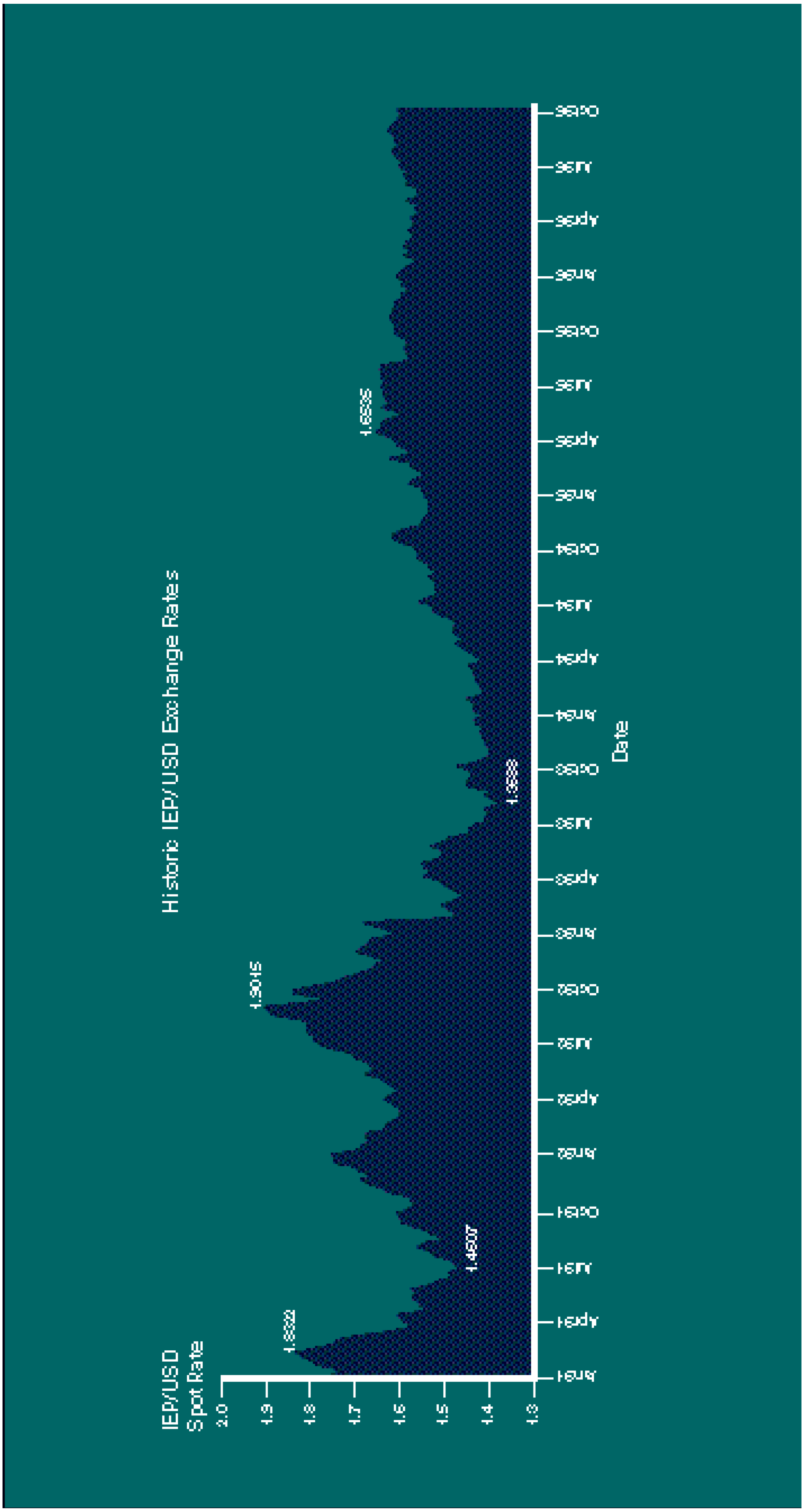
- It can transact foreign exchange deals as and when the exposures arise.
- It can try to limit the effect of changing exchange rates, for example by agreeing an exchange rate now for an exposure arising in the future.

Both strategies carry their own risks:

- Failing to hedge and subsequently transacting at unfavourable rates.
- Being locked into a rate that proves to be unfavourable versus the exchange rate pertaining on the contract delivery date.

A balance must be struck between covering an exposure and leaving the position uncovered and thus being in a position to benefit from a favourable movement in exchange rates.

Foreign exchange rate movements can be swift and large. The following graph shows US dollar movements against the Irish pound over the last five years.


Historic IEP/USD Exchange Rates
IEP/USD
Spot Rate
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
Date

This chapter provides an introduction to the foreign exchange market and analyses the instruments available for managing exchange rate risk.

We look at:

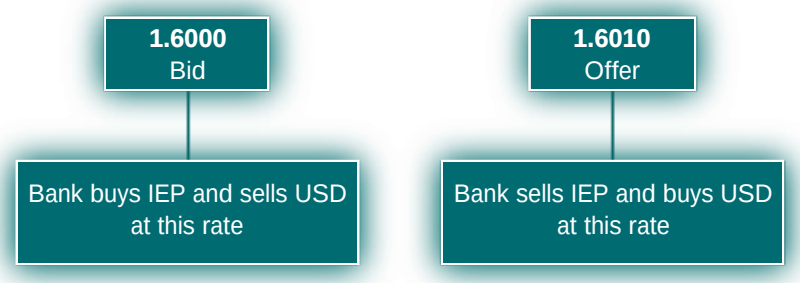
- Spot Foreign Exchange
- Forward Contracts
- Currency Swaps
- Currency Options

The chapter concludes with a discussion of some more ideas on managing foreign exchange risk, using worked examples.

5.1 Spot foreign exchange

Foreign exchange simply means exchanging one currency for another - for example, buying US dollars using Irish pounds. Banks generally quote two rates, one for buying and one for selling a particular currency.

A quoted exchange rate contains three elements:
- the two currencies involved
- the rate at which the bank will buy - the bid rate
- the rate at which the bank will sell - the offer rate



Here the bid price is 1.6000 - i.e. the bank will pay a customer USD1.6000 in exchange for the receipt of IEP1.00. The offer price is 1.6010 - i.e. the bank will receive from a customer USD1.6010 in exchange for the payment of IEP1.00.

The spread

The difference between the bid and offer prices is called the spread. In the example above, the bid rate is 1.6000 and the offer rate is 1.6010, giving a spread of .0010 (or '10 pips', as it is called in the foreign exchange market).

The spread quoted for a currency pair depends on two things:
- the risk associated with each currency (for example, political risk)
- the liquidity of the currency pair (the ease with which they can be exchanged)

The liquidity of the currency pair is a measure of:

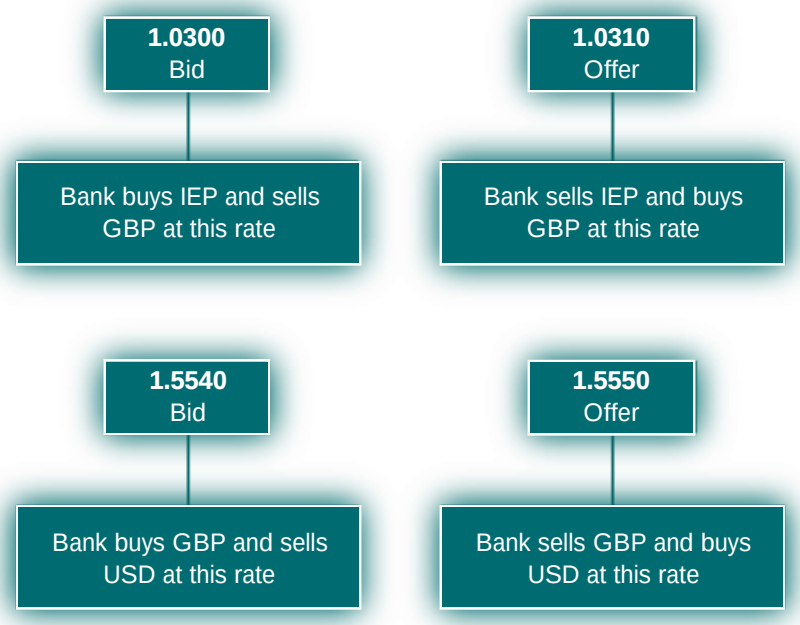
- the volume of trade between the two currencies
- the chances of finding willing buyers (or sellers) when necessary
- the possible effects on the exchange rate of any materially sizeable transactions

The world's most liquid currency is the US dollar, and the world's most liquid currency pair is the US dollar against the German mark.

Cross currency calculations

Currency pairs can be manipulated to give different currency pair combinations. Every currency can be quoted in terms of every other currency. For example, it is possible to work out the IEP/USD prices from the IEP/GBP and GBP/USD prices.

Example 1



To work out the implied IEP/USD price that the bank will quote, use the rates quoted above, as follows:

The IEP/USD bid rate is a combination of:

- IEP 1.00 = GBP 1.0300 (bank will buy IEP at this rate)
- GBP 1.00 = USD 1.5540 (bank will sell USD at this rate)
- So IEP 1.00 = (1.0300 x 1.5540) = USD 1.6006 (bank buys IEP and sells USD)

The IEP/USD offer rate is a combination of:

- IEP 1.00 = GBP 1.0310 (bank will sell IEP at this rate)
- GBP 1.00 = USD 1.5550 (bank will buy USD at this rate)
- So IEP 1.00 = (1.0310 x 1.5550) = USD 1.6032 (bank sells IEP and buys USD)

The IEP/USD bid rate is 1.6006.
The IEP/USD offer rate is 1.6032.

5.2 Forward Contracts

A foreign exchange Forward Contract is a contract under which the bank agrees to sell or buy a fixed amount of currency to or from the company on an agreed future date in exchange for a fixed amount of another currency. No money is exchanged until that future date.

A company will usually enter into Forward Contracts when it knows there will be a need to buy or sell foreign currency on a certain date in the future. It may believe that today's forward rate will prove to be more favourable than the spot rate prevailing on that future date. Alternatively, the company may just want to eliminate the uncertainty associated with foreign exchange rate movements.

The Forward Contract commits both parties to carrying out the exchange of currencies at the agreed rate, irrespective of whatever happens to the exchange rate.

The rate quoted for a Forward Contract is not an estimate of what the exchange rate will be on the agreed future date. It reflects the interest rate differential between the two currencies involved. The forward rate may be higher or lower than the market exchange rate on the day the contract is entered into. If, for example, interest rates in the currency or country in question are lower than Irish interest rates, that currency will be 'at a premium' - i.e. more expensive for the customer to buy under a Forward Contract, but less expensive to sell. If the foreign currency interest rates are higher than the Irish rates, the currency will be 'at a discount' - cheaper to buy under a Forward Contract but more expensive to sell.

Example

Problem: A company needs DEM235,000 in six months time.

Market parameters:

Spot Rate IEP/DEM	2.3500
Six month Forward Rate IEP/DEM	2.3300

Solutions available:

- The company can do nothing and hope that the rate in six months time will be more favourable than the current six-month forward rate. This would be a successful strategy if in six months time the rate is higher than 2.3300. However, if in six months time the rate is lower than 2.3300, the company will have lost money.
- It can avoid the risk of rates being lower in the future by

entering into a Forward Contract now to buy DEM235,000 for delivery in six months time at an IEP/DEM rate of 2.3300.
- It can decide on some combination of the above.

Advantages of using Forward Contracts:

- They are useful for budgeting, as the rate at which the company will buy or sell is fixed in advance.
- There is no up-front premium to pay when using forward contracts.
- The contract can be drawn up so that the exchange takes place on any agreed working day.

Disadvantages of Forward Contracts:

- They are legally binding agreements that must be honoured regardless of the exchange rate prevailing on the actual forward contract date.
- They may not be suitable where there is uncertainty about future cash flows. For example, if a company tenders for a contract and the tender is unsuccessful, all obligations under the Forward Contract must still be honoured.

To summarise:

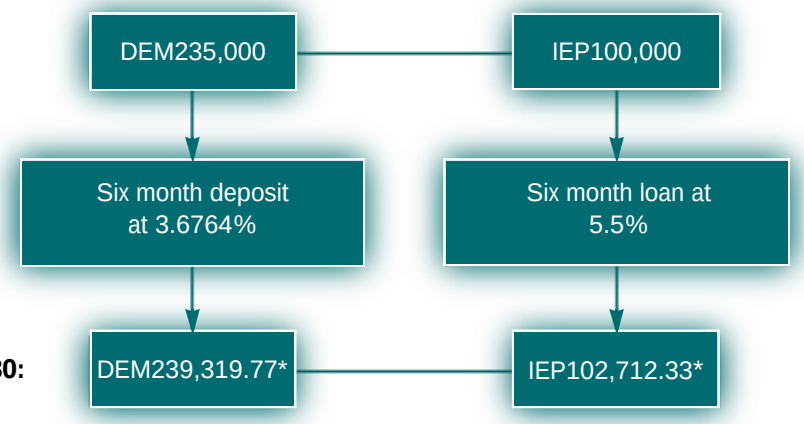
- A Forward Contract fixes the rate at which currencies will be exchanged at some point in the future.
- The actual forward rate reflects the interest rate differentials for the period in question between the two currencies.

The forward rate

To hedge the forward transaction executed with a company, the bank must purchase the currency (in this case DEM) today. To do this it must firstly borrow Irish pounds for six months. It then converts the Irish pounds into German marks at the current IEP/DEM spot rate. It then puts the German marks on deposit for six months. After six months the German marks are paid to the customer. The bank uses the Irish pounds it receives in return for the German marks to repay the original Irish pound borrowing.

How does all this translate into the quoted forward rate? Taking the previous example, which quoted the six-month forward IEP/DEM rate of 2.3300:

Day 0: Bank borrows IEP100,000 for six months (180 days) and buys DEM235,000 at a rate of 2.3500.



Day 180:

Forward Rate = $\frac{239,319.77}{102,712.33}$ = IEP/DEM 2.3300

* Note: DEM interest rate on 360 day basis.
IEP interest rate on 365 day basis.

In reality, banks will have many opportunities to offset transactions dealt with other counterparties, and therefore the specific loans and deposits referred to above may not be transacted. However, it remains the theoretically correct basis for pricing such a forward rate.

5.3 Currency Swaps

A Currency Swap is a contract whereby two parties agree to exchange cash flows in two different currencies for a given period. Currency Swaps can be applied as a foreign exchange or interest rate risk management tool. This section concentrates on the application of Currency Swaps to foreign exchange risk.

A common use of Currency Swaps is in hedging translation risk. A company may enter into the transaction to lock in the exchange rate to be used when translating foreign currency net assets to domestic currency for balance sheet reporting purposes.

Example

Company profile: A company has a UK subsidiary with net assets of GBP30 million.

Problem: The company is concerned that GBP will weaken significantly over the next five years, thus reducing the IEP value of the net assets of the UK subsidiary to be included in the company's consolidated accounts. The

company wishes to eliminate this exposure for the next five years.

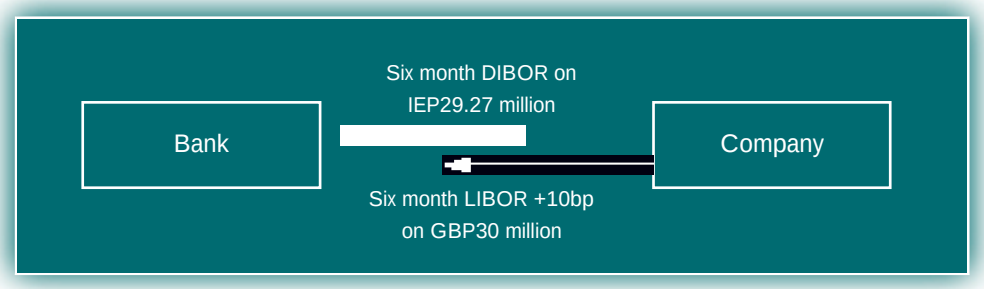
Market parameters: IEP/GBP Currency Swap available at a cost of 0.10% (10 Basis points p.a.) IEP/GBP spot rate 1.0250.

Solution: Enter into a Currency Swap for GBP30 million, locking the IEP/GBP exchange rate at 1.0250. For the life of the Currency Swap, the company will pay six-month LIBOR + 10 b.p. and receive six-month DIBOR. Currency Swaps have ongoing interest exchanges, unlike FX Forwards where the interest rate differential is built into the forward rate.

At maturity, in five years time the company will pay GBP30 million and receive IEP29.27 million (based on the exchange rate set at the start date). By entering into the Currency Swap, the company has locked in an exchange rate of 1.0250 to apply to the translation of the GBP net asset value for a five year period.

This can be shown diagrammatically as follows:

Interim semi-annual flows



Final exchange (end year 5)

Outcome 1: The IEP/GBP exchange rate has moved to 1.0500 at the end of year 1. In the absence of the hedge, the IEP value of the net assets would have fallen to IEP28.57 million, giving a translation loss of £0.7 million

Outcome 2: The IEP/GBP exchange rate has moved to Parity at 1.00. In the absence of the hedge, the IEP value of the net assets would have risen to IEP30.00 million, giving a translation gain of IEP0.73 million.

5.4 Currency Options

A Currency Option is a contract that gives the holder the right (but not the obligation) to buy or sell a fixed amount of a currency at a given rate on or before a certain date. The agreed exchange rate is known as the *strike rate* or *exercise rate.*

An option is usually purchased for an up-front payment known as a *premium.* The Option then gives the company the flexibility to buy or sell at the rate agreed in the contract, or to buy or sell at market rates if they are more favourable, i.e. not to exercise the option.

How are Currency Options different from Forward Contracts?

- A Forward Contract is a legal commitment to buy or sell a fixed amount of a currency at a fixed rate on a given future date.
- A Currency Option, on the other hand, offers protection against unfavourable changes in exchange rates without sacrificing the chance of benefiting from more favourable rates.

Types of options:

- A Call Option is an option to buy a fixed amount of currency.
- A Put Option is an option to sell a fixed amount of currency.

Both types of option are available in two styles:

- The American-style option is an option that can be exercised at any time before its expiry date.
- The European-style option is an option that can only be exercised at the specific expiry date of the option.

Option premiums

By buying an option, a company acquires greater flexibility and at the same time receives protection against unfavourable changes in exchange rates. The protection is paid for in the form of a premium.

What determines the option premium?

The size of the premium to be paid for an option depends on the following:

- How favourable the strike rate is in relation to the forward rate - the more favourable, the higher the premium.
- The length of the option - the longer the option period, the higher the premium.
- The stability of the exchange rate involved. Options on relatively volatile exchange rates cost more than options on more stable exchange rates.
- Whether the option is European or American-style. American-style options will never cost less than European-style options because of the broader flexibility they offer. However, they may cost more.

Example

Problem: A company has a requirement to buy USD1,000,000 in one months time.

Market parameters:

Current Spot Rate	1.6000
One-Month Forward Rate	1.6000

Solutions available:

- Do nothing and buy at the rate on offer in one months time. The company will gain if the dollar weakens (say 1.6200) but will lose if it strengthens (say 1.5800).
- Enter into a Forward Contract and buy at a rate of 1.6000 for delivery in one months time. The company will gain if the dollar strengthens, but will lose if it weakens.
- Buy a Call Option with a strike rate of 1.6000 for exercise in one months time. In this case the company can buy in one months time at whichever rate is more attractive. It is protected if the dollar strengthens and still has the chance to benefit if it weakens.

How does the option work?
The company buys the option to buy USD1,000,000 at a rate of 1.6000 on a date one month in the future (European-style). In this example, let's assume that the option premium quoted is 0.98% of the USD amount (in this case USD1,000,000). This cost amounts to USD9,800 or IEP6,125.

Outcomes:

- If, in one months time, the exchange rate is 1.5000, the cost of buying USD1,000,000 is IEP666,667. However, the company can exercise its Call Option and buy USD1,000,000 at 1.6000. So, the company will only have to pay IEP625,000 to buy the USD1,000,000 and saves IEP41,667 over the cost of buying dollars at the prevailing rate. Taking the cost of the option premium into account, the overall net saving for the company is IEP35,542.
- On the other hand, if the exchange rate in one months time is 1.7000, the company can choose not to exercise the Call Option and can buy USD1,000,000 at the prevailing rate of 1.7000. The company pays IEP588,235 for USD1,000,000 and saves IEP36,765 over the cost of forward cover at 1.6000. The company has a net saving of IEP30,640 after taking the cost of the option premium into account.

In a world of changing and unpredictable exchange rates, the payment of a premium can be justified by the flexibility that options provide.

Choosing the best strike rate

In theory, an option can be created at any strike rate. The choice of strike rate depends on how much protection and upside potential is desired.

If a company wants a high level of protection, a relatively favourable strike rate (equal to, or better than, the forward rate) should be chosen. However, in this case the company can expect to pay a higher premium.

On the other hand, if the company wants to make the most of possible gains, perhaps because it believes the rate is likely to move in its favour, and it is willing to take some risk, then a strike rate should be chosen that is less favourable than the forward rate. This will reduce the premium.

In the earlier example, the cost of an option to buy USD at 1.5800 would be 0.48% and the premium for protection at 1.6200 would be 1.70%. The more favourable the strike rate the higher the premium. The choice of strike rate is a trade-off between the cost of the option and the desired protection level.

Effective strike rate

The effective strike rate is simply the strike rate adjusted to reflect the cost of the premium paid. It can be thought of as the 'all-in' rate of the deal if the option is exercised.

In the previous example, if the company exercises the option at 1.6000, the cost to the company of USD1,000,000 (in IEP at a rate of 1.6000) is IEP625,000. The company must also pay a premium of IEP6,125, so the effective cost of USD1,000,000 is IEP631,125.

To work out the effective IEP/USD strike rate, you must divide the amount bought by the effective cost - in this example USD1,000,000 divided by IEP631,125, giving an effective strike rate of 1.5845.

If the option is exercised, the USD will be purchased at an effective rate of IEP/USD 1.5845.

Break-even rate

If the exchange rate at the expiry date of the option is more favourable than the option strike rate, the option will not be exercised and the company will deal at the prevailing spot exchange rate. The exchange rate at which the premium cost is recouped is known as the break-even rate.

In the earlier example, in order to recoup the premium the company would need to pay IEP618,875 (625,000 – 6,125) for the USD1,000,000, giving a break-even rate of 1.6158 (USD1,000,000 divided by IEP618,875).

