Andrew Fight

credit risk management

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Contents

Foreword

This book on credit risk management aims to provide the reader with an introduction of the role and mechanics of credit analysis within the lending function of a commercial bank.

In recent years, many banks have, for sake of economy, pared down the credit analyst function and rely increasingly on using outside sources of information such as broker's reports and credit rating agency reports to rationalize their credit decisions.

It nevertheless remains important for bankers to learn about and understand the framework of credit analysis within the framework of credit risk management. Aside from the arguments of due diligence, which means that every bank ultimately is responsible for the safekeeping of depositors' funds and accordingly effecting its own credit analysis, is the issue of comprehension. That is to say, for those banks deciding not to invest in the analytical function and rely on outside sources of analysis, it nevertheless remains important for the reader to not only understand the analyst's arguments but how those arguments have been reached at in the first place.

This book aims to provide the reader with a structural road map of the analytical process and tie it in to the formation of an effective credit risk management policy within the organization.

This book is therefore organized in a classic sequence, that of an analyst undertaking a financial analysis of an entity and taking it through the credit chain for approval and subsequent monitoring and management. The book is presented in eight main chapters:

- *Introduction to corporate credit*: This first chapter aims to introduce the novice to setting the groundwork in the credit analysis, approval, and management process, and mainly focuses on non-financial criteria. It basically situates the role of credit management in the role of bank credit policy and orients the student to the information gathering and sifting process necessary to enable the formulation of pertinent and intelligent credit proposals enabling informed credit decisions to be made.
- *Business risks*: This second chapter treats the matter of non-financial risks (vs. financial risks) and describes the importance of the 'new investment criteria' of the 'dot com' economy, as well as traditional elements of non-financial risks such as the nature of the obligor (limited vs. unlimited liability), management, industry, market, and products. Models such as SWOT, PEST, and Porter's Five Forces which are used to assess competitor positions, business strategy and plans, as well as legal and documentation risks. The role of auditors is also treated.
- *Financial risks*: Financial statement analysis (financial statements, annual reports and accounts, balance sheets, profit and loss statements). This chapter takes a more quantitative approach in focusing on the financial analysis of a borrower. A full discourse on the composition, meaning, and analysis of financial statements and company accounts is featured. This comprises the obtaining, processing, and analysis of company annual reports and accounts and some allusion to financial ratio analysis is made. An orientation on PC based spreadsheet methods and processing of a company's financial ratios in the light of peer group and industry sector averages will be treated. This ratio analysis is useful in taking a photo at a given moment in time and assessing a borrower's relative positioning in his industry sector and economic environment.
- *Transaction risks – term loan agreements and covenants*: Loan documentation, financial ratio covenants, and security arrangements are necessary tools in managing credit risk. This chapter will explore how

to enhance security from a legal perspective as well as a financial aspect (e.g. by incorporating appropriate financial covenants into the loan agreement based on the materials covered in the previous two chapters: ratios and cash flow forecasting).

- *Setting CRM in place via risk rating systems*: All of the information in the preceding sections must not only be analysed but developed into a coherent set of guidelines if the bank is to proactively manage its portfolio exposure via any meaningful credit policy. Credit risk management therefore is not only about the information gathering and analytical process, it is using that information to set in place effective policy guidelines that are the bank's constant tool to ensure portfolio quality.
- *Annexes*: We provide annexes on information such as the SSAP and FRS reporting standards currently in use in the UK.
- *Glossary*
- *Suggested readings*

We trust that this book goes some way in enabling the practitioner to review already known information and consider new concepts and technologies within a framework that can be of use in effective credit risk management.

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Chapter 1

Introduction to credit risk management

Lending has always been the primary function of banking, and accurately assessing a borrower's creditworthiness has always been the only method of lending successfully.

The method of analysis required varies from borrower to borrower. It also varies in function of the type of lending being considered.

