



Institute  
and Faculty  
of Actuaries

## **CHANGES TO THE SYLLABUS AND CORE READING FOR SUBJECT CT2 FOR THE 2018 EXAMINATIONS**

### **Changes to the Syllabus and their impact on Core Reading**

*There have been no changes to the Syllabus.*

### **Changes to Core Reading**

#### **UNIT 3**

*Minor amendments have been made to this Unit and a revised Unit is attached.*

#### **UNIT 4**

*Minor amendments have been made to this Unit and a revised Unit is attached.*

#### **UNIT 9**

*The detail on investment trusts has been updated and a revised Unit is attached.*

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

Attachments: Unit 3, 4 and 9

## UNIT 3 — TAXATION

### Describe the basic principles of personal and corporate taxation.

#### *Syllabus objectives*

- (iv)
1. Describe the basic principles of personal taxation.
  2. Describe the basic principles of the taxation of capital gains.
  3. Describe the basic principles of company taxation.
  4. Explain the different systems of company taxation from the points of view of an individual shareholder and the company.
  5. Outline the basic principles of double taxation relief.

## 1 Personal taxation

Personal taxation is typically levied on all of the financial resources of an individual such as:

- income (whether *earned* — wages and salaries — or *unearned* — investment income and rent)
- profit from operating as a sole trader or partner
- inherited wealth
- investment gains
- value of assets held

In many countries taxation is limited to *cashflows*, since these are indicative of cash being available to finance the tax payable. Where tax is determined on the value of assets, there is the possibility that these assets may have to be realised in order to generate the funds needed to pay the taxes.

In addition to ability to pay, governments will also seek to ensure that citizens have sufficient retained income and wealth to meet their essential needs. It is common, therefore, to assess tax liabilities *in arrears* taking into account all relevant sources of wealth and / or income, and to exempt some basic levels of income or wealth from the calculations. However, there may be some arrangement whereby tax is levied at source on income throughout the tax period in order to accelerate tax flows to the government. In this case, the final assessment for the period will establish the final payment (or credit) needed to generate the correct overall tax payments.

In general, governments will seek to ensure that revenue flows are taxed only once in the hands of the recipients. However, if taxes are also levied on wealth or the value of specific assets, then the revenue may be taxed twice (since the assets may well have been purchased using after-tax funds).

Consideration must be given to:

- whether marginal tax rates should increase, remain constant or decrease as the individual's taxable base varies
- the underlying "tax-free" level of income or capital which may need to reflect personal or family circumstances. This is usually catered for using a personal allowance which is deducted from income before determining the liability to tax.
- other additional allowances, for example age allowances for older taxpayers, an additional allowance for married couples.

Certain items of income are tax free. For example, in the UK the following are tax-free:

- most profits from gambling
- most forms of social security benefit
- income from certain types of investment such as an Individual Savings Account (ISA)

Tax relief may also be available on certain forms of expenditure such as contributions to an approved pension scheme and charitable gifts.

Where an employee receives additional "fringe" benefits as well as a wage or salary, the value of the benefits is usually included in the definition of taxable income.

Investment income can have income tax deducted at source. For tax purposes, the grossed up equivalent is included as taxable income and the tax deducted at source can be offset against the person's tax liability. Deducting income tax at source will tend not to occur if the investment income is subject to tax free allowances, as apply in the UK from April 2016.

In addition, most countries also levy social security contributions on earnings.

## 2 Capital gains tax

Individuals are typically subject to capital gains tax on chargeable gains. Chargeable gains normally fall into the tax year of assessment during which the gain is realised so that, again, the funds to pay the tax should be available.

Capital gains on most assets are chargeable. However, there may be exceptions. For example, in the UK the following assets are free from capital gains tax:

- private motor cars
- a main private residence
- foreign currency obtained for personal use

- British Government securities and other qualifying fixed interest stocks

A chargeable gain is typically defined as:

$$\text{sale price} - \text{purchase cost}$$

The sale price can be reduced to reflect any costs associated with the sale. The purchase cost can be increased by any costs associated with the purchase, and any expenditure made to enhance the value of the asset during the period the asset was held. In normal circumstances, the purchase cost would be the original cost of the asset. Some countries have allowances to remove the inflationary element of any gain, or to encourage individuals to retain assets.

In most countries, individuals are given an allowance each year and only pay capital gains tax on chargeable gains in excess of this amount. Capital losses can normally be offset against capital gains. For individuals, the amount chargeable to capital gains tax could be added on to the income liable to income tax and charged to CGT at the individual's marginal tax rate. In the UK, a rate of 10% or 20% (from April 2016) has applied to capital gains above the allowance, depending on the level of taxable income. Higher rates can apply to some gains, such as in the UK, for property which is not the individual's main home.

### **3 Company Taxation**

#### **3.1 Introduction**

Companies are liable to corporate income tax (corporation tax) on their taxable profits. Taxable profits usually include both income (less allowable expenses) and capital gains.

The starting point for a company's tax assessment is "profit on ordinary activities before taxation". This figure then needs to be adjusted.

The main adjustments are:

- add back any business expenses or potential expenditure shown in the accounts which are not allowable for tax
- add back any charge for depreciation, and instead subtract the capital allowances
- deduct any special reliefs e.g. research and development costs may be able to be deducted immediately

Since dividends are paid from profit after tax, some countries give relief to shareholders to ensure that dividends are not subject to both personal and corporate income tax.

Such an "imputed" tax system ensures that there is no disadvantage experienced by the shareholder when a company distributes profits. However, governments sometimes seek

to incentivise companies to retain and reinvest earnings. This may be achieved by levying higher taxes on dividends than on “retained” profits, or by allowing tax relief for new investment (such as the “capital allowances” mentioned above). Profits flowing from such investment would then be taxed in the usual way.

A particular example of this relates to pension provision, where the government may seek to encourage private and institutional pension arrangements by offering tax reliefs (or even subsidies) on contributions and, possibly, investment earnings within the pension scheme.