If the option is not exercised, then a rate of 1.6158 must be achieved in order to recoup the premium.

Making the most of options

Options are particularly flexible: - the buyer can choose any strike rate and any end date. The management of an option position can be made even more flexible with the following techniques:

Selling back an option:
The bank will at any time quote a price at which it is prepared to buy back an option it has sold. The value of the option can be paid directly to the holder or can be incorporated in the rate on any new spot or forward deals done at the time.

Extending or shortening an option:
The expiry date on an option can be changed, usually with payment of premium, either by the company to the bank (for an extension) or by the bank to the company (for a shortening). A payment of premium can be avoided by adjusting the strike rate when the expiry date is altered.

Changing other features of an option:
In principle, any feature of an option may be changed at any time (strike rate, option amount), with a resulting payment of premium in one direction or the other.

5.5 More examples on foreign exchange risk management strategy

Option driven structures

Options may be combined to produce new and flexible risk management solutions. The most popular option combinations are those which reduce or eliminate the payment of an up-front premium.

Take for example a situation where a company wants to hedge a currency position using options. There are a number of solutions which can be used:

- Put Option
- Put Spread
- Participating Forward
- Cylinder Option

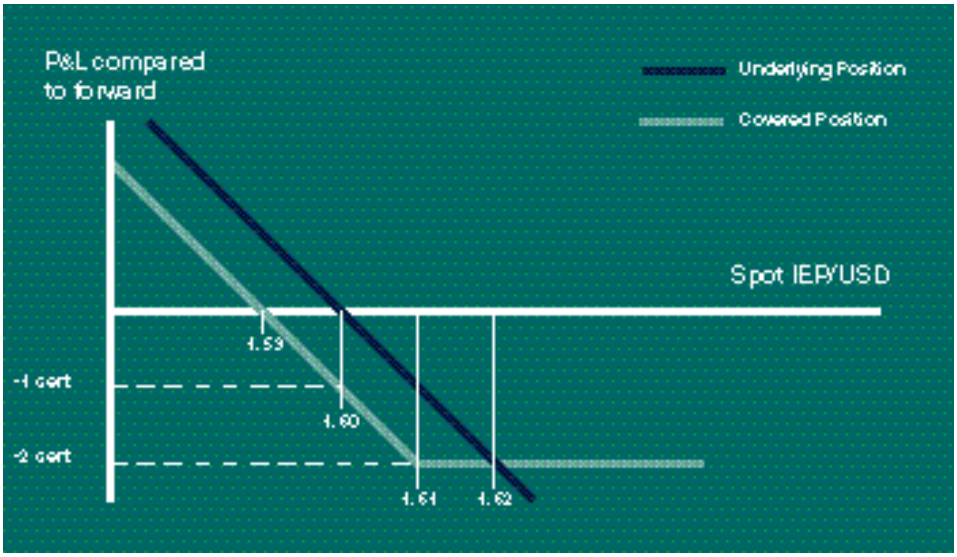
We are going to look at one specific case and, subsequently, examine how the four solutions referred to above could be applied to this example.

Company Profile :	A company is due to receive USD1,000,000 in one months time.	
Problem:	The Financial Director of the company feels that the recent period of USD strength has been over done, and that the US Dollar will weaken over the coming month. The bank has been asked for advice on how this position could be managed.	
Market parameters:	Current Spot Rate	1.6000
	One-Month Forward Rate	1.6000

Solution 1: **Put Option**

Customer buys a USD Put Option at a strike rate of 1.6100.
The cost of the Put Option is 0.63% of US$1,000,000.
This amounts to USD6,300/IEP3,938
0.63% equates to 1.00 cent.

Diagrammatically:



Outcome:

- The exposure is hedged above 1.6100 and the company will benefit from USD strengthening below 1.6100.
- At maturity, if the IEP/USD exchange rate is above 1.6100 the customer will exercise their right to sell USD1,000,000 at 1.6100, in which case the effective rate achieved will be 1.6200, including the premium cost.
- If the IEP/USD exchange rate is below 1.6100 the customer will allow the option to expire unexercised and will sell USD1,000,000 in the spot market. So, if the Spot IEP/USD exchange rate at maturity is 1.5700, the effective rate achieved will be 1.5798, including the premium cost.

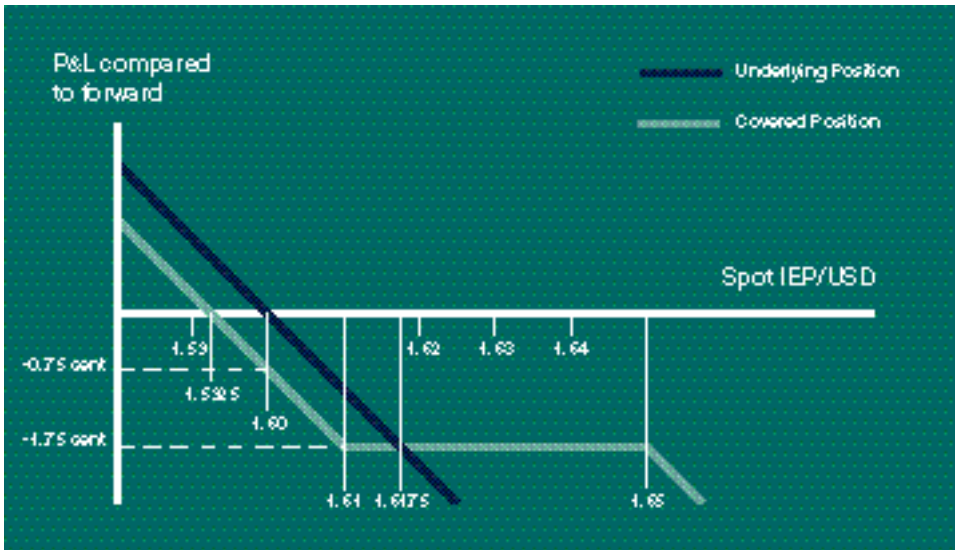
Solution 2: **Put Spread**

If the cost of buying a basic USD Put Option seems too high, the customer can reduce the cost by selling another USD Put Option to the Bank. This strategy is called a Put Spread. The exposure will be unhedged beyond the strike rate of the second option.

Customer buys a USD Put Option at 1.6100 with a cost of 0.63%.
Customer sells a USD Put Option at 1.6500 earning 0.166% (sometimes referred to as a “financing” option).
Net cost 0.464% of the US dollar amount.

This amounts to USD4,640/IEP2,900
0.464% equates to 0.75 cents.

Diagrammatically:



Outcome:

- The exposure is hedged between 1.6100 and 1.6500. The company will benefit from the USD strengthening below 1.6100 and will be exposed to USD weakening above 1.6500.

- At maturity, if the IEP/USD exchange rate is between 1.6100 and 1.6500 the company will exercise the right to sell USD1,000,000 at 1.6100, and the 1.6500 financing Option expires unexercised. The effective rate achieved will be 1.6175, including the premium cost.

- If the IEP/USD exchange rate is below 1.6100, both Options expire unexercised and the company will sell USD1,000,000 in the spot market. So if the Spot IEP/USD exchange rate at maturity is 1.5700, the effective rate achieved will be 1.5772, including the premium cost.

- If the IEP/USD exchange rate is above 1.6500, the company will exercise the 1.6100 USD Put Option, but the financing option sold to the Bank to help reduce the premium cost at 1.6500 will be exercised against them. The exposure is unhedged above 1.6500, but the company has gained the four cents from 1.6100 to 1.6500. So, if the Spot IEP/USD rate at maturity is 1.6700, the effective rate achieved will be 1.6368, including the premium cost.

Solution 3:

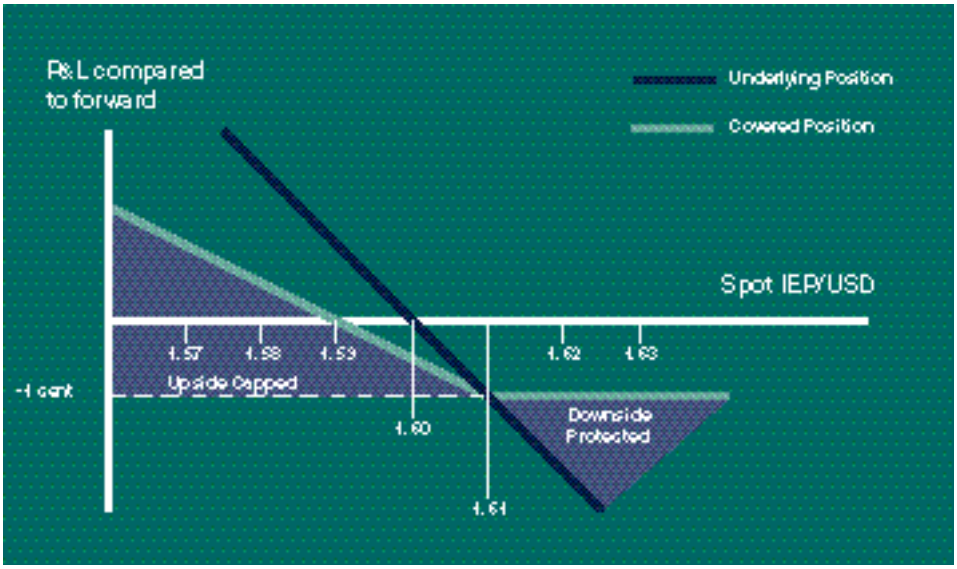
Participating Forward

This is a zero-cost structure, where the protection (or premium) cost is financed by foregoing a percentage of the upside potential. The customer buys a USD Put Option and sells a USD Call Option at the same strike rate but the Call Option is sold for a smaller amount. For this structure to work the strike level must be worse than the relevant forward level. The less favourable the strike level the greater the participation in the upside potential.

Customer buys a USD Put Option at 1.6100 in USD1,000,000.
Customer sells a USD Call Option at 1.6100 in USD500,000.

The participation in the upside potential depends on the ratio of the amounts of both options, in this example 50% or (1 – (500,000/1,000,000))

Diagrammatically:



Outcome:

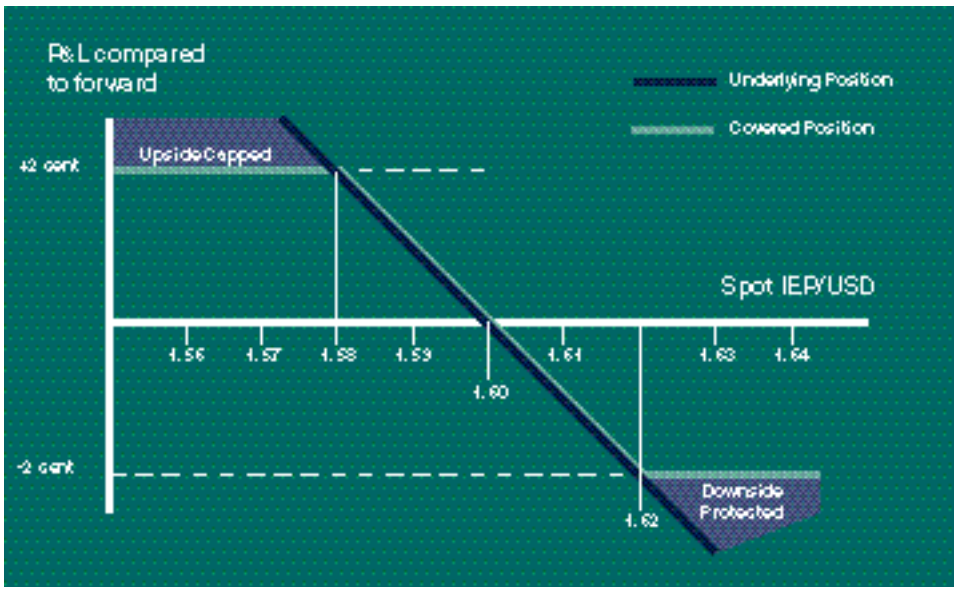
- The exposure is hedged above 1.6100.
- At maturity, if the IEP/USD exchange rate is above 1.6100, the customer will exercise the right to sell USD1,000,000 at 1.6100.
- Below 1.6100, the customer benefits to the extent of 50% for any USD strengthening. So, if the Spot IEP/USD exchange rate at maturity is 1.5800, then the effective rate achieved will be 1.5950.
  i.e. 1.5800+((1.6100 – 1.5800) x 50%)

Solution 4: **Cylinder Option**

This is another zero-cost structure, whereby the protection cost is fully financed by forgoing all upside potential beyond a certain level.

Customer buys a USD Put Option at 1.6200.
Customer sells a USD Call Option at 1.5800.

Diagrammatically:

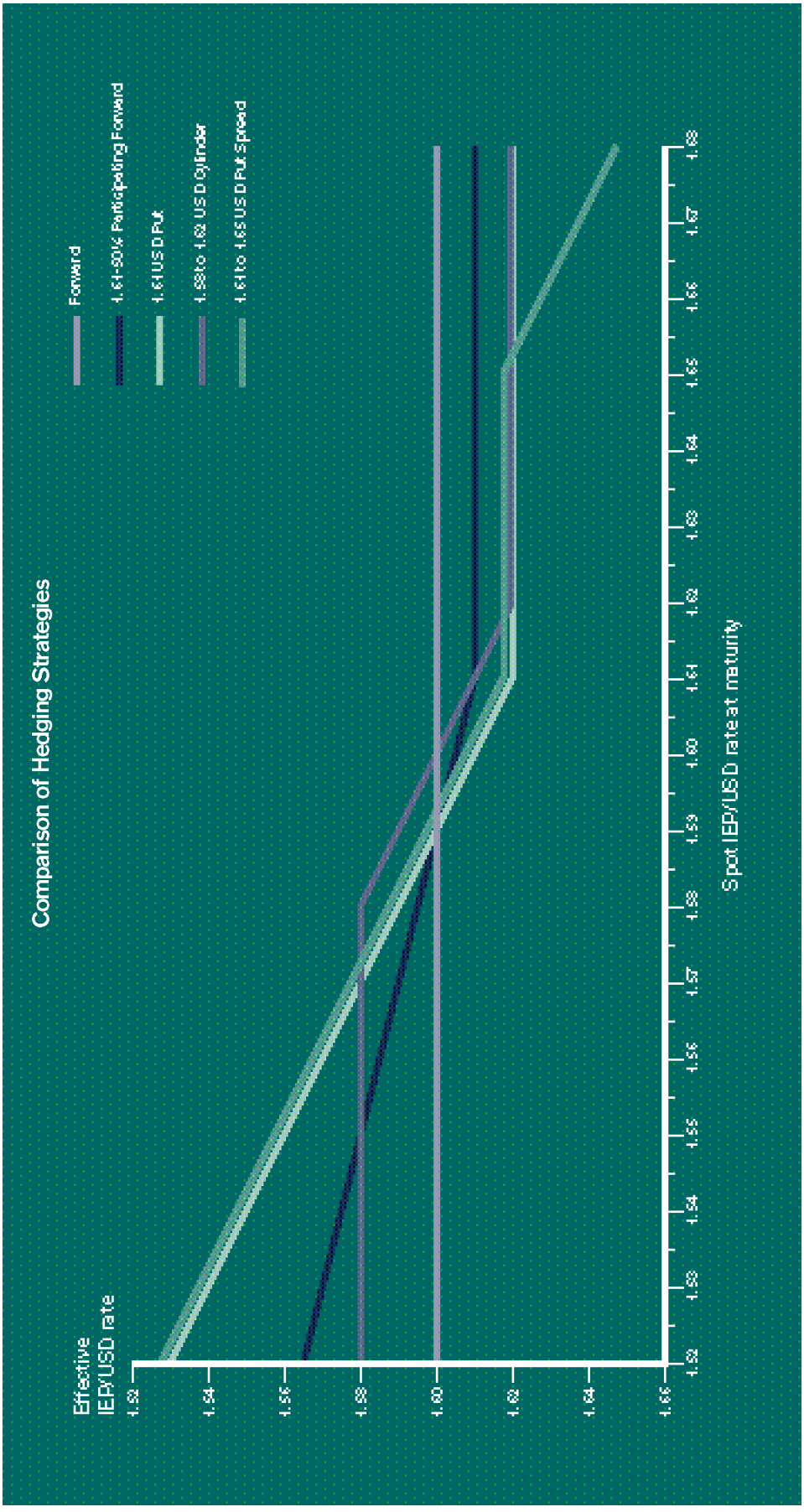


Outcome:

- The exposure is fully hedged above 1.6200 and below 1.5800. If the spot IEP/USD exchange rate at maturity is between 1.5800 and 1.6200, the USD will be sold at the prevailing spot rate.

Summary

Each solution has a different pay-out profile at maturity. These pay-out profiles suit different currency views and different attitudes towards risk and return. As can be seen from these examples, Foreign Currency Options offer the company considerable versatility in the management of currency risk.


Comparison of Hedging Strategies
Forward
1.61-90% Participating Forward
1.61 USD Put
1.58 to 1.62 USD Cylinder
1.61 to 1.65 USD Put Spread
Effective IEP/USD rate
1.52
1.54
1.56
1.58
1.60
1.62
1.64
1.66
1.52
1.53
1.54
1.55
1.56
1.57
1.58
1.59
1.60
1.61
1.62
1.63
1.64
1.65
1.66
1.67
1.68
Spot IEP/USD rate at maturity

Five Year Constant Cover

If a company regularly deals in foreign markets, a Five Year Constant Cover Product may be very useful. Under this type of agreement a bank will sell a company an agreed amount of a foreign currency at the same rate on an agreed date every year for five years. This cover is particularly attractive if a company wishes to maintain a stable pricing or cost structure in a foreign market.

Example

Company profile:	A company has a constant stream of Deutschmark receivables (DEM500,000) every twelve months for the next five years.
Problem:	The company is negotiating a five-year fixed DEM price with the German customer and is worried about the volatility of the IEP/DEM exchange rate.
Solution:	The company enters into a five year constant cover product selling DEM500,000 for IEP at, say, 2.3000 every twelve months, for five consecutive twelve month periods. The rate remains fixed for the entire life of the transaction.
Outcome:	The company has now locked in its future income stream in Irish Pounds at a constant rate for five years, eliminating any exchange rate risk, and can predict with certainty the profitability in IEP of this five year German contract.

Forward Xtra Contract

A Forward Xtra Contract provides a company with the certainty of a guaranteed worst exchange rate, but offering the opportunity to benefit from a favourable movement in exchange rates.

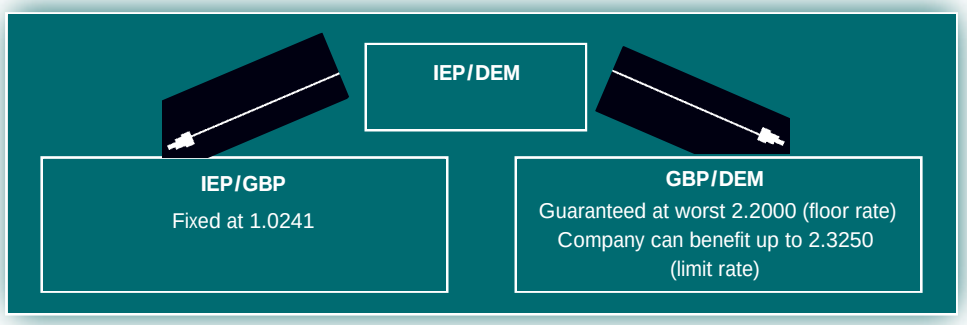
Example

The following example details a transaction that was entered into by a company in 1995:

Problem:	The company was buying new machinery. The cost was DEM4,000,000, payable in six months time. The Financial Director required an instrument that would provide a level of protection against DEM strength, yet enable the company to benefit from DEM weakness.	
Market parameters:	Spot IEP/DEM	2.2920
	Six Month IEP/DEM Forward	2.2660.
Solution:	Customer entered into a Forward Xtra Contract.	

How does a Forward Xtra Contract work?

The IEP/DEM exposure is separated into its IEP/GBP and GBP/DEM components. The IEP/GBP is fixed with a forward contract, and the GBP/DEM has a floor rate and limit rate.



The GBP/DEM rate was protected below the floor level, and could improve up to the limit rate as long as the limit rate did not trade on or before the maturity date. If the limit rate was to trade, then the GBP/DEM component would be locked in at the floor rate.

What were the guaranteed worst and best possible levels for the IEP/DEM exposure?

Guaranteed worst level: Using the fixed IEP/GBP (1.0241) and the GBP/DEM floor rate (2.200) gave a guaranteed worst level of IEP/DEM 2.2530.

Best possible level: Using the fixed IEP/GBP (1.0241) and the GBP/DEM limit rate (2.3250) means that a level of 2.3810 was the best achievable level under this proposal.

The company had a guaranteed IEP/DEM rate of 2.2530 and could possibly benefit up to 2.3810.

What was the downside trigger?

If GBP/DEM traded above the limit rate of GBP/DEM 2.3250 at any time on or before the maturity date of the contract, the company would be automatically locked in to the guaranteed IEP/DEM rate of 2.2530.

Was there a cost involved?

The actual IEP/DEM forward rate in six months was 2.2660. The difference between this forward rate and the guaranteed worst rate of 2.2530 represents the investment in the upside potential. This cost amounted to IEP10,185.

Outcome:

At maturity, the prevailing GBP/DEM rate was 2.2980, having never traded above the limit rate of 2.3250. This rate, combined with the IEP/GBP forward, resulted in an actual IEP/DEM rate of 2.3534. The company benefited by DEM 874 pips, compared with the original IEP/DEM forward level of 2.2660.

This equated to a benefit of IEP65,556.50.

Chapter 6:
Treasury Risk Arising from Changes in Interest Rates

6.1 Forward Rate Agreements(FRA)

6.2 Futures

6.3 Swaps
Interest rate swaps
Currency swaps

6.4 Interest rate options
Interest rate caps
Interest rate floors
Interest rate collars

6.5 Environment in which to use derivative products

6.6 Some more examples on tailoring interest rate derivatives

Interest rate risk management is concerned with managing the risks arising from possible changes in interest rates.

Every day businesses face the possibility that future interest rate movements will leave them at a disadvantage. A business may deal with this possibility in a number of ways:

- Allow borrowings and deposits to attract interest at the prevailing market rates.
- Try to limit the effect of changing interest rates, for example by negotiating a fixed rate of interest for a specific period.
- A combination of the above.

