CHAPTER

2

Banking: retail and corporate

LEARNING OUTCOMES

By the end of this chapter the reader should be able to:

- contrast the following types of banking: retail, corporate, commercial, investment, universal;
- describe the core elements of banking and the social functions they serve: deposit taking, lending and payments;
- discuss the main types of loans made by banks and the key factors that bankers consider when granting loans;
- outline the range of services offered by banks beyond the core banking functions, such as cash management, insurance, stock broking, providing guarantees and help with overseas trade;
- explain the importance of:
  - (a) good liquidity management – ensuring there are sufficient liquid assets to repay obligations falling due to avoid fear of a sudden outflow of cash;
  - (b) good asset management skills – banks need to lend money (acquire assets) with the expectation of a low risk of default and in a diversified manner;
  - (c) good liability management – finding funds at low cost;
  - (d) good capital adequacy management – the buffer of capital provided by shareholders must be at a high enough level to reduce the chance of insolvency problems while balancing the need to make profits by lending;
- identify the main sections of a bank income statement and recognise the main measures that are used to judge a bank's profitability and safety.

We all know from day-to-day experience that banks offer services of great value to us. For example, we open bank accounts to deposit money to keep it somewhere safe, perhaps earning interest. That money once deposited does not sit in a bank vault – at least not most of it – it is lent out to people wanting to, say, buy a house or set up a business. Thus the money is put to good use and economic benefits flow from that. We also appreciate being able to make payments to others through the banking system.

While deposit facilities, lending and payments are the three core functions of banks they have branched out into a wide range of activities, from assisting with overseas trade to advising companies on interest risk management. When we look at the modern investment bank we see a fantastic array of services that our forebears would not have dreamed of, from acting as prime brokers for hedge funds to trading in commodity derivatives in dozens of currencies.

The term bank has been stretched, so we need to be flexible in what we regard as a banking service. In addition to those institutions that have 'bank' in their name, such as Banco Santander or Barclays Bank, this chapter and the next discuss many other institutions that conduct banking activities, such as building societies and savings and loan associations, collectively known as **depository institutions** or **deposit-taking institutions (DTIs)**.

What is banking?

Banks started out as fairly straightforward businesses, taking in deposits, making loans and providing a payments mechanism. But they grew. They now conduct a much wider range of activities, and it can be difficult to define banking activity in the modern world. **Exhibit 2.1** is my attempt at providing some clarity by grouping the activities into four different types of banking. Some organisations concentrate on providing services in just one, or perhaps two, of the segments, others are **universal banks** offering a full range of banking. This classification is not perfect – there are many banks that do not neatly fit into these groups and there are other 'banking' activities not listed here – but it does allow us some tractability in understanding what it is that banks do. This classification will be used to structure this chapter and the next.

German, French and Japanese banks tend to be universal banks offering a very wide range of services. The UK is moving much more towards the universal model, but even some of the largest banks such as Lloyds are not heavily committed to investment banking, and there remain many smaller banks that concentrate on commercial banking. The US has thousands of small commercial banks often restricted to operating only in particular states, and a handful of universal banks – although at the time of writing the breadth of their activities was being curtailed by angry politicians and regulators in the wake of the financial crisis, which is largely blamed on investment bankers (*see* Chapter 16 for an explanation of the causes and consequences of the crisis). We frequently find that banks focus on both retail and wholesale commercial banking back home in their domestic markets while focusing on wholesale markets in their international operations. We also find organisations that concentrate exclusively on investment banking, e.g. Goldman Sachs.

Exhibit 2.2 discusses whether the universal banking model is going out of favour in the US. Senior executives weigh up the benefits from economies of scale and the use by different parts of the bank of the capital resources of the organisation against the problems of managing a business that is increasingly complex with cultural difficulties preventing full cooperation across divisions and across borders.

Exhibit 2.1 An overview of the different aspects of banking

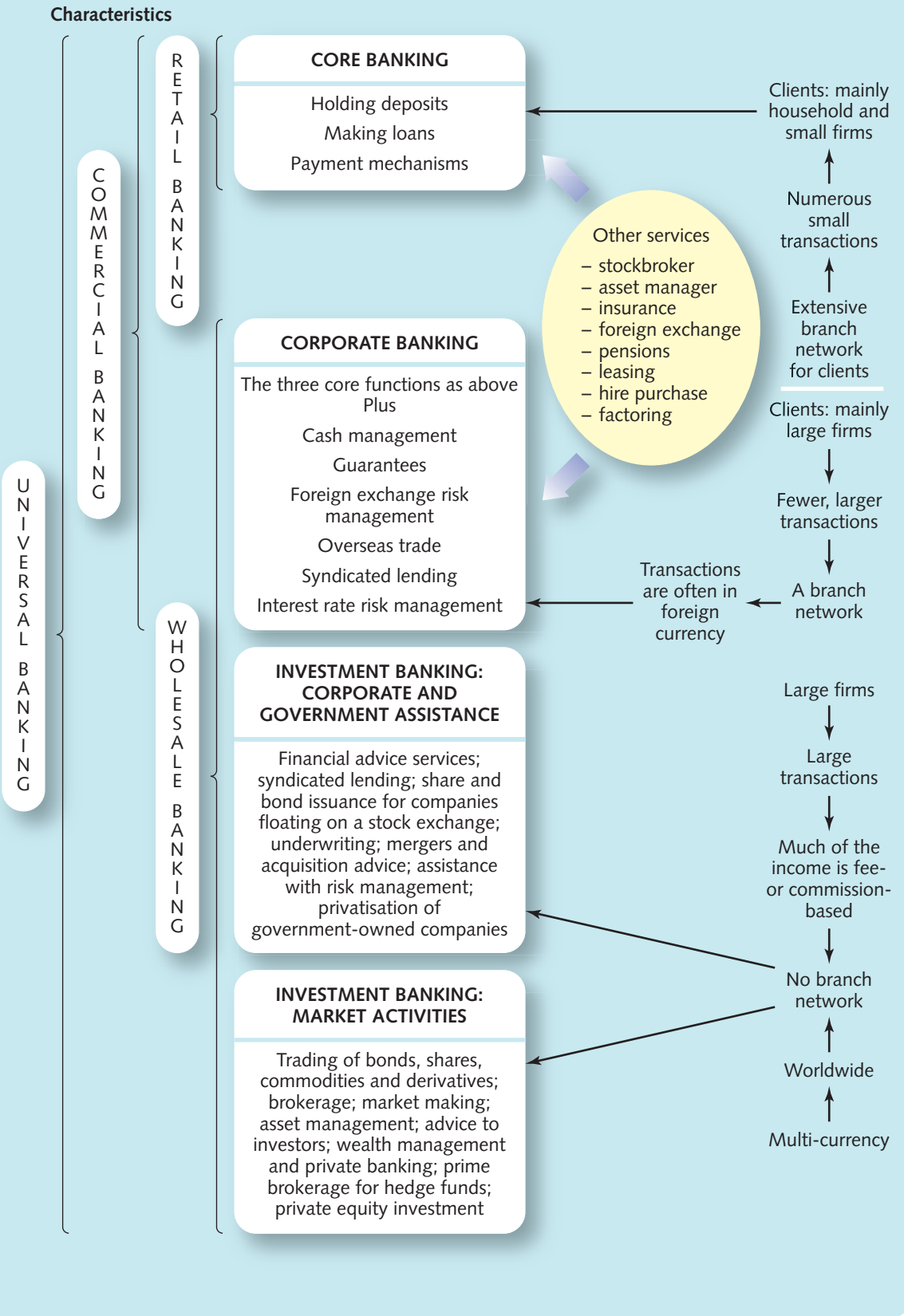


Exhibit 2.2

Too early to declare death of 'universal banking'

FT

Peter Thal Larsen

When Citicorp and Travelers unveiled their ground-breaking merger a decade ago, the deal heralded a new era of consolidation and globalisation in financial services.

However, just because Citigroup is planning to effectively unwind the deal does not mean that all its rivals will be forced to follow suit.

Ever since Citigroup was created, bankers have debated the merits of the so-called global universal bank: the notion that the future of financial services lay with large financial conglomerates that would benefit from economies of scale in information technology and access to capital to serve companies and retail customers around the world.

Over the past 10 years, the Citigroup approach has spawned plenty of imitators.

The merger of Chase with JPMorgan was inspired by a quest for scale, and the perceived benefits of combining commercial and investment banking.

HSBC's drive into the United States also reflected a belief that banks would require genuinely global reach.

More recently, the failed takeover of ABN Amro, the Dutch lender, by Barclays of the United Kingdom was an effort to create an institution that could serve customers from Birmingham to Beijing.

Even before the credit crunch struck, investors were becoming increasingly sceptical about this drive for scale.

The cost benefits of mergers were largely outweighed by increased complexity and the cultural difficulties of integrating and managing large sprawling institutions.

What Citigroup will no longer attempt to do is offer a broad range of financial services products – including insurance, brokerage services and credit cards – under the same umbrella.

"I don't think they're getting away from universal banking," says an executive at a rival lender.

"They're getting away from universal financial services."

There is also the possibility that Citigroup's U-turn represents a failure of execution rather than a failure of strategy.

Even Citigroup bankers admit that, in spite of the bank's promises to cross-sell a broad range of products to consumers, its various divisions were never properly integrated.

In other words, Citigroup was a financial services conglomerate rather than an unified banking group.

Other universal banks, including JPMorgan Chase and Bank of America, appear to have done a better job at integrating their purchases – although here too the reality often lags behind executives' rhetoric.

Finally, whatever the shortcomings of universal banks, they have survived the current crisis in better shape than some other institutions.

Wall Street's investment banks have been wiped out and many of the smaller institutions that expanded in a single product area – such as specialied mortgage and credit card lenders – have been forced to seek support from larger institutions ... Not withstanding Citigroup's retreat it is still too early to declare the death of universal banking.

Source: *Financial Times*, 15 January 2009, p. 20. Reprinted with permission

Core banking

At the heart of banking is the acceptance of deposits, the making of loans and enabling customers to make payments. The main source of funds for banks is deposits, as shown in Table 2.1, which provides a crude breakdown of the source of funds for banks. The proportions vary from bank to bank depending on whether the bank is purely retail banking focused or has moved into corporate or investment banking (indeed many investment banks would have no deposits at all). Also some banks deliberately choose to obtain most of their money from deposits whereas others obtain a high proportion from issuing securities on the financial markets in tens or hundreds of millions of pounds, euros, etc., or borrow from other banks in the interbank market.

Banks have to recognise that any money deposited (or lent to them via the issue of a financial market security) will have to be repaid one day; thus deposits and other borrowings are classified as liabilities. If you deposit money in a bank it is an asset for you and part of your wealth because you can withdraw it, but it is an obligation for the bank (when the bank says that you are in credit, it means that you are a creditor – it owes you the money). We will discuss money market borrowing and bank capital later. For now we will concentrate on deposits.

Table 2.1 The typical liabilities of banks – a rough breakdown

	Proportion of assets
Current accounts, also called sight deposits	10–40%
Time deposits, also called savings accounts	10–40%
Money market borrowing (repos, interbank, certificates of deposit[1])	10–40%
Bank capital	8–12%

- ***Current account (cheque (check) account or sight account)*** An individual can walk into a bank branch and withdraw the money held in their **current account** at very short notice. Alternatively, they can transfer the money to someone else's account, either using a paper-based method or electronically. These accounts usually pay very low (or no) rates of interest and so are a low-cost source of funds for the bank from that point of view, but the bank will need to spend a considerable amount in processing transfers, monthly statements, providing conveniently located branches, etc. Banks often run current accounts at a loss in order to build up a relationship with a customer so that they can sell them other services.
- ***Time or savings deposit accounts*** Depositors agree to place money with a bank on the understanding that a set period of notice is required to withdraw cash, ranging from a few days to several months. Alternatively, the customer may place the money in the account for a fixed period. There are usually substantial penalties for early withdrawal and the accounts rarely provide a cheque facility. To compensate for the loss of flexibility to withdraw cash at short notice they offer higher interest rates than current accounts.

Lending

Some bank lending is short term, such as an overdraft, but most of it is long-term lending – certainly longer than the notice periods on most deposit accounts. Banks have developed techniques to screen and monitor borrowers to reduce risk. They also diversify across a range of borrowers. Loans to individuals and to corporations typically account for 50–70 per cent of a commercial bank's assets. Another 10–35 per cent might be lent out to other banks and institutions in the financial markets on a short-term basis, i.e. money market instruments, loans such as interbank lending or repos (*see* Chapter 5). Some is likely to be invested in long-term government bonds, company preference shares or other long-term investments, but this is usually less than 20 per cent. Somewhere between 1 per cent and 10 per cent of the bank's assets may be in the form of buildings, equipment, software or other assets such as gold.

It is possible for banks to lend out most of the money deposited despite a high proportion of deposits being repayable on demand because depositors usually do not all ask for their money back at the same time. However, just in case they need to meet unexpected large outflows, banks hold a fraction of their capital in the form of **liquid reserves**. This is cash (the same as in your wallet or purse) in the vault, at the tills and in ATMs as well as cash deposited at the central bank (banks need bank accounts too), such as the Bank of England, the Federal Reserve in the US or the Bundesbank in Germany. These cash holdings usually account for less than 1 per cent of a bank's assets. Funds kept in a highly liquid form (but not cash) may also include assets that can quickly be turned into cash, such as lending to another bank for 24 hours or 7 days (interbank lending) or government Treasury bills (lending to a government for, say, three or six months), that can be sold to other investors within minutes in a very active secondary market if money is needed.

[1] Money market instruments are described in Chapter 5.