While the final pension benefit will be subject to tax, when paid, the individual recipient will often benefit from a lower personal tax regime when in retirement. In some countries such tax-advantaged funds are available for other purposes (such as house purchase, medical expenses or education and training finance).

#### **4 Double taxation relief**

Most countries have a double taxation agreement with other countries. Double taxation relief (DTR) means that the local tax authority will allow companies and individuals with overseas income or capital gains to offset tax paid overseas against their liability to domestic tax on that income or capital gains. The maximum offset is the rate of tax that would have been paid locally.

#### **5 Other taxes**

Other categories of tax levied on companies and individuals include:

- stamp duty on contract documents
- inheritance taxes
- property taxes

There may also be a system for levying tax on *expenditure*, either in respect of general expenditure (e.g. a sales tax, such as VAT in the UK) or on specific types of expenditure (e.g. customs duties and excise taxes). Such specific taxes may be designed, additionally, to encourage certain patterns of consumer expenditure or to raise revenues for particular categories of government expenditure. Certain classes of “essential” expenditure, such as basic foodstuffs, may be exempted from sales taxes.

**END**

## UNIT 4 — FINANCIAL INSTRUMENTS

**Demonstrate a knowledge and understanding of the characteristics of the principal forms of financial instrument issued or used by companies and the ways in which they may be issued.**

*Syllabus objectives*

(v) 2. Describe the characteristics of:

- debenture stocks
- unsecured loan stocks
- Eurobonds
- preference shares
- ordinary shares
- convertible unsecured loan stocks
- convertible preference shares
- warrants
- floating rate notes
- subordinated debt
- options issued by companies

3. Describe the characteristics and possible uses by a non-financial company of:

- financial futures
- options
- interest rate and currency swaps

### 1 Main forms of financial instrument

#### 1.1 Debt or loan capital

The main characteristics of debt or loan capital were discussed in Unit 2 above. We now consider some categories of loan stock.

##### 1.1.1 Debenture stocks

Debentures are loans which are secured on some or all of the assets of the company. This means that, if the company fails to make one of the coupon payments or the capital repayment, various actions are available to the stock holders. They may appoint a receiver to intercept income from the secured asset(s) or take possession of the secured asset to sell it in order to meet their debt.

There are two types of debenture:

**Mortgage debenture (fixed charge):** a fixed charge means that there are specific secured assets mentioned in the legal documentation for the mortgage debenture.

**Floating charge debenture:** the company can change the secured assets in the normal course of business. For example, it can sell the assets, so long as they are replaced by equally satisfactory assets. When a company fails to make an interest or capital payment, the debenture holders can apply to the courts to convert the floating charge to a fixed charge.

Debentures carry the risk that coupon payments or capital repayment may not be made, but the stockholders have security in respect of the secured assets. The value of all payments — capital and interest — may be eroded by inflation.

Debenture stocks may also not be readily marketable. The total return on debentures will reflect all these risks.

Debentures and loan stocks are used to raise large amounts of funds (typical issues in the UK may range from £30m to £100m). They have a fixed redemption date and carry a fixed rate of interest so that the borrower has a known debt servicing commitment. The interest payments are tax deductible (as an expense of the company) but the debenture holders are creditors of the company and have no right to interfere in its running.

However, the interest payments must be made irrespective of the company's profitability or cash flow position and, if the debentures are secured against the assets of the company, failure to adhere to the agreed terms may place the continuation of the company at risk.

### **1.1.2 Unsecured loan stocks**

With unsecured loan stock there is no specific security for the loan. If the company defaults, the loan stock holders' only remedy is to sue the company. The unsecured loan stock holders rank after the debenture holders. Other creditors of the company rank equally with the unsecured loan stock holders.

Gross redemption yields are higher than on debentures to compensate for poorer marketability and greater risk.

### **1.1.3 Eurobonds**

Traditionally a company would issue loan stock within the tax and legal framework of its own country. However, it is also possible to borrow in another country. Since the 1950s it has been possible to arrange with investment banks for loan capital to be issued to investors without it coming under the legal or tax jurisdiction of any country. The market for this type of loan capital is known as the "Euro" market. Companies throughout the world raise money by issuing Eurobonds. Eurobond issues can be made in almost any currency including the euro.

Most Eurobonds are redeemed at par on a set date with fixed coupon payments during the term of the Eurobond. However, coupon payments on Eurobonds are usually made annually rather than six-monthly. Almost all Eurobonds are unsecured. Eurobonds are “bearer form” documents which means that, to claim interest payments, holders must cut out coupons from the certificates and send them to the company (or its paying agent).

A significant minority of Eurobonds have a variable coupon payment. They are known as “floating rate notes” (see 1.5 below). Many innovative types of Eurobonds have been issued. Most trading in Eurobonds occurs through the banks rather than through a stock exchange.

Gross redemption yields depend upon the issuer (and hence risk) and issue size (and hence marketability). Inflation will affect the real return achieved.

Eurobonds are also used to raise large sums — the minimum acceptable issue is \$75m or more. They represent a convenient method of raising large amounts of foreign currency denominated funds without having to enter overseas financial markets. It may be possible to raise funds at a lower rate of interest than is available on domestic currency funds, but there may be associated exchange rate risks if the funds raised are converted for use in domestic projects.

## 1.2 Equity capital

The main characteristics of shares or equity capital were also discussed in Unit 2 above. We now consider some further aspects of equities.

Marketability of ordinary shares varies according to the size of the company but is usually much better than for the loan capital of the same company. There are three main reasons for this:

- (i) For many companies, the bulk of their capital is in the form of ordinary shares. So issues of ordinary shares tend to be large.
- (ii) Most companies only have one type of ordinary share whereas their loan capital is likely to be fragmented into several different issues.
- (iii) Investors tend to buy and sell ordinary shares more frequently than they trade in loan capital because the residual nature of ordinary shares makes them more sensitive to changes in investors’ views about a company.

Occasionally some companies issue variations of the basic ordinary share previously described, for example: “deferred” shares, redeemable ordinary shares, non-voting shares, shares with multiple voting rights and “golden” shares in newly privatised industries.