Any course of action will carry its own risks. If a company borrows on a fixed-rate basis when market rates are, say, 10%, it will find itself at a disadvantage if rates then fall to, say, 6%. Similarly, if it borrows at a variable rate and market rates then rise, the business will have to pay more interest.

Investors may also suffer from changes in the interest rate. Once invested on a fixed rate basis, there is an opportunity cost if rates rise. If they invest at a variable rate and market rates subsequently fall, a lower return will be achieved than if the rate had been originally fixed for a longer period.

Companies with a high level of debt are particularly exposed to interest rate increases. These businesses generally try to limit the risk by balancing levels of fixed-interest-rate debt and variable-interest-rate debt. This balance makes them less vulnerable to sudden interest rate changes.

In recent years, a wide range of interest rate risk management instruments have been developed to help companies to manage interest rate risk. These developments have been greatly assisted by progress in computer technology and in risk management techniques. Instruments can be tailored to address almost any business need or desired risk profile.

Outlined below are descriptions and examples of some of the more fundamental risk management instruments:

- Forward Rate Agreement (FRA)
- Futures
- Swaps
- Interest Rate Options

6.1 Forward rate agreements (FRA)

One of the most common ways of managing interest rate risk is by using a Forward Rate Agreement (FRA), also known as a Future Rate Agreement.

A Forward Rate Agreement (FRA) is a contract whereby a company fixes with a bank, the interest rate to be applied to a future interest period. The amount involved and the length of the contract are also fixed. By buying an FRA, a company can lock in the interest rate applicable for a future loan. By selling an FRA, a company can lock in the interest rate applicable for a future deposit.

The date on which the details of the FRA are agreed is known as the contract date or trade date.

FRAs allow a company to protect itself against a rise or fall in interest rates for a fixed future period, without creating a duty to borrow or deposit anything. Having agreed a future rate with a bank, the company receives or pays a cash sum at the start of the period that is equal to the difference between:

- the agreed interest rate and
- the DIBOR for the specific period.

Example 1: FRA for a borrower

Company profile:	IEP250,000 loan. Rolls over on a three-monthly basis.
Problem:	The company feels that interest rates are rising and that rates will be higher at the next roll-over date in three months time.
Market parameters:	Current three month rate is 5.8125%. FRA available at 6% starting in three months time.
Solution:	Company buys protection through an FRA.
Outcome:	(1) In three months time interest rates have risen to 6.5%. However, the company purchased an FRA at 6% to hedge against this feared interest rate move and thus only pays 6% on the loan. (2) In three months time, interest rates have fallen to 5.5%. However, the company purchased an FRA at 6%, so the effective cost remains at 6%.

Example 2: FRA for a depositor

Company profile:		IEP300,000 deposit. Deposit rolling over in two months time and will be renewed for a further six months.
Problem:		The company feels that interest rates will be lower in two months time when rolling over the deposit.
Market parameters:		Current six-month rate is 5.875%. FRA can be sold at 5.8%, starting in two months time for six months.
Solution:		Company sells an FRA at 5.8%.
Outcome:	(1)	In two months time, interest rates have fallen to 5.5%, but the company has entered into an FRA at 5.8% and thus achieves a deposit rate of 5.8%.
	(2)	In two months time, rates have risen to 6%. However, the company sold an FRA at 5.8%, so the effective return remains at 5.8%.

Notes:

- A borrower or depositor is not speculating on interest rate movements by using the FRA instrument, but merely fixing the rate at an appropriate level based on their current views on interest rates for budgeting and forecasting.
- Terminology: A 3 v 6 FRA (referred to in the market as a 'three's sixes FRA') means an FRA beginning three months from today for a period of three months.

6.2 Futures

An Interest Rate Future is another common tool used to manage interest rate risk. It is somewhat similar to an FRA, in that it is used to hedge a future interest period, but is less flexible and more liquid. It is defined as a contract whereby a company agrees to buy or sell a specific amount of a specific instrument on a certain date in the future. The amount involved and the length of the contract are also fixed. The price agreed is transacted by means of open outcry on the floor of a traded exchange.

Unlike FRAs, Futures are quoted on an index basis. For example, if the December - March contract is 6%, the futures price for the contract will be quoted as 94% (100 – 6).

There are three major exchanges in the world where Futures are traded:

- LIFFE (London International Financial Futures Exchange)
- CBOT (Chicago Board of Trade)
- IMM (International Monetary Market)

Example

Company profile:	GBP2,000,000 loan. Rolls three monthly.
Problem:	The company feels that interest rates are rising and that rates will be higher at the next roll-over date in three months time.
Market parameters:	Current three month rate is 5.8125%. Future price is equivalent to 6%.
Solution:	Buys protection at 6% through selling Futures contracts (on LIFFE) at 94.00 to hedge its debt.
Outcome:	The contract settles in three months time at 93.00 (indicating that rates have increased to 7%). Therefore, the exchange will pay the company the 1% difference.

Computation:	100 basis points (or 1%) x GBP12.50	=	GBP1,250
	GBP1,250 x 4 contracts	=	GBP5,000
	(Each contract is worth GBP500,000)		
	Money paid to company	=	GBP5,000.

Notes:

- Sterling Futures contracts are only available on LIFFE.
- Futures contracts are quarterly and work off fixed dates in March, June, September, and December.
- Each contract is worth GBP500,000.
- Minimum price movement in Financial Futures is a ‘tick’ and this represents one basis point.
- One tick equates to GBP12.50.
- Brokerage is charged when buying or selling Futures.
- A margining system operates in the Futures market. Therefore, money is received or deposited with the exchange as prices move daily.
- Companies usually access interest rate Futures by dealing with banks that actively broker these markets.

6.3 Swaps

A Swap is a contractual exchange of cash flows between two counterparties. As there is no deposit or loan involved in the transaction, the Swap does not appear on the company’s balance sheet. There are two categories of Swaps:

- Interest Rate Swaps.
- Currency Swaps (use in foreign exchange context, dealt with in section 5.3).

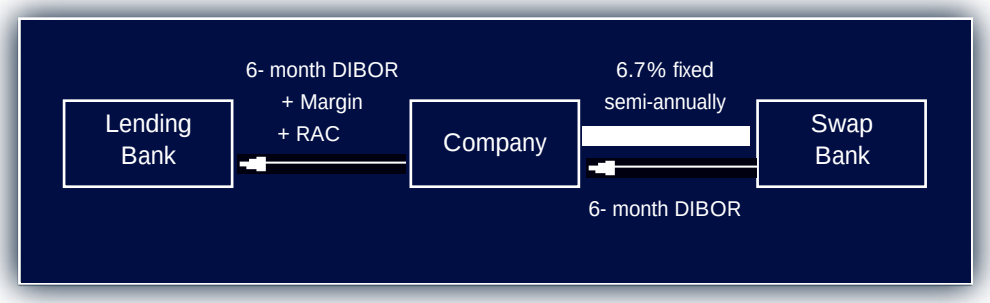
Interest Rate Swaps

An Interest Rate Swap is a single-currency contract whereby two counterparties agree to swap interest payments (typically fixed and floating) for an agreed period on an agreed principal amount.

Example 1: Interest Rate Swap for a borrower

Company profile:	Core debt IEP3,000,000. Expected to remain for two years.
Problem:	The company is concerned that interest rates are at an all-time low and will rise over the next two years.
Market parameters:	Current six month rate is 6%. Swap available in the market for two years at 6.7%.
Solution:	Obtain protection through a Swap. The company enters into an IEP3,000,000 Interest Rate Swap at 6.7% for two years on a semi-annual basis.

Diagrammatically :

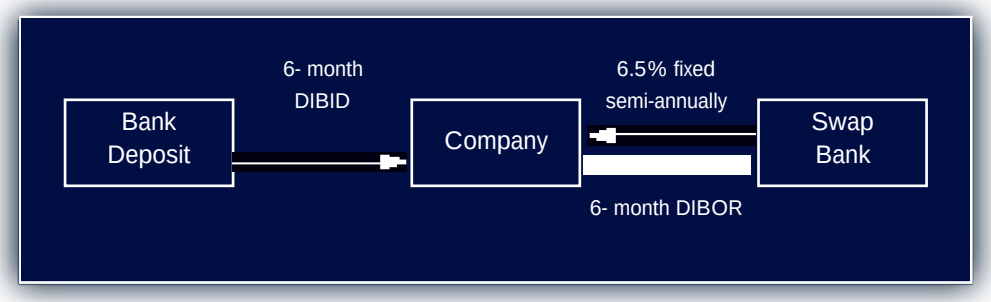


Outcome:	DIBOR will be set every six months on the company's loan. However, the Swap matches the company's loan roll-over dates. Therefore, regardless of whether interest rates rise or fall, the company will pay 6.7% plus margin and RAC for the life of the Swap.

Example 2: Interest Rate Swap for an investor

Company profile:	Core cash surplus is IEP3,000,000 and certain to be available for the next two years.
Problem:	The company feels that interest rates will decrease over the two year period and that it will therefore earn a decreasing return on this cash surplus over the period.
Market parameters:	Current six month deposit rate is 6%. Swap available in the market for two years at 6.5%.
Solution:	Enter into an IEP3,000,000 Swap at 6.5% for two years, on a semi-annual basis.

Diagrammatically:



*Note: DIBID is the Dublin Interbank Bid Rate, which is typically 0.125% less than DIBOR.

Outcome: IEP3,000,000 will roll-over on deposit every six months at the market DIBID. However, the Swap payment matches the investment income profile, and therefore whether interest rates rise or fall, the company will earn 6.5% fixed semi-annually for the life of the Swap and will pay the Swap bank DIBOR. The net result is a fixed deposit rate of 6.375% for two years (6.5% – 0.125%).

Note: A borrower or investor is not speculating on interest rate movements by using the Interest Rate Swap market, but merely fixing the rate at an appropriate level based on their current view on interest rates to help in budgeting and forecasting.

Currency Swaps

A Currency Swap involves the exchange of interest rate payments in two different currencies and possibly the exchange of principal amounts at both the beginning and the end of the swap term. Currency Swaps from a foreign exchange viewpoint were reviewed in Chapter 5, Section 5.3. This chapter concentrates on Currency Swaps from an interest rate viewpoint. There are three kinds of Cross Currency Interest Rate swaps:

- Variable-variable: a swap in which the interest in both currencies is calculated on a variable-rate basis.
- Fixed-variable: a swap in which the interest in one currency is calculated on a fixed-rate basis while the interest in the other currency is calculated on a variable-rate basis.
- Fixed-fixed: a swap in which the interest in both currencies is calculated on a fixed-rate basis.

Example: Fixed to Variable Currency Swap

Company profile: An Irish company has a GBP 5 million loan at 7.5%
Time to maturity - five years.

Problem: The company no longer has a requirement for Sterling. Costs involved in early repayment are excessive. However, company has a need for additional Irish pound funding with a variable interest rate.

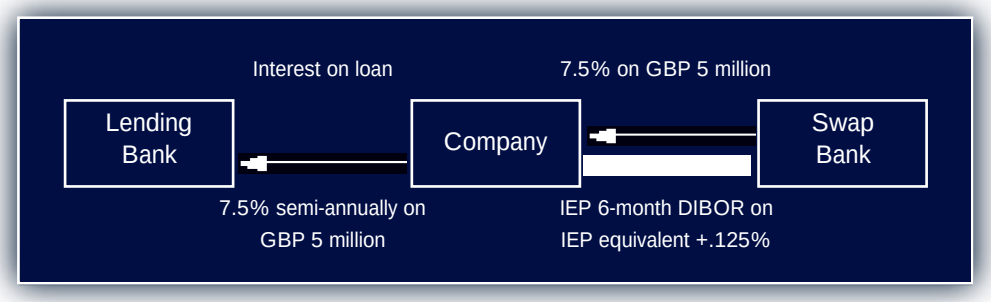
Market parameter: Fixed rate 7.5% currently being paid paid semi-annually

Solution: Enter into a Currency Swap.

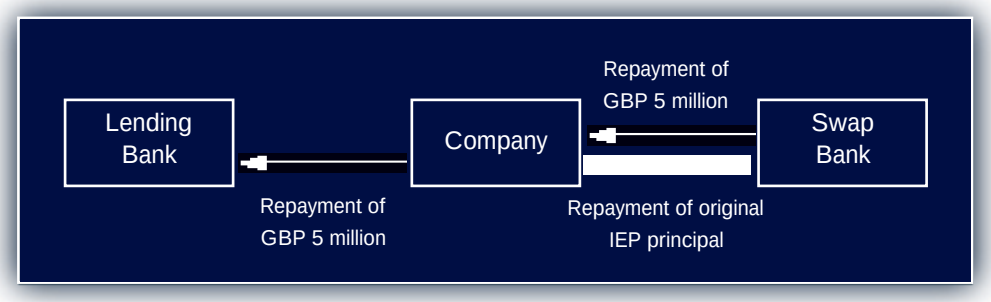
Diagrammatically:

Initial exchange

Interim flows



Final exchange



Outcome: By entering into the Currency Swap the company has ensured that it will receive all the Sterling cash flows required to meet its loan obligations against payment of Irish pound cash flows. The net effect of the combined loan and Currency Swap is that the company effectively has Irish pound funding on which it pays a variable rate of interest referenced to DIBOR. The company is thus insulated from any movements in the Sterling/Irish pound exchange rate.

Notes:

- The exchange rate set on day 1 is also the exchange rate that will apply at maturity, eliminating the company's exchange rate exposure over the five-year period.
- The Sterling interest due on the loan and Sterling interest received on the swap are exactly equal.
- The Sterling principal repayment due on the loan is exactly equal to the Sterling principal received on the maturity of the swap.
- The margin over six month DIBOR incorporates the cost of translating 7.5% fixed in Sterling into floating Irish pounds.

6.4 Interest Rate Options

An option is a contract between a seller (or writer) and a buyer (or holder)under which the buyer pays the seller a premium and in return has the right (but not the obligation) to enter into a contract with the seller during a fixed period.

There are three basic Interest Rate Option products:

- Interest Rate Cap: used to set an upper limit on an interest rate (usually used by a borrower to protect against excessively high interest rate costs).
- Interest Rate Floor: used to set a lower limit on the interest rate (usually used by an investor to protect against unusually low interest rate returns).
- Interest Rate Collar: a combination of a Cap and Floor that sets an upper limit, together with a lower limit, on the interest rate applicable to a loan or deposit.

Interest Rate Caps

In return for a premium received at the start of the Cap, one party agrees to pay the other the difference between the strike rate and the reference rate (LIBOR) should the reference rate exceed the strike rate. The closer the chosen strike rate is to the current rate, the higher the premium involved will be.

Example

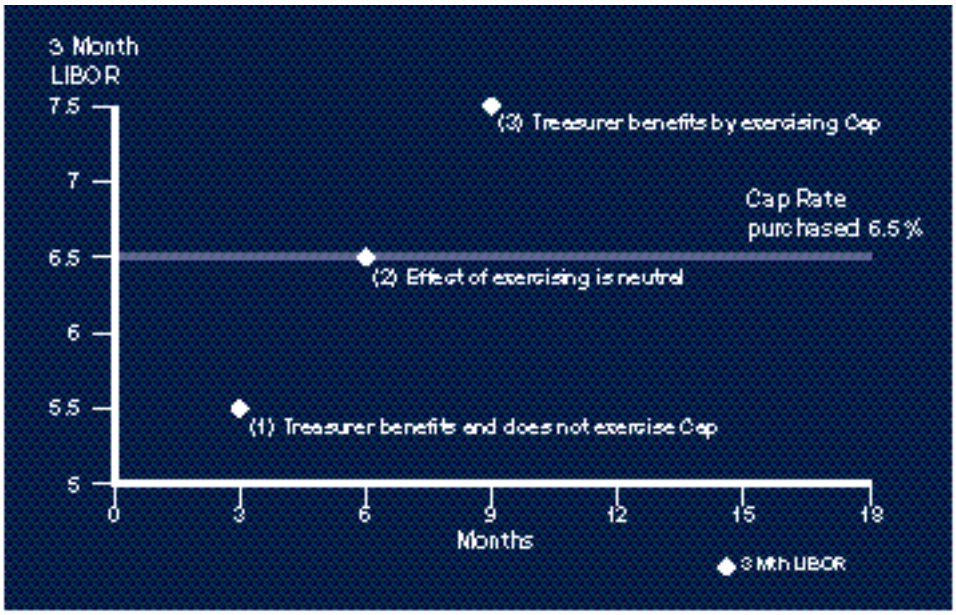
Company profile: Core debt of USD5,000,000.
Term loan with three years to maturity.

Problem: The company feels that interest rates in the long term may fall but is concerned about its ability to absorb an upward movement over the life of the loan.

Market parameters: Current three month rate is 5.50%.
Cap available with a strike rate of 6.5% for three years.

Solution: Buy protection through an Interest Rate Cap. The company enters into an Interest Rate Cap with a strike rate of 6.5% (selected by the company) for three years on a three monthly basis. For this the company will pay a fixed premium.

Diagrammatically:



Outcome:

(1) In three months time, LIBOR sets at 5.5%. Therefore, the company does not exercise the Cap at 6.5%, but takes the lower rate in the market.

(2) In six months time, LIBOR sets at 6.5%. The company purchased the Cap at 6.5%, so it does not exercise the Cap.

(3) In nine months time, LIBOR sets at 7.5%. The company purchased the Cap at 6.5%, therefore it exercises the Cap and will only have to pay 6.5% on its debt.

Interest Rate Floors

In return for a premium received at the start of the floor, one party agrees to pay the other the difference between the strike rate and the reference rate should the reference rate fall below the strike rate. The closer the chosen strike rate is to the current rate, the higher the premium involved will be.

Example

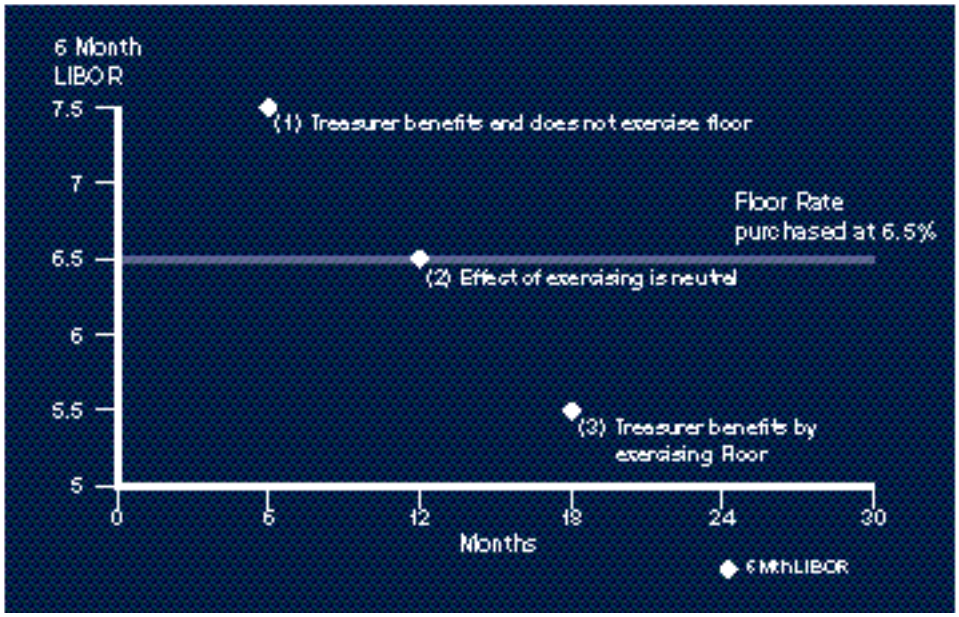
Company profile: Core cash surplus of USD5,000,000, expected to remain for at least three years.

Problem: The company feels that interest rates in the long term will rise but is concerned that unexpected downward movements in interest rates over the life of the cash surplus will show unacceptably low returns.

Market parameters: Current six month rate is 5.5%.
Floor available with a strike rate of 6.5% for three years.

Solution: Buy protection through an Interest Rate Floor. The company enters into an Interest Rate Floor with a strike rate of 6.5% - selected by the company for three years on a semi-annual basis. For this the company will pay a fixed premium.

Diagrammatically:



Outcome:

(1) In six months time, LIBOR sets at 7.5%. Therefore the company does not exercise the Floor at 7.5% but instead takes the higher rate in the market.

(2) In twelve months time, LIBOR sets at 6.5%. The company purchased the Floor at 6.5%, therefore it does not exercise the Floor.

(3) In eighteen months time, LIBOR sets at 5.5%. The company purchased the floor at 6.5%, therefore it exercises the Floor and will continue to earn 6.5% on its deposit.

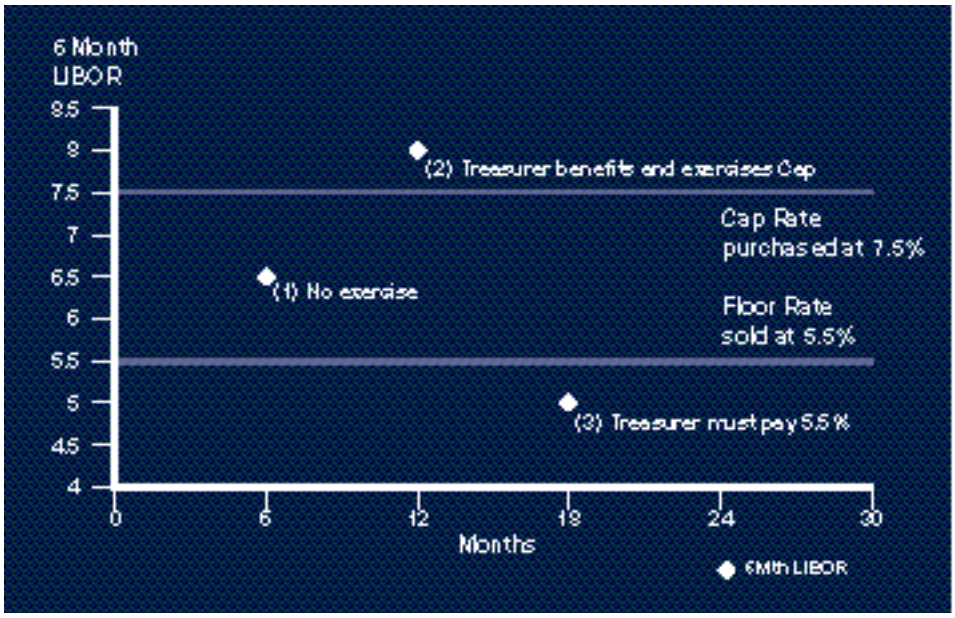
Interest Rate Collars

An Interest Rate Collar is an agreement between two parties that ensures that the interest rate of the holder is maintained within a given range (in essence a combination of a Cap and a Floor). If the interest rate goes above an agreed cap rate, one party pays or receives the difference, and if the interest rate goes below an agreed floor rate, the other party pays or receives the difference, depending on which party purchased or sold the option. The premium for a Collar is lower than for a Cap or a Floor. It is possible to construct a Collar that involves no payment of premium.

