

Introduction: The Market Context

1.1 CAPITAL AND THE CAPITAL MARKETS

Financial capital can be defined as accumulated wealth that is available to create further wealth. The **capital markets** are places where those who require additional funds seek out others who wish to invest their excess. They are also places where participants can manage and spread their risks. Originally, capital markets were physical spaces such as coffee houses and then purpose-built exchanges. In our day, capital markets participants may be located in different continents and conduct deals using advanced information technology.

Who are the users of capital? In a broad sense we all are, at least part of the time. We borrow money to buy a house or a car so that we can live our lives, do our jobs, and make our own small contribution to the growing wealth of nations. We save to pay school and university tuition fees, investing in the ‘human capital’ that will sustain the economic health of the country. More narrowly, though, financial capital is used by corporations, governments, state and municipal authorities, and international agencies to make investments in productive resources. When a company builds a new factory it is engaged in capital expenditure – using funds provided by shareholders or lenders or set aside from past profits to purchase assets used to generate future revenues. Governments use tax revenues to invest in infrastructure projects such as roads. Agencies such as the World Bank inject funds into developing countries to create a basis for economic growth and future prosperity.

Who are the suppliers of capital? Again, the answer is that we all are. Sometimes we do this directly by buying shares issued by corporations and debt securities issued by governments and their agencies. Sometimes we employ brokers to invest funds on our behalf. We deposit cash in bank accounts, invest in mutual funds, and set aside money in pension plans for our retirement. We pay taxes to the government and local authorities. We pay premiums to insurance companies who invest the proceeds against their future liabilities. Companies too become sources of capital when they reinvest their profits rather than paying cash dividends to shareholders.

This book is about the operation of the capital markets, the market participants, the roles of the main financial intermediaries, and the products and techniques used to bring together the suppliers and users of financial capital in the modern world. It is also to a large extent about the management of risk. Risk takes many forms in the capital markets, and financial institutions play a critical role in assessing, managing, and distributing risk. For example, a bank that lends money assumes a **credit risk** – the risk that the borrower may default on its payments. Bankers try to analyse and mitigate such exposures to minimize losses. As the global ‘credit crisis’ which started in 2007 revealed, when they fail it has major repercussions not only for bank shareholders and depositors but also for taxpayers and for individuals working in the ‘real economy’ outside the banking system.

In recent years banks have increasingly used their position as financial intermediaries to originate loans and then ‘package’ them up and sell them off in the form of bond issues. This process is called **securitization**. The bond investors assume the credit risk on the loan book

in return for a rate of interest greater than they could earn on safe government securities. The banks recycle the capital they were originally provided with by their shareholders and depositors, so that they have funds available to create new loans. They analyse risk, manage risk, and then distribute risk through the public bond markets.

This so-called 'originate and distribute' business model received a setback in the credit crisis starting in 2007, when bonds backed by US mortgage loans suffered major losses and became difficult to trade. It seems highly likely that securitization will remain a standard technique in the capital markets for the foreseeable future. However it also seems likely that the practice will be subject to closer supervision by the regulatory authorities.

The boundaries between different types of financial institutions have been becoming increasingly blurred in the modern financial markets. Earlier in the previous century the demarcation lines seemed more rigid. In the US the 1933 Glass-Steagall Act created a firm distinction between what became known as **commercial banking** and **investment banking**. Commercial banks took in deposits and made loans to businesses. They assumed credit or default risk and contained this risk by evaluating the creditworthiness of borrowers and by managing a diversified portfolio of loans. Investment banks underwrote new issues of securities and dealt in shares and bonds. They took **underwriting risk**. This arises when a bank or a syndicate buys an issue of securities from the issuer at a fixed price and assumes responsibility for selling or 'placing' the stock into the capital markets.

At the time of Glass-Steagall, the US Congress believed that a financial institution faced a conflict of interest if it operated as both an investment and a commercial bank. As a consequence, the great banking house of Morgan split into two separate organizations. The commercial banking business later became part of JP Morgan Chase. The investment banking business was formed into Morgan Stanley.