### 1.2.1 Preference shares

Preference shares are much less common than ordinary shares. Assuming that the company makes sufficient profits, they offer a fixed stream of investment income, which is paid like dividends.

Preference shareholders have a preferential right to either dividends, or return of capital, or both, when compared to ordinary shareholders. Preference shares pay a fixed dividend, and so can be regarded as a form of fixed interest stock. They do not usually carry voting rights. The investment characteristics are more often like those of unsecured loan stocks than ordinary shares.

Dividends do not have to be paid. However, if dividends are not paid on preference shares, no ordinary share dividends can be paid. It is usual for the preference shareholders to get voting rights when their dividends remain unpaid. Preference shareholders also have the right to vote when the rights attaching to their shares are being varied.

Most preference shares are cumulative and irredeemable. Preference shares may also be: non-cumulative, redeemable, participating, convertible, stepped and pay variable dividends.

Cumulative preference shares require any unpaid arrears of dividends, as well as the current year's dividend, to be paid before any dividend can be paid to ordinary shareholders.

Participating shares are entitled to a share of the profits, on top of the fixed dividend, once the ordinary share dividend exceeds a certain amount.

Stepped shares have a dividend that increases in a predetermined way.

Occasionally, a preference share may pay variable dividends linked to central bank rates, for example.

For all investors, the expected return on preference shares is likely to be less than on ordinary shares because the risk of holding preference shares is less.

Marketability of preference shares is similar to loan capital marketability.

The crucial difference between preference shares and ordinary shares is that preference share dividends (except for participating shares) are limited to a set amount which is almost always paid.

### 1.3 Convertibles

Convertible forms of company securities are, almost invariably, unsecured loan stocks or preference shares that convert into ordinary shares of the issuing company. This additional prospective return means that the issuer does not have to offer excessively high rates of interest on the loan stocks in order to attract lenders.

Convertible unsecured loan stocks are unsecured loan stocks which give the right to convert into ordinary shares of the company at a later date.

Convertible preference shares are preference shares which give the right to convert into ordinary shares at a later date. The investor does not pay anything to convert other than surrendering the convertible preference shares.

The convertible loan stock will have a stated annual interest payment (paid in twice-yearly instalments). For convertible preference shares, the stated rate will be in a similar format to dividends. The date of conversion might be a single date or, at the option of the holder, one of a series of specified dates. The period prior to the first possible date for conversion is known as the rest period.

There will be a specified number of ordinary shares for each convertible. If the holder chooses not to convert, then the security might continue as a loan stock or preference share for a period of time known as the stub. Alternatively it might be redeemed on a prescribed basis immediately. At any time, the cost of obtaining one ordinary share by purchasing the required number of convertible securities and converting can be compared with the market price of the share. The difference is known as the *conversion premium*.

The characteristics of a convertible loan stock in the period prior to conversion are a cross between those of fixed interest stock and ordinary shares. As the likely date of conversion (or not) gets nearer, it becomes clearer whether the convertible will stay as loan stock or become ordinary shares. As this happens, its behaviour becomes closer to that of the security into which it will convert. Similarly for convertible preference shares.

Convertibles generally provide higher income than ordinary shares and lower income than conventional loan stock or preference shares.

In the UK, in respect of capital gains, all convertibles are non-qualifying and therefore capital gains tax may be payable. Loan stocks provide gross income and preference shares provide income in the same format as dividends.

There will generally be less volatility in the price of the convertible than in the share price of the underlying equity.

From the investor's point of view, convertible securities offer the opportunity to combine the lower risk of a debt security with the potential for large gains of an equity. The price paid for this is a lower running yield than on a normal loan stock or preference share.

## 1.4 Warrants

Warrants are call options written by a company on its own stock. (See Section 1.7 below for further discussion of options.) When they are exercised, the company issues more of its own shares and sells them to the option holder for the strike price. Thus, the exercise of a warrant leads to an increase in the number of shares that are outstanding. This, in turn, leads to some *dilution* in the value of the equity.

Warrants are often added to the issue of a fixed interest bond to make it more attractive to investors — a significant proportion of private placement bonds are sold with warrants. Warrants are also often given to investment banks as compensation for underwriting services or used to compensate creditors in the case of bankruptcy.

The warrant holders are not entitled to vote or receive dividends. But the exercise price of the warrant is automatically adjusted for any share dividends or share splits.

Typically, a warrant lasts for a number of years. Once they have been created, they sometimes trade separately from the bonds to which they were originally attached.

## 1.5 Floating rate notes

Floating-rate notes (FRNs) are medium-term debt securities issued in the Euro market whose interest payments “float” with short-term interest rates, possibly with a stipulated minimum rate. Thus, the issuer does not need to estimate the likely levels of future inflation and interest rates when issuing the notes, and the lender does not require an inflation risk premium.

## 1.6 Subordinated debt

In the event of default, the holder of subordinated debt ranks below the firm’s general creditors (but ahead of preference shareholders and the ordinary shareholders). The subordinated lender holds a *junior debt* and is paid after all senior debt holders are satisfied. The rating of the debt and, consequently the terms on which it is issued, will reflect this lower level of security.

## 1.7 Options issued by companies

In addition to warrants and convertibles, the main class of option issued by companies are *executive stock options*. These are, effectively, warrants issued to senior managers as part of their remuneration package, with strike prices that are intended to represent a performance target for the executive. As noted in 1.4 above, the effect of issuing such instruments is to dilute the value of the equity already in issue. Increasingly, firms with significant amounts of warrants (or convertibles) outstanding are required to report earnings on a “fully diluted” basis. This recognises the potential increase in the number of shares.

## 2 Futures

A futures contract is a standardised, exchange tradable contract between two parties to trade a specified asset on a set date in the future at a specified price.

Financial futures are based on an underlying financial instrument, rather than a physical commodity. They exist in four main categories:

- bond futures
- short interest rate futures
- stock index futures
- currency futures

Individual stock futures are also available in some markets.