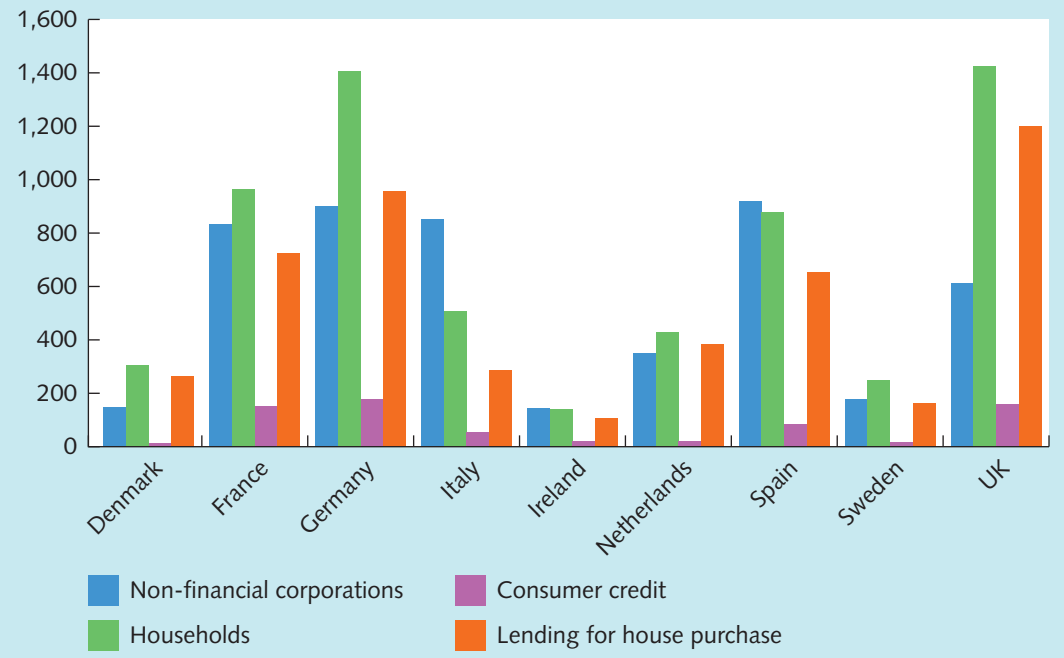
Household lending

Consumer loans (personal loans) are often **unsecured**, meaning that nothing is being used as specifically assigned collateral to be seized by the bank should the borrower fail to pay.[2] In the UK these loans can be up to £25,000 if not secured by collateral and are usually repayable within five years. The interest rate is usually fixed at a constant percentage of the outstanding amount throughout the period. Loans secured on property, such as a house mortgage, are typically repaid over 20–25 years and carry a lower rate of interest than a consumer loan because of the lower risk for the bank. Banks also lend via credit cards – discussed later.

Lending to businesses

For most companies banks remain the main source of externally (i.e. not retained earnings) raised finance. Total bank lending outstanding to the business sector in the UK was more than £500 billion at the time of writing. Spanish companies owed their banks a whopping €900 billion – no wonder they ran into serious trouble in 2011 (they had binge borrowed, much of it to build apartments). While the amounts outstanding were similar to those of Germany, France and Italy (*see* **Exhibit 2.3**), the Spanish have a much smaller economy to support their loans.

Exhibit 2.3 **Lending by financial institutions (mostly banks) in selected European countries to businesses and to households – amounts outstanding 2010 (household lending is further broken down to consumer credit and house mortgages) (€ billion)**



Source: European Central Bank.

Banks make it attractive for companies to borrow from them compared with other forms of borrowing:

- ***Administrative and legal costs are low*** Because the loan arises from direct negotiation between borrower and lender, this avoids the marketing, arrangement and regulatory expenses involved in, say, a bond issue.

[2] The bank will still be able to sue the borrower, who might have to sell assets to repay a loan.

- ***Speed*** The key provisions of a bank loan can be worked out quickly and the funding facility can be in place within a matter of hours.
- ***Flexibility*** If the economic circumstances facing the firm should change during the life of the loan, banks are generally better equipped – and more willing – to alter the terms of the lending agreement than bond holders. Negotiating with a single lender in a crisis has distinct advantages. Bank loans are also more flexible in the sense that if the firm does better than originally expected, a bank loan can often be repaid without penalty. Contrast this with many bonds with fixed redemption dates, or hire purchase/leasing arrangements with fixed terms.
- ***Availability to small firms*** Bank loans are available to firms of almost any size whereas the bond market is for the big players only.

An **arrangement fee** may be payable by the borrower to the bank at the time of the initial lending, say 1 per cent of the loan, but this is subject to negotiation and may be bargained down. The interest rate can be either fixed (same for the whole borrowing period) or floating (variable). If it is floating then the rate will generally be a certain percentage above the bank's **base rate** or **LIBOR**. LIBOR is the London interbank offered rate, that is, the rate of interest charged when a bank lends to a highly reputable and safe bank in London – *see* Chapter 5 for more on this. Because the typical borrowing corporation is not as safe as a high-quality bank, it will pay, say, 1 per cent (also referred to as 100 **basis points**, **bps**) more than LIBOR if it is in a good bargaining position. In the case of base rate-related lending the interest payable changes immediately the bank announces a change in its base rate. This moves irregularly in response to financial market conditions, which are heavily influenced by the central bank, say the **Bank of England** in its attempt to control the economy – *see* Chapter 7. For customers in a poorer bargaining position offering a higher-risk proposal the rate could be 5 per cent or more over the base rate or LIBOR. The interest rate will be determined not only by the riskiness of the undertaking and the bargaining strength of the customer but also by the degree of security for the loan and the size of the loan – economies of scale in lending mean that large borrowers pay a lower interest rate.

A generation ago it would have been more normal to negotiate fixed-rate loans, but most loans today are variable rate. If a fixed rate of interest is charged this is generally at a higher rate of interest than the floating rate at the time of arrangement because of the additional risk to the lender of being unable to modify rates as an uncertain future unfolds.

Overdraft

Usually the amount that a depositor can withdraw from a bank account is limited to the amount they put in. However, business and other financial activity often requires some flexibility in this principle and it can be useful to make an arrangement to take more money out of a bank account than it contains – this is an **overdraft**.

Overdraft facilities are usually arranged for a period of a few months or a year and interest is charged on the excess drawings. They are popular in Germany and the UK and are frequently used by people and businesses, whether by prior arrangement or accidentally (if unauthorised then fees/penalties are charged). In other countries (e.g. France), banks take a very tough line if you try to remove more than you have deposited in an account, unless you have prior authorisation.

Overdrafts have the following advantages.

1 ***Flexibility*** The borrowing firm (individual) is not asked to forecast the precise amount and duration of its borrowing at the outset but has the flexibility to borrow up to a stated limit. Also the borrower is assured that the moment the funds are no longer required they can be quickly and easily repaid without suffering a penalty.

2 ***Cheapness*** Banks usually charge 2–5 percentage points over base rate (or LIBOR) depending on the creditworthiness, security offered and bargaining position of the borrower. There may also be an **arrangement fee** of, say, 1 per cent of the facility, but many banks have dropped arrangement fees completely to attract borrowers. These charges may seem high but it must be borne in mind that overdrafts are often loans to smaller and riskier firms which would

otherwise have to pay much more for their funds. Large and well-established borrowers with low financial gearing (low borrowing relative to the amount put in by the business owners) and plenty of collateral can borrow on overdraft at much more advantageous rates. A major saving comes from the fact that the banks charge interest only on the daily outstanding balance. So, if a firm has a large cash inflow one week it can use this to reduce its overdraft, temporarily lowering the interest payable, while retaining the ability to borrow more another week.

A major drawback to an overdraft for the borrower is that the bank retains the right to withdraw the facility at short notice. Thus a heavily indebted firm may receive a letter from the bank insisting that its account be brought to balance within a matter of days. This right lowers the risk to the lender because it can quickly get its money out of a troubled company; this allows it to lower the cost of lending. However, it can be devastating for the borrower and so firms are well advised to think about how they use finance provided by way of an overdraft. It is not usually wise to use the money for an asset which cannot be easily liquidated; for example, it could be problematic if an overdraft is used for a bridge-building project which will take three years to come to fruition.

Term loans

A **term loan** is a business loan with an original maturity of more than one year and a specified schedule of principal and interest payments. These loans are normally for a period of between three and seven years, but the period can range from one to twenty years. It may or may not be secured with collateral and has the advantage over the overdraft of not being repayable at the demand of the bank at short notice (if the borrower sticks to the agreement). The specified terms will include provisions regarding the repayment schedule.

In setting up a term loan the bank can be very flexible with regard to the conditions it sets for the borrower. For example, a proportion of the interest and the principal can be repaid monthly, or annually, and can be varied to correspond with the borrower's cash flows. It is rare for there to be no repayment of the principal during the life of the loan, but it is possible to request that the bulk of the principal is paid in the later years. It could be disastrous, for instance, for a firm engaging in a project which involves large outlays for the next five years followed by cash inflows thereafter to have a bank loan which requires significant interest and principal payments in the near term. If the borrower is to apply the funds to a project which will not generate income for perhaps the first three years, it may be possible to arrange a **grace period** or **repayment holiday** during which only the interest is paid, with the capital being paid off once the project has a sufficiently positive cash flow. Other arrangements can be made to reflect the pattern of cash flow of the firm or project: for example a '**balloon**' **payment structure** is one when only a small part of the capital is repaid during the main part of the loan period, with the majority repayable as the maturity date approaches. A '**bullet**' **repayment** arrangement takes this one stage further and provides for all the capital to be repaid at the end of the loan term. Banks generally prefer **self-amortising term loans** with a high proportion of the principal paid off each year. This has the advantage of reducing risk by imposing a programme of debt reduction on the borrowing firm.

Not all term loans are drawn down in a single lump sum at the time of the agreement. In the case of a construction project which needs to keep adding to its borrowing to pay for the different stages of development, an **instalment arrangement** might be required with, say, 25 per cent of the money being made available immediately, 25 per cent at foundation stage and so on. This has the added attraction to the lender of not committing large sums secured against an asset not yet created. From the borrower's point of view a **drawdown arrangement** has an advantage over an overdraft in that the lender is committed to providing the finance if the borrower meets prearranged conditions, whereas with an overdraft the lender can withdraw the arrangement at short notice.

It may be possible for a company to arrange a **mortgage-style repayment schedule** in which monthly payments from the borrower to the lender are constant throughout the term. Indeed, the repayment schedule agreed between bank and borrower is capable of infinite variety – four possibilities are shown in **Exhibit 2.4**.

Exhibit 2.4 Simple examples of loan repayment arrangements

£10,000 borrowed, repayable over four years with interest at 10 per cent p.a. (assuming annual payments, not monthly). Schemes (a) to (d) all pay the equivalent 10 per cent per annum.

(a) Mortgage-style repayment arrangement

Time period (years)	1	2	3	4
Payment (£)	3,155	3,155	3,155	3,154

(b) Interest only paid each year

Time period (years)	1	2	3	4
Payment (£)	1,000	1,000	1,000	11,000

(c) Bullet loan with interest and capital repaid at the end

Time period (years)	1	2	3	4
Payment (£)	0	0	0	14,641

(d) Balloon-style repayment schedule

Time period (years)	1	2	3	4
Payment (£)	0	1,000	6,000	6,831

Security for banks on business lending

When banks are considering the provision of debt finance for a firm they will be concerned about the borrower's competence and honesty. They need to evaluate the proposed project and assess the degree of managerial commitment to its success. The firm will have to explain why the funds are needed and provide detailed cash forecasts covering the period of the loan. Between the bank and the firm stands the classic gulf called **asymmetric information** in which one party in the negotiation is ignorant of, or cannot observe, some of the information which is essential to the contracting and decision-making process. The bank is unable to assess accurately the ability and determination of the managerial team and will not have a complete understanding of the market environment in which they propose to operate. Companies may overcome bank uncertainty to some degree by providing as much information as possible at the outset and keeping the bank informed of the firm's position as the project progresses.

Bankers encourage the finance director and managing director to consider carefully both the quantity and quality of information flows to the bank. An improved flow of information can lead to a better and more supportive relationship. Firms with significant bank financing requirements to fund growth will be well advised to cultivate and strengthen understanding and rapport with their bank(s). The time to lay the foundations for subsequent borrowing is when the business does not need the money, so that when loans are required there is a reasonable chance of being able to borrow the amount needed on acceptable terms.

There are two types of interaction a company might have with a bank. The first is **relationship banking** in which there is an understanding on both sides that there will be a long-term relationship in which the company provides information regularly to the bank and the bank can reduce its screening and monitoring costs. Over time, the bank develops special knowledge of the firm and its needs and as a result will be more supportive when the need for borrowing or forbearance in hard times is needed. The other type is **transactional banking** in which the company shops around for services, looking for the lowest cost for individual tasks. This has the advantage of obtaining cheap individual services but the absence of a long-term relationship can make the firm vulnerable in tough times.

Another way for a bank to reduce its risk is for the firm to offer sufficient **collateral** for the loan. Collateral provides a means of recovering all or the majority of the bank's investment should

the firm fail to repay as promised. If the firm is unable to meet its loan obligations then holders of **fixed-charge** collateral can seize the specific asset used to back the loan. With a **floating charge** the legal right to seize assets 'floats' over the general assets of the firm so they can be bought and sold or rented without specific permission from the lender. The charge only crystallises at the point of default on the loan – the assets are frozen within the firm and made available to repay lenders. On liquidation, the proceeds from selling assets will go first to the secured loan holders, including floating-charge bank lenders. Bankers may look at a firm on two levels. First, they might consider a **liquidation analysis** in which they think about their position in a scenario of business failure. Second, they will look at a firm on the assumption that it is a **going concern**, where cash flows rather than assets become more important.