For example, the banking risks in financing the building of a hotel or rail project, of providing lending secured by assets or a large overdraft for a retail customer would vary considerably.

For the financing of the project, you would look to the funds generated by future cash flows to repay the loan, for asset secured lending, you would look at the assets, and for an overdraft facility, you would look at the way the account has been run over the past few years.

In this book on credit risk management, we will be looking specifically at the appropriate methods of analysis for lending to companies, a subject more often known as 'corporate credit'.

What is the role of credit analysis?

Credit analysis supports the work of marketing officers by evaluating companies before lending money to them.

This is essential so that new loan requests can be processed, a company's repayment ability assessed, and existing relationships monitored.

The extent of the credit analysis is determined by

- the size and nature of the enquiry,
- the potential future business with the company,
- the availability of security to support loans,
- the existing relationship with the customer.

The analysis must also determine whether the information submitted is adequate for decision-making purposes, or if additional information is required.

An analysis can therefore cover a wide range of issues.

For example, in evaluating a loan proposal for a company, it may be necessary to:

- obtain credit and trade references,
- examine the borrower's financial condition,
- consult with legal counsel regarding a particular aspect of the draft loan agreement.

By making these checks you are ensuring that your report does not look at a company's creditworthiness in a narrowly defined sense. You will be taking the further step of deciding whether the provisions in the loan agreement are appropriate for the borrower's financial condition.

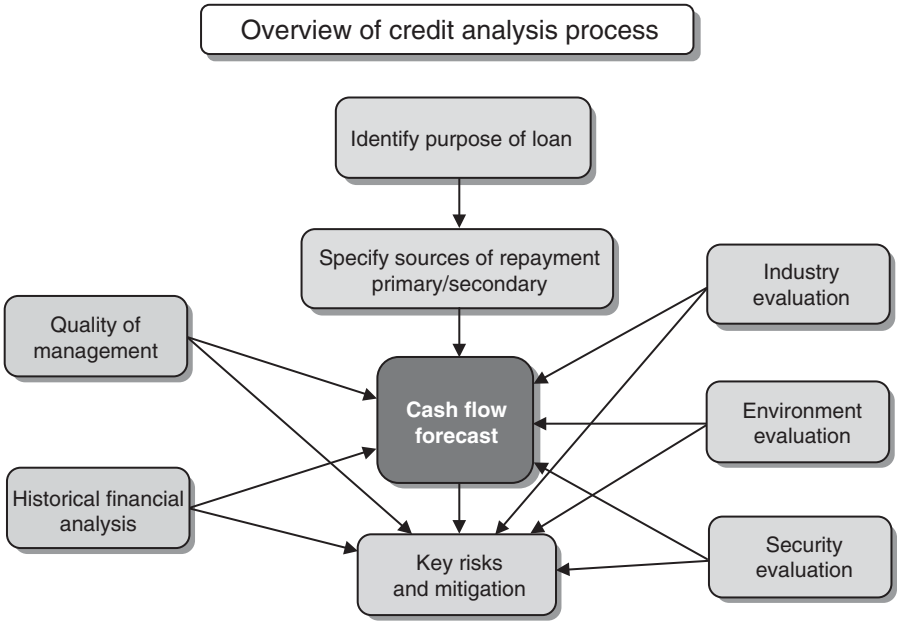
Often it will be necessary for the analyst to place the assessment of the borrower's financial condition within the wider context of the conditions existing in the industry in which it is operating.

For example: Is the company's business cyclical or counter cyclical? How will this affect the long-term cash flow of the firm? What are the considerations of general economic conditions and, if appropriate, political conditions in the country where the company is operating?

Framework for credit analysis

Credit analysis includes financial and non-financial factors, and these factors are all interrelated. These factors include:

- the environment,
- the industry,
- competitive position,
- financial risks,
- management risks,
- loan structure and documentation issues.



All companies operate in an economic and business environment, therefore, when beginning to analyse a company, it is important to situate the company within this context.