Each party to a futures contract must deposit a sum of money known as *margin* with the clearing house. Margin payments act as a cushion against potential losses which the parties may suffer from future adverse price movements.

When the contract is first struck, *initial margin* is deposited with the clearing house.

Additional payments of *variation margin* are made daily to ensure that the clearing house's exposure to credit risk is controlled. This exposure can increase after the contract is struck through subsequent adverse price movements.

### 2.1 Bond futures

For delivery, the contract requires physical delivery of a bond. If the contract were specified in terms of a particular bond then it would be possible simply to deliver the required amount of that stock. If the contract is specified in terms of a notional stock then there needs to be a linkage between it and the cash market. The bonds which are eligible for delivery are listed by the exchange. The party delivering the bond will choose the stock from the list which is *cheapest to deliver*. The price paid by the receiving party is adjusted to allow for the fact that the coupon may not be equal to that of the notional bond which underlies the contract settlement price.

### 2.2 Short interest rate futures

The way that the quotation is structured means that as interest rates fall the price rises, and vice versa. The price is stated as 100 minus the 3-month interest rate. For example, with an interest rate of 6.25% the future is priced as 93.75.

The contract is based on the interest paid on a notional deposit for a specified period from the expiry of the future. However no principal or interest changes hands. The contract is cash settled. On expiry the purchaser will have made a profit (or loss) related to the difference between the final settlement price and the original dealing price.

The party delivering the contract will have made a corresponding loss (or profit).

## 2.3 Stock index futures

The contract provides for a notional transfer of assets underlying a stock index at a specified price on a specified date.

## 2.4 Currency futures

The contract requires the delivery of a set amount of a given currency on the specified date.

## 2.5 Uses of financial futures

A company can use financial futures to “lock in” the value of assets or liabilities, or to guarantee the value of receipts and payments. For example, if a company has raised capital by borrowing at floating interest rates, but wishes to fix its future interest payments, it can use interest rate futures to fund any increase in the interest rate payable (but will have to pay over any interest saved if market rates fall).

In the same way, currency futures could be used to fix the value of foreign receipts or payments. In practice, forward currency markets would be used. Like futures contracts, forwards are contracts to buy or sell an asset on an agreed basis in the future. The difference is that futures contracts are standardised contracts that can be traded in a recognised exchange.

## 2.6 Options

An option gives an investor the right, but not the obligation, to buy or sell a specified asset on a specified future date.

A call option gives the right, but not the obligation, to buy a specified asset on a set date in the future for a specified price. A put option gives the right, but not the obligation, to sell a specified asset on a set date in the future for a specified price.

An American style option is an option that can be exercised on any date before its expiry. A European style option is an option that can be exercised only at expiry.

Traded options are available on individual equities and also on financial futures contracts.

### 2.6.1 Uses of options

Options allow a company to protect itself against adverse movements in the financial environment while retaining the ability to profit from favourable movements. For example, a company that has borrowed at variable interest rates could purchase options to protect itself against increases in market interest rates. If rates fall the company will only suffer the loss of the premium paid to purchase the options.

## 2.7 Swaps

A swap is a contract between two parties under which they agree to exchange a series of payments according to a prearranged formula.

In the most common form of *interest rate swap*, one party agrees to pay to the other a regular series of fixed amounts for a certain term. In exchange, the second party agrees to pay a series of variable amounts based on the level of a short term interest rate. Both sets of payments are in the same currency.

The fixed payments can be thought of as interest payments on a deposit at a fixed rate, while the variable payments are the interest on the same deposit at a floating rate. The deposit is purely a notional one, no exchange of principal takes place.

A *currency swap* is an agreement to exchange a fixed series of interest payments and a capital sum in one currency for a fixed series of interest payments and a capital sum in another.

The swap will be priced so that the present value of the cash flows is slightly negative for the investor and positive for the issuing organisation. The difference represents the price that the investor is prepared to pay for the advantages brought by the swap on the one hand, and the issuer's expected profit margin on the other.

Each counterparty to a swap faces two kinds of risk:

*Market risk* is the risk that market conditions will change so that the present value of the net outgo under the agreement increases. The market maker will often attempt to hedge market risk by entering into an offsetting agreement.

*Credit risk* is the risk that the other counterparty will default on its payments. This will only occur if the swap has a negative value to the defaulting party so the risk is not the same as the risk that the counterparty would default on a loan of comparable maturity.

### 2.7.1 Uses of swaps

#### 2.7.1.1 Risk management

A company can use swaps to reduce risk by matching its assets and liabilities. For example a company which has short term liabilities linked to floating interest rates but long term fixed rate assets can use interest rates swaps to achieve a more matched position. Currency swaps could be used by a company with liabilities in one currency and assets in another.

#### 2.7.1.2 Reducing the cost of debt

If one company has a comparative advantage in borrowing at a floating rate while another company has a comparative advantage in borrowing at a fixed rate, they can use an interest rate swap to reduce the total cost of financing and both benefit from a lower cost of debt.

Note that comparative advantage here implies that the companies' relative credit ratings are different in the long and short term debt markets.

**END**

## UNIT 9 — FINANCIAL INSTITUTIONS

**This Unit describes the major types of financial institution operating in the financial markets.**

It covers:

- (viii) 1. The main features of the following institutions and analyses their influence on the financial markets:
- central banks
  - investment exchanges
  - investment banks
2. The role played in financial markets by each of the following institutions:
- clearing banks
  - building societies
  - investment trusts
  - unit trusts
  - investment management companies
  - self-administered pension funds
  - life insurance companies
  - general insurance companies

### 1 Government agencies

#### 1.1 The Bank of England

The Bank of England is the United Kingdom's central bank. Traditionally, it carries out government policy, issues bank notes and acts as a banker to the commercial banks. The Bank of England is an agent of the UK government.

Responsibility for setting official interest rates has rests with the Bank of England.