Collateral can include stocks (inventories) of unsold goods, debtors and equipment as well as land, buildings and marketable investments such as shares in other companies. In theory, banks often have the right to seize assets or begin proceedings to liquidate; in practice they are reluctant to use these powers because such draconian action can bring adverse publicity. They are careful to create a margin for error in the assignment of sufficient collateral to cover the loan because, in the event of default, assigned assets usually command a much lower price than their value to the company as a going concern. A quick sale at auction produces bargains for the buyers of liquidated assets and usually little for the creditors. Instead of rushing to force a firm to liquidate, banks will often try to **reschedule** or **restructure** the finance of the business (e.g. grant a longer period to pay).

Another safety feature applied by banks is the requirement that the borrowing firm abides by a number of **loan covenants** which place restrictions on managerial action until the debt has been repaid in full. Some examples are:

- ***Limits on further debt issuance*** If lenders provide finance to a firm they do so on certain assumptions concerning the riskiness of the capital structure. They will want to ensure that the loan does not become more risky due to the firm taking on a much greater debt burden relative to its equity base, so they limit the amount and type of further debt issues – particularly debt which is higher ranking ('**senior debt**') for interest payments and for a liquidation payment. **Subordinated debt** – with low ranking on liquidation – is more likely to be acceptable.
- ***Dividend level*** Lenders are opposed to money being brought into the firm by borrowing at one end while being taken away by shareholders at the other. An excessive withdrawal of shareholder funds may unbalance the financial structure and weaken future cash flows.
- ***Limits on the disposal of assets*** The retention of certain assets, for example property and land, may be essential to reduce the lender's risk.
- ***Financial ratios*** A typical covenant here concerns the **interest cover**, for example: 'The annual pre-interest pre-tax profit will remain four times as great as the overall annual interest charge.' Other restrictions might be placed on working capital ratio levels and on the debt to net assets ratio. If these financial ratio limits are breached or interest and capital are not paid on the due date, the bank has a right of termination, in which case it could decide not to make any more funds available or, in extreme cases, insist on the repayment of funds already lent.

While covenants cannot provide completely risk-free lending they can influence the behaviour of the management team so as to reduce the risk of default. The lender's risk can be further reduced by obtaining guarantees from third parties that the loan will be repaid. The guarantor is typically the parent company of the issuer.

Finally, lenders can turn to the directors of the firm to provide additional security. The directors might be asked to sign **personal guarantees** that the firm will not default. Personal assets (such as homes) may be used as collateral. This erodes the principle of limited liability status and is likely to inhibit risk-taking productive activity. However, for many smaller firms it may be the only way of securing a loan and at least it demonstrates the commitment of the director to the success of the enterprise.[3]

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[3] Indeed, when the author recently contacted a number of banks to negotiate a loan for a company he controls, the corporate loan officers were all amazed at his cheek in not accepting a personal guarantee clause. 'But we normally get a personal guarantee, it is just standard practice,' they declared. Don't accept this line if you have a strong business plan and strong financial structure.

There are two other factors on the minds of lending officers at banks:

1 ***Creditworthiness*** This goes beyond examining projected future cash flows and asset backing and considers important factors such as character and talents of the individuals leading the organisation.
2 ***The amount that the borrower is prepared to put into the project or activity, relative to that asked from the bank.*** If the borrower does not show commitment by putting their own money into a scheme, banks can get nervous and stand-offish.

Payment mechanisms

Banks facilitate payments between people and organisations using either paper or electronic means.

- ***Cheque*** While still a popular means of settling indebtedness the cheque is increasingly giving way to direct debits, credit and debit cards. Already card transactions outnumber cheques by a large margin in many countries – in the UK, for example, by four to one. A number of banks are hoping to phase out this relatively expensive means of transferring money; the UK had a target date (31 October 2018) for doing away with cheques, but following a public outcry the plan was dropped.
- ***Giro*** Even before the electronic age people without cheque books could still transfer money to others by using a giro slip which instructs their bank to pay, say, the electricity company. This remains a popular means of payment in Germany, the Netherlands, Austria and Japan. Giro banks were set up in many European countries using their post offices to allow those without a bank account, let alone a cheque book, to make payments. The bill could be paid at the post office counter and the money transferred to the payee. Post offices can be surprisingly big players in the financial system. Indeed, the largest deposit-taking institution in the world is not a bank but the Japanese post office. It holds around £2,000 billion in savings accounts (a quarter of all Japanese household assets) and has bought one-fifth of all the Japanese government bonds in issue – and that is a lot of bonds, given that the Japanese government has outstanding borrowings of 200 per cent of annual gross domestic product.
- ***Standing orders and direct debits*** These are used for recurring payments. With standing orders the account holder instructs their bank to pay a fixed regular amount to a beneficiary's account. It is only the account holder who can change the order instructions. Direct debits are similar to standing orders except that the supplier of a good or service which is due to paid (e.g. gas or water company) gets the customer to sign the direct debit which allows the supplier to vary the amount and vary the time of payment.
- ***Plastic cards*** We have got so used to transferring money using plastic that it no longer seems remarkable. A bank card allows us to use ubiquitous ATMs providing a quick way of obtaining cash, checking balances or other services. The **debit card** (usually the same card as the ATM-enabled card) allows us to make payments by providing the information the retailer needs to set up what is in effect an electronic cheque to credit the retailer's account while debiting our account. They use an **EFTPOS** (Electronic Funds Transfer at Point of Sale) terminal to initiate the debiting of our accounts. EFTPOS are even more numerous than ATMs. **Credit cards** allow users to pay for goods, wait for a statement of indebtedness to the credit card company and then decide whether to pay off the whole amount outstanding that month or pay only, say, 5 per cent of the debt owed and borrow the rest until they are in a better position to pay back. They are allowed a fixed maximum borrowing. The credit card company gains income from charging the retailers (usually 1–3 per cent of the transaction value) as well as charging the user interest if they fail to pay off the full amount outstanding each month. The rates on money borrowed this way can be very high. For example, while secured mortgages can be obtained for around 4–6 per cent per year, credit cards typically charge more than 18 per cent. Much of this extra interest is to cover bad debts and fraud. Visa and Mastercard process transactions for the retailer, and card issuer. Thousands of commercial organisations, such as high-street retailers, issue their own versions of credit cards, known as **store cards**. The retailer usually lacks the infrastructure to process credit cards and so works with a bank or a specialist organisation. American Express

and Diners Club cards are different – they are **charge cards**. Here, the user is expected to pay off the balance every month. **Smart cards (electronic purses, chip cards)** store information on a microchip. This might be an amount of cash (**e-money**) loaded onto it using an ATM, personal computer or telephone download. The retailer is able to take money from the customer's card and load it onto their own, ready for paying into their bank account. To purchase goods on the internet, **e-cash** is often used, which is created by setting up an account with a bank which then transfers credits to the user's PC. When the user wants to buy something, cash is taken electronically from the user's PC and transferred to the merchant's computer.

- ***Landlines and mobile phones*** Telephone banking has been with us for a long time now. Many banks are principally telephone (with internet) based, e.g. First Direct in the UK, but mostly telephone banking is an extra service available for standard branch-based accounts. Not only is telephone banking available 24 hours per day but transactions such as bill paying can be conducted quickly and loans can be arranged. Banks encourage customers to use telephone banking because the cost of undertaking a transaction can be 25–50 per cent that of using the branch. In many parts of Africa (e.g. Kenya), people, many of whom do not have a bank account, are transferring money to each other using mobile phones – for a report on this see http://news.bbc.co.uk/1/hi/8194241.stm. Mobile phone banking, including sophisticated smartphone banking apps, is expected to become very big business over the next decade.
- ***Internet*** Millions of people now use internet-based accounts, either separate from their normal branch-based account (e.g. Security First Network Bank in the US and Egg in the UK) or as an extra facility attached to their usual account. Transaction costs for banks can be a tenth of those for branch-based activity, so expect to see banks promoting greater use of the internet. **Exhibit 2.5** shows the extent of online banking in the US and the UK.

Clearing systems

After a cheque (or electronic payment) has been written and handed over to the payee there needs to be a system for transferring the money from one bank account to another. This is **clearing**. Banks within countries came together long ago to work out a way of ensuring accurate and timely settlement of payments. Usually central banks led the process. Those banks linked into the system are referred to as **clearing banks**. These are usually only the large banks with extensive retail banking operations. Smaller banks may make a deal with one of the clearing banks for it to handle its cheque (electronic) clearance. If a cheque or debit card draws money from one account for it to be credited to another person's account at the same bank then the bank will deal with clearing itself. If, however, money needs to be transferred to an account at another bank, the cheque will be put through the central clearing system. This is mostly electronic because the cheque has computer-readable information such as the branch sort code, account number and cheque number displayed – the amount of money is the missing element that needs to be input. Of course, direct debits, standing orders and other regular payments are already inputted into computer systems to permit electronic clearance.

In the UK all clearing is overseen by the **UK Payments Council**, which acts as controller of various payment services. **BACS Ltd** (originally the **Bankers' Automated Clearing Services**) clears electronic payment for direct debits and credits, standing orders, salaries, etc. The **Cheque and Credit Clearing Company (CCCL)** manages the cheque clearing system. **CHAPS (Clearing House Automated Payment System)** allows money to be electronically transferred the same day (this costs a minimum of £20 but is frequently worth it for large or urgent payments). It is a **real-time gross settlement (RTGS)** system, meaning that payments are settled individually and continuously through the day rather than waiting until the end of the day (avoiding the risk associated with a bank going bust halfway through the day and not completing the deal). The average payment under CHAPS is more than £2 million, compared with a few hundred under BACS and CCCL. **TARGET (Trans-European Automated Real-time Gross Settlement Express Transfer system)** – now TARGET2 – is the most important large-value euro system for cross-border transfers within the EU. It too is a real-time settlement system. A large group of US and European banks own an international electronic payments system called **SWIFT (Society for Worldwide Interbank Financial Telecommunication)**, which is a messaging service that sends payment orders between banks and other financial institutions which then settle payments between themselves.

Exhibit 2.5

Slow but inexorable move to cyberspace banking

FT

Ellen Kelleher

The oversupply of Lloyds, Natwest, HSBC and Barclays branches on the high street, not to mention the plethora of building societies, suggests we still prefer chatting with tellers over logging on to the internet to pay bills, check balances and deposit funds.

Yet slowly but surely, the internet is making its mark on the sector as more people over their banking online. Lloyds is to shut up to 400 branches as part of its integration of HBOS. Its rivals are likely to follow suit.

A decade from now, the local branch could well be an endangered species as "cyber-banking" grows ever more popular and more branches close.

"Is there such a need for so many branches? Clearly, there are too many in certain areas," says Ben Yearsley, investment adviser with Hargreaves Lansdown. "The only time I personally go into a bank is to collect foreign currency and to pay in cheques that I occasionally receive, and I can't imagine I am too different to most people."

Since the dotcom boom of a decade ago, high street banks have been pushing their internet businesses, offering incentives to encourage online bill payment and enticing customers with attractive rates.

Crucially, it is the banks' core brands, rather than their internet-only spin-offs, that have been making all the progress.

At the height of the dotcom boom, Abbey launched Cahoot, Halifax brought out Intelligent Finance and the Co-op Bank launched Smile. Yet while these banks have had some success, none has threatened the market position of the sector's leaders.

American banks have been far more successful at persuading their customers to bank online. Just 30 per cent of British adults banked online in the past month while almost half of those in the US did, according to a survey this year by Gartner, the market research group.

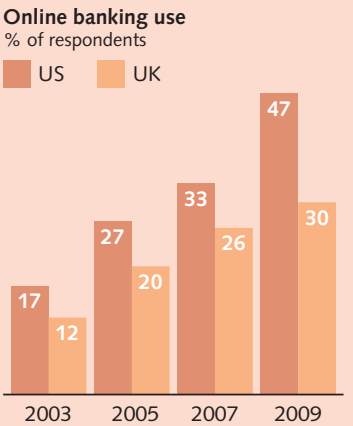
But that gap is likely to shrink. About 87 per cent of UK residents with incomes of £15,000 use the internet for browsing, reading newspapers and other activities, Gartner's research indicates.

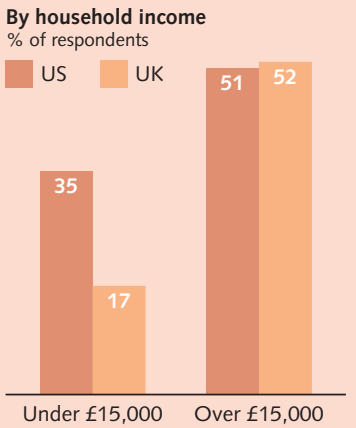
The move online is likely to be accompanied by a change in the role of the remaining bank branches.

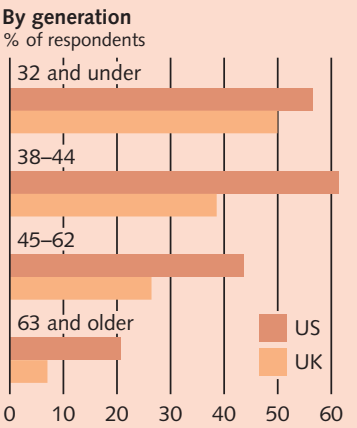
Jason Butler, a planner with Bloomsbury Financial Planning, predicts that large regional centres where advisers offer financial planning and other services will replace the traditional branch networks.

"However, banks need to avoid past mistakes of selling poor value, financial 'rubbish' to their customers," he cautions.