Environment is important – whilst management cannot control the environment, it needs to function within it and therefore limit the impact of potentially adverse changes and ensure that it has resources to withstand them.

We shall consider each of these factors in detail, starting with macro-economic factors which affect the economy and sectors of the industry and then focus on company risk and the risks that might affect particular loans.

Types of lending

The starting point in analysing the creditworthiness of a company is to consider the type of lending being proposed. It is important to establish this before analysing the financial condition of the borrower because there are different risks involved in different types of lending.

Establishing what type of lending is being proposed will define the approach to be adopted in assessing the creditworthiness of a company. The three primary types of lending and their risks are as follows:

- Temporary or seasonal finance
- Working investment lending
- Cash-flow lending.

One US bank summarized these risks as given in the following table (page 5).

Temporary or seasonal finance

Farming, package tour holidays, ski equipment, or manufacturing Christmas toys are typical seasonal businesses.

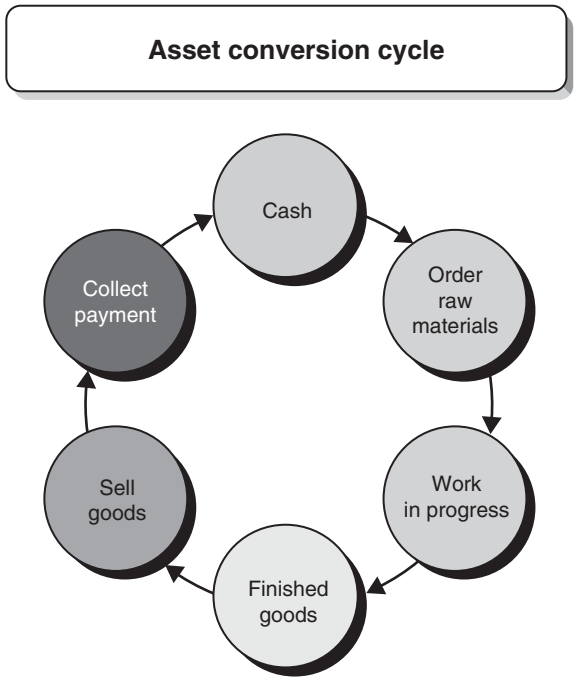
A banker dealing with a toy-maker would expect an increasing overdraft during the summer as the company buys raw materials and builds up stock which is then processed into finished goods. The overdraft would be substantially reduced as the asset is sold, usually on credit.

Such short-term financing is repaid from the cash collected when the goods are paid for. This process is called the cash or asset conversion cycle.

The primary risk in this type of lending is the company's inability to complete the conversion of the asset into cash, due to failures in the supply, manufacturing, sales, or debt collection phase of the cycle.

Summary of lending types

	Purpose	*Source of repayment*	*Risks*	*Protection ag*
Temporary seasonal or finance	Financing the short-term seasonal build-up of current/working assets.	Cash received from the successful conversion of the raw material asset into completed goods which have been sold, and the payment received.	Inability to recover costs through company's unsuccessful completion of the asset conversion process.	Asset marketa liquidity Management to complete asset conversion cy Short time factor
Working investment lending	Evergreen (permanent) financing of a permanent level of circulating working assets.	Successful completion of successive transactions of turnover and cash flow. Liquidation of (easily marketable) assets in default situation.	Inability to generate sufficient cash flow. Decline in market value of assets below amount needed to satisfy senior creditors in the event of liquidation.	Management to keep the flow of transactions moving and to genera satisfactory le profits over a n of years. Liquidity of the assets being financed, and low shrinkage of a forced sale.
Cash-flow lending	Financing of long-term fixed or plant assets. Financing of corporate acquisitions.	Cash from profits generated by the asset being financed, by the company's operations, and by the profits retained in the business over time.	Inability of the company or management to generate a sufficient level of profits to cover operating costs and debt-servicing costs.	Management to generate pr Adequate equity cushion. Unused debt ca



The analyst should be concerned with the liquidity of the assets being financed (would they be easy to sell in a forced sale?) and management's ability to complete the asset conversion cycle.