In April 2013 the government established three new regulatory bodies:

1. Financial Policy Committee (FPC), responsible for macro-prudential regulation;
2. Prudential Regulation Authority (PRA), responsible for micro-prudential regulation of systemically important firms, including banks, insurers and certain investment firms; and
3. Financial Conduct Authority (FCA), responsible for the conduct of business regulation of all firms, the prudential regulation of all firms not authorised by the PRA and some market conduct regulatory functions.

### **1.1.1 Influence of the Bank on investment markets**

#### **The money markets**

The term money markets covers bank deposits and short-term securities such as Treasury bills and bills of exchange. The Bank of England intervenes directly in the market for short-term securities with the primary aim of influencing interest rates. It also seeks to encourage the development of private sector markets in which banks (and other market participants) can manage their liquidity, and to foster efficiency and competition in these markets.

In its money market operations, the Bank of England satisfies the marginal liquidity demand of the banking system as a whole through open market operations conducted transparently in high credit quality market instruments. This is predominately through transactions conducted under sale and repurchase (repo) agreements at a two week maturity.

By providing the liquidity needed by the banking system for settlement of money market transactions, the Bank acts as the marginal supplier of money to the banking system, enabling effective system-wide liquidity management in normal market conditions.

#### **The currency market**

The government maintains large amounts of gold and foreign currencies, collectively known as the foreign reserves. By selling foreign reserves in return for sterling, the Bank of England can decrease the supply of sterling and so increase its price in terms of other currencies. Similarly, if the government feels that sterling is overvalued, the Bank of England can sell sterling (thus increasing the foreign reserves) to force the exchange rate down.

#### **Providing information to the investment markets**

The Bank of England publishes a great deal of information which will be of interest to investors in the financial markets, and thus indirectly influences the markets.

## **1.2 The Debt Management Office**

### **1.2.1 New issues of Treasury bills**

The Debt Management Office (DMO) is responsible for issuing Treasury bills which are used to cover the government's short term funding needs. Treasury bills are issued in a weekly auction.

## 1.2.2 The gilt-edged market

*New issues:* When the government has a Public Sector Net Cash Requirement it will instruct the DMO to sell gilts, using various means such as:

- auctions
- tap stocks
- syndication

Auctions are the primary method now used for public offerings of conventional gilts.

Tap stocks are sold to gilt-edged market makers (GEMMs – see below).

Syndication, where an issuer appoints a group of banks to manage the sale of bonds, is also used extensively for the sale of gilts.

*Buying gilts:* Rather than having to find £3bn or more on a day when a gilt matures, the DMO tends to buy gilts in the market in the weeks and months before maturity. At times the government buys additional gilts back because it is running a Public Sector Debt Repayment.

*Regulation:* There are about 15 gilt-edged market makers (known as GEMMs or primary dealers) who are allowed to make a market in gilts. The regulator licences GEMMs and imposes certain requirements on them. In return, GEMMs are allowed certain privileges. For example:

- only the GEMMs can buy, sell or borrow existing gilts directly from the Bank of England and the DMO
- they are given a favourable tax treatment

The Bank of England is also partly responsible for monitoring GEMMs.

*Settlement:* While the Bank has designed and built a settlement system for gilts and Eurobonds, responsibility for keeping the main register of owners of gilts is now in the hands of CREST (see 2.3.3 below).

## 1.2.3 Quantitative Easing

Quantitative Easing (QE) is a monetary policy used by some central banks to increase the supply of money. It usually involves both a direct increase in the money supply and a knock-on effect from the fractional reserve system, increasing the money supply further, although it can involve just making changes to the fractional reserve system.

QE often involves the purchase of government bonds as follows:

- The central bank credits its own account with money it creates out of nothing (“ex nihilo”).

- It then purchases financial assets, for example, government bonds, quasi-government debt, mortgage-backed securities and corporate bonds, from banks and other financial institutions in a process referred to as “open market operations”.
- It can also involve changing the reserve requirements for banks which, through the fractional reserve system, would increase the money supply.

## 2 The Stock Exchange

The Stock Exchange has two key roles:

- (i) raising new finance for companies and governments (the primary or new issue market)
- (ii) providing a secondary market for investors

The Stock Exchange brings together lenders and borrowers. In order of importance, the main lenders are:

- pension funds
- life insurance offices
- individuals
- general insurance companies
- unit trusts
- investment trusts

### 2.1 Securities dealt on the Stock Exchange

The Stock Exchange is mainly concerned with the long term capital markets. It does not cover money market transactions. Nor does it cover foreign exchange transactions, futures or options contracts.

The types of securities that are quoted on the London Stock Exchange are:

- gilts, local authority bonds, bulldogs (sterling-denominated bonds issued by an overseas borrower in the traditional UK bond market)
- ordinary shares, preference shares, debentures, unsecured loan stocks and Eurobonds

In terms of market value, ordinary shares are the most important. In terms of turnover gilts are the most important.

## 2.2 The markets

The Stock Exchange runs the following markets:

- gilt-edged market
- UK fully listed securities
- Alternative Investment Market (AIM)
- overseas securities

## 2.3 The roles of the stock exchange

### 2.3.1 Providing a market

A market is a place where buyers and sellers can come together.

The London Stock Exchange (LSE) operates two dealing systems:

1. The quote-driven competing market maker system, for which prices are disseminated via the Stock Exchange Automated Quotations (SEAQ). Each market maker enters quotes into SEAQ for each security that they deal in. SEAQ then displays all the quotes in each security to brokers, and to institutional investors. Dealing is carried out over the telephone between member firms.
2. The order-driven electronic system called the Stock Exchange Electronic Trading Service (SETS). SETS currently operates for some 200 FTSE stocks. Member firms display their bid and offer orders on the system and matching orders are executed automatically.

Trading in international securities takes place through an order-driven system similar to SETS. AIM stocks and less liquid main market stocks are traded using a separate Stock Exchange service SETSqx.

### 2.3.2 Regulating the market

The Stock Exchange is a recognised investment exchange under the Financial Services and Markets Act 2000. It is responsible for ensuring that business takes place in an orderly manner and that investors are afforded proper protection.