Survey of online banking users







Reasons given for not banking online
% of respondents*

	US	UK
Prefer other channels	61	58
Security	41	38
Technology	17	18
Access	23	18
None	25	31

Source: Gartner * Multiple choice

Source: *Financial Times*, 7 July 2009, p. 18. Reprinted with permission.

Currently, the European Union is working on a more effective clearing system for cross-border payments because it can be very expensive to transfer money from, say, a Spanish bank account to one in Germany. In the US, high-value payments go through different electronic systems called CHIPS (Clearing House Interbank Payments) and **Fedwire**; there are a number of systems for small payments clearing.

Corporate banking

There are two categories of bank lending to corporates – uncommitted facilities and committed facilities.

Uncommitted facilities

With an **uncommitted facility** the bank does not enter an agreement that makes it obliged to provide funds at the borrower's request and the facility can be cancelled and so the borrower may have to repay at short notice. These are usually short-term borrowing arrangements – less than one year. The simplest type is the overdraft, which may be a six-month (or annual) arrangement. There may be an expectation on both sides that the overdraft facility will be renewed – **rolled over** or revolved – after the six months are up, but the bank has not guaranteed that this will be possible. Indeed, the bank can insist on repayment within the six months.

An **uncommitted line of credit** is an alternative to an overdraft. The borrower can borrow up to a maximum sum for a period of, say, a month or six months, and can repay and borrow again as needed within that time period. The bank is uncommitted because it merely has to make its best efforts to make the sum available and it has the discretion to remove the facility at short notice. The interest rate is often set as a number of basis points over the interbank lending rate, say one-month LIBOR.

Banks also lend by signing a document that states that the bank will pay a sum of money at a date some time in the future, say in 90 days. The company (the borrower) that requested that the bank draw up the document, called a **banker's acceptance**, holds it until it needs to borrow. They can do this by selling it at a discount price to the face value (the amount stated to be paid in the future). So, say the acceptance states that €1 million will be paid to the holder on 1st August. It could be sold by the borrower to an investor (perhaps another bank) in the discount market for €980,000 on 15 June. The borrowing company is obliged to reimburse the bank €1 million (and pay fees) on 1 August; on that date the purchaser of the acceptance credit collects €1 million from the bank that signed the acceptance, making a €20,000 return over six weeks. Chapter 5 discusses banker's acceptances.

Committed facilities

A committed facility is one where the lender enters into an obligation to provide funds upon request by the borrower, provided any agreed conditions and covenants in the loan agreement have been and are being met. With many of these forms of borrowing the borrower pays a commitment fee on the undrawn portion of the committed facility. A term loan is one example of a committed facility; here are some others.

Revolving credit

Revolving credit (revolving credit facility, RCF) allows the borrower to both draw down the loan in tranches and to reborrow sums repaid within the term of the facility so long as the committed total limit is not breached, usually for between one and five years. The facility does not require the borrower to make a number of fixed payments to the bank (unlike instalment credit, such as hire purchase). This is usually unsecured lending. The borrower makes payments based only on the amount they've actually used or withdrawn, plus interest. The bank is committing some

of its assets to providing the facility to the corporation whether or not, in the end, the borrowing is actually needed (it may be termed a committed line of credit). This uses up some of the bank's loan capacity and therefore it demands fees. **Front-end** or **facility fees** are for setting it up and **commitment fees** on the undrawn amount are for providing the option to the borrower (say 50 basis points or 0.5 per cent) while the commitment remains in place. Of course, the borrower will also be charged interest on the amounts drawn under the facility, usually a number of basis points over an interbank rate.

Project finance

A typical project finance deal is created by an industrial corporation providing some equity capital for a separate legal entity (a 'special purpose vehicle', SPV) to be formed to build and operate a project, for example an oil pipeline, an electricity power plant. The **project finance loan** is then provided as bank loans or through bond issues direct to the separate entity. The significant feature is that the loan returns are tied to the cash flows and fortunes of a particular project rather than being secured against the parent firm's assets. For most ordinary loans the bank looks at the credit standing of the borrower when deciding terms and conditions. For project finance, while the parent company's (or companies') credit standing is a factor, the main focus is on the financial prospects of the project itself.

To make use of project finance the project needs to be easily identifiable and separable from the rest of the company's activities so that its cash flows and assets can offer the lenders some separate security. Project finance has been used across the globe to finance power plants, roads, ports, sewage facilities, telecommunications networks and much more.

It is a form of finance that has grown rapidly over the last 25 years; globally, about £50 billion is lent in this form per year. A major stimulus has been the development of oil prospects. For the UK, the North Sea provided a number of project finance opportunities. Many of the small companies which developed fields and pipelines would not have been able to participate on the strength of their existing cash flows and balance sheets, but they were able to obtain project finance secured on the oil or fees they would later generate.

There is a spectrum of risk sharing in project finance deals. At one extreme there are projects where the parent firm (or firms) accepts the responsibility of guaranteeing that the lenders will be paid in the event of the project producing insufficient cash flows. This is referred to as **recourse finance** because the lenders are able to seek the 'help' of the parent. At the other extreme, the lenders accept an agreement whereby, if the project is a failure, they will lose money and have no right of recourse to the parent company; if the project's cash flows are insufficient the lenders have a claim only on the assets of the project itself rather than on the sponsors or developers. Between these two extremes there might be deals whereby the borrower takes the risk until the completion of the construction phase (for example, provides a completion guarantee) and the lender takes on the risk once the project is in the operational phase. Alternatively, the commercial firm may take some risks such as the risk of cost overruns and the lender takes others such as the risk of a government expropriating the project's assets.

The sums and size of projects are usually large and involve a significant degree of complexity and this means high transaction and legal costs. Because of the additional risk to the lenders the interest rates charged tend to be higher than for conventional loans. Whereas a well-known highly creditworthy firm might pay 80 basis points (0.80 per cent) over LIBOR for a 'normal' parent company loan, the project company might have to pay 200 basis points (2 per cent) above LIBOR.

The salient points of project finance are:

1 ***Transfer of risk*** By making the project a stand-alone investment with its own financing, the parent can gain if it is successful and is somewhat insulated if it is a failure, in that other assets and cash flows may be protected from the effects of project losses. This may lead to a greater willingness to engage in more risky activities, which may benefit both the firm and society. Of course, this benefit is of limited value if there are strong rights of recourse.

2 ***Off-balance-sheet financing*** The finance is raised on the project's assets and cash flows and therefore is not recorded as debt in the parent company's balance sheet. This sort of off-balance-sheet financing is seen as a useful 'wheeze' or ploy by some managers – for exam-

ple, gearing limits can be bypassed. However, experienced lenders and shareholders are not so easily fooled by accounting tricks.

3 ***Political risk*** If the project is in a country prone to political instability, with a tendency towards an anti-transnational business attitude and acts of appropriation, a more cautious way of proceeding may be to set up an arm's-length (separate company) relationship with some risk being borne by the banking community, particularly banks in the host country.

4 ***Simplified banking relationship*** In cases where there are a number of parent companies, it can be easier to arrange finance for a separate project entity than to have to deal with each of the parent companies separately.

5 ***Managerial incentives*** Managers of projects may be given an equity stake in the project if it is set up as a separate enterprise. This can lead to high rewards for exceptional performance.

Syndicate lending

For large loans a single bank may not be able or willing to lend the whole amount. To do so would be to expose the bank to an unacceptable risk of failure on the part of one of its borrowers. Bankers like to spread their lending to gain the risk-reducing benefits of diversification. They prefer to participate in a number of syndicated loans in which a few banks each contribute a portion of the overall loan. So, for a large multinational company loan of, say, £500 million, a single bank may provide £30 million, with perhaps 100 other banks contributing the remainder. The bank originating the loan will usually manage the syndicate and is called the **lead manager** (there might be one or more lead banks or 'arranging' banks). This bank (or these banks) may invite a handful of other banks to co-manage the loan and these other banks then persuade other banks to supply much of the funding. That is, they help the process of forming the syndicate group of banks in the general syndication. The managing bank also underwrites much of the loan while inviting other banks to underwrite the rest – that is, guaranteeing to provide the funds if other banks do not step forward.[4]

Syndicated loans are available at short notice, can be provided discreetly (helpful if the money is to finance a merger bid, for example) and are usually cheaper to arrange than a bond issue. While they can be a cheap form of borrowing for large, well-established firms, there will be various fees to pay, from commitment fees to underwriting fees for guaranteeing the availability of the funds and the agent's fee (the agent collects the loan money to transfer it to the borrower and collects interest and other payments from the borrower to transfer them to the syndicate banks, and performs various other administration tasks). The syndicated market is usually really available only for loans of more than £50 million. For around one-third of syndicated loans the credit rating agencies (e.g. Standard & Poor's – *see* Chapter 5) are paid to rate the likelihood of default. The volume of new international syndicated loans now runs into hundreds of billions of pounds per year – *see* **Exhibit 2.6**. (A leveraged loan is one where there is a lot of debt relative to the amount of share capital put in the firm; investment grade means that the credit rating agencies, e.g. Moody's, rank the loan as unlikely to default (a rating of BBB – or above – *see* Chapter 5); M&A is mergers and acquisitions.)

Revolving underwriting facility and note issuance facility

Revolving underwriting facilities (RUF) and note issuance facilities (NIF) were developed as services to large corporations wanting to borrow by selling commercial paper or medium-term notes into the financial markets. The paper and notes are merely legal documents stating that the borrower agrees to pay sum(s) of money in the future, say three month from now. Thus a company could sell for £1.9 million commercial paper that gave the investor the right to receive £2 million in six months. The investor gains £100,000 over six months. (There is more on commercial paper in Chapter 5 and on medium-term notes in Chapter 6.)

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[4] The term 'mandated lead arranger' or MLA is often used for the managing bank(s). Also 'bookrunner' or 'bookrunner group' indicates those who solicit interest in the loan from lenders and gather offers of support. They gradually 'build a book' – a list of confirmed buyers. They do the syndication.

Exhibit 2.6

Syndicated loan sector shows fresh signs of life

FT

Anousha Sakoui and Nicole Bullock

Global syndicated lending totals $1,150bn so far this year, down 51 per cent on the same period last year, making it the lowest amount at this stage of the year since 1996, says Dealogic. Global investment grade loans so far this year at $886bn stand at less than a third of their $3,000bn peak reached in the full year 2007. Leveraged loans have staged a bigger collapse – so far this year $256bn has been issued globally, against a full year peak of $1,800bn in 2007.

The return of M&A activity could start a fire under the syndicated loan market.

In the US this week, syndication of part of the $4.2bn in financing for Warner Chilcott's purchase of Procter & Gamble's pharmaceutical unit began in earnest.

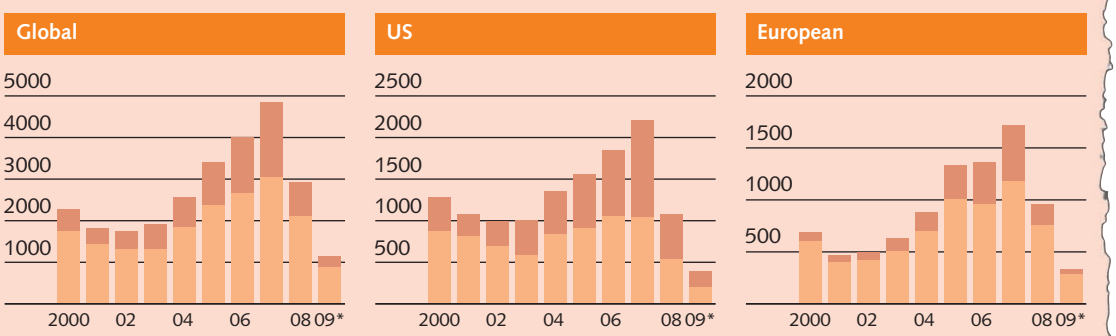
Mr Douglas at Deloitte says a sign of increased confidence is that some banks are increasing their participation in new loans from an average ticket size of £25m to £50m. Moreover, pricing has come down since the first quarter, tightening up to 100 basis points depending on structure and total leverage.

A leveraged loan is likely to have a total cost of about 450bps over Libor and an investment grade corporate can obtain pricing at about 250bps, according to Mr Douglas. Moreover they are willing to lend for longer.

"Clearly we are a long way from the halcyon days of early 2007 and the syndicated loan markets have shrunk but they will grow from current levels as M&A activity increases," said Mr Douglas.

Source: *Financial Times*, 17 September 2009, p. 39. Reprinted with permission.

Syndicated loans issuance ($bn) Leveraged Investment grade



Source: Dealogic

* Year-to-date

The largest corporations often expect to be selling a series of different commercial paper issues over the next five years. Instead of handling each individual issue themselves as the need arises they can go to an *arranging bank*, which will, over the five years, approach a panel of other banks to ask them to purchase the debt. The loan obligation can be in a currency that suits the borrower at the time. The borrower can also select the length of life of the paper (say, 14 days or 105 days) and whether it pays fixed or floating interest rates. If there is a time when it is difficult to sell the paper then the borrower can turn to those banks that have signed up to be underwriters of the RUF or NIF to buy the issue. Underwriters take a fee for guaranteeing that someone will buy the issue. Most of the time they do not have to do anything, but occasionally, often when the market is troubled, they have to step in.

Cash management

Corporations with large day-to-day cash flows soon realise that they need to employ efficient systems to ensure that the potential to earn interest on the cash is not lost while also keeping back enough cash in an easily accessible form to support the business. Banks can help with this. They provide daily information on the firm's cheques that have been paid and account balances so that money can be moved out of no-interest accounts if the balance starts to build up. They can be given the task of automatically redirecting money held in a number of accounts at different banks and branches to a few centralised accounts at one branch. They can also provide software to assist firms in handling money in a variety of currencies and investing it short term.