Furthermore, the loan facility and documentation should be structured in such a manner so that the lender can monitor the borrower's condition frequently and retain control in lending funds or renewing the facility.

Working investment finance

As companies expand, they need more cash to finance new fixed (premises, plant, and machinery) and current assets (stock, etc.).

Working investment financing is a method of financing a relatively long-term need with a short-term facility.

The level of working investment finance will generally fluctuate, but has a direct link with the level of sales. The higher the sales, the more stocks are needed, and possibly more plant, premises, and machinery.

Such finance is often on a short-term revolving basis. Typical users of such finance would be companies that need to finance a permanent level of current assets, such as wholesalers, commodity dealers, importers, and exporters. These are all businesses which act as intermediaries between buyer and seller. (In these businesses, there is little value added to the goods by the company, and profits are generated by high volume selling.)

You should be concerned with the viability and reputation of the company as well as the quality (liquidity) of the assets if the company goes into liquidation.

The quality of the assets should be such that if sold, the amount raised would be sufficient to repay all loans. Obviously, goods such as raw materials or supermarket stocks are easier to dispose of than half-completed goods such as ships, cars, or machinery. Risk also arises from price or market fluctuations.

Where the asset value falls below the level required to satisfy the creditors, facilities should be structured in a manner that enables the lender to exercise control of funds on a frequent basis.

Cash-flow lending

This is lending to finance a company's medium to long-term needs (5–7 years typically). Often, the loan is to purchase an asset that is expected to generate future cash flow and contribute towards the repayment of the loan. The assets being financed by the facility, such as plant or equipment, are usually expected to produce other assets which, when converted to cash through completion of the manufacturing process and sale, will generate sufficient funds to repay the loan. The fixed asset itself is therefore not expected be converted to cash to repay the loan, which means that this type of loan is not self-liquidating. Rather, profits produced by the new equipment are the source of cash used to repay the loan. This process is expected to occur over the long, not short term.

Your primary concern in this type of lending is the company's ability to manage asset conversion cycles over several years.

Reasonable forecasts of sales growth, and determining the amounts of cash left over after paying all operating costs to service debt, will also be important factors.

In addition to the borrower's current financial condition, you will want to examine the company's track record of innovation and expansion to determine whether the company provides confidence for such lending. Sales growth, product innovation, and marketing success are general indicators of whether successful repayment is likely.

The bank's control over such types of lending usually relies on establishing financial covenants and conditions on the borrower (via the loan agreement) to ensure that it retains some element of control over the borrower should the financial condition deteriorate.

Types of financial statements

The company annual report

The company annual report is the first source of information in analysing the creditworthiness of a company, although a good analyst will supplement the enquiry with other information sources.

Annual reports can usually be obtained from the company's web site. Annual reports can also be obtained from other sources, for example, in the UK's Companies House web site. In the USA, 10-K filings can be obtained over the Internet from the US Securities and Exchange Commission's Electronic Data Gathering and Retrieval (EDGAR) web site.

Annual reports are produced at the close of the company's fiscal year. They include the audited accounts of the current year and the previous year for comparison. Long delays in providing an annual report can be an indication of difficulties in the firm.

Annual reports usually provide additional information to the financial accounts.

The chairman will generally make a brief statement at the beginning of the report concerning the company's operations.

It will also address any changes in management or resolutions which may affect the company.

There may be a description of the group's operations by product or division, with a narrative of the situation and plans in each of these divisions.

Topics such as product development, research and development, expanding distribution networks, market penetration, and buying or selling particular operations of subsidiaries are covered in these sections, and can help you assess the company in relation to its competitors.

The financial statements and accompanying notes normally follow, treating changes in each of the accounts in further detail. At the end of the report is the auditors' statement certifying the accounts.