*Regulating members of the Stock Exchange:* Brokers and market makers are members of the Stock Exchange and therefore have to follow the Stock Exchange's rules. The Stock Exchange is particularly interested in trading practices and professional standards.

*Regulating transactions:* An important feature of the Stock Exchange is that the price, time and volume of all trades have to be reported soon after they have occurred. This reporting means that it will be possible to check whether the best execution rule has been followed, and whether insider dealing may have occurred.

*Regulating companies:* A company wishing to have its securities quoted on the Stock Exchange must meet the regulator's requirements for listing. In addition, quoted companies must fulfill certain requirements. For example, a quoted company must produce an interim six-monthly report.

### 2.3.3 Settlement of trades

When one investor has agreed to sell (or buy) a security to (or from) another investor or a market maker, the registrar needs to be informed, the share certificate or bond needs to be transferred, and money needs to change hands. These administrative processes are known as settlement.

*Settlement for equities:* Under the system of rolling settlement any share transaction agreed on a particular day will be settled two working days later. This is done using a computerised system called CREST which records the holding of securities and the settlement of trades.

*Settlement for gilts:* Gilt transactions have to be settled the day after the deal is made. Buyers and sellers deal directly with each other, rather than through a third party.

### 2.3.4 Providing investors with information

The Stock Exchange also publishes information which may be of interest to investors. Much information can be accessed via its website.

The Stock Exchange Daily Official List (SEDOL) shows details such as price and volume of transactions in all the securities listed on the Stock Exchange. It is prices in the official list that the HM Revenue & Customs recognises when calculating capital gains.

## 3 Role of derivatives exchanges

Derivative contracts, which draw their value from that of an underlying asset (e.g. coffee), security (e.g. BP shares) or an index (e.g. FTSE 100), are primarily used to hedge risks, or for speculation.

Derivative contracts are traded either directly between two parties, called Over-The-Counter (OTC contracts), or are traded via an exchange, such as NYSE Liffe, and are called exchange-traded contracts.

Credit risk is a major factor in an OTC market and so regulators are trying to reduce the counterparty risks through the use of central clearing systems and the holding of collateral in respect of OTC derivative transactions.

## 4 Institutional investors

### 4.1 Investment banks

Investment banks specialise in giving financial advice to companies and in fund management. The roles played by a typical investment bank are:

Financial advisers to companies:

- give advice on takeover and merger strategies and defences
- give advice on investment projects
- give advice on the best ways to raise capital
- act as issuing houses
- arrange underwriting of new issues
- issue Eurobonds

Fund management:

- provide management for unit trusts and for investment trust companies
- manage pension funds and large private investment portfolios
- organise the Eurobond market

Money market operations:

- accept (i.e. guarantee) bills of exchange
- hold Treasury bills and local authority bills
- run some bank accounts and issue certificates of deposit

Other:

- provide both short term and long term finance to companies (e.g. through lease agreements)
- act as trustees (e.g. for debenture issues)
- act as counterparties/ brokers for Over-The-Counter (OTC) derivative contracts, a facility used mainly by pension funds and insurance funds.

### 4.2 Clearing banks

Clearing banks carry out a multitude of roles, although their distinguishing feature is that they obtain the bulk of their finance from private individuals through high street outlets, and provide means for customers to transfer money to third parties.

Most of a bank's funds come from current accounts, deposit accounts and savings accounts.

Banks then advance bank loans which may have terms of a few years. However, banks will also lend a lot of money on shorter terms to maintain adequate liquidity. For example, banks lend to customers on overdrafts (in theory recallable immediately) and buy money market instruments (liquid, and mostly with terms to maturity of only a few months).

#### 4.2.1 Role played in the investment markets

*Money market deposits:* The banks dominate the money markets. Banks requiring cash are the main source of demand for short term deposits. Banks with excess cash are the biggest suppliers of money to be deposited. Deposits can be for any term from overnight to one year and occasionally beyond. The shorter terms tend to be the most active.

The banks usually deal through specialist money brokers who monitor the whole market to find the best rates. The rate at which one bank is prepared to lend to another at is known as LIBOR (London Inter Bank Offered Rate).

*Certificates of deposit:* The majority of certificates of deposit represent surplus funds of one bank being deposited with another bank.

*Eurodeposit markets:* A Eurodeposit is any currency deposited outside its country of origin. The banks' need to balance surpluses and deficits means that they are the dominant force in the Eurodeposit markets.

*The bill markets:* Banks quite often buy and sell Treasury bills, bills of exchange and local authority bills.

*Gilt market:* Banks also hold some spare cash in gilts. Due to their need for liquidity, almost all of their funds are invested in short dated gilts and much of that is in gilts within one year of maturity.

*Other:* Banks are a key competitor in the market to take deposits from retail customers. Banks are increasingly playing a role as a middleman in the unit trust, investment trust, life assurance and personal pensions markets. They give advice to customers on which product to choose, and often have their own in-house unit trust or pension plan.

Banks also exert a small influence on the equity markets and debt market when they want to raise long term capital.

#### 4.3 Building societies

The role of building societies is similar to that of banks, although there are some differences:

- building societies have not entered the commercial money markets to the same extent as banks
- building societies' lending is dominated by house-purchase mortgages

- building societies both individually and collectively are smaller, and thus exert less influence than banks on the markets

They channel private individuals' excess short term cash to private individuals who need to borrow to buy a house. Building societies grant house-purchase mortgages and some personal loans. Surplus cash is invested in:

- short dated gilts and local authority bonds
- other banks and building societies (particularly using certificates of deposit)

### 4.3.1 Role played in investment markets

Building societies have a little influence on short-dated gilts and certificates of deposit, but negligible influence on the other markets.

Building societies are in competition with banks in the retail deposit market, and to an extent in the investment trust/unit trust/pensions/life assurance advice markets.

Building societies do not have shares. However, they do raise some long term debt capital. Unusually for non-government borrowers, some of this has been in the form of index-linked bonds so that building societies are relatively important in what is a very small market.