Example 1 - Interest Rate Collar for a Borrower

Company profile:	Core debt of USD5,000,000, expected to remain for at least three years.
Problem:	The company feels that interest rates will rise in the future. It does not wish to enter into a Swap and be locked in to a fixed rate, but the cost of protection through the purchase of an Interest Rate Cap is too high.
Market parameters:	Current six month rate is 5.75%. Current three year Swap rate is 6.28%. Cost of Cap at 7.5% is considered too expensive by the company.
Solution:	Enter into an Interest Rate Collar. The company buys protection through an Interest Rate Cap with a strike rate of 7.5% (selected by the company) and at the same time enters into an Interest Rate Floor whereby the company sells a Floor at 5.5%, thus reducing the company's premium charge. The effect is that the company never pays more than 7.5% and never pays less than 5.5%. This transaction is entered into for three years on a semi-annual basis.

Diagrammatically:



Outcome:

(1) In six months time, LIBOR sets at 6.5%. Therefore, as the company purchased a Cap at 7.5% and sold a Floor at 5.5%, neither option is triggered.

(2) In twelve months time, LIBOR sets at 8%. The Cap triggers at 7.5% and the company will only have to pay 7.5% on its loan.

(3) In eighteen months time, LIBOR sets at 5.0%. The Floor is triggered, and therefore the company will have to pay 5.5% on its loan.

Example 2: Interest Rate Collar for a Depositor

Company profile: Company has a core cash surplus of USD5,000,000, expected to remain for at least three years.

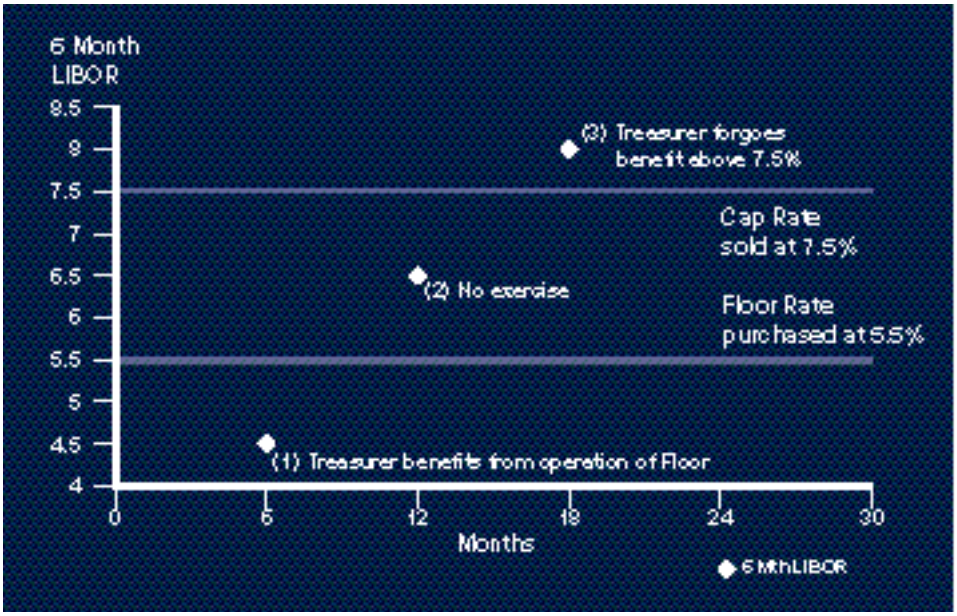
Problem: The company feels that interest rates will fall in the future. It does not wish to enter into a Swap and be locked in to a fixed-rate return, but the premium cost of protection through the purchase of an Interest Rate Floor is too high.

Market parameters: Current six month rate is 5.625%.
Current three year swap rate is 6.16%. Current Floor rate is 5.5%.
Premium to purchase Floor at 5.5% considered too expensive by company.

Solution: Enter into an Interest Rate Collar. The company buys protection through an Interest Rate Floor with a strike of

5.5% (selected by the company) and at the same time enters into an Interest Rate Cap whereby it sells a Cap at 7.5%, thus reducing the company's premium charge. This transaction is entered into for three years on a semi-annual basis.

Diagrammatically:



Outcome:

(1) In six months time, LIBOR sets at 4.5%. The company exercises the Floor and will continue to earn 5.5% on its deposit.

(2) In twelve months time, LIBOR sets at 6.5%. As the company sold the Cap at 7.5% and purchased the Floor at 5.5%, neither option is triggered.

(3) In eighteen months time, LIBOR sets at 8.0%. The Bank exercises the Cap at 7.5%, so the company may only earn up to 7.5%.

Note:

In all other risk management instruments discussed in this chapter, a company is purchasing the instrument. However, when a company sells an Option to a bank, it is selling (writing) the instrument. This should be consistent with a company's Treasury risk management policy.

6.5 Environment in which to use derivative products

Factors to be considered when looking at a treasury risk management strategy include:

- the company's risk appetite
- the volatility levels
- the absolute level of interest rates and general outlook

A company with a very significant level of debt will be highly sensitive to interest rate movements and will typically adopt a conservative risk management strategy. This would generally involve a high level of fixed-rate debt, i.e. the use of Swaps or interest rate caps. Conversely, if a company has a relatively small exposure to interest rates it may purchase a Cap to allow it some protection if rates rise suddenly.

In general, if interest rate volatility is high, option premiums will be expensive and FRAs and Swaps may be a better alternative. On the other hand, if volatility is low, options may provide a cheaper method of protection.

Another parameter to consider when adopting a risk management strategy is the absolute level of interest rates and general economic outlook. If rates are historically high, it may not be in a company's interest to lock in its debt by way of a Swap or FRA because it may prove to have paid excessively high rates for the life of the transaction. Therefore, to ensure that the company has some level of protection it would probably be preferable to purchase some form of option. On the other hand for the investor, if rates are historically high it could make more sense to lock in the returns by way of an FRA or Swap rather than using an option, thus guaranteeing high returns. The opposite applies for borrowers and investors if rates are historically low.

The diagram below summarises this.

Environment in which to use Derivative Products

	FRA/Futures	Swaps	Options
Rates high for borrower			•
Rates high for investor	•	•	
Rates low for borrower	•	•	
Rates low for investor			•
Rates in between	•	•	•
High volatility	•	•	
Low volatility			•

Note:
"Rates high" implies that the company, in conjunction with its advisers, has taken the view that the most likely direction of interest rates is downwards, or vice versa if rates are low.

6.6. Some more examples on tailoring interest rate derivatives

Zero Coupon Deposit

This is particularly useful for companies seeking to invest funds for a longer period. All administrative issues with respect to interest payments, rate setting etc. are removed, as interest is fixed from the outset and payable in a lump sum at final maturity. This is because all coupons due are automatically reinvested.

Case Study

Company profile:	The company has a core IEP2 million cash surplus, available for the next two years.
Problem:	The money is currently being rolled over on deposit on a three monthly basis, leaving the company open to interest rate fluctuations.
Solution:	The company places IEP2,000,000 on deposit for two years and agrees to accept a gross return that may be significantly above short-term rates payable at maturity. (This is a zero-coupon deposit: i.e. no coupons are paid until maturity).
Outcome:	The company earns an attractive return fixed for two years.

Knock-in-Collar

- This product is a variation on a conventional zero-cost collar for a borrowing company. The main features are that no premium is payable and the floor is set at a considerably lower rate than with a conventional collar.
- If rates fall below the floor level, the company has to pay slightly more than would be the case with a zero-cost collar rate.
- The product is extremely useful when rates are low and it is less likely that the Floor level under the Knock-in Collar structure will be breached.

Case Study

Company profile:	The company has a GBP2,000,000 loan for two years.
Problem:	It wishes to purchase a zero-cost collar but discovers that the Cap rate that suits the budget figures is too close to market rates, implying that it is impossible to sell a Floor at zero cost. The company goes to the market to see if there is any other way of paying no premium while still allowing the same Cap level.
Solution:	The company enters into a Knock-in Collar, allowing it to continue to hedge at the budget rate. In this instance the company purchases a Cap for two years at a strike rate of 7% and sells a Floor at 6.0%. Under this type of structure, the following applies:

Scenario 1:	LIBOR sets at 8%, Cap at 7%. Company receives 8% – 7% = 1%.
Scenario 2:	LIBOR sets at 6%, Cap at 7%, Floor at 6%. Company does nothing.
Scenario 3:	LIBOR sets at 5%, Cap at 7%, Floor at 6%. Company pays 7% – 5% = 2%. Note: The amount due is the difference between the Cap rate and the LIBOR set and not the difference between the Floor rate and the LIBOR set as with a conventional Collar.
Outcome:	The company manages to hedge itself against interest rate rises using options without paying a premium.

DIBOR-in-Arrears

A company may enter into a transaction under this structure by agreeing to pay interest based on the DIBOR setting at the end of the interest period, rather than at the start, which is the normal convention. This type of product is particularly useful for a borrowing company if it believes that the Irish pound yield curve is currently too steep: i.e. rates will not rise as quickly as predicted by the yield curve.

Case Study

Company profile:	The company has a core debt of IEP5,000,000, on which it pays a quarterly variable interest rate (three month DIBOR).
Problem:	The company believes that the yield curve is currently too steep and wonders if it can take advantage of three month DIBOR over a twelve month period.
Solution:	The company enters into a DIBOR-in-Arrears transaction. Under this agreement, a bank agrees to pay three month DIBOR under the normal convention (settling at the start of three months for payment in arrears). However, the company will pay three month DIBOR setting on the last day of the interest period minus a set number of basis points, which will be agreed at the outset. This calculation will be based on the shape of the yield curve.
Outcome:	If the price is DIBOR - 10bps per quarter and if rates on average do not rise by more than 10bps per quarter, the company has achieved an interest saving.

FRA Options

This type of product is particularly useful if rates are fairly static yet a company does not wish to leave a short-term position completely unhedged.

Case Study

Company profile:	IEP2,500,000 loan due to draw down in three months time for three months.
Problem:	The company feels that rates may rise but does not wish to purchase an FRA immediately, as it will lose the opportunity of availing of lower rates.
Solution:	The company buys protection by purchasing an FRA option. This product will allow the company a window period in which to purchase an FRA at a set price. In return for this product the company will have to pay a premium upfront.
Outcome:	The company has the opportunity of benefiting from lower rates but still has insurance against rates rising suddenly.

Interest Rate Swaption

A Swaption is an option on a Swap giving a company the right, but not the obligation, to enter into a Swap at a given rate for a given period. This type of product is particularly useful where a company is contemplating a long-term project and wishes to protect itself against a possible rise in interest rates without committing itself to pay a fixed rate now.

Case Study

Company profile:	The company is planning a project involving an investment of IEP3,000,000 for three years in six months time.
Problem:	The company feels that interest rates are fairly steady but does not want to expose itself to an unexpected rise in rates over the next six months. However, there is a small chance that the project may not proceed.
Solution:	The company buys protection through a Swaption at current market levels, exercisable in six months time which gives it the right but not the obligation to enter into a three year Swap in six months time at an agreed rate. If rates rise above the agreed rate and the project proceeds the company will exercise the option and enter into a three year Swap. If rates fall or remain unchanged or the project does not proceed, the company will let the option lapse and revisit the risk at the end of the period. The bank writing the option will charge the company a premium for this product.

Outcome: The company has the opportunity of benefiting from lower rates but still has insurance against rates rising suddenly.

Flexi-Cap

This product is a variation on a conventional Cap. It gives a company the opportunity of only exercising a pre-agreed number of caplets (the individual setting periods within a Cap) in an entire period. Thus the cost of the premium the company has to pay will be less than under a conventional Cap. A typical flexi-cap would allow a company to exercise a pre-arranged number of in-the-money caplets out of a pre-agreed total. This product is ideal if rates are low and do not look like increasing in the short term yet the company wishes to buy some protection over the life of its loan.

Case Study

Company profile: The company has a core debt of GBP5,000,000 for three years.

Problem: Rates are relatively low yet may fall further in the short-term. The company is reluctant to enter into a Swap, but the premium for exercising a 3 year Cap seems excessive.

Solution: The company enters into a flexi-cap for three years, which gives protection at the cap rate for six out of the eleven settings over a three year period. Once the company exercises any six in-the-money Caplets it no longer has any protection for the remaining life. If a Caplet is in-the-money, it must be exercised. Therefore, if rates rise quickly and stay high, it is likely that the company will then be exposed at the latter end of the three year period.

Outcome: The company hedges its debt for the three year period at lower premium rates than a conventional cap and can still benefit from lower LIBOR rates in the market.

Seasonal Swaps

This is another derivation of the Swap instrument, which is used to hedge exposure arising in a particular part of a year for a number of future years. Typically, it is used by agricultural companies to cover seasonal borrowing requirements.

Case Study

Company profile: The company has IEP1,000,000 seasonal debt.
Debt occurs every year in the September-December period for the next three years.

Problem:	The company feels that rates are going to rise over the next three years and is not satisfied to just hedge for next year.
Solution:	The company enters into a seasonal swap to fix a three month rate, which will remain constant for every September to December for the next three years.
Outcome:	Regardless of whether interest rates rise or fall, the company will pay that fixed rate for the specified three month period each year.

Chapter 7:
Short and Long-Term Funding

7.1 Funding options
- Overdraft
- Revolving credit facility
- Term Loan
- Commercial Paper
- Note Issuance Facility
- Bond issue
- Medium- term note programme
- Equity funding

7.2 Relative benefits of funding options

There are a number of options available to companies for sourcing both short-term and long-term funding. This chapter attempts to give a brief overview of the main sources that should be considered in the market. It does not comprehensively deal with all the issues pertinent to this subject. Your bank will have full details of the financing methods mentioned below should you need more information.

Parameters		Consideration
• Short/long-term	-	Need to match asset or project life to loan maturity.
• Risk to the investor	-	If funding is by way of a bond issue, how will it be rated by the investor market.
• Flexibility	-	Does the funding mechanism give a company the flexibility it requires.
• Strategic fit	-	Does it support the long-term objectives of the business.

7.1 Funding options

Overdraft

Overdraft is a facility that is used to finance the working capital needs of a business. A company only utilises the line as necessary and may draw up to a pre-agreed limit at any time. It is extremely flexible. It is an uncommitted facility, and the pricing is based on 'Prime' rate plus borrowing margin. This rate, which is linked to the DIBOR market, may change on a weekly basis. The facility is classified as a demand facility, implying that a bank may call the facility if necessary. It is more appropriate for short-term funding. However, while the rate is higher than other types of loans, a company will only pay interest on the daily debit balance outstanding.

Revolving credit facility

There are two types of revolving credit ('revolver') facility:

- Committed revolver: A bank is at all times obliged to advance to the company, up to the stated amount of the facility, under agreed terms. For this arrangement a company will pay a commitment fee on the undrawn portion of the loan, which is generally half the margin applicable when the funds are fully drawn.

- Uncommitted revolver: A bank is not obliged to provide funding to the company at all times but instead may provide funds at its discretion. No commitment fee is charged.

Term Loan

A company borrowing by way of a term loan facility generally borrows a specific amount, i.e. the draw-down amount is usually agreed when the facility is being set up. The facility tends to be used for acquisition finance or capital expenditure, which require longer-term funding. Amounts repaid may generally not be redrawn. However, the repayment schedule can be tailored to match the cash flow of the company in general or that of the project being financed. It is generally used for longer-term funding.

Commercial Paper

Commercial paper is a debt instrument evidenced in the form of a short-term note. Its main attraction is that reserve asset cost is not applicable. Before January 1994 this was a major cost saving, but RAC is now at a relatively low level because of Article 104A of the Maastricht Treaty which prohibited the Government or other public bodies borrowing from financial institutions. The paper tends to be bank-guaranteed and therefore sold on easily in the market. In relatively few instances companies may issue commercial paper which does not carry a bank guarantee but investor appetite for this is small in the Irish market.

Note Issuance Facility (NIF)

This facility enables issuers (the borrower) to raise funds directly from investors. In other words, a bank in effect matches the issuer and the buyer and acts as a broker. Issuers are normally state or semi-state bodies that have access to Government guarantees. Investors are attracted to NIFs as they are seen as quasi sovereign instruments, and are not subject to DIRT. The NIF market is not particularly large but can prove to be a relatively cheap method of raising funds for the borrower.

NIFs are typically available in two forms:

- an NIF with a backstop.
- an NIF without a backstop.

A backstop facility enables the issuer (the borrower) to have certainty that they will have access to funds on agreed terms at all times from their bank for the full commitment period. This backstop is provided regardless of whether the bank can find a buyer (investor) for the paper or not. This in effect implies that the bank will buy the paper if another buyer cannot be found. The issuer will be charged a commitment fee for this facility. Commitments normally extend for five to seven years. NIFs may therefore be regarded as a more flexible method of long-term finance.

In the absence of a backstop facility, the company is relying on continuous investor appetite to be assured of funding.

Bond issue

A bond is a debt instrument under which the issuer (borrower) agrees to pay to the investor an agreed amount of interest on fixed dates over the life of the bond and to repay the value of the bond on its fixed end date. Bonds are normally issued for at least a year and can be traded in the secondary market (i.e. any market in which securities are traded after they have been launched on the primary market). This type of instrument allows a borrower to raise funds without directly borrowing from a bank, and the bank may only act as arranger for the transaction.

There are two types of bond issue:

- public bond issue
- private bond issue

Public bond issues

The bond market allows companies to broaden their funding sources and lessen their reliance on the more traditional bank facilities. This can be useful for example where a company has undergone a major expansion over a short period and finds that its credit supply from banks is reaching a limit. A number of different types of issues may be used:

- Floating-rate notes: A floating-rate note pays the investor a variable rate of return based on a floating rate index plus a margin. The index generally used is LIBOR, and the margin applicable is dependent on the credit quality of the issuer.
- Fixed-rate notes: A fixed-rate note pays a rate of return that is fixed at the outset and applies for the full term of the bond.
- Convertible bonds: This is a bond that allows the holder to convert the bond into equity of the issuer. This type of bond pays a lower coupon than a conventional bond issue because of the equity conversion option. The bond documentation will specify the number of shares and the conversion price per share that applies on conversion. The exercise price is set at a premium over the share price prevailing at the time when the issue is arranged. The life of this type of instrument will be set in the bond documentation, but it would be regarded as a longer-term funding option.

Public bond issues are usually listed as securities on a stock exchange.

Private bond issue

Private placement of a bond issue will generally be structured to exactly match a company's requirements. It may be regarded as a long-term note for a fixed amount, with a fixed maturity date and yield. It will be pre-arranged that the issue be placed with a certain number of investors and will usually remain unlisted. A corporation may use this type of funding as a means of reducing its dependence on bank sources. This may also lengthen the maturity profile of the debt, which may not have been possible by borrowing from the more conventional bank source

because of capital allocation requirements and credit quality.

Medium-term note programme

A medium-term note programme is a facility that allows a company to issue notes with maturities ranging from one to thirty years. The MTN prospectus acts as a master document containing the overall terms and conditions of the programme, with the terms of individual notes contained in a pricing supplement issued for each note. The notes are generally listed and rated on an appropriate exchange and aimed mainly at long-term investors. The instruments are aimed at the investment community rather than banks thus allowing companies to diversify their investor base. However, an MTN programme offers the flexibility to issuers to be able to tailor tranches of note issuances to specific investor requirements. This is quite often a valuable feature that can reduce funding costs for borrowers.

Costs tend to be up-front, and there are no continuing issue costs. However, there are annual costs payable to update the program (rating cost, legal costs, auditors comfort letter etc.) Public bond issues may also be documented under an MTN programme.

Equity funding

Equity funding can be raised in two ways:

- Public fund raising: A company already listed on a stock exchange may go to the market to raise funds by way of a rights issue or a public offering.
- Private fund raising: A company with no stock exchange listing will obtain an investor to invest directly in the company.

Equity funding is a strategic decision that is taken by a company, its main purpose being to grow and develop a company by attracting additional and diverse shareholder skills and investment. The investment is typically rewarded by an enhanced value of the equity stake.

7.2 Relative benefits of funding options

	Term		Low Risk for Investor	Flexible
	Short	Long		
1. Overdraft	•			•
2. Revolving credit facility		•		•
3. Term loan		•		
4. Commercial paper	•		•	
5. Note inssuance facility		•	•	
6. Bond issues		•		
7. MTN		•		•
8. Equity funding		•		

Chapter 8:
Cash and Investment Management

Decisions in relation to cash management are concerned with the effective use and conservation of cash resources in the company. This typically means speeding up the cash collection process, for example by clarifying invoicing procedures and monitoring the follow-up procedures for suppliers on the payments side. Cash management decisions incorporate:

- managing working capital
- cash transmission
- bank account configurations
- investment options

Working Capital	Cash Transmission	Bank Account Configuration
Speeding collections	Cash collection instruments and methods	Netting systems
Prudently managing payments	Cash disbursement instruments and methods	Cash pooling
Stock ordering and balancing holding		Target and zero and concentration accounts

8.1 Managing working capital

The company will be concerned with the process of conserving cash and therefore promoting efficient working capital management. The treasurer will normally be more involved with those activities related to the company's trade activities, specifically debtors and creditors. This involves managing the collection cycle and the payments cycle.

The collection cycle starts from the time the order is received and finishes when the cash is invested by the company. The payment cycle starts from the time the order is placed and finishes when that value is lost from those funds.

By examining the stages in each cycle, the company can ensure that it is minimising the cash invested in working capital.

Many textbooks deal with this subject in detail, and therefore the following is only a check-list of the key aspects of the decision making process that companies should undertake in reviewing their working capital situation:

Collection cycle

- Determine the optimal level of stock to be held, from raw materials to finished goods.
- Ensure that goods are despatched as soon as they are ready.
- Reduce the time taken to despatch the invoice, and decide on the most appropriate credit terms to offer to customers.
- Ensure timely follow-up of debtors.