The annual report is a vehicle for a company to state its mission, objectives, and corporate culture to its shareholders and the investor/creditor community. Consequently, the report is often a carefully crafted public-relations document with glossy photos and presents the company in a favourable light.

Other types of financial statements

In addition to the annual report, there are several other types of financial statements. The most usual are as follows:

- *Interim statements*: These are produced internally at half-yearly, quarterly, or even monthly intervals. Interims provide creditors with more up-to-date information than that contained in the annual report. Interims are also issued for the benefit of investors and potential investors.
- *Estimated (unaudited) statements*: These can be erroneous or misleading, either by accident or by intent. Where exposures are significant, efforts should be made to obtain audited statements.
- *Consolidated financial statements*: These are also usually contained in the annual report. These show the combined picture for a whole group, and may also include individual figures for the parent. With consolidated statements, inter-company transactions such as investments, advances, revenues, expenses, and distribution of income are cancelled

out. In the UK, only statements of subsidiaries (when more than 50% of the share capital is held by the parent) may be consolidated into the statements of the parent. When less than 50% of the share capital is held, the company is called an associate and when less than 20%, an investment and is not consolidated. The consolidated statement is regarded as an artificial grouping, relating to no one particular entity, but reflecting the pooling of two or more separate entities in order to present an overall corporate image. It should be noted that each company is legally distinct with control over its own assets and operations. During the course of the year, subsidiaries can be bought and sold, changing the nature of the group but having less impact on the size of the balance sheet. Consolidated statements can reflect the operations of a closely integrated and coordinated group, or the operations of a wide and disparate range of companies with no common purpose. It is for the analyst to highlight these points when using such statements.

- *Pro-forma financial statements*: These show a 'what if' scenario of a company – what the results would have been if certain events had taken, or will take place. Such statements can be useful to gauge the impact of events, such as a company issuing stock to purchase a new subsidiary or expand plant investment, or selling off a subsidiary to prepay debt and reduce interest expenses.

Contents of financial statements

The financial information in a company's financial statements is given in the following:

- Balance sheet
- Profit and loss (P/L) statement
- Statement of sources and applications of funds (also known as a cash flow)
- Other (ancillary) elements.

The balance sheet

Balance sheet presentations can vary considerably:

- In the UK, the balance sheet is presented in a 'short format' whereby assets minus liabilities yields the net worth figure with liquid accounts at the top and fixed assets at the bottom.

- In European countries, assets are listed at the top and liabilities at the bottom, with the least liquid accounts at the top and most liquid accounts at the bottom.
- In the US-style balance sheet presentation, assets are listed at the top and liabilities at the bottom, with the most liquid accounts at the top and least liquid accounts at the bottom.

These differences are depicted in the adjacent tables in Annex 1.1 on page 19.

The main balance sheet categories can be summarized in the following categories, which we shall consider in further detail in the subsequent chapter:

- **Assets** are resources owned by a company. These can take several forms and can be fully paid, in which case they are held free and clear; or they might be owned subject to outstanding debt. For example, a company may own a factory with a mortgage on it or plant that has been bought outright. In these situations the company is the legal owner of the assets. This is not the case with leases. The possession is with the company, but the ownership with the leasing company. This is reflected in the balance sheet by showing the lease rights as an asset and the lease obligations as a liability.
- **Current assets** are trading assets. These company resources are constantly changing form and being used in the asset conversion cycle. Such assets are normally cash, debtors (accounts receivable), stock, Work In Progress (WIP), and finished goods. In addition, there are temporary investments in high grade securities such as government securities which are the equivalent of cash. These are known as marketable securities and are used as a way of efficiently utilizing temporary cash surpluses that the company may have in the normal course of business.
- **Fixed assets** are permanent or semi-permanent investments in tangible properties required for the conduct of business and not subject to periodic purchase and sale. These include land, plant, buildings, machinery, tools, furniture, and motor vehicles. In some instances, a company may own properties that are not used in the course of regular business. These items are considered investments, even though they may appear as fixed assets on the balance sheet, and should be

listed separately under miscellaneous assets. Fixed assets are subject to depreciation and are usually shown as a net figure in the balance sheet. In the notes, UK companies are required to show the original cost of the assets. Depreciation accumulated over the years is listed as a deduction, giving the net figure that you will see in the balance sheet.