## 4.4 Investment trusts

An investment trust is a company. Most investment trusts are listed on the Stock Exchange. They raise equity and debt capital. The money raised is often invested in the shares of other UK companies. A number of investment trusts buy other assets such as gilts, property and overseas equities.

Investment trusts provide the opportunity for small investors to own a share of a big, well diversified, and professionally managed portfolio. The investor owns shares in the investment trust. In turn, the investment trust owns the underlying assets. Some institutional investors also invest in investment trusts.

The main parties in an investment trust are:

- Board of directors, who are responsible for the policy of the company.
- Investment managers, who manage the investments for the investment trust.
- Shareholders, who buy and sell the shares in the investment trust company in the same way as they would in any other company.

When investors sell a share, they do so to another investor. The total number of shares in issue for an investment trust does not change (unless the company has a rights issue). For this reason, an investment trust is sometimes called a closed-end fund.

#### 4.4.1 Pricing

In theory, the price of a share in an investment trust might be expected to be its share of the total value of investments in the company. However, in practice, many investment trusts stand at a discount to their net asset value.

The reasons which are often given for the discount to the net asset value include:

- **Greater supply than demand:** The price of any share is ultimately determined by supply and demand. If there are more sellers than buyers, the price will fall and contribute to a discount to the underlying net asset value, and vice versa. For example, the perceived high prospects for technology investment trusts during the “tech boom” led to many such investment trusts trading at a premium to their net asset value – only to then trade at a discount after the market in technology stocks crashed.
- **Marketability:** A small investment trust investing in shares of large companies will provide a less marketable investment than the underlying assets. Trading volumes of many investment trusts are relatively small, making it difficult to buy/sell without affecting the price.
- **Management charge:** A further reason given is the reduction in value due to the deduction of the management charges. (Often the annual management charge will be 0.5% of the value of the assets, which may well be 10% of the annual income from the fund.) However, the significance of this is often disputed when comparisons are made between the price of unit trusts (see section 4.5.1) and that of investment trusts.

#### 4.4.2 Split capital

The shares in most investment trusts are like the shares in any other company. The shareholder is entitled to a share of the income through dividend payments and an equivalent share in the company’s residual value should it wind up.

Some investment trusts have a set winding up date. For some of the limited life investment trusts the capital structure might be split so that there are two or more types of shares aimed at investors with different tax positions:

- capital shares receive the residual capital value on wind-up and little or no income (good for tax payers with a high marginal rate of income tax)
- income shares receive income and little or no capital on winding up (good for non-tax payers)

### 4.4.3 Role in investment markets

An investment trust will have a specific objective which will determine which investment market the investment trust influences.

A number of investment trusts specialise in investing in assets such as commercial property and overseas assets that small investors would find difficult to invest in directly.

## 4.5 Unit trusts

Unit trusts are trusts in the legal sense. Unit trusts are set up and run by a management company.

Unit trusts are not companies. They are not quoted on the Stock Exchange. Units are bought from and sold to the management company, not from other investors. The only money that unit trusts raise is the money that investors pay for units. They do not raise equity or debt capital.

Unit trusts allow small investors to invest in a professionally managed portfolio of shares with a specific investment objective. There are more restrictions on what an authorised unit trust can invest in than for an investment trust. Consequently, almost all invest only in quoted securities (mainly shares).

The main parties involved are:

- A management company, which runs the trust. They set up the trust, get authorisation from the regulator, advertise the trust, carry out all necessary administration and control the investment of the funds.
- The Trustees, who are responsible for checking that the trust is run according to the terms of the trust deed. The trustee will be a company such as a clearing bank or an investment bank that is independent of the management company.
- The investors, who buy units in the trust.

### 4.5.1 Pricing

The price of the units is calculated by the managers to be:

$$\frac{\text{market value of assets}}{\text{number of units}}$$

In order for the management group to meet its expenses and make a profit, it makes an initial charge of, typically, 6% of the funds invested. The way that this is expressed is to define an offer price which is higher than the bid price. Units are sold by the management company at the offer price, but bought back at the lower bid price.

Unit trust managers have to calculate the value of the units using the formula given above. However, they can choose how the figure “market value of assets” is calculated. They can calculate it as the cost of buying new assets. This is called offer pricing. Alternatively, they can calculate it as the cost of destroying units. This is called bid pricing.

Furthermore, the managers can choose to move between offer and bid pricing. Normally, they will use offer pricing if the unit trust is expanding i.e. units are being created, and bid pricing if the trust is contracting i.e. units are being destroyed.

#### **4.5.2 Role in investment markets**

The role of unit trusts depends upon their specific objectives. In general, individual unit trusts are even smaller than investment trusts.

### **4.6 Open ended investment companies (OEICS)**

Open ended investment companies (OEICS) have characteristics of both investment trusts (they are companies with a single share price) and unit trusts (new shares are created when money is invested, with the price reflecting the net asset value of the fund).

OEICS are the preferred legal form over unit trusts for new open ended investment vehicles.

### **4.7 Investment management companies**

Investment management companies (often referred to as *fund managers*) perform a range of activities centered around the core service of investing client assets:

- “front office” functions (buying and selling investments, formulating stock selection and asset allocation decisions, research, cash management)
- “back office” functions (including custody, transaction processing and settlement, stocklending).

Firms are increasingly “unbundling” some of these services and outsourcing an increasing number of functions, in order to focus on the core service of investment.

#### **4.7.1 Role in investment markets**

As noted above, investment management companies are primarily involved in buying and selling investments and formulating stock selection and asset allocation decisions. In many countries, investment management companies handle immense volumes of assets. The industry is also, typically, very concentrated with a small number of firms dominating the market. Short-term fund performance is often a key factor in attracting and retaining clients.