- Ascertain the quickest way of delivering funds received to the bank.
- Reduce the time it takes to get cleared funds available for investment.

Payment cycle

- Determine the best time to place an order for stock to minimise the stock holding period.
- Ensure that goods received are correctly recorded, as discounts are often linked to arrival date.
- Ascertain whether the company should avail of early payment discounts, where available.
- Ensure that payments are made at the latest possible allowed date.
- Understand the timing of when value is lost for funds, to ensure that the company gets maximum value until this date.

In performing any review of the collection or payment cycles it is important that good relationships with customers and suppliers are maintained.

8.2 Cash transmission

Important elements in the collection and payment cycles where savings can be made are the instruments and methods used for collecting and paying cash. There are a wide range of cash transmission techniques, including:

- Cash
- Cheques
- Drafts
- Direct debits
- Standing orders
- Credit cards
- Transfers
- Electronic funds transfer systems

The company should understand and evaluate the benefits of each system and specifically understand:

- The cost per item charge.
- The overhead cost of operating each system.
- The cost of float time, which is the cost associated with time delays as payments pass through the clearing system.
- Any specific associated control features.

8.3 Bank account configurations

Bank account configurations are a method of arranging the operation of the different accounts of a company in order to reduce costs. Bank account configurations can be operated domestically or internationally, but in either case some level of centralisation is needed. The complexity of the configuration will

determine the amount of information needed at the centre to operate the accounts efficiently as well as the systems that might be needed as part of the process. Companies will need to assess the advantages and disadvantages for them of any particular configuration.

Netting systems

Netting is the process by which intercompany cash flows are offset within the company or group in order to minimise the number and size of cash transfers going through the banking system. Netting systems are more complex in large organisations involving operating companies in a range of different countries where there is a large amount of intercompany trade. There can be difficulties operating netting systems in certain jurisdictions, for regulatory reasons.

Cash pooling

Cash pooling is a system that involves the offset of bank account balances in order to achieve interest savings. The process involves transferring bank account balances from a number of different accounts into a dummy account. Interest is calculated on the net balance in the dummy account, whether there is a surplus or deficit of cash. All pooled accounts must be within the same bank.

Cash concentration accounts

This involves sweeping the cash from individual accounts into a central location to allow cash to be managed centrally. Decisions need to be made regarding:

- The amount of cash to sweep, which can range from leaving a target level of cash in specific operating accounts to leaving zero balances.
- The number of currencies that will be incorporated.
- Where the central account will be located, which may be driven by interest, tax and regulatory considerations.

Unlike pooling accounts, concentration accounts can be operated across banking organisations. However, value may be lost as funds are physically transferred.

8.4 Investment options

When a company has surplus cash, either on a long-term basis or because of seasonal flows, a decision has to be made as to how to maximise the return it receives from this cash.

A variety of instruments are available on the market for a company to invest its surplus cash. However, before making any investment decision the company needs to know its current cash position and projected future cash flows. Another important factor to consider is the location and currency of the cash and any possible time delays in transferring funds from one centre to another. Cash may be generated in a currency that is of little working use to a company and may have to be exchanged for another currency. Therefore, access to external market information on prevailing and forecasted interest and foreign exchange rates may also be of importance. The basic parameters that most treasurers will take into consideration when choosing an investment will be based on the following:

	Parameters	Consideration
•	Yield	How good is the return on the investment relative to other available instruments?
•	Risk/security	Is there a high or low risk attached to the investment? Is the investment bank or state guaranteed?
•	Short/long-term investment	Does the company see this investment as being a long or short-term project?
•	Liquidity	Is the instrument "liquid"? Will a company have easy access to its funds should they be required?
•	Tax advantage	Are there any tax advantages to using one instrument rather than another?

8.5 Investment products

Bank deposits and certificates of deposit

This market is extremely liquid, but the yield tends to be less than or equal to the market DIBID (Dublin Interbank Bid) rate. Bank deposits are generally used as a short-term investment, have a high degree of security, and allow for speedy turnaround of funds. However, companies should be aware of the credit ratings of the institution with which the cash is placed. Bank deposits may be on a fixed term basis (e.g. three-month fixed) or on call, which means that money may be withdrawn at a moment's notice.

A certificate of deposit (CD) is in effect a bank deposit evidenced in the form of a note that is physically delivered to the purchaser. Such notes are freely tradable and are therefore more liquid than a bank deposit.

Exchequer notes

These are short-term note issued by the Government, typically for periods of three or six months. The market is highly liquid, with the yields generally less than or equal to DIBID. The main advantages of the instrument are the negligible credit risk (Government risk) and high liquidity.

Commercial paper (CP) and note issuance facilities

CP is short-term debt paper issued by companies or financial institutions. Investors can occasionally achieve returns higher than DIBID for such paper. In Ireland, paper is generally bank-guaranteed and the risk is related to the credit ratings of the bank's themselves. As there are a large number of CP issuers, investors will generally be able to purchase paper that closely matches their maturity requirements.

In Ireland, NIFs are in effect Government-guaranteed CP issued by semi-state companies. As a result of the lower credit risk, such notes generally pay a return lower than that paid by conventional CP.

Section 69 bonds

These are short-term bonds issued by the Department of Finance through the NTMA and are used as a means of raising money on behalf of the Government. The main advantage is that the bond is a tax-exempt investment for qualifying companies (a company that is 90% foreign-owned and Irish-resident). As a result of this tax advantage, the net return on investment after tax tends to be higher than that on other short-term instruments.

Government gilts

These are bonds issued by the Government for maturities of one to fifteen years. A secondary market operates, whereby the original purchaser may sell on the instrument. The market is extremely liquid. Returns are generally on a fixed-rate basis, but there are a small number of floating-rate bonds currently in issue.

Medium-term notes/Euro notes

These are essentially long-term notes (up to thirty years) issued by corporates and financial institutions and sovereigns. The notes are generally listed on an appropriate exchange and aimed mainly at longer term-investors, i.e. for periods greater than twelve months. The main advantage of medium-term notes is that it can be tailored to meet the specific requirements of the investor. The rate of return will depend on the quality of the issuer and the maturity profile of the notes.

Asset swaps

An asset swap is a package consisting of two elements:

- a bond
- a swap.

For example, a fixed-rate bond may be purchased by the investor and swapped from its fixed-rate yield to a yield based on LIBOR plus a margin using an Interest rate swap. The rate of return will depend on the quality of the bond issuer. The risk of the package is directly related to the credit quality of the issuer of the bond, with limited risk also on the swap provider.

8.6 Relative benefits of investment options

Set out below is a summary of the factors to be considered:

			Term			
	Higher Yield	Low Risk	Short	Long	Liquid	Tax Advantage
1. Bank deposits		*	•	•	•	
2. Exchequer notes		•	•		•	
3. CP/NIFs		•	•	•	•	
4. S.69 bonds		•	•			•
5. Government gilts	•	•	•			
6. MTNs	•	*		•		
7. Asset swaps	•	*		•		

* Depending on the credit quality of the chosen bank or institution; 1, 6 and 7 may also be regarded as low-risk investments.

Chapter 9:
Taxation

9.1 General principles governing the tax treatment of treasury products

9.2 Interest rate management products

9.3 Exchange rate management products
Tax mismatch
Options: some special rules
Currency Swaps: special features

9.4 Tax aspects of fund raising
Incidental costs
Withholding tax
Allowability of funding costs

9.5 Tax aspects of cash investment and management
Withholding tax
Tax rate differential

The comments that follow reflect the law and practice applicable in the Republic of Ireland on 1 September, 1996. This chapter does not purport to deal with law and practice in any other jurisdiction.

9.1 General principles governing the tax treatment of treasury products

Legislative provisions generally tend to lag behind developments in the commercial world. Tax law is no exception. There is relatively little statute law in Ireland dealing with the taxation of treasury products. Consequently, the appropriate treatment must be determined in most situations by reference to general principles that have emerged from case law over the last century or so.

In the absence of comprehensive legislation, the most useful source of guidance is undoubtedly the 1991 publication 'Taxation of International Financial Transactions in Ireland' produced by the Tax Administration Liaison Committee - comprising representatives of the Revenue Commissioners and tax practitioners. Because of the time lapse since its publication, care should be taken on relying on it exclusively. It has actually been supplemented by some subsequent Revenue Statements of Practice and by some legislative changes.

The general approach adopted is to consider the profits or losses arising from transactions in treasury products and to ascertain whether they are capital or revenue in nature. Furthermore, if revenue in nature, whether they arise from trading activities or otherwise. Finally, in most situations the answer to these questions will be determined largely by reference to the underlying item or transaction that made acquisition of the treasury product necessary or advantageous.

Products hedging an underlying item or transaction of a revenue nature will attract income-type treatment. If the item or transaction arises on trading account, any receipt or payment related to the treasury product will be taken into account in computing trading profits. Otherwise, different tax rules, in most cases less advantageous, will apply. Where the underlying item or transaction is capital in nature, capital gains tax treatment will prevail.

9.2 Interest rate management products

These have been discussed in Chapter 6 above and include Forward Rate Agreements, Interest and Currency Swaps and the Interest Rate Options - Caps, Floors, and Collars.

Interest is invariably a revenue-type item, so it follows that payments and receipts under interest rate management products will rank as revenue-type profits and losses for tax purposes, rather than capital gains.

Where the interest cost itself has been incurred for trade purposes, the general practice is to merge the interest with the payments or receipts under the relevant product, and the net balance will be taxable or allowable in computing trading profits. This treatment is relatively straightforward.

Example 1

Company A has a loan of IEP5,000,000, used to fund working capital. It enters into a Forward Rate Agreement (FRA) to fix the interest on the loan. The interest on the loan is tax-deductible. Any payment Company A makes or receives under the FRA is taken into account in calculating its trading profits for tax purposes.

The main tax difficulty likely to be encountered in dealing with interest rate management products arises in non-trading situations, for instance where the interest cost is associated with an investment by a trading company, or where the borrower is a group holding company that does not carry on a trade, an investment holding company, or a property holding company.

Interest rate management product receipts and payments, in each of these situations, will be dealt with under different tax rules (contained in Case IV of Schedule D). This is a distinct disadvantage, because such profits may not be sheltered by trading losses, nor may such losses be offset against trading profits. This means that a profit may be taxed immediately in certain situations, while a loss may only be relieved by carry-forward against a future profit of a similar type - if one arises.

The only exception to this treatment relates to Swap payments or receipts by a property rental company where the underlying interest expense arises on borrowings for the purchase, repair or improvement of property. In such situations the treatment is akin to that of a trading transaction, in that Swap payments or receipts are merged with the interest cost itself.

Interest rate management products do not incur VAT or stamp duty.

9.3 Exchange rate management products

These have been discussed in Chapter 5 above. The principal products are Forward Contracts and Options. Currency Swaps need to be added to this list, because they have a dual role. To the extent that they provide for an exchange of interest payment in different currencies, they act as an interest management mechanism, and the tax treatment appropriate to the periodical net flows over the course of the agreement is dealt with in section 9.2 above. However, they may also provide for an exchange of principal in the two currencies at the beginning and end of the swap period, and from this point of view they have an exchange rate management function.

In addition, Caps, Floors and Collars are option-type products, but because they relate to interest management the tax treatment is also dealt with at 9.2 above. The options that are the subject of this section are those relating to currencies.

Consistent with the general principles outlined in section 9.1 above, in seeking to determine the tax treatment of an exchange risk management product it is first of all necessary to determine the capital or revenue nature of the underlying transaction, asset, or liability. Where this is capital in nature, capital gains tax treatment will be applied to gains or losses associated with the product. Where it is revenue in nature, the gain or loss will be dealt with as a trading item if the underlying risk is trade-related.

These general principles are modified by specific legislation in the case of exchange rate management products which relate to monies held or payable for trade purposes - for example foreign currency trade related borrowings or foreign currency held to discharge future trade obligations. In such cases the rule is that exchange differences attributable either to the actual monies concerned or to a related exchange risk management product and which are properly dealt with through the profit and loss account will be accorded trading treatment.

However, where the foreign currency borrowings or balances, or related products, arise in a non-trading company or in relation to non-trading transactions (e.g. investments) by a trading company, the general principles outlined above will continue to apply.

Example 1
Company A has a deposit of USD2,000,000. It enters into a Forward Contract in relation to that deposit. The foreign currency deposit is a capital asset, and any gain or loss on the Forward will also be a capital gains tax item and taxable at 40%.

Example 2
Company B will have to pay DEM100,000 for stock in trade in two months time. It arranges a Forward Contract to buy the DEM on that date. Any currency fluctuation in relation to the value of the stock in trade will be taken into account in calculating Company B's trading profits for tax purposes (even though no currency fluctuation may be separately identifiable in the accounts), as will any profit or loss on the Forward.

Difficulties are most likely to arise where there is no underlying transaction, asset, or liability - for instance because the product was taken up for speculative purposes.

Example 3
A company submits a tender to provide equipment for DEM1,000,000. It arranges a Call Option contract to sell these DEM for IEP450,000 in six months time. It fails to gain the contract. The rate depreciates from 2.222 to 2.3. The option is exercised for a gain of IEP15,217 (ignoring the cost of the option). This is taxable as a capital gains tax item at 40%, as it has no associated trading transaction.

The tax treatment in such situations - where there is no underlying trading transaction - will either be as non-trading income or as a capital gain. Non-trading income rules will apply if it is concluded that the speculative purpose was

systematically organised. However, because of difficulties in establishing the surrounding facts, circumstances and motives, capital gains tax treatment may be easier to impose.

Exchange rate management products do not incur either VAT or stamp duty.

Tax mismatch

Tax mismatches can arise in relation to foreign currency liabilities (for example loans) that are non trade related. Liabilities are outside the capital gains tax net, as they are not assets by definition. Any foreign exchange gain or loss on the repayment of principal of a loan would be outside any charge to tax (as it is a gain or loss not on an asset but on a liability). However, the associated treasury product would be a capital gains tax item and any gain would be taxed at 40%.

Example 4

Company C borrows USD1,500,000. Company C converts this into IEP1,000,000 (at USD1.5 = IEP1), with a Forward Contract maturing in two months time to buy USD at the same spot rate. The dollar strengthens to IEP1 = USD1.25. There will be a gain on the forward contract but a corresponding loss on the loan repayment:

Forward	IEP		Loan	IEP	
Proceeds	1.2	million	Original value of loan	1.0	million
Cost of USD1.5 million	1.0	million	Value of repayment	1.20	million
Gain	0.2	million	Loss	0.2	million

If the USD were borrowed for trade purposes, the gain on the Forward and the loss on the loan would both form part of the company's trading profit for tax purposes. If the USD were not borrowed for trading purposes, the gain on the Forward would be taxed at 40% as a capital gains tax item, but the loss on the repayment of the loan would be ignored for tax purposes.

Options: some special rules

The principles outlined in the immediately foregoing paragraphs apply to the taxation of options as well as any other exchange rate management products. However, where these principles operate to bring options within the scope of capital gains tax, there is specific legislation to be considered. This provides that an option is to be treated as a separate asset in the hands of the person granting it but not in the hands of the person to whom it is granted. There are also special rules dealing with options that are sold or not exercised because they have been abandoned.

Example 5
Company A grants an option to Company B to buy DEM1,000,000 in three months time for IEP450,000. The option costs IEP1,000.

- If the option is abandoned:
  - A is taxed on the IEP1,000 at 40% as a capital gains tax item.
  - B cannot use the IEP1,000 loss against future capital gains unless the DEM were to be used for Company B's trade.

- If the option is exercised, the option and its exercise price merge into one transaction, and, for example, the cost to company B of the DEM includes the option cost.

Currency Swaps: special features
The re-exchange of principals on the maturity of a Currency Swap may give rise to tax liability.

As with other exchange risk management products, where a Currency Swap is hedging an asset or a liability ranking as a trading item, generally there will be a complete tax match, because any gain or loss on maturity of the Swap will offset an equal and opposite loss or gain on the trading item.

However, where a capital or non-trading item is being hedged, so that capital gains tax treatment will apply to the Swap, there may be a mismatch along the lines already illustrated in example 4 above.

For capital gains tax purposes, the gain or loss on maturity of a foreign Currency Swap is calculated by comparing the relevant spot exchange rate ruling on the maturity date with the corresponding rate applicable when the Swap was originally put in place.

9.4 Tax aspects of fund raising

The various methods of raising funds have already been discussed in Chapter 7.

Three main tax issues arise:
- Allowability of incidental fundraising costs
- Withholding tax obligations
- Allowability of the actual funding costs.

Incidental costs
The test is to consider whether or not the funding serves to increase the capital base of the business. Applicable case law suggests that practically all funding, except overdrafts and short-term loans of less than one year, are capable of being viewed as increasing the capital base. Clearly this is capable of being disputed by reference to the particular facts and circumstances and it may be possible to obtain Revenue agreement that certain longer-term funding is not of this type.

Costs associated with fund-raising that is regarded as increasing the capital base are not tax-deductible. These costs can be quite significant in the context of bond issues, note programmes, or equity funding, and the after-tax cost must be factored into the decision making process. In passing it may be observed that our nearest neighbour, the United Kingdom, several years ago introduced legislation that allows the incidental costs of fund-raising in most circumstances but so far Ireland has not chosen to follow this lead.

Withholding tax

This will normally apply to payments of annual interest - where the underlying borrowings are capable of remaining outstanding for more than one year. Conversely, it does not apply to short-term funding. There are some exceptions to the withholding requirement, most notably where interest is paid to a bank carrying on a bona-fide banking business in the State.

It may be possible to obtain clearance to pay interest without a withholding tax where the recipient is resident in a country with which Ireland has a tax treaty that applies a zero rate of withholding on interest payments. There are also exceptions from the withholding obligation where paper is issued in the form of a “quoted Eurobond”.

Withholding tax obligations need to be considered carefully because many loan agreements will contain a “grossing-up” clause, which will require the borrower, in a situation where the withholding tax applies, to pay an additional amount to the lender to ensure that he or she remains in the same cash position as they would have been in had there not been a withholding obligation. In most cases grossing up will make the cost of funds prohibitively expensive.

Withholding tax does not apply in discounting transactions. Neither does it apply to dividend payments on equity investments but instead there may be an obligation to account for advance corporation tax which can range from nil to 23//77ths of the amount of a cash dividend, depending on the profile of the profits out of which the dividend has been paid. Advance corporation tax may, however, be offset against mainstream corporation tax. If the latter is adequate to absorb the Advance Corporation Tax (ACT), then there is no effective cost.

Allowability of funding costs

Where borrowings are used for trading purposes - to finance either working capital or fixed capital - funding costs will be tax-deductible. This applies both to interest costs and to discounting costs. Somewhat surprisingly, the Revenue view is that the deductibility of funding costs associated with the acquisition of fixed assets is concessional, not statutory, but in practice they have never challenged their deductibility.

The tax position is more complex where the funding costs are associated with the acquisition of non-trading assets. For instance, funding costs associated with the acquisition of a portfolio investment will not be deductible under any tax heading. Interest costs attributable to borrowings for the purposes of acquiring or lending to

a subsidiary will be tax-deductible in most cases but only as a 'charge on income' which means that the interest will be allowed on a strict payment basis only. Interest costs associated with the purchase, repair or improvement of rented property will also be tax-deductible but only in computing the taxable income from the property.

There is no statutory entitlement to a tax deduction for discounting costs in a non-trading situation and in practice the Revenue resists such claims. This has important implications for holding companies, seeking to fund acquisitions or to lend to subsidiaries. It also potentially affects property holding companies. In practice, borrowings to finance investments of this type should not be made under commercial paper or note issuance facilities (both of which normally involve discounting transactions) without seeking prior Revenue clearance.

Dividends and other distributions on equity funding are not tax-deductible for the borrower.

9.5 Tax aspects of cash investment and management

This topic has been dealt with in Chapter 8.

The main tax issues to be considered here are the applicability of withholding taxes on investment returns and the possible impact of tax rate differentials on manufacturing rather than investment companies.

Withholding tax

Investments that yield an interest return that is annual in nature will in many cases be subject to a withholding tax. The present rate of withholding tax is 27%. While the tax withheld will in due course be available for crediting against mainstream corporation tax, there is obviously a cash flow disadvantage.

Returns on Government gilts and on certain semi-state paper are not subject to withholding tax. Neither are returns in the form of a discount e.g. many types of short-term commercial paper.

Deposit interest retention tax (DIRT) potentially applies to interest or discounts paid by a bank or building society but a corporate investor, by making an appropriate form of declaration, may be paid on a DIRT- free basis.

Tax rate differential

Ireland applies a 10% corporation tax rate to income from manufacturing processes and some other types of business deemed to constitute manufacturing. However, investment income will always be subject to the full corporation tax rate (38% at present), even where the trading profits are subject to the 10% rate.

The existence of this differential makes Section 69 securities, the return on which is tax-exempt, potentially attractive to qualifying investors.

Chapter 10:
Accounting and Disclosure

Accounting rules in Ireland and the UK are set down in Accounting Standards issued by the Accounting Standards Board (ASB). These standards have been issued in the past as Statements of Standard Accounting Practice (SSAPs) or more recently as Financial Reporting Standards (FRSs). While currently there are few accounting rules in existence in relation to derivatives, efforts are being made around the world to develop suitable accounting standards. In the United States the Financial Accounting Standards Board has been reviewing this area for a number of years, while the International Accounting Standards Committee (IASC), and the ASB in the UK and Ireland have been addressing it in the more recent past.

The ASB issued a Discussion Paper on Derivatives and other Financial Instruments in July 1996. This Discussion Paper is the first stage towards the development of new accounting standards in this area. Financial instruments include both non-derivatives and derivatives. Non-derivatives include loans, bonds, borrowings and holdings of shares, while derivatives include Swaps, Forward Contracts, and Options.

There are several concerns about current accounting and disclosure practices for derivatives. In essence, the problem is that derivatives can speedily transform the position, performance and risk profile of a company in a way that is not made readily apparent within the present accounting framework. Derivatives may not be reflected in the accounts at all. Furthermore, little if any disclosure has been given of the extent of use of derivatives and the associated risks.