In the UK similar divisions of responsibility used to apply until the barriers were progressively removed. After the Second World War and until the 1980s the new issue business in London was largely the province of so-called **merchant banks**. Retail and corporate banking was dominated by the major clearing or 'money centre' banks such as Barclays and National Westminster Bank (now part of the Royal Bank of Scotland group). Trading and broking in UK and European shares and in UK government bonds in London was conducted by a number of small partnership-businesses with evocative names such as James Capel and Wedd Duracher. The insurance companies were separate from the banks, and the world insurance market was dominated by Lloyds of London. These segregations have all since been swept away. Nowadays large UK financial institutions offer a very wide range of banking and investment products and services to corporate, institutional, and retail clients.

In the US the constraints of Glass-Steagall were gradually lifted towards the end of the twentieth century. US commercial banks started to move back into the new issuance business both inside the US and through their overseas operations. One factor that spurred this development is called **disintermediation**. In the last decades of the twentieth century more and more corporate borrowers chose to raise funds directly from investors by issuing bonds (tradable debt securities) rather than by borrowing from commercial banks. The development was particularly marked amongst top-quality US borrowers with excellent credit ratings. In part the incentive was to cut out the margin charged by the commercial banks for their role as intermediaries between the ultimate suppliers of financial capital (depositors) and the ultimate users. In part it reflected the overall decline in the credit quality of the commercial banks themselves. Prime quality borrowers discovered that they

could issue debt securities and fund their capital requirements at keener rates than many commercial banks.

Disintermediation (cutting out the intermediation of the lending banks) developed apace in the US and then spread to other financial markets. Later even lower credit quality borrowers found that in favourable circumstances they could raise funds through the public bond markets.

The advent of the new single European currency, the euro, encouraged the same sort of process in continental Europe. Before the single currency was created, Europe developed as a collection of small and fragmented financial markets with many regional and local banks. Banks and corporations had strong mutual relationships, cemented by cross-shareholdings. In Germany the major banks and insurance companies owned large slices of the top industrial companies. Most corporate borrowing was conducted with the relationship bank. Shares and bonds were issued and traded primarily in domestic markets and in a range of different currencies. There were restrictions on the extent to which institutional investors such as pension funds could hold foreign currency assets. There was a general lack of understanding amongst investors of other European markets.

All this has been changing in recent decades, and at great speed. For example, Deutsche Bank has grown to be a major international presence in the global capital markets, with substantial operations in centres such as New York and London as well as in Frankfurt. Although cross-border mergers are still complicated by the actions of governments and regulators, banks across Europe have been consolidating. For example, in 2005 the Uncredit group of Italy merged with the Munich-based HVB group, which was itself formed from the merger of two Bavarian banks. In 2007 the Dutch bank ABN-Amro was taken over by a consortium led by the Royal Bank of Scotland. On the other side, European borrowers are increasingly looking to the new issue markets to raise funds. Investors in Europe can now buy shares and bonds and other securities denominated in a single currency that are freely and actively traded across an entire continent. Stock and derivative exchanges that originated in national markets have been merging and re-inventing themselves as cross-border trading platforms.

One of the most dynamic influences on the international capital markets in recent years has been the growth of **hedge funds**. Essentially, hedge funds are investment vehicles aimed at wealthier investors and run by professional managers. Traditionally they were largely unregulated, but this is now set to change in the aftermath of the global credit crisis. Often hedge funds use leverage (borrowing) in an attempt to magnify the returns to the investors. Unlike a traditional mutual fund, which buys and holds stocks for a period of time and therefore tends to profit when markets rise and lose when they fall, hedge funds aim to achieve an absolute return – that is to say, to make money in all market conditions. This comes at a price however. Typically a hedge fund manager takes ‘2 and 20’: a 2% annual management fee plus 20% of the profits. Investors also tend to be ‘locked in’ for agreed time periods and so cannot quickly redeem their investments.

Hedge funds can pursue a wide range of different strategies, some of which are highly risky, though others are actually designed to contain risk. One classic approach is the **long-short fund**. As well as buying (‘going long’) shares, it can also take short positions. This involves betting that the price of a security (or an entire market index) will fall over a given period of time. Sometimes a hedge fund constructs a ‘spread’ trade, which involves betting that the price difference between two stocks or markets will increase or reduce over a given period.

However, the activities of hedge funds have greatly diversified in recent years. Some buy shares of companies that are potential takeover targets. Others speculate on commodity prices and currency rates, analysing macroeconomic trends in the global economy. Some use complex mathematical models to exploit pricing anomalies; while others bet on the levels of volatility in the market by using derivative products. There are also hedge funds which take direct stakes in unlisted companies, which is the traditional business of private equity houses. Some hedge funds invest in so-called ‘distressed’ securities, such as bonds issued by companies in severe financial difficulties. They can profit if the amount recovered by selling off the company’s assets exceeds the price paid for the bonds.