Guarantees

Banks are sometimes prepared, for a fee, to guarantee that a transaction by a third party will take place or that compensation will be paid if the transaction does not take place. For example, a bank may grant a guarantee to an exporter that an importer will pay for goods supplied. If the importer becomes unable to pay, i.e. does not fulfil its legal obligation, the exporter is protected against that non-compliance as the bank covers those responsibilities and will pay the exporter in a timely manner, as per the agreement.

Overseas trade

Banks provide various services to assist companies when buying and selling across borders. A **letter of credit** is a promise from a bank that an exporter will be paid after shipping goods to an importer. This reassures the exporter and allows an importer to buy even though they may not be well known to the exporter. While a letter of credit is similar to a bank guarantee, it differs in that the bank pays out if the transaction proceeds as planned, while a bank guarantee is to make payment if the transaction does *not* go as planned. With a guarantee the issuing bank waits for the buyer to default before paying out. With a letter of credit the obligation to pay is transferred to the bank, which it will do at the contracted time; even if the importer's finances are perfectly healthy and it could pay from its own resources, the bank will make the payment. Thus the exporter has much greater reassurance of getting paid because a safe bank has taken on the obligation to pay – the risk of bank defaulting (credit risk) is much less than an unknown importer in a distant land. Naturally, the bank will expect its client (the importer) to pay it the amount concerned plus some fees and interest to provide this service.

With **forfaiting** a bank will supply cash to an exporter in return for a right to claim the payments for goods or services supplied to an importer, thus the exporter does not have to wait three months or so to receive cash for the export. The bank advances money and gets that back with interest and fees when the importer eventually pays. There is more on overseas trade in Chapter 13.

Foreign exchange risk management and interest risk management

Companies usually learn through bitter experience that shifts in the exchange rate or in market interest rates can lower profits significantly, sometimes to the point of endangering the firm. There are various risk management tools that a bank can offer a client to mitigate these problems. These usually involve the use of derivatives such as forwards, futures and options. They are considered in Chapters 10, 11 and 12.

Other commercial banking services

Although some banks are state-owned, as in China, or are owned by their customers, e.g. cooperative banks, the majority are run as commercial operations, with the profit motive driving them forward. They are keen on finding new sources of revenue and over the past 30 years or so have done remarkably well in using the competitive advantages they possess, such as knowledge of long-standing customers, trust and presence on the high street, to sell an ever widening range of products and services to individuals and businesses. Customers often find when walking into a branch that the original activities of the bank (e.g. paying in money) are demoted to a corner while staff are encouraged to sell other services to customers. A phrase has been coined to describe the shift to a wide-ranging operation: *financial supermarkets*.

Stockbroking

In many countries, e.g. the UK, most buying and selling of shares and bonds by retail investors (individuals) takes place using independent stockbrokers as agents, rather than the banks. Having said this, the banks have established impressive stockbroking business since they were permitted to enter the industry following the Big Bang of financial reforms in 1986 (*see* Chapter 8). In other countries, e.g. many continental European countries such as Germany and Switzerland, banks have long dominated the buying and selling of financial securities on behalf of investors.

Asset management

Banks often establish their own range of mutual funds, unit trusts or investment trusts (*see* Chapter 4) to offer to investors, allowing them to place their money in a wide range of shares or other securities in a portfolio under professional management. The fees on these funds are usually over 1.5 per cent and they can generate a lot of money for the bank. Alternatively, banks may act as agents for outside fund management groups, receiving a commission for sales made. In Spain, the banks sell *Super Fondos*, in France they provide *SICAVs*, and most of these mutual funds can now be marketed across European borders.

Many commercial banks also have private banking arms to assist wealthy people to manage their money – this is discussed under investment banking (in Chapter 3) – but note that much private banking is conducted by commercial banks without an investment banking subsidiary.

Custody and safety deposits

Share and bond owners often do not want to receive and look after certificates of ownership. The banks provide a service of safekeeping and ensure interest or dividends are claimed. They will also notify the owner of annual general meetings of companies, rights issues and other events. The bank is paid a fee for acting as **custodian**. As well as the local retail custodianship there is the big league of **global custodians** (mostly owned by banks) who safeguard the investments of enormous investment funds run by institutional investors – the amounts are measured in billions. In addition to dealing with the technicalities of transfer of ownership of shares and other securities, in a number of countries they collect income, reclaim tax and assist with other aspects of fund administration (*see* Chapter 4 for more on custodianship).

Banks may also provide safety deposit boxes for people to keep items such as jewellery in a vault.

Insurance and pensions

Most banks in continental Europe also own insurance operations or have a close relationship with an insurance company. The French have coined the term **bancassurance** for the selling of insurance and banking services alongside each other; the Germans have the term **Allfinanz**. Banks often know their customers well and can tailor insurance offerings to their needs. For example, if a couple with children take out a mortgage with a bank it is an easy sell to point out the need for

life insurance to pay off the mortgage should one of the parents die, and for buildings and contents insurance. Banks are also increasingly selling pension savings schemes to their customers. Chapter 4 has more on insurance and pensions.

Foreign exchange

There is a thriving business in exchanging currency for people going on holiday or for business transactions. Traveller's cheques are also available. *See* Chapter 11 for a discussion of the foreign exchange markets with banks at their core.

Asset-based lending

Banks also provide finance for individuals or companies obtaining the use of, say, a car, by leasing it or buying it on hire purchase. Factoring involves the lending of money using a company's trade debtors (what its customers still owe) as security. Asset-based lending is discussed under 'finance houses' in the next chapter.

How a bank operates

The objective of this section is to show how core banking works. The fundamentals are that a bank starts out with some money put in by its owners to pay for buildings, equipment, etc. and to provide a cash buffer of resources should the bank run into difficulties. Shareholders' funds, obtained by the selling of shares in the firm, have the advantage that the shareholders do not have the right to withdraw their money from the company – it is **permanent capital** (although they may sell the shares to other investors). As well as paying for the initial set-up with premises, etc., shareholders' capital provides a buffer of capital acting as a safety margin against the event of a significant number of the loans granted to borrowers going wrong. The buffer is referred to as **capital** and loans made are **assets** of the bank. Deposits (and other loans to the bank) are **liabilities**.

Total assets = Total liabilities + Capital

In addition to capital being raised at the foundation of the business it can be augmented over the years through the bank making profits for its shareholders and deciding to keep it within the business rather than distributing it as dividends. It can also be increased by selling more shares. Exactly how much the buffer of capital should be as a percentage of the assets or liabilities of the bank to provide sufficient safety without being too much of a drag on the bank's profits is a subject of much debate in the financial world. This is especially so in the aftermath of the financial crisis of 2008–2010 when many banks were found to have hardly any buffer at all following the writing off of many loans. (*See* Chapter 7 for a discussion of bank safety rules and Chapter 16 for an outline of the crisis.)

A bank is also likely to be concerned about the possibility of a high proportion of the depositors or other lenders to the bank withdrawing their money on a single day; it thus keeps a proportion of the money it raises in the form of cash (or near cash) rather than lending it all, because it does not want to run out if many depositors insist on transferring their money out of the bank (i.e. the bank faces **liquidity risk**, running out of liquid assets).

Let us assume for now that a bank, BarcSan, is required by the central bank (its regulator) to hold 8 per cent of the value of its current account deposits in reserves. These are the regulatory **required reserves**. However, the bank may judge that 8 per cent is not enough and decide to add

another 4 per cent of the value of its current account liabilities as **excess reserves**. Reserves consist of both the cash (notes, etc.) that the bank is required to hold in its account with the central bank plus cash (notes, etc.) that it has on its own premises, referred to as **vault cash**. Note that we are referring here to cash reserves and not the capital reserves (the difference between assets and liabilities).

Cash reserves of 12 per cent is unusually high, but useful for illustration. A more normal figure is 1–3 per cent of overall liabilities (not just current account liabilities) held in cash, but another 10 per cent or so might be held in assets that can quickly be converted to cash, such as very short-term loans to other banks, certificates of deposit (*see* Chapter 5) and government Treasury bills; these are termed near-cash. The term for reserves that includes near-cash is 'liquid reserves'.

To understand the working of a bank we will start with a very simple example of a change in the cash held by a bank. Imagine that Mrs Rich deposits £1,000 of cash into her current account at the BarcSan Bank. This has affected the bank's balance sheet. It has an increase of cash (and therefore reserves) of £1,000. This is an asset of the bank. At the same time it has increased its liabilities because the bank owes Mrs Rich £1,000, which she can withdraw at any time. We can illustrate the changes by looking at that part of the balance sheet which deals with this transaction. In the T-account below, the asset (cash) is shown on the left and the increased liability is shown on the right.

BarcSan partial balance sheet

Assets		Liabilities	
Vault cash (part of reserves)	£1,000	Current account	£1,000

Thus BarcSan has increased its reserves because it received a deposit. This increase in reserves could also have come about through Mrs Rich paying in a £1,000 cheque drawn on an account at, say, HSBC. When BarcSan receives the cheque it deposits it at the central bank which then collects £1,000 from HSBC's account with the central bank and transfers it to BarcSan's account at the central bank, increasing its reserves. Remember: cash reserves include both those held at the central bank and these in the bank vault, tills, ATMs, etc.

Given that BarcSan has required reserves at 8 per cent of current account deposits, following the receipt of £1,000 it has increased assets of £80 in required reserves and £920 in excess reserves.

BarcSan partial balance sheet

Assets		Liabilities	
Required reserves	£80	Current account	£1,000
Excess reserves	£920		

These reserves are not paying any interest to BarcSan. What is even more troubling is that the bank is providing an expensive service to Mrs Rich with bank branch convenience, cheque books, statements, etc. This money has to be put to use – at least as much of it as is prudent. One way of making a profit is to lend most of the money. It does this by lending to a business for five-years. Thus the bank borrows on a short-term basis (instant access for Mrs Rich) and lends long (five-year term loan). The bank decides to lend £880 because this would allow it to maintain its required reserve ratio of 8 per cent and its target excess reserve of 4 per cent.

BarcSan partial balance sheet

Assets		Liabilities	
Required reserves	£80	Current account	£1,000
Excess reserves	£40		
Loan	£880		

A bank has to keep enough cash on hand to satisfy current account holders and other customers withdrawing money from their accounts. There may be times when a large volume of cash is withdrawn and the bank has to be ready for that – this is what we refer to as **liquidity management**. A bank also needs to lend its money (acquire assets) with the expectation of a low risk of default and in a diversified manner – that is, it must have good **asset management** skills. Third, it must be capable of finding funds at low cost and risk – good **liability management**. Finally, it must keep its capital at a high enough level to reduce the chance of **insolvency** problems (assets worth less than liabilities) while balancing the need to make profits by lending – this is **capital adequacy management**. We will now explore these four tasks for bank managers.

Liquidity management and reserves

Let us look at the (simplified) balance sheet for BarcSan as a whole, all its assets and all its liabilities. We will assume that all deposits are current account deposits and so it keeps 8 per cent of those as required reserves and aims to have a further 4 per cent as excess reserves (either at the central bank or as vault cash). As well as £10 billion in deposits the bank has £900 million in capital accumulated mostly through retaining past profits. It has lent £5.7 billion and bought £3.1 billion of marketable securities such as government bonds and bills.

BarcSan's balance sheet

Assets		Liabilities	
Required reserves	£800m	Deposits	£10,000m
Excess reserves	£1,300m	Bank capital	£900m
Loans	£5,700m		
Securities	£3,100m		

To satisfy its own rule on 12 per cent of current account deposits held as reserves it needs only £1.2 billion, but it currently has £2.1 billion (£800 million + £1,300 million). It has a 'spare' £900 million. If there is a sudden rise in withdrawals from bank accounts as people worry about the bank system collapsing and not being able to repay deposit liabilities (as with Northern Rock in 2007), this will have an impact on BarcSan. If £900 million of cash is withdrawn from BarcSan, its balance changes to:

BarcSan's balance sheet after a sudden withdrawal of £900 million

Assets		Liabilities	
Required reserves	£728m	Deposits	£9,100m
Excess reserves	£472m	Bank capital	£900m
Loans	£5,700m		
Securities	£3,100m		

The bank still has cash reserves above its target because 12 per cent of £9,100 million is £1,092 million[5] whereas the bank has £1,200 million. Because it started with plentiful reserves, the public panic to withdraw funds has not affected the other elements in BarcSan's balance sheet.

Now take a different case, where BarcSan has already lent out any reserves above its prudential level of 12 per cent of deposits.

[5] Made up of 8 per cent of £9,100 million = £728 million and 4 per cent of £9,100 million = £364 million.

BarcSan's balance sheet if actual reserves equal target reserves

Assets		Liabilities	
Required reserves	£800m	Deposits	£10,000m
Excess reserves	£400m	Bank capital	£900m
Loans	£6,600m		
Securities	£3,100m		

Now imagine a financial panic. Many depositors rush to the bank's branches to take out their money. In one day £900 million is withdrawn. At the end of the day the balance sheet is looking far from healthy.

BarcSan's balance sheet after £900 million is withdrawn (after the bank just met its reserve target)

Assets		Liabilities	
Required reserves	£300m	Deposits	£9,100m
Excess reserves	£0m	Bank capital	£900m
Loans	£6,600m		
Securities	£3,100m		

Another day like that and it might be wiped out. It is required to hold 8 per cent of £9,100 million as reserves – £728 million – but now has only £300 million. Where is it going to get the shortfall from? There are four possibilities.