The Discussion Paper deals with two main groups of issues:

- **Disclosure,** on which the ASB believes there is an urgent need for improvement. The ASB intends to develop the disclosures proposed in the Discussion Paper into an Exposure Draft and, subsequently, an FRS as quickly as possible during 1997. The ASB is however encouraging companies to disclose further information about derivatives and other financial instruments before a standard is finalised.
- **Measurement and hedge account issues,** on which the ASB's tentative proposals would involve far-reaching changes in current practice. Consequently the ASB plans to allow ample time for preparers, users and auditors of accounts to explore the implications and to debate the issues. It could therefore be several years before a standard is implemented. The ASB envisages its measurement proposals applying only to listed and similar public interest companies.

Several accounting areas are important in relation to treasury, and these are considered below under the following headings:

- Accounting for derivatives (section 10.1)
- Accounting for capital instruments (section 10.2)
- Disclosures (section 10.3)

10.1 Accounting for Derivatives

There is currently no accounting standard that deals in detail with the correct accounting treatment for derivatives. Pending the development of an Financial Reporting Standard, companies are left with whatever guidance there is in other accounting standards as well as Generally Accepted Accounting Practice in Ireland (GAAP).

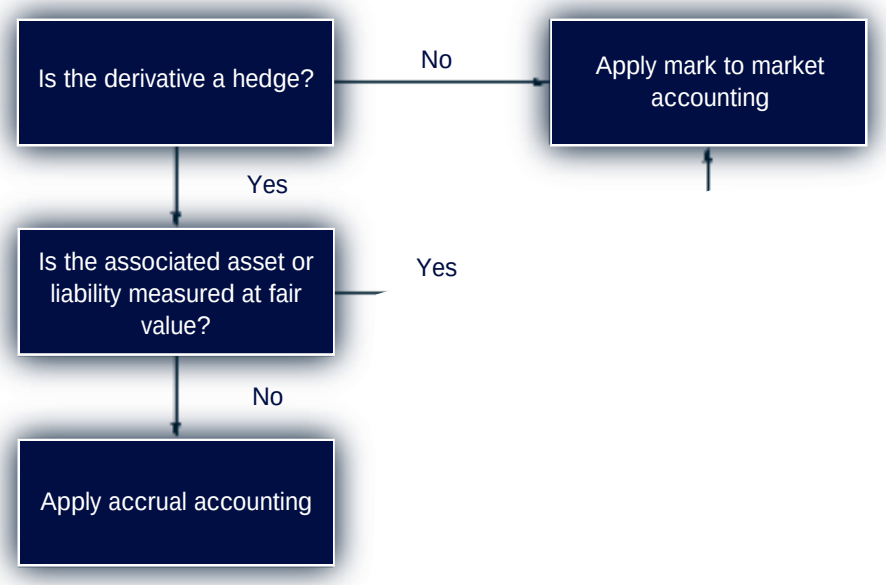
The main guidance from which current practice is derived comes from:

- The requirement that financial statements give a true and fair view.
- The fundamental principles of accounting outlined in SSAP2 namely going concern, accruals, consistency, and prudence.
- The principle that the substance of a transaction or series of transactions be reported in a company's financial statements, rather than the strict legal form.
- SSAP20, dealing with accounting for foreign exchange.

This section outlines current practice, although the Discussion Paper highlights a number of weaknesses with this approach and proposes a significantly different approach.

Because it is expected to be a number of years before these changes become mandatory, and because there is likely to be significant comment from all the interested parties, which may lead to changes in the proposals, we have not dealt with the new proposals in any great detail below. A summary of the proposals relating to accounting for derivatives and other financial instruments is included in table 2 at the end of this chapter. Under current practice, derivatives that are entered into as hedges are generally accounted for on a consistent basis with the asset, liability or position being hedged (otherwise known as "hedge" accounting). Derivatives that are not hedges are measured at fair value, and any gain or loss is taken to the profit or loss account (otherwise known as "mark to market" accounting). The following decision tree shows the alternatives:

Hedge Accounting



How to determine a hedge

The most important thing in deciding the correct accounting treatment for derivatives is to determine whether the derivatives in question do in fact represent a hedge. The SSAPs and the FRSs do not define a hedge, but a definition is included in the Statement of Recommended Practice on Derivatives. While this statement is not an accounting standard and applies only to banks, the definition does give us some guidance:

> Hedging transactions are transactions entered into with the purpose of matching or eliminating the risk of loss or reduction in profit as a result of movements in interest rates, exchange rates, equity prices or commodity prices.

Under Irish GAAP it is generally accepted that for derivatives to be classified as hedges three criteria need to be satisfied, which are referred to as the "ICC Test":

- Intention — The instruments must have been arranged with the intention of reducing the risk of loss from changes in interest or exchange rates. This intention should be documented at the time the transaction is entered into.

- Correlation — For a derivative to be treated as a hedge it must reduce risk and there must be a reasonable correlation between the effect that changes in interest or exchange rates have on the hedge instrument and on the underlying assets or liability. Therefore, where an exchange rate moves and increases the value of an asset there should be an offsetting fall in the value of the hedge. In contrast, if a company will not lose as a result of changes in the value of the currency (no currency assets, liabilities, income or expenditure) and it sells currency forward for delivery in three months, it has increased its risk, and this transaction would not be a hedge.

  The degree of correlation necessary will depend on the circumstances involved. In some instances there will be 100% correlation between the risk and the hedge, while in others there may only be partial correlation.

  Example

  Company A has a loan of USD5,000,000, which will be repaid in six months time and decides to hedge the currency risk on this loan by buying USD5,000,000 forward for delivery in six months. Company B sells its products in the United States and receives on average USD1,000,000 in receipts each month. Company B decides to hedges its dollar exposure by selling forward USD750,000 for delivery in the middle of each of the next four months. Clearly Company A has been able to achieve 100% correlation, fully removing its risk, as the level and timing of the cash flows arising in dollars are fixed. Company B has only chosen

to reduce the risk on 75% of its expected dollar income for the next four months in circumstances where the timing is far less certain.

- Certainty — Where a derivative is arranged as a hedge for a risk that occurs in the future, there must be a reasonable certainty that this future risk will occur. In relation to the example above, Company B would need to be reasonably certain that it will actually have sales of at least USD750,000 each month for the next four months for these Forward Foreign Exchange Contracts to be considered hedges.

Difficulties can arise where:

- the correlation between the hedge and the underlying asset or liability is weak
- the future transaction is not sufficiently certain
- the underlying asset or liability ceases to exist
- the hedge is terminated early.

Mark to market accounting

Marking to market is the process of calculating the current value of a financial instrument based on current prevaling market prices. The majority of companies (excluding banks and other financial institutions) do not apply mark to market accounting, because they are not engaged in trading in derivatives or speculating on changes in interest or exchange rates. Some larger companies will hedge their exposures using a portfolio approach, whereby underlying transactions, such as loans, cannot be linked directly to hedge transactions, such as Interest Rate Swaps. In these cases it may not be appropriate to use accrual accounting, and some form of mark to market approach is often adopted. Mark to market information is good practice for reporting and performance measurement and may be required for disclosure in financial statements in the future.

Most companies prepare their financial statements under the provisions of the Companies (Amendment) Act, 1986. This Act prohibits unrealised profits from being taken to the profit and loss account. Therefore, it would appear that full mark to market accounting is prohibited. Companies that wish to apply mark to market accounting will usually invoke the true and fair override provisions of the Act.

Problems with current practice

The ASB discussion paper highlights a number of problems with current practice:

- Under current practice, many derivatives are not shown in the financial statements at all. Many derivatives have a nil cost, and since most companies apply historical cost accounting, the balance sheet value is also nil. Indeed one can read the financial statements of some entities from cover to cover and not know that a single derivative has been used.
- Under current practice, unrealised gains and losses arising from changes in value are generally ignored. There is a consequent danger that unrealised losses will be overlooked and there is the opportunity for abuse.

- Under accrual accounting, realised gains and losses on derivatives are not recognised in the profit and loss account as they occur but are deferred until the period in which the hedge transaction is recognised. Therefore a realised loss may be reported as an asset (deferred expense) on the balance sheet, even though it is not in fact an asset.
- There are also a number of practical issues:
  - Accrual accounting relies on management intent (a 'hedge' exists only in the mind of the management and does not reflect an external link between the hedge and the hedged items). Therefore identical instruments may be accounted for differently, depending on management's intentions in respect of them.
  - There can be difficulties in deciding on the conditions that should exist in relation to risk reduction. Questions arise such as whether it has to be risk at a transaction level or risk for the company as a whole that can be hedged. Also, what is risk? Is fixed-rate or floating-rate debt risky?
  - Traditional accrual accounting cannot be applied easily where hedging is carried out on a portfolio basis, since it becomes more difficult to identify a 'hedge' with a 'hedged position'.

Examples of accrual accounting

Under current practice, once a derivative has been classified as a hedge then hedge accounting can be used. This means that the accounting treatment of the derivative should be consistent with the treatment of the underlying asset, liability, income or expense being hedged. For most companies in Ireland derivatives are entered into as hedges of loans and deposits, or foreign currency income and expenses. As none of these are marked to market, the derivative will also not be marked to market, and so accrual accounting is appropriate. Under accrual accounting, the gain or loss on the hedge is brought into the profit and loss account at the same time as the gain or loss on the hedged transaction. Examples of accrual accounting for derivatives include:

- Interest Rate Swaps: A company has arranged an Interest Rate Swap in order to lock in the rate of interest it is paying on its variable-rate loan. At each review date under the Swap the company will receive or pay the difference between the variable rate and the fixed rate included in the Swap based on the notional principal amount. Under accrual accounting the company would account for the amount it pays or receives on a time basis and would adjust the interest charge in the profit and loss account on the underlying loan by these amounts.

- Forward Contract: A company is committed to buying capital equipment for Sterling in its next financial year, and in order to hedge the risk it purchases Sterling forward for delivery on the date it plans to pay for the equipment. Under accrual accounting the company would not record any amount in its current year financial statements related to this Forward Contract. Instead the full effect of the Forward Contract will be recognised when the underlying asset is accounted for, as the asset would be translated into Irish pounds at the forward rate.

In these examples, if the derivatives ceased to be hedges, for example where the loan was repaid early or the decision to purchase the equipment was reversed, then mark to market accounting should be applied to any hedge contracts that are not closed out, with any gain or loss arising being taken to the profit and loss account. It is more usual for companies to close out the hedge contract at the time the underlying hedged transactions ceases. If the hedge is not closed out, the hedge becomes a speculative transaction, and therefore mark to market accounting is applied.

Accounting for Forward Foreign Exchange Contracts

SSAP20 'Accounting for Foreign Exchange', makes reference to the treatment of Forward Foreign Exchange Contracts. However, the provisions of the standard do not deal with all cases in which Forward Foreign Exchange Contracts might be used, and so care needs to be taken to ensure that the accounting treatment adopted is suitable.

The most common use of Forward Foreign Exchange Contracts in companies is as a hedge of foreign currency income or expenditure. As discussed in Chapter 5 on Foreign Exchange Rate Products, the forward rate is based on the current exchange rate on the date the Forward Contract was arranged and the difference in interest rates between the two currencies involved. This is referred to as the premium (forward rate higher than current rate) or the discount (forward rate lower than the current rate).

SSAP20 requires that monetary assets and liabilities such as cash, debtors and creditors be translated at the exchange rate at year end. However, where there are related or matching Forward Contracts, the contract rate may be used. In fact it would be unusual to arrange such a hedge and then not use the hedge rate. An example might best illustrate how this would work in practice.

Example

A company sells the great majority of its product in the United States. At 31 December it has debtors of USD1,400,000 and expected sales over the next six months as follows:

	USD
January	750,000
February	600,000
March	450,000
April	700,000
May	650,000
June	900,000

On average, customers pay two months after they receive the goods, and the company wishes to protect itself from an expected weakening in the dollar. If the

dollar falls in value the company will receive fewer Irish pounds when it converts the dollars. The exchange rate at 31 December is 1.55, and the company has arranged the following Forward Contracts:

Maturing	Amount USD	USD Forward Rate
January	700,000	1.62
February	650,000	1.60
March	750,000	1.57
April	600,000	1.58
May	360,000	1.61
June	560,000	1.63

What is the most suitable rate to be used to translate the debtors at year end, and how are the Forward Contracts hedging next year's sales treated?

SSAP20 does not prohibit translating the debtors at the year end rate of 1.55. However, it would be more usual to translate them at the related forward rate. As customers pay within two months, the January and February Forward Contracts will relate to the year end debtors, and the remaining debtors are in effect unhedged.

Amount	USD	USD rate	IEP equivalent
January Forward	700,000	1.62	432,099
February Forward	650,000	1.60	406,250
Remainder at balance sheet rate	50,000	1.55	32,258
	1,400,000		870,607

The remainder of the Forward Contracts totalling USD 2,700,000 (maturing in March to June) are hedging the exchange risk on future sales (between January and April), and so, provided it is reasonably certain that these sales will occur, these contracts would be ignored at year end.

Accounting for Interest Rate Swaps

Companies in Ireland usually arrange Interest Rate Swaps in order to fix the interest they will pay on their loans. As loans interest is accounted for on a time basis (accrual-accounted) and loans are not marked to market, it follows that the Swap should also be accrual-accounted. Payments and receipts from the Swap are included in interest, even though they are not strictly interest payments.

Example

A company has a loan of IEP5,000,000, on which it pays variable rate interest based on DIBOR plus 0.5%. The company expects that interest rates are going to rise and arranges an Interest Rate Swap with a notional amount of IEP5,000,000 and on which it:

- pays fixed interest at 9%
- receives floating rate interest based on DIBOR.

The current DIBOR rate is 7% and in six months time the DIBOR rate has risen to 10%. The company will record the loan and Swap as follows:

On receipt of the loan

- Record the loan liability of IEP5,000,000.

At the interest payment date after six months

- Record the interest expense on the loan of IEP187,500 (5,000,000 at 7.5% for six months).
- Record the payment under the Swap as interest expense of IEP50,000 (5,000,000 at 2% (9%–7%) for six months).

At the interest payment date after twelve months

- Record the interest expense on the loan of IEP262,500 (5,000,000 at 10.5% for six months).
- Record the receipt under the Swap as a reduction in interest expense of IEP25,000 (5,000,000 at 1% (9%–10%) for six months).

In this example the company has recorded a total interest expense for the year of IEP475,000 (187,500 + 50,000 + 262,500 – 25,000), which is the desired fixed rate of 9.5%. The receipt under the Swap is included in interest expense rather than interest income, because the Swap is a hedge on the loan. More frequent accounting entries would be needed for monthly or year-end reporting, for example to accrue interest to the reporting date.

Accounting for Future Rate Agreements (FRAs)

Companies will usually use FRAs to fix the rate of interest they will have to pay on a loan they will need in the future. As with Interest Rate Swaps, since loans are accrual-accounted the FRA should also be accrual-accounted.

Example

On 1 April a company has a loan of IEP500,000, on which the interest rate is reviewed every three months. It is currently paying interest at 6% but feels that

interest rates are likely to rise. To protect itself, the company arranges an FRA at 6%. If in three months time interest rates have risen to 8% the company will receive a cash sum representing the difference between 6% and 8% of approximately IEP2,500.

The company will record the loan interest and FRA settlement as follows:

On arranging the FRA - 1 April:

- No entries are made, as the purchase of the FRA does not involve any cash payment.

On FRA settlement - 1 July:

- Record the interest expense on the loan of IEP7,500 (500,000 at 6% for three months from 1 April).
- Record the FRA settlement of IEP2,500 on the balance sheet as deferred income, because the FRA is a hedge on the period starting on the date of the settlement.

On next loan review date - 1 October:

- Record the interest expense on the loan of IEP10,000 (500,000 at 8% for three months from 1 July).
- Record the amortisation of the deferred income of IEP2,500 from 1 July to 1 October.

In this example the company has achieved the protection it was seeking, and the interest expense was IEP15,000 (7,500 + 10,000 – 2,500) or 6% over the six months of the loan.

Accounting for the substance of transactions

As derivatives are often part of larger and more complex transactions, it is important to consider FRS5, 'Reporting the Substance of Transactions', when deciding on the most suitable accounting treatment. This standard requires a company to report the substance of transactions rather than just their legal form; that is to say, accounting for transactions should reflect the commercial essence or logic of the transactions.

The standard does not affect the accounting treatment and disclosure of the great majority of transactions. However, it may affect those more complex transactions whose substance may not be readily apparent. This may involve looking at aspects of a transaction where:

- One party gains the principal benefits of an item but is not the legal owner of the item.
- The transaction is linked with others in such a way that the commercial effect can only be understood by considering these in total.
- An Option is included on terms that make it highly likely that the Option will be used.

Almost all derivatives are excluded from the scope of the standard, unless they are

part of a larger group of transactions. FRS5 is a complex and detailed standard, and care needs to be exercised in determining the accounting treatment that is most appropriate. Professional advice may be required.

10.2 Accounting for Capital Instruments

FRS4, 'Capital Instruments', deals with the accounting and disclosure implications of capital instruments issued by an entity. Capital instruments are all instruments issued by an entity to raise finance and include shares, debentures, loans, and any form of debt instrument.

The standard has three aims:

- To ensure consistent and coherent classification of capital instruments as debt, equity shares, or non-equity shares.
- To make sure the costs associated with capital instruments are allocated to the profit and loss account on a fair basis.
- To make sure the financial statements provide relevant information about the nature and amount of the company's sources of finance and the associated costs.

FRS4 does not deal with leasing, which is covered by SSAP21, and the accounting rules in relation to leases are not considered here.

Classification of Capital Instruments

All capital instruments must be separated into Liabilities and Shareholders' Funds. Liabilities must be analysed into convertible and non-convertible debt (conversion of debt should not be anticipated), while Shareholders' Funds should be analysed into equity and non-equity interests. The standard contains definitions of each of these items.

Allocation of finance costs

The finance costs associated with capital instruments such as fees and interest should be allocated to accounting periods at a constant rate based on the amount recorded in the balance sheet. Finance costs in respect of debt finance will normally comprise some or all of the following:

- the annual interest amount
- any issue expenses
- the difference between the amount of the loan and the amount to be repaid at the end of the loan.

Where the finance costs are fixed, this amount should be allocated over the life of the instrument. Where the amount is uncertain (or contingent), as with an index-linked loan, it should be reassessed at each year end, and the difference in the recorded amount should be treated as the finance cost.

Example

	IEP
Finance raised at the beginning	1,000
Repayments	
Year 1	50
Year 2	10
Year 3	60
At the end of year 3	1,200
	1,320

Total finance costs are IEP320, giving an imputed interest rate over the life of the loan of 10%. This finance cost should be allocated as follows:

Date	Loan Balance at Start of Year	Finance Cost for Year	Cash Paid in Year	Loan Balance at End of Year
Year 1	1,000	100	(50)	1,050
Year 2	1,050	105	(10)	1,145
Year 3	1,145	115	(60)	1,200
End of Year 3	1,200	–	(1,200)	–
Total		320	1,320	

Treatment of issue costs and presentation in the balance sheet

The standard requires that the direct costs of issue of capital instruments should be deducted from the amount of the finance raised; and so, after raising the finance, debt should be recorded at this net amount. The recorded amount should be increased by the finance cost for the year and reduced by payments made in the year as shown in the example above. Because of this treatment treasurers may be asked to explain why the amount reported in the balance sheet as debt is different from the amount originally borrowed. Accrued finance costs may be included in accruals rather than in the amount recorded as debt to the extent that the finance costs arise in one accounting year and will be paid in cash in the next. Any such accruals should be included in the amount of the debt, however, for the purpose of calculating finance costs.

The net proceeds, that is, after deduction of any issue costs, from the issue of shares (equity or non-equity) must be recorded in Shareholders' Funds. Issue costs may still be charged to the share premium account under the Companies Acts. Where there is no share premium account, the most logical way to comply with the standard is to take the costs directly to the profit and loss account reserve and not

through the profit and loss account itself. All Shareholders' Funds must be analysed between equity and non-equity, and so issue costs need to be allocated too.

10.3 Disclosures

Proposed disclosures in the ASB discussion paper

The ASB believes that there is an urgent need for improved disclosure of financial instruments. The ASB intends to progress its proposed disclosures, amended in the light of any comments it receives, as soon as possible. In the meantime the ASB regards the disclosures as best practice and is encouraging companies to adopt them without delay. The proposed disclosures will add to the length of published financial statements, but the ASB believes that this is justified in view of concerns about the risks that can arise from the use of derivatives and other financial instruments. Most of the concerns revolve around the particular risks associated with derivatives and the problems these can cause because derivatives are largely 'off balance sheet', risk can be geared, they are poorly understood, and the position can change rapidly.

The primary objective of the disclosures is to enable users to assess the risk profile of the company. Numerical information on its own is unlikely to meet this objective. A discussion of the entity's objectives and policies is also needed to enable the reader to understand the company's chosen risk profile.

Proposed discussion of objectives and policies

It is proposed that the financial statements should contain a discussion of the company's objectives and policies in using financial instruments. This discussion would set the scene for the numerical disclosures by describing what the company is seeking to achieve in its use of financial instruments and how it is going about it. Because of the high-level nature of this information, it is not expected to be commercially sensitive.

The discussion paper recommendations attempt not to be over-prescriptive about the contents of the discussion; rather it is for the company to explain its own objectives and policies, focusing on those instruments and risks that are of greatest significance to it. However, the following are suggested as a guide:

- The purposes for which financial instruments are used (e.g. financing, risk management, speculation or trading).
- A description of the major financial risks that the business faces (e.g. under headings of interest rate risk, currency risk, commodity price risk) and the company's approach to managing each of these risks. This should include the company's main policies, in relation to:
  - the fixed/floating split, maturity profile and currency profile of borrowings
  - the extent to which foreign currency debtors and creditors are hedged to the local currency (or functional currency) of the business unit concerned
  - the extent to which foreign currency net investments are hedged by currency borrowings and other instruments
  - any hedging of future transactions (both those future transactions that are contractually committed and those that are not).

- The main types of instruments used, both derivative and non-derivative.
- If the directors have reason to believe that the year end position shown by the accounts is materially unrepresentative, an explanation of the extent to which this is so.
- The purpose and effect of major financing transactions undertaken up to the date of approval of the financial statements.
- The manner in which treasury activities are controlled.
- The effect of interest costs on profits and the potential impact of interest rate changes.