One of the major growth areas for investment banks in recent years is the **prime brokerage** business, which involves providing high-value services to hedge funds. This includes stock lending, research advice, trading and settlement services, administrative support, providing loans against collateral, and tailoring advanced structured products to help a hedge fund implement a particular investment strategy.

Outside Europe and the US, a recent key trend in the capital markets is the rise of China, India, Brazil, and other emerging countries. With its huge trade surpluses, China has amassed capital that is no longer invested only in US government bonds. For example, in 2007 it took a \$3 billion stake in US private equity firm Blackstone in an initial public offering of shares.

The power of so-called **sovereign wealth funds (SWFs)** is now felt everywhere in global markets. SWFs make international investments using wealth derived from the sale of natural resources and other export activities. According to forecasts published by the *Economist* in May 2007, based on research from Morgan Stanley, SWFs could have assets of \$12 trillion under management by 2015. The largest SWF as at March 2007 was run by the United Allied Emirates with assets of \$875 billion. At that time China had around \$300 billion under management. In 2008 US banks such as Citigroup and Merrill Lynch sought major cash injections from SWFs to re-build their balance sheets following losses in the sub-prime mortgage lending market.

1.2 THE EUROMARKETS (INTERNATIONAL CAPITAL MARKETS)

The modern capital markets have become truly global in their scale and scope. Although New York is the biggest financial centre in the world by many measures, some of the developments that led to today’s international marketplace for money originated in London. In the years immediately following the Second World War London had lost its traditional role as a place where financial capital could be raised for large-scale overseas investment projects. It shrank to a small domestic market centred around the issuance and trading of UK shares and government bonds. It rediscovered its global focus through the growth of the so-called **Euromarkets** starting in the 1950s and 1960s. (The prefix ‘Euro’ here is historical and does not relate to the single European currency, which was created later.)

It all started with **Eurodollars**. These are dollars held in international accounts outside the direct regulatory control of the US central bank, the Federal Reserve. The largest Eurodollar market is based in London, and from the 1950s banks from the US and around the world set up operations in London to capture a share of this lucrative business. These dollars were recycled as loans to corporate and sovereign borrowers, and through the creation of

Eurodollar bonds sold to international investors searching for an attractive return on their surplus dollars. The first Eurobond was issued by Autostrade as far back as 1963.

The oil crisis of the early 1970s gave a tremendous boost to the Euromarkets. Huge quantities of so-called petrodollars from wealthy Arab countries found a home with London-based banks. The Eurobond market boomed in 1975, and the international market for securities has never looked back. The banks became ever more innovative in the financial instruments they created. A market developed in other Eurocurrencies – Euromarks, Euroyen, and so forth. The watchwords of the Euromarkets are innovation and self-regulation. The UK government allowed the market to develop largely unhindered, and kept its main focus on the domestic sterling markets and the UK banking system. To avoid confusion with the new single European currency, Eurobonds are now often referred to as ‘international bonds’. They can be denominated in a range of different currencies, though the US dollar is still the most popular.

Although London is the home of the Euromarkets, there are other centres such as in Asia. The London market has been compared to the Wimbledon tennis tournament – it is staged in the UK but the most successful players are foreigners. This is not entirely fair, given the presence of firms such as Barclays Capital and Royal Bank of Scotland. However it is true that the large US, German, and Swiss banks are strong competitors. The trade association for Eurobond dealers is the International Capital Market Association (ICMA). It provides the self-regulatory code of rules and practices which govern the issuance and trading of securities.

1.3 MODERN INVESTMENT BANKING

The term ‘investment banking’ tends to be used nowadays as something of an umbrella expression for a set of more-or-less related activities in the world of finance. Firms such as Goldman Sachs and Morgan Stanley were up until very recently classified as ‘pure play’ investment banks because of their focus on debt and equity (share) issuance and trading as well as on mergers and acquisitions advisory work. Other organizations such as Citigroup and JP Morgan Chase have actually developed as highly diversified ‘universal’ banks which have commercial and investment banking divisions as well as other businesses such as retail banking, credit cards, mortgage lending, and asset management.