1 ***Borrowing from the central bank*** One of the major duties of a central bank is to act as lender of last resort. It stands ready to lend to banks that lack cash reserves (there is more on this in Chapter 7). However, it will do this at a high price only (high interest rate) to deter banks from calling on it in trivial circumstances. If BarcSan borrows the £428 million shortfall from the central bank to take it back to the regulator's minimum of 8 per cent, its balance sheet now looks like this:

BarcSan's balance sheet if it borrows £428 million from the central bank

Assets		Liabilities	
Required reserves	£728m	Deposits	£9,100m
Excess reserves	£0m	Borrowings from central bank	£428m
Loans	£6,600m	Bank capital	£900m
Securities	£3,100m		

2 ***Securities could be sold*** Of the securities bought by a bank most are traded in very active markets where it is possible to sell a large quantity without moving the price. Let us assume that the bank sells £428 million of government Treasury bills and bonds to move its reserves back to 8 per cent of deposits.

BarcSan's balance sheet if it sells £428 million of securities

Assets		Liabilities	
Required reserves	£728m	Deposits	£9,100m
Excess reserves	£0m	Bank capital	£900m
Loans	£6,600m		
Securities	£2,672m		

Of course, there are a few more moves that need to be made if the bank wants to reach its target of 12 per cent reserves, but after such a crisis in the financial markets this may take a few years to achieve.

3 ***Borrow from other banks and other organisations*** There is an active market in interbank loans as well as banks borrowing by selling commercial paper to corporations and other institutions. Perhaps BarcSan could borrow the £428 million it needs here.

BarcSan's balance sheet if it borrows £428 million from the markets

Assets		Liabilities	
Required reserves	£728m	Deposits	£9,100m
Excess reserves	£0m	Borrowed from banks & corporations	£428m
Loans	£6,600m	Bank capital	£900m
Securities	£3,100m		

However, given the cause of the crisis was a system-wide loss of confidence, BarcSan may have difficulty raising money in these markets at this time. This was a problem that beset many banks in 2008. They had grown used to quickly obtaining cash to cover shortfalls from other banks. But in the calamitous loss of confidence following the sub-prime debacle, banks simply stopped lending to each other – those that were caught with insufficient reserves failed or were bailed out by governments. Greek banks experienced a freeze in the interbank loan market in 2011 as potential lenders feared they might not be repaid.

4 ***Reducing its loans*** Banks receive principal repayments on loans every day as the period of various loan agreements comes to an end, or as portions of loans are repaid during the term of the loan. To raise some money the bank could simply refuse any more loans for a period. I was on the sharp end of this in February 2007 when trying to complete a business property deal. Suddenly Halifax Bank of Scotland refused to lend on what was a pretty safe deal for them. I was nonplussed. What were they playing at? Didn't they know they would lose my company as a customer? Of course, with hindsight we all know that this was the start of the crisis when HBOS was desperately short of cash (it avoided annihilation only by allowing itself to be bought by Lloyds). Another possibility is to sell off some of its loan book to another bank – but the purchasers are unlikely to pay full value, especially in uncertain times. An even more drastic solution is to insist that borrowers repay their loans immediately. This is possible with some types of loans, such as overdrafts, but it results in much resentment and damage to long-term relationships. If BarcSan raised £428 million in one of these ways, its balance sheet would look like this:

BarcSan balance sheet after reducing loans by £428 million

Assets		Liabilities	
Required reserves	£728m	Deposits	£9,100m
Excess reserves	£0m	Bank capital	£900m
Loans	£6,172m		
Securities	£3,100m		

A bank has a trade-off to manage. If it ties up a very high proportion of its money in reserves it loses the opportunity to lend that money to gain a return, but the managers can feel very safe, as they are unlikely to run out of cash. Yet if it goes for maximum interest by lending the vast majority of the money deposited, it could run out of cash. Thus it has to have enough reserves to avoid one or more of the following costly actions for quickly raising money: (a) borrowing from the central bank; (b) selling securities; (c) borrowing from other banks, (d) reducing its loans. Excess reserves provide insurance against incurring liquidity problems due to deposit outflows, but like all insurance it comes at a high price.

The financial regulator in the UK, the Financial Services Authority,[6] announced that once the recession was over, banks would have to hold much higher levels of cash and other liquid assets than they had in the past. The level of liquid assets required can be reduced if the bank has most

[6] Responsibility for prudential reserves at banks will pass to the Prudential Regulatory Authority, part of the Bank of England, in 2013.

of its liabilities in long-term instruments. The banks do not like the rule because holding such safe assets lowers profitability, but it reduces the risk to the rest of us having to bail out the banks again – *see* **Exhibit 2.7**.

Exhibit 2.7

Liquidity rule change sparks fear of harm to City

FT

Brooke Masters and Patrick Jenkins

Analysts and financial industry groups have warned that new liquidity rules announced by the FSA could damage bank business models and harm London's competitiveness unless other countries follow suit.

The rules, which will not come into effect until at least the middle of next year, could require UK banks to lift their holdings of high-quality government bonds by £110bn, or roughly one-third, in the first year after they are implemented.

"This puts UK Banks at a massive disadvantage," said Simon Maughan, banks analyst at MF Global. "The risk of banks focusing on capital and liquidity so much is that profitability becomes an afterthought."

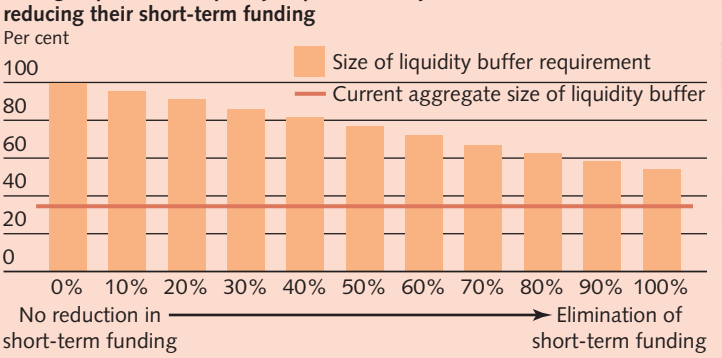
The British Bankers Association and others have lobbied hard for the rules to be postponed until an international consensus can develop. The FSA declined to delay publication of its rules, but in a nod to the concerns it has promised they will not take effect until after the recession and will be phased in over time.

That timetable would allow the UK regulator to tweak its rules as other countries move forward with their own plans and as the Basel committee on global bank supervision sets new capital requirements, officials said.

US regulators are working on new liquidity enhancement rules that would look at the ratio of a bank's short-term borrowings to easily sold assets, and Australia announced draft proposals last month, but the FSA is the first to announce specific requirements.

The FSA increased the pressure on other nations to follow its example by saying that it will impose similar rules on the 197 branches and subsidiaries of overseas banks that are in the UK, unless their parent group is subject to a regulatory regime with "broad equivalence".

How groups can cut liquidity requirements by reducing their short-term funding



"There are good signs they are moving in the right direction," said Patrick Fell, director of PwC's regulatory capital practice.

Unlike capital requirements, liquidity buffers cannot be boiled down to a simple ratio of a bank's capital to its assets.

Instead banks will have to run a series of stress tests that assume big problems, such as the closure of the foreign exchange markets, a run on deposits, or a reluctance by banks to lend to one another.

Each institution then estimates how much in cash and government bonds it would need to survive and what it could do to mitigate the situation.

The FSA's new liquidity requirements will be based on the results.

The FSA estimates that if it required the UK industry to hold 60 per cent of the doomsday scenario needs, or £110bn in safe, low-yielding treasuries, the annual cost in terms of lost investment income would be roughly £2.2bn.

But Jonathan Pierce, banks analyst at Credit Suisse, said full implementation of the FSA rules would be far more expensive, since it would cut banks' investment income by forcing them to hold 15 per cent of their balance sheet in liquid assets, compared with 5 per cent at the end of last year.

"Applying a 1.5 percentage point negative [impact], that would reduce interest income by around £9.2bn," Mr Pierce said, although he said this was an extreme case that was unlikely to be put into practice.

Banks could cut the amount of government bonds they need to hold by reducing their exposure to risky areas and dependence on short-term funding.

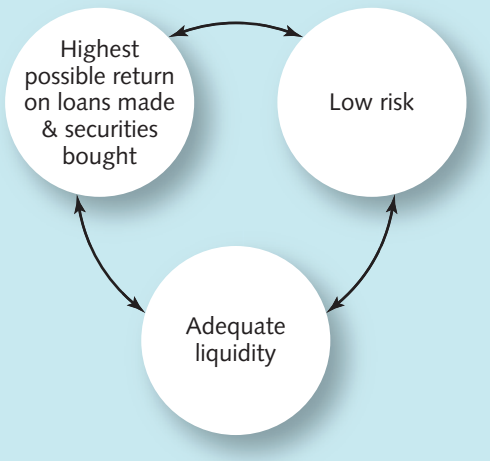
The FSA's announcement yesterday shied away from firm numbers and instead emphasised that the level of bond purchases required would depend on where the FSA sets the liquidity requirements and how much short-term capital banks chose to hold.

Source: *Financial Times*, 6 October 2009, p. 21. Reprinted with permission.

Asset and liability management

In managing the bank's assets the senior team must balance out the three factors shown in **Exhibit 2.8** to try to maximise shareholder returns in the long run. The highest returns usually come from tying up bank money in long-term loans and securities where it is difficult and/or costly to release the money quickly. Also, higher returns are usually associated with higher risk taking by the bank. However, within those generalisations it makes sense for bank loan officers to search for potential borrowers who are least likely to default and most likely to accept a high interest charge. The skill in asset management comes from assessing who is a good credit risk and who isn't. Banks generally like to take a very low-risk approach and anticipate that only around 1 per cent of their loans will go bad. However, they occasionally engage in riskier prospects. When they do, they charge a higher interest rate to compensate for the expectation that a higher proportion of these loans will default.

Exhibit 2.8 The three objectives to be traded off in asset management



A crucial aspect of asset management is to be diversified so that no one loan or no one category of loans (say, property related or retail related) or securities dominates the portfolio.

Liability management is focused on the judgements made about the composition of liabilities as well as the adjusting of interest rates offered to lenders to the bank to obtain the target mix of borrowing. Banks are generally advised to be diversified in terms of where they obtain money. Many banks (e.g. Northern Rock) found in 2008 that they had become over-reliant on obtaining funding from the wholesale markets (selling bonds, commercial paper or borrowing from other banks, for example) and not enough of their money came from ordinary depositors with current or time deposits. A balance needs to be struck. Retail depositors tend to be more reliable in leaving their money with a bank, whereas lenders in the wholesale markets move money from place to place quickly if there is any sign of trouble or low rates of return are offered. But wholesale money can allow a bank to grow its balance sheet rapidly, whereas it takes time to attract deposits – all those advertisements, high-street branches, teaser interest rates, etc.

Capital adequacy management

How much capital should the bank hold? In deciding this managers need to trade off the risk of bank failure by not being able to satisfy creditors (depositors, wholesale market lenders, etc.) against the attraction of increasing the return to the bank's owners by having as little capital as possible relative to the asset base. The fear here is of insolvency – an inability to repay obligations over the longer course of events – rather than illiquidity, which is insufficient liquid assets to repay obliga-

tions falling due if there is a sudden outflow of cash (e.g. large depositor withdrawals on a particular day, borrowers defaulting, unexpectedly drawing down on lines of credit, or large payments under derivative deals). Another consideration is the minimum capital rules imposed by the regulators to prevent peril to the financial system (discussed in Chapter 7). To understand the difficulty with this trade-off we can compare BarcSan's situation with a less well-capitalised bank, Mercurial.

BarcSan's opening balance sheet

Assets		Liabilities	
Required reserves	£800m	Deposits	£10,000m
Excess reserves	£1,300m	Bank capital	£900m
Loans	£5,700m		
Securities	£3,100m		

BancSan's capital to assets ratio is £900 million/£10,900 million = 8.3 per cent. Mercurial has exactly the same assets as BarcSan, but it has only £400 million in capital. It has raised an extra £500 million from deposits. Its ratio of capital to assets is 3.7 per cent (£400 million/£10,900 million).

Mercurial's balance sheet

Assets		Liabilities	
Required reserves	£800m	Deposits	£10,500m
Excess reserves	£1,300m	Bank capital	£400m
Loans	£5,700m		
Securities	£3,100m		

Now consider what happens if we assume a situation similar to that in 2008. Both banks have invested £500 million in bonds which are backed by US sub-prime mortgages. These now become worthless as house owners stop paying their mortgages. BarcSan can withstand the loss in assets because it maintained a conservative stance on its capital ratio.

BarcSan's balance sheet after £500 million losses on sub-prime mortgages

Assets		Liabilities	
Required reserves	£800m	Deposits	£10,000m
Excess reserves	£1,300m	Bank capital	£400m
Loans	£5,700m		
Securities	£2,600m		

It's capital-to-assets ratio has fallen to a less conservative 3.8 per cent (£400 million/£10,400), but this is a level that still affords some sense of safety for its providers of funds. Mercurial, however, is insolvent. Its assets of £10,400 are less than the amount owed to depositors.

Mercurial's balance sheet after £500 million losses on sub-prime mortgages

Assets		Liabilities	
Required reserves	£800m	Deposits	£10,500m
Excess reserves	£1,300m	Bank capital	–£100m
Loans	£5,700m		
Securities	£2,600m		

One possible course of action is to write to all its depositors to tell them that it cannot repay the full amount that was deposited with the bank. They might panic and rush to the branch to obtain what they are owed in full. The more likely scenario is for the regulator to step in to close or rescue the bank. Occasionally the central bank organises a rescue by a group of other banks – they, too, have an interest in maintaining confidence in the banking system.

In 2009, Royal Bank of Scotland and Lloyds Banking Group, following the sudden destruction of balance sheet reserves when the value of their loans and many securities turned out to be much less than what was shown on the balance sheet, were rescued by the UK government, which injected money into them by buying billions of new shares. This was enough new capital to save them from destruction, but the banks are still clawing their way back to health by holding onto any profits they make to rebuild capital reserves. In 2010, there were liquidity and solvency fears for the Kabul Bank – *see* **Exhibit 2.9**.