Many publicly quoted companies now include an Operating and Financial Review (OFR) in their financial statements. The principal aim of the financial review is to explain to the user of the annual report how the company is funded, its treasury policy, and the interaction of its financial position, its sources of funds, and the expected use of such funds. The Discussion Paper suggests that the discussion of the objectives and policies outlined above is best suited to the Operating and Financial Review and would not be mandatory.

Proposed numerical disclosures

The aim of the numerical disclosures is to show how the entity's objectives and policies were implemented during the period. It is envisaged that these disclosures would be required by an accounting standard (while the proposed discussion of objectives and policies would be voluntary). Of the disclosures suggested below, numbers 5 and 7 (on comparing book values with current values and on hedges of future transactions) may be superceeded in the longer term once standards on measurement and hedge accounting have been implemented.

The proposed disclosures are as follows:

Interest rate and currency profile

1 An analysis of borrowings (and, if significant, debt investments), showing for each major currency those at fixed and those at floating rates and, for fixed-rate debt, the weighted average rate and weighted average period for which rates are fixed.

   For this purpose, it is proposed that a fixed-rate debt should be one that does not mature and whose payments are not reset to market rates in the next twelve months.

   This analysis should be given after taking account of non-optional derivatives such as Interest Rate and Currency Swaps whose effect is to convert the interest basis or currency of the borrowings or investments. The information might best be given in tabular form. Borrowings may be shown net or gross of cash and liquid resources, but if net borrowings are shown they should be reconciled to the gross amounts included in the balance sheet. Separate disclosure should be given of any non-standard borrowings, such as those bearing an inverse floating rate of interest, and any non-standard Swaps, such as those paying out a multiple of a change in a rate.

2. Details of optional derivatives, such as Caps and Collars, that are associated with the borrowings analysed at 1. Such optional instruments 'convert' borrowing (e.g. from floating to fixed) only over a limited range of interest rates. Therefore they cannot be simply included in the above analysis but need to be explained separately. Similarly, convertible debt should be described separately, because it gives the holder the option to redeem, convert or continue to hold the debt on one or more dates.

3. For the group's principal currencies, an analysis comparing the group's assets by local ('functional') currency with the currencies of its financings. As far as possible within the constraints of practicality and cost, a distinction should be drawn between those financings that match the currency of the operations they support and those that do not.

Liquidity

4. A maturity profile of borrowings. (FRS4 already requires this in the form of an analysis into those maturing in one year or less, in one to two years, in two to five years, and after five years (see below).

Current values

5. For all instruments, both derivatives and non-derivatives, a comparison of current value and book value. Instruments should be grouped into classes (e.g. showing separately instruments held for trading; borrowings; derivatives held to manage the interest basis of borrowings; and instruments used to hedge future transactions). Within each class, instruments with a positive value should be shown separately from those with a negative value. This disclosure would apply only to listed and similar public interest companies.

Instruments held for trading

6. For instruments held for trading:

   - average current value of instruments held in the year
   - net gains or losses from trading.

Hedge accounting

(At least in the short-term, until a standard on hedge accounting is implemented)

7. The impact of using hedge accounting for hedges of future transactions:

   - Description of the future transactions, including the period until they are expected to occur.
   - A description of the instruments used to hedge them.
   - The amount of deferred or unrecognised gains or losses and the expected timing of their recognition in the profit and loss account.
   - The amount of gains or losses on hedges that arose and was deferred or not

recognised in previous years and that has been included in the current year's profit and loss account.

Market risk

8. Companies are encouraged to give some quantification of the market risk of all the financial instruments held. The method chosen for the disclosure should reflect how management controls and manages market risk. This might involve using sensitivity analysis, gap analysis, value at risk, or some other method.

Table 1 sets out a comparison of the disclosures currently required under International Accounting Standards, US Accounting Standards, and those proposed in the discussion paper.

Accounting policies

SSAP2 requires that financial statements disclose all significant accounting policies. Where a company uses derivatives to any material extent, the accounting policy for these should be disclosed. By way of example, the accounting policies for Telecom Éireann, as stated in its financial statements for the year ended 4 April 1996, were:

Foreign Currencies
Transactions designated in foreign currencies are translated into Irish pounds at the rate of exchange ruling at the transaction date. Assets and liabilities denominated in foreign currencies are translated at the rates ruling at the balance sheet date, or rates of exchange contracted for under various currency management instruments, with the resulting gain or loss being dealt with through the profit and loss account.

Financial Instruments
The Group enters into transactions in the normal course of business using a variety of financial instruments in order to hedge against exposures to fluctuating exchange and interest rates.

Currency Swap agreements and Forward Foreign Exchange Contracts are used to cover the Group's foreign currency debt position. These are valued at year end exchange rates, and the resulting gains and losses are offset against the gains and losses on the translation of the related debt. The interest element of the contracts is reflected in interest payable. Forward Contracts and related instruments designed to hedge future transactions are accounted for on a consistent basis with the related transactions.

Interest Rate Swap agreements and Forward Rate Agreements are used to reduce the effect of interest rate fluctuations. Interest differentials arising on these agreements are accrued and reflected in interest payable.

FRS4 disclosure of debt maturity

An analysis of the debt by repayment date must be given, showing amounts falling due:

- in one year or less, or on demand
- in one to two years
- in two to five years
- after five years.

The repayment date should be identified by reference to the first date on which the bank can ask for repayment. However, loan agreements sometimes include conditions such as “repayable on demand at the sole discretion of the bank”. In these circumstances the bank’s intentions should be considered. The bank debt should be classified in accordance with its normal repayment dates, unless it is thought that the bank might decide to use its discretion and ask for repayment, in which case the earlier date should be used.

Where the bank is committed to making a loan and this will allow the company to extend existing debt beyond its current repayment date, this may only be taken into account when the following conditions are met:

- The existing debt and commitment loan are contained in a single agreement with the same lender or group of lenders.
- The finance costs for new debt will not be greatly higher than those of existing debt.
- The bank cannot decide not to make the loan.
- The bank is expected to be able to make the new loan.

Many companies had to change the way they showed debt on the balance sheet when these rules were introduced, especially where they had commercial paper programmes.

Other FRS4 disclosures

Other important disclosures included in FRS4 are:

- A brief summary of the rights attaching to each class of shares must be shown
- Aggregate dividends for each class of share must be disclosed including total amounts for:
  - dividends on equity shares
  - participating dividends
  - other dividends on non-equity shares.
- Details of the rights attaching to convertible debt must be shown
- Details of the legal nature of any instrument included in debt where it is different from that normally associated with debt must be shown
- Gains and losses on repurchase or early settlement of debt should be disclosed in the profit and loss account.

For further details on these and other required disclosures you should refer to the standard.

The Companies (Amendment) Act, 1986

The format and content of a company's financial statements are set out in the Companies (Amendment) Act, 1986. This Act sets out the required format of presentation and specifies a certain number of disclosures that need to be made. The Act has little to say specifically about disclosure of derivatives; however, the following section is relevant:

Guarantees and financial commitments

36 (6) Particulars should also be given of any other financial commitments which:

(a) have not been provided for; and

(b) are relevant to assessing the Company's state of affairs.

Therefore, in relation to the example above in the section on Accounting for Forward Foreign Exchange Contracts, the company had a total of USD2,700,000 in commitments that have not been reflected in its profit and loss or balance sheet at the year end. The company would need to decide whether this amount should be disclosed under (b) above.

Table 1 Comparison of ASB, US and IASC Disclosures for Derivatives

Disclosure standards have been developed in the United States (FAS105, 107 and 119) and by the International Accounting Standards Committee (IAS32). The following table, which was included in the ASB Discussion Paper, compares the proposals in the ASB paper with the main requirements of the US and international accounting standards.

	IAS 32	FASs 105 ,107 ,119	ASB Discussion Paper
Scope	All financial instruments.	FAS105: all instruments with off balance sheet risk. FAS107: all instruments. FAS119: derivatives only.	All financial instruments.
Discussion	Encourages disclosure of extent of financial instruments used, associated risks, purposes served, and hedging policies.	For derivatives that are held other than for trading: objectives and strategies for holding them and classes of derivative used.	Objectives and policies in using financial instruments. Includes the purposes that instruments are used for, risks company faces, how those risks are managed, and types of instruments used.
Location	Notes or OFR.	Notes.	OFR.
Accounting policies	Recognition and measurement of all	Recognition and measurement of all	Not required: covered by
Terms and conditions	financial instruments. Extent and nature of financial instruments, including significant terms and conditions that may affect future cash flows (may include notional principal amounts).	derivatives Nature and terms, including credit risk, market risk, and cash requirements. Face or contract amount.	SSAP2 See next two disclosures Notional principal amounts not proposed.

Table 1 continued

	IAS32	FAS 105, 107, 119	ASB Discussion Paper
Interest rate risk	Earlier of contractual repricing and maturity dates. Effective interest rates. To be disclosed for each class of instruments.		Borrowings analysed by currency and fixed v. floating after non-optional derivatives. Separate description of optional derivatives.
Currency risk			See previous disclosure. For the group's principal currencies, an analysis comparing the group's assets by local (functional) currency with the currencies of its financings.
Credit risk	Maximum credit risk. Concentrations of credit risk.	For instruments with off balance sheet risk: maximum credit risk and policy on obtaining collateral. For all financial instruments (including non-derivatives): concentrations of credit risk.	
Current values at year end	All instruments by class, unless not practicable (in which case give principal characteristics).	All instruments, unless not practicable (in which case say why and give information pertinent to current value).	All instruments by class, with a comparison with book value.

Table 1 continued

	IAS32	FAS 105, 107, 119	ASB Discussion Paper
Instruments held for trading		Average and year end current values. Net gains or losses by class, business activity, risk, or other category.	Average current values. Net gains or losses.
Hedges of future transactions	Description of future transactions, including timing. Description of hedging instrument. Amount of deferred gain or loss and expected timing of recognition.	Description of future transactions, including timing. Description of hedging instrument. Amount of deferred gain or loss and event or / transaction that will lead to its recognition.	Description of future transactions including timing. Description of hedging instrument. Amount of deferred or unrecognised gain or loss and expected timing of recognition. Amount of gain or loss deferred or not recognised in previous years and recognised in current year's profit and loss account.
Other	For assets held at above current value: carrying amount and current value, and reason for not writing down.	Quantified disclosure of market risk encouraged for derivatives and, where relevant, other assets and liabilities.	Quantified disclosure of market risk encouraged. Maturity profile of borrowings (FRS4). Comment if year end position is unrepresentative.

Table 2 Summary of Proposed Accounting Rules in ASB Discussion Paper

Set out below is a summary of the proposals contained in the ASB Discussion Paper relating to accounting for Derivatives and other Financial Instruments.

(a) All financial instruments, with the exception of the entity's own equity shares, would be measured at current value. Thus current value would be used for all derivatives, investments in shares or debt instruments of other entities (except subsidiaries and associates that are excluded), and the entity's own borrowings and its own non-equity shares (such as preference shares). The entity's own equity shares would continue to be measured on the cost basis. In addition, changes in value of the entity's liabilities that are caused by changes in its own creditworthiness would be ignored.

(b) Changes in the value of a fixed rate borrowing that are caused by movements in interest rates would be recognised in the statement of total recognised gains and losses (STRGL). To prevent accounting arbitrage, changes in the value of a derivative (such as an Interest Rate Swap) that serves to 'convert' borrowings from fixed to floating (or vice versa) would also be recognised in the STRGL. The profit and loss account would continue to show an interest charge, calculated in accordance with present practice under FRS4.

(c) Where a borrowing or derivative hedges a net investment in a foreign enterprise, changes in its value that are caused by exchange rate movements would also be reported in the STRGL. This is consistent with current practice under SSAP20.

(d) All other changes in value would be recognised in the profit and loss account, whether realised or unrealised.

(e) In addition, the ASB has considered whether hedge accounting should be used for hedges of future transactions (such as hedges of sales expected next year). Some members of the ASB Board would not allow hedge accounting at all. Some would permit hedge accounting in the limited circumstance where it corrects for other recognition or measurement anomalies, i.e. where the hedge is of an unrecognised asset or liability (such as a liability under an operating lease or other firm contract) or, alternatively, of a recognised asset or liability that is measured at cost (such as commodities not held for active trading). Others would go still further and allow the use of hedge accounting in cases where the entity is 'commercially committed' to the hedged future transaction. No firm proposals were made and the ASB will await comments from interested parties on this topic.

Chapter 11:
Legal Overview

11.1 Introduction

The purpose of including this section in the handbook is to introduce some of the more important legal issues that require consideration when documenting Treasury Risk Management activities, involving instruments such as Forward Foreign Exchange, Interest Rate Swaps and Forward Rate Agreements, among others.

In the normal course of banking relationships, companies will be addressing the legal issues and documentation associated with some of the more generic range of banking services such as Term Loans, Bills of Exchange, Credit Cards, Leasing and Electronic Banking services. We have not included guidance on these ever-broadening areas in this handbook.

Instead it is intended to give an overview of some of the legal issues and terms that are likely to be of interest and relevance to those involved in documentation related to treasury activities. This is an important aspect of treasury, in that the consequences of entering into badly drafted legal documentation can be catastrophic. This applies to banks as much as it does to corporates, but banks have learned many lessons over the years.

11.2 Legal issues arising in relation to treasury activities

Company's power to transact (capacity)

A company is created by statute and therefore cannot enter into any transactions or courses of business unless its constitutive documents expressly allow it to do so. These are its Memorandum of Association and Articles of Association. In its Memorandum of Association the company sets out its objects. It should be understood that:

- By its nature, a company can only engage in business that furthers its objects, and it is empowered to transact any such business and has 'capacity' to do that business
- A power, however, must be exercised in furtherance of an object.

This sounds like typical legal jargon. But why do problems arise, and why are banks so concerned with ensuring that companies have the capacity to transact and deal in Treasury Risk Management instruments? The answer is 'Ultra Vires'.

Ultra Vires is a legal term meaning 'beyond the powers of the company'. In 1991, the issue of Ultra Vires rose to prominence in the treasury context when a local authority in the UK which had transacted a very substantial number of interest rate risk management contracts with banks, defaulted on its obligations and pleaded that it never had the power to enter into these transactions in the first instance.

A now landmark House of Lords decision decided in favour of the local authority and against the banks. Accordingly, all the contracts were deemed “null and voidî” It was as if the contracts never existed. The legal explanation given was that interest rate risk management was not an object of the company. None of the transactions entered into could be legitimised as transactions concluded in furtherance of an object.

Without labouring the point any further, suffice it to say that as a result of this decision, the Irish Bankers’ Federation recommended that all Irish companies engaging in treasury risk management activities would (where necessary) amend their Memorandum of Association by the addition of a clause specifically empowering the company to enter into risk management activities.

To assist in this process, a sample text was suggested for inclusion in the objects clause of the company’s Memorandum and of Association. This sample text is outlined in appendix 1 of this handbook, for information and reference purposes only. Clearly it is a very broadly based paragraph, and it is strongly recommended that individual companies consult with their legal advisers to draft wording that would be most appropriate to their own specific needs.

Documenting treasury business

(A) Contractual aspects:

There is a variety of contracts available at any time. Some cover all products, some are product-specific, some are bank-specific, and others embrace a combination of different source documents.

As with the purchase or sale of any substantial asset or property or the provision of any sophisticated service, treasury business requires a written contract between the company and the bank. That contract (or Master Agreement) sets out the rights and obligations of both parties and other provisions, typical of commercial agreements.

What type of contract?

The contract between the company and the bank can take any form. However, as the market in treasury risk management instruments developed, the industry, through its own trade association - the International Swaps and Derivatives Association - has introduced its own standard industry document. This contract is known as the ‘ISDA Master Agreement’ and is all-embracing. Yet, although it is described as a standard form, it is in reality a very complex document, comprising three parts:

- The Master Agreement, outlining standard terms and conditions.
- The schedule to the Master Agreement, giving the parties to the agreement the ability to adjust and amend the Master Agreement to their requirements.
- The transaction confirmations which evidence individual transactions completed under the overall Master Agreement ‘umbrella’.

These three documents together comprise the contract terms.

Many banks have used the basis of this very complex agreement to produce their own standard form contracts, which have many of the same provisions but may be less complex in structure and language. Alternatively, a company undertaking treasury business may ask its legal advisers to draft a suitable agreement and present it to the relevant bank.

The main contractual features

Quite often it is felt that well drafted contractual agreements made with banks work only to the banks' advantage. In relation to risk management, these documents can offer as much protection and benefit to corporate counterparties as they do to banks.

What follows (in no particular order of priority) are some of the more interesting and worthwhile features that should be understood by any company concluding such a contractual agreement in relation to treasury activities.

1. Single agreement

There would appear to be a number of benefits to documenting all treasury risk management activities under a single all-embracing agreement, as opposed to negotiating a number of separate product-specific agreements. Documents that have been produced since 1992 (when ISDA formally expanded the standard industry document) have tended to include all foreign exchange and interest rate risk management instruments, equity index swaps, commodity swaps, any option in relation to these transactions, and any combination of these transactions. So we have progressed to the stage of a 'catch-all' document.

It is intended that all transactions entered into under the terms of the master agreement would constitute a single agreement between the parties. This feature is particularly important in the context of netting, which is discussed next.

Note: It should be borne in mind that master agreements need to be used with a degree of caution, since they are attempting to be all things at all times. As a result, certain provisions may need to be added or modified in a particular transaction or for particular counterparties.

2. Netting

Assuming that the single agreement structure has been put in place between two parties, an additional benefit of all transactions being treated as one agreement is that the parties can substantially reduce their credit exposure to one another. This is possible (in jurisdictions where default netting is enforceable) in default or early termination situations, when the entities can terminate all transactions simultaneously and net the termination gains against the termination losses.

Netting provisions may also apply (depending on the parties' election) during the lifetime of an agreement. Where payments due from one party to the other and vice versa are in the same currency and are due for payment on the same date and in respect of the same transaction. This is called 'payment netting.'

In the absence of default netting, a non-defaulting party might find itself having to pay out on foot of 'out of the money' contracts (where it is due to pay over money) but failing to collect under 'in the money' contracts (where it is due to receive money). This may arise through action by a receiver or examiner and is sometimes referred to as the risk of 'cherrypicking'.

These two types of netting can be beneficial in four ways:

1. They reduce default risk (sometimes referred to as credit risk), as explained above.
2. They reduce delivery risk (settlement risk).
3. They reduce paper flows and are administratively convenient.
4. They can reduce a bank's capital cost provision.

In relation to the last point, the extent to which netting might in the future allow a bank to measure its exposure to an individual counterparty on the basis of its net exposure under all contracts with that counterparty, should not be lost on companies. However, capital cost requirements for banks will reduce the return on capital thresholds to be attained. This should be welcome news for banks' customers.

Because effective default netting reduces credit exposure and, together with the single-agreement structure, reduces the risk of cherrypicking, it appears desirable from all counterparties' viewpoints to provide for these in their documentation to the fullest extent.

In Ireland, default netting is upheld and protected by the Netting of Financial Contracts Act, 1995. The effect of this Act is to reduce the credit risk of the parties to each other, provided they come within the Act. In such cases, on the insolvency or examinership of one party, an election to perform only the contracts advantageous to it (cherrypicking) cannot be made to the disadvantage of the other party. This reduces the parties' exposure to each other to the net amount of their obligations.

Appendix 2 gives a list of some of the main countries where default netting, it is believed, is legally enforceable. It also includes a list of some of the more prominent countries where there is doubt about the enforceability of default netting.

3. Some other features to be addressed

- Do any provisions apply to affiliates of the counterparty?
- Do cross-defaults apply to any affiliates in the group?
- Is an event of default triggered by a change of ownership?

- Tax representations
  - Which ones should you insist on?
  - Which ones can you properly give?
  - What are the risks and benefits in contracting as or with a multi-branch counterparty?

- Governing law and jurisdiction
  Most contracts, particularly those of an international nature, contain clauses stating which law will govern the contract and which courts will hear any proceedings that may arise.

- Are there any credit support documents (guarantees, letters of comfort) from third parties?

- Representations
  Contracts will in general include representations by each party to the effect that:
  - It has the power to enter into and perform the agreement.
  - Performance will not violate any law applicable to it.
  - There is no litigation pending against it that would affect the validity of the agreement.

- Are there documents listed in the agreement to be delivered, e.g. constitutive documents, board resolutions, signing authorities?

- Termination

  (i) Associated with fault or default:
  - Failure to pay or deliver under the contract.
  - A representation proves untrue or inaccurate.
  - A party defaults on another agreement.
  - A party becomes insolvent, bankrupt or the subject of any similar proceedings.

  (ii) No fault termination
  - performance becomes unlawful because of a change in the law;
  - payment amounts will alter because of a change in the tax laws;
  - a merger occurs and the resulting entity is financially weaker.

  The scope of these termination clauses may be extended to other companies that are members of the same group of companies.

- Some additional financial clauses may also be included, such as those that might be found in any loan agreement, for example ‘Negative Pledge’. By executing a negative pledge, a company undertakes not to grant any further right that will give another creditor priority over the facility provider or bank in question.

(B) Operational aspects

Chapter 3 discussed dealing and account operating mandates within an internal control framework. Here the focus is more on the drafting of the mandates themselves and what might be included.

Mandates should be completed with each bank to fully reflect the basis on which treasury transactions will be operated and concluded between the parties. It may be desirable to have individual mandates for specific activities. Nevertheless, there follows a check-list of the main areas for consideration by the company management, but not a list of items that should necessarily be included in a mandate.

(a) Evidence that the company and Board of Directors have power to engage in financial transactions, as contained in the Memorandum and Articles of Association, and that the Board has the power to delegate.

(b) Evidence (such as a certified copy of the true Board resolution) of the identity of the persons empowered or authorised to commit the company, including specific authority to commit the company orally (as well as any functional or quantitative limitations, such as dealing limits);

(c) Instructions covering:

- The operation of accounts, including the receipt of funds (which may be restricted to defined accounts).
- How written and/or electronic communications are transmitted to the bank (the use of photocopies and faxes is discouraged, as these are easily forged).
- Oral or telephoned instructions (with limitations, such as prohibiting their use for transfers to third parties, if not covered by (b) above).
- Confirmations by the bank (such as 'call backs' for oral instructions), including the time limit for banks to issue written confirmations and who these should be sent to in the company (usually someone separate from the dealing activities).
- Confirmations by the company, including persons authorised to sign (this may be covered by (b) above), the time limit for confirmations to be received by the bank, procedures if a time limit is not met or if confirmations do not match instructions.
- Statements of account, paid cheques and other vouchers from the bank.
- Limits of aggregate indebtedness the bank is allowed to act on, set-off, etc. (attention needs to be given to daylight overdrafts that may temporarily exceed the limit and to the use of mandates covering more than one company).
- Tape-recording by the bank and the company and its use in solving disputes or discrepancies.