In the wake of the credit crisis, however, it is not clear what the future holds for the concept of a ‘pure play’ investment bank, except for smaller niche businesses which focus on specific areas such as corporate finance. In March 2008, in the wake of the crisis which began over write-downs on the value of sub-prime loans, Wall Street’s fifth largest investment bank Bear Stearns was taken over by JP Morgan Chase. In September 2008, Lehman Brothers filed for bankruptcy, and Merrill Lynch was taken over by Bank of America for around \$50 billion. In the same month the two remaining major US investment banking giants, Morgan Stanley and Goldman Sachs, asked the US Federal Reserve to change their status to bank holding companies. This means that they are now subject to tighter regulation, including requirements on holding capital against potential losses. However it also allows them to act as deposit-taking institutions and to borrow directly from the Federal Reserve.

In some ways it is easier to explain what does *not* happen inside an investment banking operation these days than what does. For example, it will *not* operate a mass-market retail banking business, which demands a completely different skill set. If an investment bank is a division of a large universal bank then retail banking will be located elsewhere in the group.

An investment banking operation *will* handle activities in the international wholesale capital markets and will also house the corporate advisory function. It will manage new issues of securities for corporations and governments, distributing the stock amongst investors; conduct research on financial markets; trade shares, bonds, commodities, currencies, and other assets; advise institutional investors on which assets to buy and sell and execute orders on their behalf; and structure complex risk management and investment products for clients.

There is a more detailed list below of the activities typically carried out in an investment banking operation, with a brief description of what happens in each business area. The next section also sets out some profiles of clients of investment banks. Some large banking groups have also folded in with their investment banking division that part of the operation which makes loans to major corporate customers. The view taken here is that large clients expect their relationship bank to ‘put its balance sheet at their disposal’ and that corporate lending, while not in itself particularly profitable, will lead to lucrative investment banking mandates.

- **Corporate Finance or Advisory.**

Advising corporations on mergers, takeovers, and acquisitions.

Advising corporations on strategic and financial restructurings.

Advising governments on the privatization of state assets.

- **Debt Markets.**

Debt capital markets (DCM): managing or ‘originating’ new bond issues and underwriting issues for corporate and sovereign borrowers, often operating as a member of a syndicate of banks.

Government bonds (‘govies’): research, trading, sales.

Corporate and emerging markets bonds: sales, trading, credit research (researching into the risk of changes in the credit quality of bonds, which will affect their market value).

Credit derivatives (products that manage and redistribute credit risk): research, trading, sales.

‘Flow’ derivative products (standardized derivatives dealt in volumes): research, trading, sales.

Foreign exchange: research, trading, sales, and currency risk management solutions for corporations and investors.

Structured derivative products (complex structures often devised with the needs of specific corporate or investment clients).

- **Equity Capital Markets (ECM).**

Advising companies on initial public offerings (IPOs) of shares and subsequent offerings of new shares to investors.

Underwriting and syndicating new equity issues.

(Note that in some banks DCM and ECM have been combined into a single entity responsible for helping clients raise either debt or equity capital.)

- **Equities and Equity Derivatives.**

Cash equities (known as common stock in the US and ordinary shares in the UK): research, trading, sales to institutional investors.

Equity derivatives: equity swaps, options, and structured products. Trading, sales and research, dealing with investors and corporations.

An investment banking business or division *may* also include:

- a custody business which holds securities on behalf of clients and manages cash;
- a private banking and wealth management operation aimed at high net-worth individuals;
- a private equity business which invests the bank’s own capital and that of its clients in unlisted companies and in the shares of companies listed on smaller stockmarkets;

- a structured finance operation which creates complex and tailored funding structures;
- a prime brokerage team which provides value-added services aimed at hedge funds.

It *will* include:

- operational staff who settle trades and handle payments (the so-called ‘back office’);
- risk management specialists and auditors and ‘middle office’ staff who monitor and measure risks and exposures and profits;
- information technology professionals who develop and manage the bank’s computer systems;
- human resources and other support functions.