Exhibit 2.9

Afghan savers lay siege to Kabul Bank

FT

James Fontanella-Khan and agencies

Crowds of people queued outside Kabul Bank's main branch yesterday seeking to withdraw their deposits as fears grew that the bank was heading for insolvency, **writes James Fontanella-Khan and agencies**.

Two of the bank's executives resigned on Wednesday amid corruption allegations, and media reports claimed the bank was on the verge of a meltdown because of the mismanagement of funds, including giving unrecorded loans to allies of Hamid Karzai, the Afghan president.

"I have $15,000 deposited and now they are telling me they are out of money, and I was able to take only $1,000," Haji Tamim Sohraby, 24, said.

A run on the bank, which is partly owned by Mr Karzai's brother, would have wide political repercussions because it handles the salaries of civil servants, including teachers and soldiers.

Omar Zakhilwal, the finance minister, said, "The government of Afghanistan guarantees every penny...deposited will be paid back if [people] request it."

Additional reporting by Dan Dombey in Kabul

Source: *Financial Times*, 3 September 2010. Reprinted with permission

Why might banks sail close to the wind in aiming at a very low capital-to-assets ratio?

The motivation to lower the capital-to-assets ratio is to boost the returns to shareholders. To illustrate: imagine both banks make profits after deduction of tax of £150 million per year and we can ignore extraordinary losses such as the sub-prime fiasco. A key measure of profitability is **return on assets (ROA)**.

$$\text{ROA} = \frac{\text{Net profit after tax}}{\text{Total assets}}$$

Given that both firms (in normal conditions) have the same profits and the same assets, we have a ROA of £150 million/£10,900 million = 1.38 per cent.[7] This is a useful measure of bank efficiency in terms of how much profit is generated per pound of assets.

[7] This is at the top end of the usual range of ROAs for commercial banks.

However, what shareholders are really interested in is the return for each pound that *they* place in the business. Assuming that the capital figures in the balance sheet are all provided by ordinary shareholders then the **return on equity (ROE)** is:

$$\text{ROE} = \frac{\text{Net profit after tax}}{\text{Equity capital}}$$

$$\text{For BarcSan : ROE} = \frac{£150\text{m}}{£900\text{m}} = 16.7\%$$

$$\text{For Mercurial: ROE} = \frac{£150\text{m}}{£400\text{m}} = 37.5\%$$

Mercurial appears to be super-profitable, simply because it obtained such a small proportion of its funds from shareholders. Many conservatively-run banks were quizzed by their shareholders in the mid-noughties on why their returns to equity were low compared with other banks, and 'couldn't they just push up returns with a little less caution on the capital ratio?' Many were tempted to follow the crowd in the good times only to suffer very badly when bank capital levels were exposed as far too daring. You can understand the temptation, and that is why regulation is needed to insist on minimum levels of capital – this is discussed in Chapter 7.

Central banks can use the level of reserves held by banks to control the amount of lending going on in an economy. If the central bank insists that banks hold more in reserves then there is less cash available to offer potential borrowers. China's central bank used this tool in 2010 to try to reduce economic activity and the threat of rising inflation – *see* **Exhibit 2.10**.

Exhibit 2.10

Chinese banks set to increase reserves

FT

Jamil Anderlini in Beijing

China's central bank said yesterday that it will raise the amount banks must hold in reserve for the third time this year, in the latest move by Beijing to cool its booming economy.

The increase comes after regulators ordered China's largest banks to re-examine their loan books and provide estimates of their exposure to uncollateralised loans, especially to provincial governments, according to Chinese bankers and analysts. If bank are unable to find assets to collateralise these loans within the next few months they may be required to downgrade the loans, potentially leading to a spike in non-performing assets on their books, analysts said.

After reporting record profits in the first quarter, Chinese banks are under pressure to rein in lending and restrict loans to certain sectors and industries as Beijing attempts to calm the economy without causing growth to stall.

The biggest concerns for regulators are huge loans to shell companies set up by local governments to supplement their fiscal income, as well as loans to real estate developers and speculators that have helped to inflate a bubble in the property market.

As part of its efforts to reduce lending, the People's Bank of China will raise the reserve requirement ratio for deposit-taking financial institutions by 0.5 percentage points, effective on May 10, bringing the rate to 17 per cent for large Chinese banks and 15 per cent for smaller lenders.

Source: *Financial Times*, 3 May 2010, p. 20. Reprinted with permission.

Income statements

A bank's income statement is split into two sources of income and three types of operating expense.

Income:

(a) **Interest income**. This can be interest on loans granted, securities purchased (e.g. a government bond paying interest) or other interest.
(b) **Non-interest income**. Banks charge for various services, ranging from current account charges to fees on underwriting securities and asset management commission. They may also generate income from trading in the markets.

Operating expenses:

(a) ***Interest expense*** Banks pay interest on many deposit accounts and when they borrow in the markets from other banks, corporations or the central bank.
(b) ***Non-interest expense*** Buildings, computer systems, salaries, etc.
(c) ***Provisions for loan losses*** Banks are required to estimate the likely losses they will make when a proportion of loans default and write this off as an expense even though borrowers have not yet actually defaulted.

In addition, there may be sections of the income statement dealing with gains (or losses) made when the bank sold securities in the financial markets, and '**extraordinary items**' which are unusual and infrequent events/transactions producing an extraordinary gain or loss that year.

A key measure of bank performance is the difference between interest earned and interest paid as a percentage of assets. This is the *net interest margin (NIM)*:

$$\text{NIM} = \frac{\text{Interest income} - \text{Interest expense}}{\text{Assets}}$$

A typical NIM is between 1 per cent and 4 per cent. So if a bank is paying 3.5 per cent on average on its deposit accounts and other borrowings, but charges the average borrower 6 per cent, it has a net interest margin of 2.5 per cent. Many NIMs were lowered in 2009 and 2010 as some banks, desperate to attract funds, raised the interest rate on deposit accounts to a figure almost as high as the rate they charged borrowers – they were trying to reduce their dependency on the wholesale market for funds.

Exhibit 2.11 discusses net interest margins for some UK banks. It also discusses another important measure: the **loan-to-deposit ratio** (amount of loans lent out divided by the amount of funds attracted to bank accounts – these deposits are 'stickier' than funds obtained from the wholesale markets, e.g. from other banks). You can see that the banks are heavily dependent on wholesale finance that has to be repaid within 12 months – this can make them vulnerable to a sudden withdrawal of wholesale funds, as happened in 2008.

Exhibit 2.11

Customers feel pinch as lenders pass on the pain

FT

Jane Croft

According to Mike Trippitt, analyst at Oriel Securities: "What lies ahead of us is the structural impact on banks' profitability of greater liquidity in banks' balance sheets, and the longer maturity of wholesale funding."

The first pressure on net interest margins comes from financial watchdogs' proposed insistence that banks hold higher levels of lower-yielding but safer instruments such as government gilts. The aim is that they have a ready source of liquidity in case markets dry up.

Many banks have increased their holdings of these safer instruments ahead of the new rules. The result is that lower yields are already starting to squeeze net margins – a key measure of profitability – at institutions such as Royal Bank of Scotland and Nationwide, the UK's largest building society.

The building society saw its net interest margin decline to 0.93 per cent in the six months

Exhibit 2.11 continued

to April 2009, from 1.12 per cent in the year to April 2008. It said that holding greater levels of safer investments cut its net interest margin by about 4 basis points.

At RBS, meanwhile, the net interest margin in the first quarter of 2009 fell from 2.05 per cent at the start of the period to 1.73 per cent at the end.

It said that 25 basis points related to the higher cost of term funding and holding a bigger stock of liquid assets.

Stephen Hester, RBS chief executive, recently warned that even though the liquidity proposals might be phased in over a number of years, they could still have a heavy impact. "I think they can cost a lot of money," he told analysts.

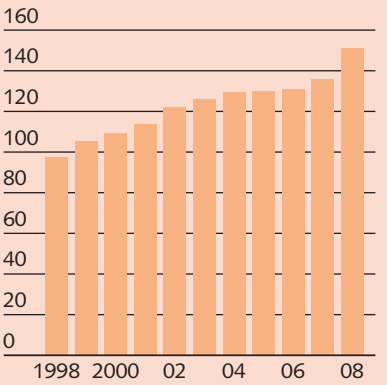
He is not alone in this view. Jonathan Pierce, analyst at Credit Suisse, estimates that the banking sector may have to increase its holdings of government bonds to £150bn–£250bn to meet the new liquidity requirements.

Mr Trippitt at Oriel says the cost to the five biggest UK banks of meeting the new requirements would be £4bn.

Second, margins will be squeezed because the new regulations will also require banks to extend the duration of their wholesale funding so it more closely matches the duration of their loans.

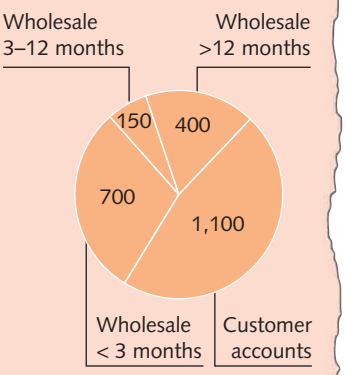
The reasoning behind the new rules is straightforward enough.

Loan to deposit ratio
% (Barclays, Lloyds Banking Group, RBS)



Sources: Credit Suisse; KBW

Funding maturities
£bn (Barclays, Lloyds Banking Group, RBS)*



*2008 estimate

The "borrow short, lend long" mismatch between 25-year mortgage loans and wholesale funding that needed to be rolled over every three months proved catastrophic when the wholesale markets froze. Watchdogs' insistence on longer maturity funding is intended to prevent this happening again.

But this added security of funding comes at a price. Mr Trippitt believes that lengthening the maturity of wholesale funding to match the asset base would add a further £3bn pressure on the sector as longer term funding is more expensive.

Tim Tookey, finance director at Lloyds Banking Group, said recently that the group's margin had benefited from offering more expensive loans, but that this advantage had been offset "by the impact of falling base rates and higher funding costs as the group continues to extend its wholesale funding maturity profile".

Lloyds has lengthened the maturity of its £442.5bn of wholesale funding so that £63.6bn is now five years or more duration.

Many analysts believe that even when banks have returned to more normal trading patterns after the seismic events of the past couple of years, then return on equity in the sector – which was as high as 20 per cent in the boom years – could fall to 10–15 per cent or even drop down into single figures. It would take more than being able to charge a bit more for home loans to offset such a fall in profitability.

Margins pressured in effort to attract deposits

Jane Croft

Banks are adding to their own margin pressure as they seek to attract retail deposits, to cut their reliance on wholesale funding.

At the height of the boom, banks funded most of the new loans from wholesale funding and this pushed up their loan-to-deposit ratio – a measure of the amount of a bank's loans divided by the amount of its deposits – from 100 per cent a decade ago to about 150 per cent now.

Lloyds Banking Group currently has even higher loan to deposit ratios of 178 per cent.

Some banks have set themselves the aim of achieving a loan-to-deposit ratio of no more than 100 per cent over the next five years. This aim has intensified competition to appeal to savers.

Source: *Financial Times*, 19 June 2009, p. 19. Reprinted with permission.

Banks (and the financial press) also report the **net interest income (NII)**, which is simply the top half of the NIM ratio, interest income minus interest expense. Of course, this is a measure in absolute amounts of pounds, euros, etc., rather than a percentage.

Another frequently quoted measure is the **cost–income ratio (C/I)**, which measures the bank's efficiency in holding down its costs relative to its income.

$$\frac{\text{Cost}}{\text{Income}} = \frac{\text{Non-interest expenses}}{\text{Net interest income} + \text{Non-interest income}}$$

Concluding comments

Retail and corporate banking is something that most of us take for granted, the services being provided day after day in the background of our lives. It is only when something goes wrong or a service is removed that we fully realise the importance of a healthy and efficient banking system in enriching our lives. If, for example, mortgages or business loans are suddenly difficult to obtain, we quickly feel the effects throughout the economy as the property market and business activity are stifled, house prices fall and people are made redundant. If the payment mechanisms suddenly stopped we would all notice as wages would not get through and goods could not be purchased in the shops; we would have to revert to a much more primitive way of operating.

If banks fail to run themselves in a prudent way and are vulnerable to collapse it is considered wise for governments to spend billions, or even trillions, to prop them up to restore the confidence of bank creditors. If one collapses, the risk to the rest of us might be limited, but if a handful of key players cannot repay their suppliers of funds (depositors, bond holders, etc.) then a domino effect occurs in which the non-payment of an obligation by one bank puts another at risk.

Because of the vital role banks play, governments around the world have taken the risk of dramatically increasing their own borrowings to save the banks. We will be paying for this decision for many years to come as governments cut public spending and raise taxes to reduce their deficits. And yet, despite all this pain, there are few voices which say we should not have saved the banking system. This alone provides a clear illustration of its importance to a modern society: we cannot contemplate living without the banks.

Key points and concepts

- **The three core functions of banks**: taking in deposits, making loans and providing a payments mechanism.
- **Retail banking:** operating the three core functions with an extensive branch network, numerous small transactions on behalf of households and small firms.
- **Corporate banking:** the three core functions plus an array of additional services needed by medium-sized and large firms, e.g. cash management or foreign exchange risk management. There tend to be fewer larger transactions than with retail banking and the transactions are often in an overseas currency.
- **Wholesale banking:** borrowing and lending in large transaction sizes with corporates and other large organisations including other banks. Corporate banking and investment banking tend to be wholesale banking.
- **Commercial banking:** retail and corporate banking.
- **Universal banking:** a very wide range of banking services is offered by one organisation, stretching from retail and corporate banking to investment banking, securities dealing, brokerage, etc.
- **Investment banking:** offering services to clients (generally large organisations, e.g. large corporates or governments) that are usually linked to financial market activities. Fees and/or commission are charged for assistance/advice with matters such as bond or share issues, mergers and risk

management. Investment banks also help with fund management and trade and provide markets in numerous financial instruments. They do not have branch networks and tend to operate worldwide, dealing only in large quantities.