- **Miscellaneous assets** include all assets not listed in current and fixed assets. These can include investments, advances to or investment in subsidiaries and 'intangibles'. Intangibles are assets that, as their name suggests, are not assets you can physically touch. They are not available for payment of debts of a company in the ordinary course of its business. While they are important to an active business, they may depreciate or cease to have value in the event of liquidation. Examples of such items are goodwill, trademarks (e.g. Coca-Cola), brands, designs, and mailing lists.
- **Liabilities** are the amounts owed by a company. Current liabilities are debts due to be paid within 1 year from the date of the financial statement in question. Included in this category are not only creditors, but overdrafts, tax liabilities, and principal payment due on long-term debt within the next 12 months.
- **Non-current liabilities** include such items as long-term debt (anywhere from 2 to 5+ years). Long-term debt includes bonds, mortgage borrowings, and term loans. The analyst should examine items such as the maturity schedules of such borrowings (shown in the notes to the financial statements) to see if, for example, there is a bunching up of loan repayments in the future that could cause cash-flow problems.
- **Subordinated debt** typically falls in a 'grey' area of the balance sheet. Although not considered as equity, subordinated debt is not truly long-term debt either. Subordinated debt gives comfort to other lenders because in the event of a company's liquidation, such debts are repaid after those owed to the other creditors. For this reason, subordinated debt is usually broken out and listed between the total figure of long-term debt, and equity, which has the lowest claim on the company's assets (which means that it is paid last in a liquidation before the shareholders). Some analysts add subordinated debt to net worth, thereby treating it as a quasi-equity item.

- **Equity** Net worth or shareholders' equity is divided into various classes of outstanding shares, reserves and retained earnings, and represents the owners' share of the business. In the event of liquidation, owners are paid off after all other creditors have been satisfied. The analyst should be interested in any asset or dividend preferences given to the holders of the various categories of shares as well as in the relationship between internal funds and borrowed funds. Preference shares, for example, may have been issued as part of an agreement to defer existing debt. Retained earnings are the accumulation of previous years' profits that, after payment of dividends, are ploughed back into the company.

The P/L statement

The P/L statement (also called the income statement), can vary considerably in presentation from a complete schedule to a severely condensed version eliminating important items such as cost of goods sold and operating expenses.