One of the most distinctive features of investment banking is the **trading function**. Essentially, traders buy and sell assets to make a profit. A trader who has bought more of a particular security (such as a share or bond) than he or she has sold is said to have a ‘long position’ in that security. A trader who has sold more of a security than he or she has bought is said to hold a ‘short position’. In share trading, short positions are managed by borrowing stock from investors on a temporary basis, and providing collateral in the form of cash or bonds to protect the lender. Some deals are made on organized exchanges, such as the New York Stock Exchange. Other deals are conducted on an **over-the-counter (OTC)** basis, which means that they are arranged directly between two parties, one of which is normally a bank. Most corporate bonds are traded OTC. In the past bond trades were conducted over the telephone, though now the transactions may be made through electronic networks.

Traders are given **risk limits** so that there is a limit to the amount that the bank is exposed to by their activities. One technique developed in recent years is called **value-at-risk (VaR)**. This uses statistical methods to forecast the maximum loss likely to be made on a particular trading position over a given time period to a given level of confidence. At an aggregate level, it is also possible to assess the benefits that arise from the fact that a bank tends to hold a diversified portfolio of assets, so that losses on one trading position may be offset by gains on another.

Statistical tools such as value-at-risk can be effective in managing risk in normal market conditions. However, banks tend to augment such models by using what is known as **stress testing**. This involves investigating the losses the bank would be likely to make in extreme circumstances, when asset prices become highly volatile or when ‘liquidity’ dries up in the market – that is, when it becomes difficult to trade at all without having a major impact on prices. For example, a bank might explore what would happen to its current trading positions if a scenario as extreme as the 1987 stock market crash were to happen now.

In theory, there are two different types of traders, although in reality the distinction is far less clear-cut. Some traders act as **market makers**. They make two-way prices consisting of bid (buy) and ask or offer (sell) prices in particular assets, such as shares or bonds. This helps to ensure that there is an active and liquid market in those securities. The difference between the two prices is known as the **bid-ask spread**. It tends to widen in volatile markets.

Sometimes market makers operating in particularly active markets are known as ‘flow traders’. Their role is essentially about facilitating the needs of the clients of the bank, which can be assured of obtaining a price for assets even in difficult circumstances. A market maker buys and sells securities on his or her trading book, and takes **market risk** – the risk of losing money because of changes in the market value of those securities. It may sometimes be necessary to manage or hedge market risk by using products such as financial futures.

In volatile markets it may be very difficult to avoid taking losses. On the other hand, 'flow traders' can acquire useful information about what is happening in the markets which they can use to manage their positions.

The other type of trader is a **proprietary** trader, who takes positions using the bank's own capital rather than facilitating client business. For example, a 'prop' trader may decide to 'go short' by selling US dollars, anticipating a fall in the value of the currency. In practice, though, market makers are normally also allowed to take market views, within defined limits.

1.4 THE CLIENTS OF INVESTMENT BANKS

Investment banks deal with corporations, investing institutions such as pension funds, governments, hedge funds, municipal authorities, and supranational bodies. They also deal with other commercial and investment banks. For example, the bulk of international currency trading takes place between banks. The larger international investment banking operations also provide services for smaller regional and local banks. For instance, if a small bank wishes to construct a deal to help a corporate client solve a complex risk management problem, perhaps hedging against changes in currency rates or commodity prices, then it may turn to a global investment bank for help and advice. It may have a long-standing relationship with the investment bank.

One of the key roles of an investment banking operation is to act as an intermediary between corporations that need to raise financial capital through share or bond issues, and the large investors that ultimately purchase such assets. For example, in an **initial public offering** (IPO) a company sells its shares to the public and obtains a listing on a regulated stock exchange. It is assisted in the process by an investment bank acting as **lead manager** (sometimes more than one is involved). The lead manager helps to set the offer price for the stock and typically underwrites the issue, operating with a syndicate of other banks. In effect, the syndicate agrees to take up any unsold stock at the offer price. The sales people help to 'place' or distribute the shares amongst investors, and the traders will normally make a market in the stock after it is issued to provide liquidity.

In the capital markets institutional investors such as pension funds and insurance companies are sometimes referred to as the 'buy side'. Investment banks and securities houses are called the 'sell side' because they advise institutional investors on suitable assets to purchase. In effect, what the analysts and the sales people in investment banking operations are selling is investment ideas. Their traders then execute the resulting customer orders. The bank earns brokerage commissions on orders, and also gains from the fact that the traders charge a bid-offer spread. In practice, there can be tensions between the sales staff and the traders in a dealing room because the former are seeking to maintain a good relationship with key clients, which involves making attractive prices, while the latter are trying to run a profitable trading book.