- **Commercial banks generally obtain money from:** current accounts (10–40 per cent of liabilities), time deposits (10–40 per cent), money market borrowing (10–40 per cent) and owners' capital (8–12 per cent).
- An individual can walk into a bank branch and take the money held in their **current account** at very short notice. With time (or savings) deposit accounts depositors agree to place money with a bank on the understanding that a set period of notice is required to withdraw cash. Alternatively, the customer may place the money in the account for a fixed period.
- **Bank assets**: loans to individuals and to corporations typically account for 50–70 per cent of a commercial bank's assets. Another 10–35 per cent might be in money market instruments. Some is likely to be invested in long-term investments – usually below 20 per cent. Up to 10 per cent of the bank's assets may be in the form of buildings, equipment, software or other assets such as gold.
- **Banks make it attractive for companies to borrow** from them compared with other forms of borrowing:
  - administrative and legal costs are low;
  - quick;
  - flexibility. With altering the terms of the lending agreement. If the firm does better than originally expected, a bank loan can often be repaid without penalty;
  - available to small firms.
- **LIBOR** (London Inter-bank Offered Rate) is the rate of interest charged when a bank lends to a highly reputable and safe bank in London.
- A **basis point, bps,** is 100th of 1 per cent.
- **An overdraft** is a permit to overdraw on an account up to a stated limit.
- A **term loan** is a business loan with an original maturity of more than one year and a specified schedule of principal and interest payments.
- **Action to reduce banker's lending risk**:
  - high quality and quantity of *information* flowing from borrower to bank;
  - **collateral**: holders of **fixed charge** collateral can seize the specific asset used to back the loan. With a **floating charge** the legal right to seize assets 'floats' over the general assets of the firm so they can be bought and sold or rented without specific permission from the lender. The charge crystallises only at the point of default on the loan;
  - **loan covenants**;
  - **guarantees from third parties**;
  - **personal guarantees**;
  - **assessment of creditworthiness**;
  - **ensuring that the amount that the borrower is prepared to put into the project is adequate**.
- **Payment mechanisms:**
  - **cheque**;
  - **giro**;
  - **standing orders**;
  - **direct debits**;
  - **debit cards**;
  - **credit cards**;
  - **store cards**;
  - **smart cards (electronic purses, chip cards)**;
  - **e-money, e-cash**;
  - **landlines and mobile phones**;
  - **internet**.

- **Clearing system:** a system for transferring money from one bank account to another conducted by clearing banks.
- **An uncommitted facility**: the bank is not obliged to provide funds at the borrower's request and the facility can be cancelled so the borrower may have to repay at short notice. With an uncommitted line of credit the borrower can borrow up to a maximum sum for a period of, say, six months and can repay and borrow again as needed within that time period.
- **A committed facility**: where the lender enters into an obligation to provide funds upon request by the borrower, provided any agreed conditions and covenants in the loan agreement have been and are being met.
  - **Revolving credit** (**revolving credit facility RCF**) allows the borrower to both draw down the loan in tranches and to re-borrow sums repaid within the term of the facility so long as the committed total limit is not breached, usually for between one and five years.
  - With a **project finance** loan the loan returns are tied to the cash flows and fortunes of a particular project rather than being secured against the parent firm's assets.
  - **Syndicate loans** are large loans provided by a number of banks, each taking a portion of the overall lending**.**
  - **Revolving underwriting facilities** (**RUF**) **and note issuance facilities** (**NIF**) allow large corporations to borrow by selling a series of commercial paper issues or notes into the financial markets over a number of years. Underwriters take a fee for guaranteeing that someone will buy the issue.
- **Other bank services for larger corporations:**
  - **Cash management** – banks provide efficient systems to ensure that the potential to earn interest on day-to-day cash held by the business is not lost while also keeping back enough cash in an easily accessible form to support the business.
  - **Guarantee** that a transaction by a third party will take place or that compensation will be paid if the transaction does not take place.
  - A **letter of credit** is a promise from a bank that an exporter will be paid after shipping goods to an importer.
  - With **forfaiting** a bank will supply cash to an exporter in return for a right to claim the payments for goods or services supplied to an importer.
  - Supplying **risk management tools** to cope with foreign exchange and interest rate risk. These usually involve the use of derivatives such as forwards, futures and options.
  - **Stockbroking**.
  - **Asset management** – e.g. share portfolio management.
  - **Custodian** – the banks provide a service of safekeeping and ensuring interest or dividends are claimed on investment portfolios. They will also notify the owner of annual general meetings of companies, rights issues and other events.
  - **Safety deposit boxes**.
  - **Insurance. Bancassurance** is the selling of insurance and banking services alongside each other; the Germans use the term **Allfinanz**.
  - **Foreign exchange**.
  - **Asset-based lending**, e.g. leasing, hire purchase.
- **Permanent capital** of a bank is obtained by the selling of shares in the firm and by shareholders keeping retained earnings within the firm – shareholders do not have the right to withdraw their money from the company below a regulated level of capital.

Total assets = Total liabilities + Capital

- **Cash reserves** consist of both the cash (notes, etc.) that the bank is required to hold in its account with the central bank plus cash (notes, etc.) that it has on its own premises. **Required reserves** are held because the regulator insists. Additional 'excess reserves' may be held if the bank judges that it needs this extra buffer of cash.
- **Liquidity management:** there may be times when a large volume of cash is withdrawn and the bank has to be ready for that. If this managerial task is performed poorly then there are sources of cash, but these can be costly:
  - **borrowing from the central bank**;
  - **selling securities**;
  - **borrow from other banks and other organisations**;
  - **reduce the loan book**.
- **Asset management:** a bank needs to lend its money (acquire assets) with the expectation of a low risk of default and in a diversified manner.
- **Liability management:** a bank must be capable of finding funds at low cost and with the right mix of borrowing.
- **Capital adequacy management:** a bank needs to keep its capital at a high enough level to reduce the chance of **insolvency** problems (assets becoming worth less than liabilities) while balancing the need to make profits by lending.
- **Return on assets (ROA)**:

$$\text{ROA} = \frac{\text{Net profit after tax}}{\text{Total assets}}$$

- **Return on equity (ROE)**:

$$\text{ROE} = \frac{\text{Net profit after tax}}{\text{Equity capital}}$$

- A bank's **income statement** is split into two sources of income and three types of operating expense.
  Income: (i) interest income (ii) non-interest income.
  Operating expenses: (i) interest expense; (ii) non-interest expense; (iii) provisions for loan losses.
- **Net interest margin (NIM)**:

$$\text{NIM} = \frac{\text{Interest income} - \text{Interest expense}}{\text{Assets}}$$

- **Loan to deposit ratio:** amount of loans lent out divided by the amount of funds attracted to bank accounts.
- **Net interest income (NII):** interest income minus interest expense.
- **Cost–income ratio (C/I)** measures the bank's efficiency in holding down its costs relative to its income.

$$\frac{\text{Cost}}{\text{Income}} = \frac{\text{Non-interest expenses}}{\text{Net interest income} + \text{Non-interest income}}$$

References and further reading

To keep up to date and reinforce knowledge gained by reading this chapter I can recommend the following publications: *Financial Times, The Economist, Corporate Finance Magazine* (London: Euromoney), *Bank of England Quarterly Bulletin (www.bankofengland.co.uk/publications/quarterlybulletin/index.htm)* and *Bank for International Settlements Quarterly Review* (www.bis.org).

Casu, B., Girardone, C. and Molyneux, P. (2006) *Introduction to Banking*, 2nd edn. London: FT Prentice Hall.
A wide-ranging consideration of banking from a UK perspective.

Howells, P. and Bain, K. (2008) *The Economics of Money, Banking and Finance*, 4th edn. London: FT Prentice Hall.
Provides an interesting run through different banking systems around the world.

Mishkin, F. S. and Eakins, S. G. (2009) *Financial Markets and Institutions*, 6th edn. London: Pearson Prentice Hall.
Contains a brief, easy-to-follow introduction to the US banking system.

Saunders, A. and Cornett, M. M. (2007) *Financial Markets and Institutions*, 3rd edn. McGraw-Hill.
A US perspective on banking.

Websites

BACS www.bacs.co.uk
Bank of England www.bankofengland.co.uk
British Bankers Association www.bba.org.uk
CHAPS (Clearing House Automated Payment System) www.chapsco.co.uk
Cheque and Credit Clearing Company (CCCL) www.chequeandcredit.co.uk
CHIPS (Clearing House Interbank Payments) www.chips.org
European Central Bank www.ecb.int
Fedwire www.frbservices.org/fedwire
Financial Services Authority www.fsa.gov.uk
Financial Times www.ft.com
SWIFT (Society for Worldwide Interbank Financial Telecommunication) www.swift.com
UK Payments Council www.paymentscouncil.org.uk
UK Payments Administration www.ukpayments.org.uk

Video presentations

Bank chief executives and other senior people describe and discuss policy and other aspects of banking in interviews, documentaries and webcasts at Cantos.com. (www.cantos.com) – these are free to view.

Case study recommendations

See www.pearsoned.co.uk/arnold for case study synopses.
Also see Harvard University: http://hbsp.harvard.edu/product/cases

- Bank of America: Mobile banking (2010) Authors: Sunil Gupta and Kerry Herman. Harvard Business School. Banking applications for iPhones and tablet computers.
- Developing an App for That: Mobile Application Strategy (Banking) (2010) Authors: Hanna Halaburda, Joshua Gans and Nathaniel Burbank. Harvard Business School. Case study focused on an internal debate of a bank's strategy for mobile banking apps.
- BP Amoco (A): Policy Statement on the Use of Project Finance (2010) Authors: Benjamin C. Esty and Michael Kane. Harvard Business School. Discusses the pros and cons of project finance.
- BP Amoco (B): Financing Development of the Caspian Oil Fields (2010) Authors: Benjamin C. Esty and Michael Kane. Harvard Business School. An interesting project finance case study.

- Why study large projects? (2003) Author: Benjamin C. Esty. Harvard Business School. Provides useful background about project finance in the context of finance theory.
- Poland's A2 Motorway (2008) Authors: Benjamin C. Esty and Michael Kane. Harvard Business School. An interesting project finance case.
- An Overview of Project Finance and Infrastructure Finance – 2009 Update (2010) Authors: Benjamin C. Esty and Aldo Sesia. Harvard Business School. A very useful introduction to project finance.
- Petrolera Zuata, Petrozuata C.A. (2002) Author: Benjamin C. Esty. Harvard Business School. Project finance case.

Self-review questions

1 What are the basic functions of a bank?

2 What are the four different types of banking?

3 What are the two main types of retail bank accounts?

4 Explain four of the types of lending banks offer.

5 What are the advantages to the customer of bank lending compared with other types of lending?

6 What is LIBOR?

7 What is an overdraft?

8 Explain (a) repayment holiday, (b) balloon payment, (c) bullet repayment.

9 What is asymmetric information and what is its significance in the relationship between a bank and a borrower?

10 Explain relationship banking and transactional banking.

11 What is collateral? Give some examples.

12 What are loan covenants? Give some examples.

13 Explain a personal guarantee in the context of banking.

14 Give a brief description of as many payment mechanisms as you can.

15 Explain clearing within the banking system.

16 What is revolving credit?

17 In addition to loans and deposits services, what services do banks provide for corporate customers?

18 Explain cash management.

19 Describe one of the ways in which banks help with overseas trading.

20 For banks, what is (a) asset management, (b) liability management?

21 Describe bank cash reserves.

22 What is the capital-to-assets ratio for a bank and why is it important?

23 Why is a bank's capital level important?

24 For banks, what are (a) ROA, (b) ROE, and what is the significant difference between them?

25 How is a bank's income statement split?

26 What are (a) NIM, (b) NII?

Questions and problems

1 Describe and illustrate, using simplified bank balance sheets, how a bank could find itself with a liquidity crisis and a capital reserve crisis. Describe and explain the actions it can take to move back to more prudent liquidity and capital reserve levels after such a crisis.

2 'Bankers are simply over-paid parasites on the really productive parts of the economy!' Describe and explain the functions of commercial banks and discuss whether you agree with this opinion held by an irate politician.

3 Write an essay distinguishing between the four different types of banking and explain their different functions.

4 Discuss the structure of a bank's source of funds.

5 Compare and contrast (describe and explain the relative advantages and disadvantages) of an overdraft versus a term loan versus project finance versus a syndicated loan.

6 Describe and explain the different ways banks try to mitigate risk in their lending operations.

7 Describe and compare the various types of uncommitted and committed loan facilities provided by banks.

8 Describe, explain and illustrate how a bank could find itself insolvent.

Assignments

1 Collect as much information as you can about the services provided by a bank you know well. Describe those services and discuss the importance to businesses of their provision.

2 Examine the accounts of a number of banks and write a report comparing them on the basis of the key banking ratios and measures.

Web-based exercises

1 Go to www.ukpayments.org.uk. Obtain statistics on payment transactions and write a report on the relative importance of the various payment mechanisms over time.

2 Go to the statistical section of www.bankofengland.co.uk. Obtain statistics on lending to individuals, lending secured on dwellings, consumer credit and a range of other lending to compile a report describing the shifts that have taken place over the last few years.