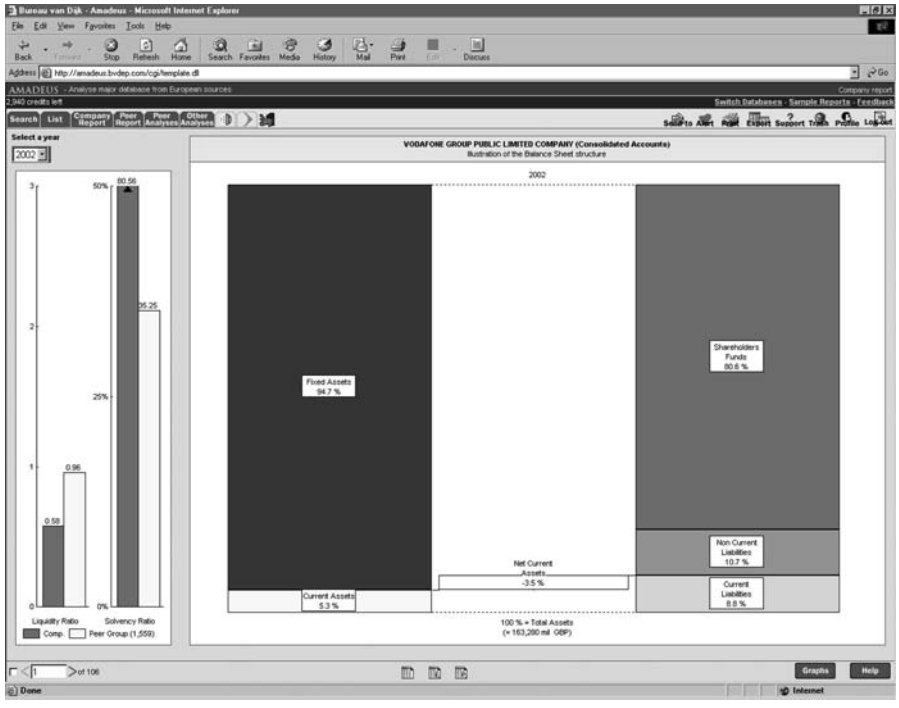
The relationship of the P/L to the balance sheet is so important that its absence or omission (say in unaudited interim statements) is a severe handicap to the analyst. The P/L provides explanations for changes not only in profitability and net worth, but also in the relationship between assets and liabilities and the efficiency of their usage. Calculating how efficiently the company is using its stock and plant, for example, requires input from the P/L.

The balance sheet provides a 'snapshot' of a company's financial condition at a given point in time while the income statement traces the results of corporate activity over a period of time.

Diagram of balance sheet and P/L statement

The following two screencaps (given below and on page 15) are extracted from the AMADEUS database published by Bureau Van Dijk and provide a graphical depiction of a balance sheet and income statement, with the various categories colour coded.

AMADEUS: Balance Sheet – Vodafone Plc



Source: Bureau Van Dijk, AMADEUS 2004

Statement of sources and applications of funds

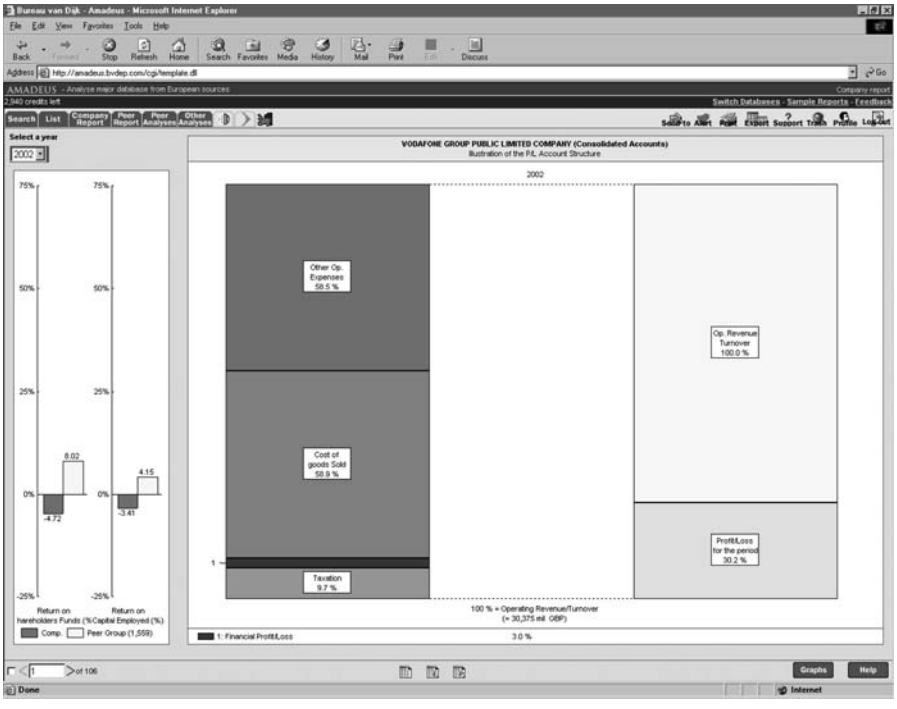
Or The Cash Flow and Reconciliation to the P/L Statement.