The remaining paragraphs of this section outline the main institutional investors and their investment objectives.

Pension schemes are sponsored by companies and other organizations to help their employees provide for their retirement. There are two main kinds. A **defined benefit** (or final salary) scheme promises to make certain payments to pensioners, such as a percentage of their final salary on retirement, in some cases rising in line with inflation. By contrast, in a **defined contribution** scheme the sponsor and the employee make regular payments

which are invested in assets such as shares and bonds. The pension received by an individual depends on the level of contributions and the performance of the assets in which those contributions are invested. The management of the money is normally outsourced to a professional asset management firm. Sometimes individuals have a right to choose between different funds which have stated investment strategies. In the US employees are allowed to contribute a proportion of their salary to a defined contribution scheme known as a participant-directed 401(k) plan. Normally cash can be reallocated between funds at any time.

Defined benefit schemes have to generate sufficient returns so that the sponsor can discharge its obligations to the pensioners. The sponsor will be advised by actuaries who establish the future liabilities, taking into account forecasts of salary growth, mortality rates, changes in the workforce, and early retirement rates. A **fully funded** plan is one in which the assets match the liabilities. The managers of the fund will also have to take into account cash inflows and outflows, and ensure that there is sufficient cash and liquid assets available to make payments.

The investment strategy of a defined benefit plan is influenced by a wide range of factors. The key considerations include workforce demographics, the extent of provision for early retirement, whether the fund is currently in surplus or deficit, and constraints imposed by government regulations on what are considered to be suitable investments for pension schemes. A scheme run for a company with a younger workforce will have a longer investment time horizon than one in which the majority of members are already retired, and the fund managers may be prepared to be more risk-seeking. However, the investment strategy will also be influenced by market forecasts. For example, if the sponsor or fund manager believes that inflation is set to increase in the future it may prefer to invest in securities which offer some level of protection, such as shares or alternatively bonds that pay a variable rate of interest.

Some banks are now prepared to take over complete pension obligations from companies. For example, in February 2008 it was announced that a subsidiary of Goldman Sachs would acquire the defined benefits pension scheme of UK gaming operator Rank Group after taking part in a bidding process. In this deal, Goldman Sachs assumed the risks and the liabilities of the scheme, which had approximately 19,000 members. In arrangements of this kind the acquiring bank can gain if it is able to manage the assets effectively so that it can honour the pension commitments and still return a profit. It can also benefit if the payments to pensioners are less than originally forecast.

Unlike pension funds, which are aimed at individuals, an **endowment fund** is designed to generate income for an entity such as a university, hospital, school, or charitable institution. They are particularly important in the US. The managers typically invest in long-term assets, and the protection of the value of the capital is an important consideration. Investments may be in government bonds, shares of 'blue chip' companies, and low risk corporate bonds.

The job of the insurance industry is to help protect against personal and business risks. The premiums collected from policy holders are invested in assets such as shares and bonds. **Life insurance** companies provide a benefit that is linked to the survival or death of the policy holder. A whole life policy provides a payment on the event of death to a beneficiary, which may be a fixed sum of money or based on the performance of a given fund. In an annuity contract an individual uses an accumulated pension fund to purchase an annuity from a life insurance company, which pays a regular sum of money until death. Some annuities rise in line with inflation.

The main investment objective of a life insurance company is to provide for the benefits and claims of the policy holders, as forecast by the actuaries. Life insurance companies are long-term investors and may hold investment assets for 20 and more years. They tend to invest in long-dated corporate and government bonds. In some countries, life funds may also invest in equities to achieve capital growth and also to hedge against inflation. However the industry tends to be heavily regulated by governments and only certain authorized investments are permitted.

Non-life insurance companies provide a wide range of policies including health and property insurance and insurance against claims for negligence and occupational injuries. The liabilities of non-life companies tend to be shorter-term compared to life companies, though there is more uncertainty over the timing and the size of payments that will have to be made to policy holders. As a result, non-life companies are concerned about liquidity and tend to hold a percentage of their portfolio in short-term securities such as Treasury bills, as well as investing in longer-dated securities and equities. The longer-dated bonds may be chosen with maturities that match anticipated obligations, or to ensure a rate of return that generates sufficient cash to match those obligations. Switching from government bonds into corporate bonds may increase investment returns, though at the expense of taking on a higher risk of default. In general, non-life companies may be prepared to purchase a certain proportion of riskier assets in pursuit of higher returns. They tend to be less highly regulated than life companies and have greater investment flexibility.