(d) Authority for amendments to, or cancellation of, the mandate (if not covered in (b) above).

(e) Authority or prohibition to deal at non-market rates.

(f) Accountabilities and indemnities in case of errors, negligence, etc.

(g) Whether the company is observing any regulatory codes of conduct.

(h) Acknowledgement by the bank that it accepts the mandate.

11.3 Conclusion

Legal documentation is usually difficult but can be particularly problematic and complex in the area of treasury business.

Two brief recommendations:

- Never make assumptions.
- If in doubt, take advice.

Some references for further reading are given in appendix 3.

Appendix 1

Sample wording for Memorandum and Articles of Association Objects Clause

As an object of the company or as a power incidental to any of its other objects, to engage in currency exchange and interest rate transactions, including but not limited to dealings in foreign currency, spot and forward exchange rate agreements, swaps, caps, floors, collars and any other foreign exchange or interest rate hedging arrangements and such other instruments as are similar to or derived from any of the foregoing, whether for the purpose of making a profit or avoiding a loss, or managing a currency or interest rate exposure or any other exposure, or for any other purpose.

Appendix 2

Jurisdictions believed to allow default-netting

Ireland

England

Germany

Denmark

Japan

Netherlands

Jurisdictions believed not to allow default-netting

Greece

Spain

Luxembourg

Portugal

Appendix 3

Some ISDA documents for further reading and information

Standard Form Contracts

- 1992 ISDA Master Agreement (Multicurrency - Cross Border).
- 1992 ISDA Master Agreement (Local Currency - Single Jurisdiction)
- 1995 Credit Support Deed (Security Interest - English law)
- 1995 Credit Support Annex (Transfer - English law)
- 1995 Standard Terms and Conditions for Escrow Float Transactions.
- 1996 Representation Regarding Relationship between Parties

Guides and Definitional Booklets

- User's Guide to the 1992 ISDA Master Agreement
- 1992 FX and Currency Option Definitions
- 1994 ISDA Equity Option Definitions
- 1996 ISDA Definitions

Chapter 12:
Glossary

Accounting Standards Board (ASB)
A UK body responsible for making, amending and withdrawing accounting standards. The ASB is independent and able to act on its own authority, but consults widely on its proposals.

Accrual Accounting
Under accrual accounting, realised gains and losses on derivatives are not recognised in the profit and loss account as they occur but are deferred until the period in which the hedge transaction is recognised.

American-Style Option
An option that can be exercised at any time before its end date. In contrast, a European-Style Option can only be exercised on its end date. See also *Call Option, European-Style Option, Put Option.*

Amortising Swap
An interest rate swap where the notional principal amount of the contract reduces in a predetermined fashion over the life of the contract. See also *Currency Swap, Interest Rate Swap.*

At-the-Money (ATM) Option
An option whose strike rate is equal to the current value of the underlying instrument. For example:

- A currency option is at-the-money when the strike rate is equal to the current spot exchange rate for the currency.
- An interest rate option is at-the-money when the strike rate is equal to the relevant current money market rate. See also *Call Option, In-the-Money Option, Out-Of-the-Money Option, Put Option.*

Base Currency
The currency against which a particular financial centre or country normally quotes foreign exchange rates - for example, Sterling or the US dollar.

Basis Point
The unit of measurement used to express changes in interest rate and bond yields. It equals one-hundredth of 1 per cent - that is, 0.01%. For example, the difference between interest rates of 6.90% and 7.00% is ten basis points. Basis Points are also referred to as points, pips, or ticks. See also *Pip.*

Bid Price
The price at which a bank will buy and a company will sell financial instruments. See also *Offer Price.*

Bond
A debt instrument under which the issuer agrees to pay to the investor a set amount of interest on fixed dates over the life of the bond and to repay the value of the bond on its fixed end date. The issue price of the bond may not be the same as the face value or par value of the bond if the interest rate on the bond is not equivalent to current market rate. The market prices of a bond after its issue date will depend on market rates and conditions prevailing at that time. Bonds are normally issued for at least a year and can be easily traded in the secondary market. See also *Bond Yield, Convertible Bond, Coupon, Maturity, Par Value.*

Bond Yield
The rate of return on a bond expressed as a percentage of its price. The most commonly used yield measurement is the yield-to-maturity or redemption yield. This is the rate of interest at which the present value of the total cash flow of the bond (its redemption value and interest payments) equals the bond's current price. Other types of yield are nominal yield and current yield. See also *Coupon, Maturity, Yield Enhancement.*

Broken Period
Financial transactions are normally for standard periods of one, two, three, six or twelve months. A broken period refers to any non-standard period, such as four months or eleven months and two days.

Cable
A term for the spot exchange rate between the US dollar and Sterling.

Call Option
A Call Option gives the buyer the right to buy the underlying instrument at an agreed price rate on or before a certain date. In return, the option seller receives a premium. The buyer does not have to use the option, and the most the buyer can lose is the cost of the premium. The agreed rate at which the underlying instrument will be bought is the exercise or strike rate.

Cap
An option that fixes an upper limit for rates or returns in foreign exchange, interest rate or equity markets. It is used as a protection against rising interest rates, foreign exchange rates or equity prices. See also *Collar, Floor, Interest Rate Cap, Interest Rate Floor.*

Capital instruments - FRS4
All instruments that are issued by reporting entities as a means of raising finance, including shares, debentures, loans and debt instruments, options and warrants that give the holder the right to subscribe for or obtain capital instruments. In the case of consolidated financial statements the term includes capital instruments issued by subsidiaries except those that are held by another member of the group included in the consolidation.

Caplet
One of the series of single payment periods that make up a cap. See also *Cap, Interest Rate Cap.*

Cash Market
The market for interbank loans and deposits of up to one year maturity.

Central Bank
A country's chief regulatory bank, which acts as the government's banker and which is usually government-controlled. Its responsibilities normally also include supervising commercial banks, managing exchange reserves, managing the national currency's value, and regulating the country's credit system. Central banks can intervene in the financial markets to directly control interest rates, foreign exchange rates, or by buying and selling currencies, bonds etc., in the open market. They may do this, for example, in an effort to stabilise currency markets or to steer exchange rates to a particular level.

Certificate of Deposit (CD)
A document normally provided by a bank to show that the holder has lent the bank a certain amount of money for a fixed period at an agreed interest rate. If the investor holds the CD until the end date, he or she will receive interest on the investment at given times and will receive a lump sum at the end date. Such instruments are freely transferable.

Close-out Netting
A process by which after an event of default has occurred under a contract,
- all the transactions governed by that contract terminate,
- the values of those terminated transactions are determined, and
- those values are set off against each other, with the result that
- a net amount is payable from one party to the other.

Collar
An instrument that is a combination of a cap at one strike level and a floor at a lower level. The principle involved in a collar contract is explained under Interest Rate Collar. See also *Cap, Floor, Interest Rate Cap, Interest Rate Collar, Interest Rate Floor.*

Commercial Paper
Promissory notes (that is, written promises to pay) issued by large companies or government agencies to meet short-term borrowing needs. Commercial paper may be secured or unsecured and is usually sold at a discount from its face value. Maturities can range from one week to one year.

Commitment Fee
The fee a bank charges, usually on dates set out in the loan agreement, on the undrawn part of a loan. Because the loan agreement commits the bank to lend a fixed principal amount, the fee is compensation for holding the undrawn funds, which would otherwise be available for lending elsewhere.

Confirmation
A written outline issued by one of the parties to a transaction detailing the principal terms of the deal that was transacted.

Convertible Bond
Like a conventional bond, a convertible bond is issued for a fixed period at a fixed interest rate. However, it differs in that it can be exchanged for shares in the company issuing the bond. The bond can be exchanged into a pre-set number of shares of the issuer within a specified time period.

Coupon
The rate of interest on a bond, usually expressed as a percentage of the bond's face value. See also *Bond.*

Covering (see *Hedge*)

Credit Risk
The risk that the other party or organisation in a financial contract may default on its obligations under the agreement, potentially resulting in a loss on the contract.

Cross Default Clause
A clause in an agreement stating that a breach of any of the company's other loan agreements or financial contracts will be deemed to be a breach of the agreement containing the clause. For example, a clause in one loan agreement could require full repayment of principal and interest immediately on the breach of any other loan agreement.

Cross Rate
The exchange rate between any two currencies, neither of which is the Irish pound. The cross rate can be worked out from the exchange rate of each currency against the Irish pound, or it can be a direct rate between the two currencies as set by the bank.

Currency Basket
A selection of currencies whose weighted average is equal to one unit of a notional currency. For example, the ECU (European Currency Unit) is a notional currency based on the average of a basket of European Community currencies.

Currency Exposure
The portion of a company's assets and liabilities that is subject to change in value as a result of movements in currency exchange rates.

Currency Swap
A Swap involving a series of interest rate payments, and possibly a principal exchange in different currencies. The swap usually starts with an exchange of principals in the two currencies. Over the life of the swap, fixed-rate or variable-rate interest payments in the two currencies are exchanged. At the end of the swap, the principal amounts are re-exchanged. Currency Swaps can be used for funding, managing risks, or protecting balance sheets. See also *Interest Rate Swap.*

Current Value
The amount at which an instrument could be exchanged in an arm's length transaction between informed and willing parties, other than in a forced or liquidation sale.

Day Count
The number of days in the year to be used when calculating interest payable. For example,. for IEP interest calculations, 365 days per year are assumed, while 360 days per year are assumed for currencies such as DEM.

Debt Profile
An analysis of the debt a company must repay over future periods.

Demand Deposit
A bank deposit that can be withdrawn without notice.

Derivatives
A contract or security whose value depends on or derives from the value of another instrument. Futures, forwards, options and swaps are the main derivative instruments. They depend on currencies, commodities, equities, equity indexes, interest rates, or combinations of these instruments. See also *Option.*

DIBOR
Dublin Interbank Offered Rate: The rate at which banks will lend to other banks in the Dublin interbank market. DIBOR is often used as the reference rate for derivative instruments such as caps, floors, collars, and swaps. The 'official' DIBOR rate is an average of the rates quoted by the leading banks in the Dublin market.

Draw Down
A new advance of funds under a loan facility for an agreed period.

Equity
Shares issued by a company to raise capital. The investor gets a share in the ownership of the company and its assets and profits. Equities (more commonly known as shares) have no fixed maturity date and can generally be traded in the equities market whenever necessary.

Equity Shares - FRS4
Shares other than non-equity shares.

Eurocurrency
A currency deposit or loan that is made and held outside the currency's country and so is outside the formal control of the country's financial authorities. Eurocurrencies such as the Eurodollar, Euroyen and Eurosterling are traded in the international Euromarkets by investors and borrowers based outside the country of the particular currency being traded.

European-Style Option
An option that can be exercised only on its end date. In contrast, an American-Style Option can be exercised at any time up to the end date of the option contract. See also *American-Style Option, Call Option, Put Option.*

Fair Value (option)
The option value based on a mathematical option valuation model. It is the price at which the buyer and the seller should expect to break even - that is, it is an estimate of what the price of an option would be in an efficient market. See also *Options.*

Financial Engineering
Designing tailored financial solutions to meet the particular cashflow or risk management requirements of a customer. This is normally done by combining traditional instruments such as bonds, forward and futures contracts, options, foreign exchange contracts, and swaps.

Financial Instruments - ASB
Any contract that gives rise to both a financial asset of one entity and a financial liability or equity instrument of another entity.

A financial asset is any asset that is:
(a) cash,
(b) a contractual right to receive cash or another financial asset from another entity,
(c) a contractual right to exchange financial instruments with another entity under conditions that are potentially favourable, or
(d) an equity instrument of another entity.

A financial liability is any liability that is a contractual obligation
(a) to deliver cash or another financial asset to another entity, or
(b) to exchange financial instruments with another entity under conditions that are potentially unfavourable.

An equity instrument is any contract that evidences an ownership interest in an entity, i.e. a residual interest in the assets of the entity after deducting all of its liabilities.

Floating-Rate Currency
A currency whose value is set by market forces and the central bank. There are no limits on the amount by which it can rise and fall in value.

Floating-Rate Note (FRN)
A bond paying a variable rate of interest linked to a short-term index such as the three-month or six-month LIBOR. The rate is reset regularly to a fixed amount above or below the reference rate (the margin).

Floor
An option that sets a lower limit on rates or returns in foreign exchange, interest rate or equity markets. This kind of option is used to protect against falling interest rates, foreign exchange rates or equity prices. See also *Cap, Collar, Interest Rate Floor.*

FOREX (also FX)
An abbreviation of 'foreign exchange'.

Forward Contract
A contract between two parties (for example a bank and a customer) where one party agrees to sell or buy a fixed amount of a particular currency at an agreed rate on a certain date. The agreed foreign exchange rate is referred to as the forward rate. Foreign exchange Forward Contracts are useful tools for fixing the exchange rate for a transaction with a known settlement date in the future.

FRA (Forward Rate Agreement)
A contract that fixes the interest now that will apply to a loan or deposit for a particular amount for a given period starting on a certain date in the future (the settlement date).

Futures Contract
A contract whereby two parties agree to exchange a stated good for a given price on a given date in the future. Such contracts are on standard terms and are dealt on organised futures exchanges.

Hedge, Hedging
Action taken to reduce or eliminate the risk of changes in interest rates, currency rates or security prices that could reduce the value of an asset or transaction. The action usually means sacrificing possible rewards from favourable changes in price, interest rate or exchange rate. Instruments used in hedging include FRAs, Swaps, Forward Contracts, and Options. See also *Forward Contract, FRA, Option.*

Hedge Accounting
A special accounting treatment that alters the normal accounting for a hedge so that offsetting changes in the fair values or cash flows of the hedge and the item being hedged are included in the profit and loss account in the same period or periods.

Gearing
The ratio of total debt to equity in the balance sheet of a company. A highly geared balance sheet is one where the level of debt is high in relation to the equity base of the company.

Interest Rate Cap
An interest rate option that protects against rising interest rates by giving the buyer a guaranteed maximum interest rate. The buyer pays a one-off, up-front premium. See also *Caplet, Collar, Floor, Interest Rate Collar, Interest Rate Floor.*

Interest Rate Collar
An interest rate option where a borrower limits the cost of interest on a debt by buying an Interest Rate Cap and sells an Interest Rate Floor to cover some or all of the cost of the cap. A Zero-Cost Collar is one in which the floor premium is equal and opposite to the cap premium. See also *Interest Rate Cap, Interest Rate Floor.*

Interest Rate Floor
An interest rate option that protects against falling interest rates by guaranteed a minimum interest rate. The buyer pays a one-off, up-front premium. See also Interest Rate Cap, Interest Rate Collar.

Interest Rate Swap
A swap contract whereby two parties agree to swap interest payments on a notional principal sum over an agreed period. The most frequently used Interest Rate Swap structure is a fixed-variable structure, in which one party to the agreement pays a fixed rate over the term of the swap in exchange for variable-rate interest payments from the other party.

In-the-Money (ITM) Option
An option is in the money if exercising it has some value - that is, it's strike value is more favourable for the holder than the current market value of the hedging instrument. A Call Option is in the money if the current market price of the instrument is higher than the strike price of the option. A Put Option is in the money if the current market price of the instrument is lower than the strike price of the option. See also *At-the-Money Option, Call Option, Out-of-the-Money Option, Put Option.*

Intra-Day
This literally means 'within the day'. For example, an intra-day limit is the limit allowed on a foreign exchange dealer's position during a trading day. Similarly, intra-day prices or rates are those quoted during a working day.

ISDA
International Swaps and Derivatives Association: the main trade association of the swaps and derivative industry.

Knock-In Option
An option that behaves a standard option only if the price of the instrument reaches or passes an agreed price. A Down-and-In Option is one that comes into play if the price of the instrument falls below an agreed price. An Up-and-In Option is one that comes into play if the price of the instrument rises above an agreed price.

Knock-Out Option
An option that ends if the price of the instrument reaches or passes an agreed price. A Down-and-Out-Option is one that ends if the price of the instrument rises above an agreed price.

LIBOR
London Interbank Offered Rate: the rate at which banks will lend to other banks in the London Interbank market. LIBOR is often used as the reference rate for derivative instrument such as caps, floors, collars, and swaps.

Lombard Rate
The interest rate charged by the Bundesbank (German Central Bank) to other banks for credit against security such as public authority bonds and rediscountable trade bills. Normally the rate is at least one percentage point above the German discount rate. Credits from the Bundesbank are referred to as Lombard credits.

Margin
Used in the context of loans and FRNs to mean the spread over the market rate that the issuer/borrower must pay. This margin reflects the creditworthiness of the issuer/borrower.

Market Risk
The possibility that a loss may occur on a financial instrument because of changes in market prices such as interest rates, exchange rates, equity prices, and commodity prices.

Market Value
The price at which a particular instrument is currently trading in the financial market.

Mark to Market
The process of calculating the current value of a financial instrument based on currently prevailing market prices.

Maturity
The life span of an agreement. The maturity date of an investment is the date on which the agreement ends.

Money Market (see *Cash Market*).

Non-Equity Shares - FRS5

Shares possessing any of the following characteristics:

(a) any of the rights of the shares to receive payments (whether in respect of dividends, in respect of redemption, or otherwise) are for a limited amount that is not calculated by reference to the company's assets or profits or the dividends on any class of equity share;

(b) any of the rights to participate in a surplus in a winding up are limited to a specified amount that is not calculated by reference to the company's assets or profits and such limitation had a commercial effect in practice at the time the shares were issued or, if later, at the time the limitation was introduced;

(c) the shares are redeemable either according to their terms, or because the holder, or any party other than the issuer, can require their redemption.

Off-Balance Sheet Instruments

Financial instruments that do not appear as an asset or as a liability on a company's balance sheet. Common off-balance sheet instruments are swaps, futures, options, and FRAs.

Offer Price

The price at which a bank will sell and a company will buy financial instruments. See also *Bid Price.*

Open Outcry

A method of public trading that takes place in a trading pit on the floor of an exchange. Dealers call out their bids and offers and arrange deals verbally and with gestures.

Option

An option gives the buyer the right to buy or sell an instrument at a fixed price on or before a certain date in the future.

Option Premium

The up-front, non-returnable fee that the option seller receives from the buyer in return for an option. See also *Option, Call Option, Put Option.*

Out-of-the-Money (OTM) Option

An option that currently has no value - that is, its strike value is less favourable to the holder than the current market value of the instrument. See also *At-the-Money Option, Call Option, In-the-Money Option, Put Option.*

Par Value

The face value of a security. It is more important for instrument such as bonds and certificates than for shares, because, it represents the amount the seller will pay for the bond or certificate at the end of the agreement. It is also known as the nominal value or face value.

Pip (see *Basis Point*).

Premium (see *Option Premium*).

Prime Rate (Ireland)
The rate at which banks lend cash to corporate customers with the highest creditworthiness.

Private Placement
Offering new shares or a new bond to a small, select group of investors. As well as making sure that the securities are held by only a few supportive institutions, a private placement is generally cheaper and more flexible than a public issue. For example, selling to a small number of chosen investors means that the investment can be tailored to meet the needs of those investors.

Put Option
An option that gives the buyer the right to sell the instrument at a fixed price on or before a certain date. In return the seller receives a premium (fee). The buyer does not have to exercise the option unless it is in it's interests to do so. The most the buyer will lose is the cost of the premium. The agreed price at which the investment may be sold is the exercise or strike price. See also *At-the-Money Option, Call Option, In-the-Money Option, Option, Out-Of-the-Money Option, Premium.*

Real Time
A term describing a system where there is little noticeable delay between the time of entering data and the time the data becomes available to users. For example, real-time market prices are prices that are available to the computer user almost as soon as they are entered into a computer system by the bank or financial institution that is providing them.

Reserve Asset Cost
The Central Bank of Ireland requires lending banks to hold a given percentage of their loan book in a low-rate deposit account with the CBI. To compensate for the opportunity loss of having to retain such low-yielding reserves, Irish banks add a Reserve Asset Cost to all lending rates.

Roll Over
Ending one contract and opening a similar contract with a later maturity date.

Seasonal Swap
A swap designed to hedge exposure serving in a given period, within a year, or a number of future years.

Settlement Day
The day on which a deal is settled or cleared - that is, the day on which the cash, securities, paperwork and so on are exchanged.

Spot Market
The market for immediate cash sales of securities, deposits, commodities, foreign exchange, and so on. For example, the settlement period for foreign exchange deals in the spot market is two days. This market contrasts with the forward market, where the sale takes place on a future date.

Spread
The difference between the bid price and the offer price for any instrument.

SWIFT (Society for Worldwide Interbank Financial Telecommunications)
An international society responsible for transferring messages (e.g. money transfers) safely between banks. Most banks are on the SWIFT network.

Trade Date
The date on which a deal is completed. This may be different from the start date.

Translation Risk
The risk caused by converting amounts of foreign currency into domestic currency for accounting purposes - for example, assets and liabilities of foreign branches and balance sheets of foreign subsidiaries. Translation risk does not involve any actual market trade and has no direct effect on cashflow, but it does affect values reported on a, companys balance sheet and so can have a real effect, for example on a company's borrowing power or its share price.

Two-way Market
A market where traders quote both bid and offer prices.

Uncommitted Facility
Credit that can be cancelled or suspended at any time.

Value Date
The value date for a transaction is the date on which the transaction starts. Different types of transaction have different default value dates. See also *Settlement Day.*

Value Spot
A deal in which the settlement day is two business days after the trade date.

Wire
A term for the spot exchange rate between the US Dollar and Irish Pound.

Yield Curve
A graphic illustration of the level of interest rates plotted as a function of time. This is also known as the term structure of interest rates.

Yield Enhancement
Strategies designed to increase the returns on an investment.

Zero Coupon Deposit

A deposit where one party pays a variable rate at regular intervals over the life of the contract in return for receipt of a single fixed-interest payment from the other party on the end date of the swap. See also *Bond, Currency Swap, Interest Rate Swap.*

Chapter 13:
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