As a result, concern has been expressed that fund managers have become too influential in determining asset allocation and the direction of capital. Issues cited include:

- herd-like behaviour
- excessive focus on short-term results
- “churning” of portfolios (to generate commission)
- overpayment (and hidden payments) for research
- closet “passive” investment (while charging “active management” fees)
- insufficient attention to corporate governance issues
- insufficient allocation to “new” asset classes (such as private equity / venture capital)

#### 4.8 Self-administered pension funds

Many employers set up pension schemes as part of the benefits provided for their workforce. In the UK from October 2012, “auto-enrolment” started to be phased in, whereby employees not currently in an employment-related pension scheme must be automatically enrolled into a “qualifying scheme” provided by their employer. The aim of the pension fund is to provide pensions for the workforce when they retire. A self-administered pension scheme is one that is responsible for its own investment strategy.

Almost all private sector schemes are funded i.e. the employer (and usually employees too) make contributions over the working lives of members. There are two basic types of scheme as follows:

- *Defined benefit schemes*: where the member’s pension is determined by a specific formula. Members contribute to the scheme at a set rate and the employers make up the difference required to finance the benefits (the “balance of cost”)
- *Defined contribution schemes*: where there is a set rate of employer and member contributions, paid into members’ individual funds. The pension payable is determined by a) the size of the fund and b) annuity rates at the date of retirement (or future investment returns if funds are kept invested and drawn down after retirement).

Many existing defined benefit schemes are switching to defined contribution for future service; currently around a half of UK defined benefit schemes are closed to future benefit accrual. Most new schemes are defined contribution arrangements.

The main parties involved in a pension scheme are:

- Employer, who sets up the pension scheme. Will make contributions either at a set rate (defined contribution scheme) or at a rate determined periodically by an actuary (defined benefit scheme).
- Employee, who will usually make contributions as well. Will eventually receive benefits.

- Trustees, who are responsible for checking that the trust is run according to the terms of the trust deed and trust law. Their primary responsibility is to ensure that members' pensions are safeguarded. As part of this they must ensure that the scheme's assets are invested prudently. They are required to prepare a Statement of Investment Principles within which they and delegated managers must act.
- Fund managers, who invest a self-administered scheme's assets.

A typical fund invests mostly in UK equities, longer dated conventional gilts and company debt. There will be some investment in overseas securities. A small proportion of the assets might be invested in property, money market investments and index-linked gilts and other classes, such as commodities and infrastructure, are becoming more common. Due to the shift from defined benefit to defined contribution schemes, together with volatile equity markets, the proportion of pension funds assets invested in equities is falling.

#### **4.8.1 Role played in investment markets**

Collectively, pension funds are among the most important investors in gilts and equities. However, in recent years equity holdings have fallen to reflect the decline of pension provision and the move away from investing in UK equities.

A pension fund's liabilities are long term. For example, a 30 year old member of a scheme will be making contributions for a pension that may still be in payment in 50 or more years' time. The extent of the liability from a defined benefit scheme depends upon the level of final salaries in, say, 30 years' time. This in turn depends mainly on inflation over the next 30 years. A pension fund's assets will reflect the long term, inflation related, nature of the liabilities.

In the fixed interest markets, pension funds tend to buy longer dated and to an extent medium dated stocks to meet their liability to pensions already in payment. They also usually buy high coupon stocks because these offer slightly higher gross redemption yields than lower coupon stocks.

### **4.9 Life insurance companies**

Life insurance companies pool mortality and investment risks by channelling savings into the long-term capital markets.

#### **4.9.1 Role played in investment markets**

A typical fund invests largely in a mixture of UK equities and fixed interest securities. It may also invest in overseas securities, property, money market investments and index-linked bonds.

Collectively, life insurance companies are the second most important investors in gilts and equities after pension funds.

A life company's liabilities are medium to long term. The majority of without profits liabilities and the accrued guaranteed part of with profits liabilities are fixed in monetary terms. Some without profits liabilities may be guaranteed in terms of an index of prices or similar, i.e. the benefits are directly linked to that index. The future bonus part of with profits benefits needs to satisfy policyholders' reasonable expectations in the context of treating customers fairly. In effect, this means that part of the liabilities is inflation related.

Legislation requires life companies to maintain an excess of assets over liabilities. The need to meet this capital adequacy requirement means that many companies have to choose assets which match their liabilities quite closely. Some companies have large free assets (i.e. a large surplus of assets over liabilities) and therefore have more investment freedom.

In the fixed interest markets, life companies tend to buy long-dated and some medium-dated stocks, to match the terms of their liabilities.

Many life insurance companies offer investment-linked products. The most common such type is unit-linked business, the benefits of which are determined directly by the value of the investments underlying the contracts. The company will normally offer a range of different fund options for its unit-linked policyholders. Some products may instead be partially or fully linked to an investment index (such as the FTSE 100), e.g. guaranteed equity bonds.

Many life insurance companies invest in derivatives. This is usually done for the purposes of hedging market risks, but also can be used to provide or increase exposure to equities as an alternative to direct investment.

## **4.10 General insurance companies**

General insurance companies provide cover by pooling a variety of risks.

### **4.10.1 Role played in investment markets**

A typical insurer invests mainly in short-dated fixed interest and money market investments. They may also invest quite large amounts in UK equities and overseas securities (the latter to back non-sterling policies).

There are two key characteristics of general insurance business that are relevant to their role in investment markets.

- (i) Short term: Almost all policies provide cover for one year, and most claims are settled within a few months or a year or two.
- (ii) Variable claim amounts and number: General insurers are vulnerable to catastrophes (e.g. a hurricane or an oil rig disaster) which can result in a large number and/or very large payments.

A general insurer's liabilities are almost all short term (although some liability insurance claims may take a longer time to settle). General insurers are required to keep an excess of assets over liabilities. This, together with the variability of their claim outgo, means that they do not want to take much investment risk.

The majority of a general insurer's liabilities are in place to indemnify the policyholder for the loss suffered. The amount paid out will represent money values when the claim is settled. Sometimes losses can take a significant time to reach final settlement e.g. bodily injury claims, and so insurers will seek an element of inflation-linking in the assets supporting these liabilities (index-linked gilts, equities and maybe property).

In the fixed interest markets, general insurers tend to buy short dated and some medium dated gilts.

**END**