As well as pension funds and insurance companies, investment banks also deal with **investment companies**. These are vehicles which pool money from investors and invest in assets such as shares, bonds, and commodities. The assets are managed by professional money managers. The precise legal structure varies between countries, but broadly speaking there are two main types of investment companies: closed-ended and open-ended. A **closed-ended** fund is a limited company which has a set number of ordinary shares (common stock) currently on issue. The shares are listed on a stock exchange or traded over-the-counter by dealers. The company can actually create new shares through periodic secondary offerings, though this is a relatively cumbersome procedure.

The net asset value per share (NAV) of a closed-ended fund equals its assets less its liabilities divided by the number of shares. The shares can trade at a discount or premium to the NAV. For example, the shares of a fund which holds attractive assets which investors find hard to access directly may be in considerable demand. Because there is limited supply, this can create a premium to NAV. However, if the fund holds more standard assets which are widely available it may find that its shares trade at a discount to NAV. In some countries so-called 'vulture funds' have bought such shares as a cheap way of gaining exposure to the underlying assets held by the fund. In theory, a 'vulture' can push for a vote to liquidate the fund, though liquidation can be costly. In practice, it may take a shorter-term view and seek to force the fund's management to take steps to reduce the discount to NAV, such as share buy-backs.

In an **open-ended** fund (known in the US as a mutual fund) the fund manager has the ability to create and sell new shares to investors on a regular basis. Investors buy and sell the shares directly from the fund manager or a broker operating on its behalf rather than on a stock exchange. In a no-load mutual fund shares are sold to investors at NAV. In a load fund investors have to pay an additional commission to the manager. Even in a no-load fund, however, investors may have to pay a charge when they redeem shares. Sometimes this decreases the longer the shares are held.

In the UK closed-ended funds are traditionally called **investment trusts**. As discussed above, they sometimes purchase and cancel their own shares in an attempt to reduce a discount to NAV. They can also borrow money to enhance the returns to the shareholders. The traditional open-ended investment vehicle in the UK is known as a **unit trust**. Here, investors buy and sell ‘units’ from the fund manager, which earns a commission by quoting a bid-ask spread. It also charges an annual management fee, which is typically around 1–2%. In 1997 UK legislators introduced a new hybrid structure called an **open-ended investment company** (OEIC). This is set up as a limited company, but with the flexibility to issue or cancel shares in response to investor demand, so that the share price reflects the NAV. A further attraction is that OEIC shares are normally bought and sold at one price, with commission charged on top at an agreed rate.

The objectives of investment companies are many and varied. Some are set up to invest only in major ‘blue chip’ shares or in safe government bonds. However, others are designed to invest in emerging markets or commodities or lower credit quality corporate bonds, seeking higher returns from taking higher risks. Some funds aim to generate capital gains, reinvesting any earnings; whilst others focus on producing high levels of income from share dividends and from the interest received from cash and bonds.

One investment vehicle that has become popular in recent years is the **exchange-traded fund** (ETF). This has the aim of tracking a stockmarket index such as the S&P 500, or the price of a commodity such as gold. The advantage of an ETF is that shares in the fund can be bought and sold on an organized stock exchange via brokers. The expenses incurred in running the fund can also be relatively low.

1.5 ABOUT THIS BOOK

This book is intended to provide a convenient one-volume introduction to the capital markets. The subject is of course a massive one and there will necessarily be topics that individual readers will wish to explore later in more detail. There are many excellent titles in the Wiley Finance Series that perform this function. The aim of the current volume is to provide sufficient depth of explanation so that it is of practical use to people who are entering or planning to enter the capital markets business, or who are already working in the industry and who wish to improve their knowledge of specific areas of the markets.

Chapters 2 and 3 are concerned with two areas of the business that are intimately related, the market for short-term interest rate (STIR) products and the foreign exchange (FX) markets. In the past a bank dealing room handling such instruments would have been segregated into separate desks handling ‘cash market’ products and ‘derivatives’. The cash or spot market is the underlying market, in this instance for short-term loans and deposits and for spot foreign exchange transactions. A derivative is anything whose value is derived from prices in the underlying cash market. Examples include options on interest rates and on currencies.

Nowadays the cash and derivatives businesses are closely aligned, and sales and marketing staff are expected to have a wide knowledge of a range of products that provide solutions to the problems of a bank’s corporate and institutional clients. The traders are also expected to have an understanding of the impact of events in other aspects of the business on the particular instruments they deal in. Chapter 3 explores the links between the short-term interest rate market and the foreign exchange market and between spot trades and forward

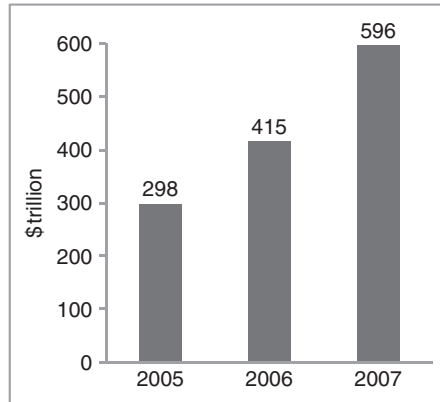


Figure 1.1 Notional amounts outstanding OTC derivative contracts at year-end.
Source: Bank for International Settlements.

foreign exchange deals. Later chapters continue the theme of linking events in the underlying and the derivatives markets.

Figure 1.1 above gives an idea of the size of modern derivatives markets and the tremendous growth rate. It shows the notional amounts outstanding for ‘over-the-counter’ contracts, which are bilateral deals agreed between two parties. The amounts are stated in trillions of US dollars.

Corporations and governments raise funds through the issuance of longer-term debt. Chapters 4–7 look at the markets for government and corporate bonds, the issuers and the investors, and the role of the banks in bringing issues to the market and in trading bonds. Investors and traders in bonds have to understand how securities are priced and how the returns and risks are evaluated. These chapters consider a range of measures including yield-to-maturity (internal rate of return), duration, convexity, and their practical applications and limitations.

The value of a financial asset such as a bond or a share (or indeed an entire company) is the present value of the expected future cash flows. The key to valuation is therefore an assessment of the likely future cash flows, and the application of the correct rate of discount with which to establish present value. Chapter 5 looks at the sensitivity of bonds to changes in market interest rates. Chapter 6 shows how to derive and apply discount rates and forward interest rates, absolutely essential tools in modern finance. Chapter 7 extends the discussion by exploring credit risk on debt securities as well as credit default swaps and securitization. It considers the relationship between the probability that a company will default on its debt obligations and the returns on its debt.

Corporations also raise funds through the issuance of shares (known as common stock in the US). Chapter 8 describes the role of equity capital markets specialists within investment banks in the process of issuing new shares. The majority of shares in modern developed markets are held by institutional investors. Chapters 8–10 explore equity investment styles and the markets for trading shares once they are issued. They also consider how shares are valued using multiples such as the price/earnings ratio and also using discounted cash flow methods.

As noted previously, in the modern capital markets banks and securities houses not only bring together investors with corporations and governments looking to raise funds. They also play a critical role in the evaluation and management of risk. Chapters 11–14 explain key products that are used to manage interest rate exposures and exposures to changes in bond values: forward rate agreements, interest rate futures, bond futures, and interest rate swaps. Through a series of examples and case studies these chapters show how these instruments are used in practice and how they can be priced using tools introduced in earlier chapters. Chapter 15 extends the discussion by exploring listed equity futures contracts and equity swap transactions.

One of the most remarkable features of the modern financial markets is the growth of financial options and structured products based on options. Sometimes the options are so deeply embedded in the structure of a financial product that it is not obvious to the untutored eye that they are there. Chapter 16 introduces fundamental option concepts and Chapter 17 describes the principles underlying the pricing of options, including an explanation of how the famous Black-Scholes option pricing model can be set up on a spreadsheet.

Chapter 18 considers the application of the pricing model in more detail. It looks at how the risks on option positions are measured and managed. Chapter 19 explores some of the many applications of options in hedging and trading. Chapter 20 applies option concepts to currency and interest rate options, with a set of risk management cases and examples. It considers how the standard pricing methodology can be adapted to value currency options and key interest rate option products such as caps, floors, and swaptions. Finally Chapter 20 discusses convertible bonds and their use in investment and in constructing arbitrage trades.

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