These statements can be most useful in analysing a company's financial strength. It represents the flow of funds during the period among the various asset, liability and net worth accounts, and analyses changes in net working capital. In other words, it provides an explanation of how the changes between two balance sheets have occurred. The important concept here is the idea of cash flow. By eliminating changes that do not involve cash payments, you get a truer picture of the actual amount of cash generated by the firm and can more accurately assess the company's ability to repay possible loan facilities.

Non-cash items can include:

- depreciation of fixed assets,
- amortization (spreading over a number of years) of deferred income or intangible assets,

AMADEUS: Profit & Loss – Vodafone Plc



Source: Bureau Van Dijk, AMADEUS 2004

- tax liabilities, which are affected by the timing differences between financial reporting and tax reporting dates.

Important components in the calculation of cash flow are net profit and depreciation, and how they are calculated will affect the reported cash flow in the firm. Thus, changes in accounting policy can affect financial reporting and cash flow. Specifically, conservative accounting policies tend to understate earnings and so give a weaker picture of the firm's operations, which would be reflected in its cash flow. In contrast, liberal accounting policies tend to overstate earnings, yielding a cash-flow picture better than the actual situation.

Other elements of the annual report

Notes to the financial statements

These can offer important information not appearing on the balance sheet, such as a breakdown of the various accounts, impending lawsuits

arising from product liability (e.g. unsafe cars), environmental issues (e.g. radioactive leakage or oil spills), or patents. Normally, litigation or regulatory actions must be disclosed in the notes to the financial statements as a 'contingent liability'. However, in some cases, an estimated amount of the liability may not be disclosed because the company feels that calculating the potential liability could be viewed as a tacit admittance of liability. Again, it is for the analyst to examine the information in order to assess the potential impact of such developments.

Auditors' remarks

In the UK, financial accounts are produced by the company directors. The auditors report, following their review of the accounts, that the accounts provide a 'true and fair' view of the business in their opinion. A certain amount of comfort can be taken if the auditors are a reputable firm of accountants. The credit analyst should understand the terminology and conventions used by accountants which are standardized by regulations and pronouncements.

There are several different types of audit. When a report states that the auditor has reviewed the financial data, this means that the statement has not been audited. The auditor examines internal procedures of the client but does not make external enquiries, observe physical inventories, review internal control, or perform other mandatory auditing procedures. Interims are seldom audited, even when issued on the accountants' stationery.

The auditors' statement, where the auditors report the results of the audit to the client, may be in short or long form:

- The short form (usually in the annual report) describes the scope of the audit in general terms, noting exceptions to general practice or procedure.
- The long form details computations and verification tests made in connection with all material assets and liabilities. The long form is usually prepared for management purposes while the short form usually goes to creditors.

The audit also expresses an opinion which may be unqualified or qualified:

- An unqualified opinion states that the auditors have examined the accounts and that they represent, in their opinion, a 'true and fair' view of the company's financial condition (according to Financial Reporting Standards (FRS) and Statement of Standard Accounting Practices (SSAP) in the UK, this is required by law) and operations for the period being reported and show the actual financial condition of the company on the date of the statement.
- A qualified opinion is given when there are irregularities. These may have an adverse material effect on a company's operating results and financial condition or may merely be of a technical nature. When an opinion is qualified, you should compare successive statements to clarify changes in wording or omissions which could prove significant upon further enquiry.

Generally Accepted Accounting Principle (GAAP) is a collection of international guidelines and are not mandatory. In the wake of the Enron hearings, it was joked that the gaps in GAAP were large enough to drive a truck through.

Key points to note in the auditors' statement are as follows:

- An inexplicable change in auditors. Here, the analyst should find out why, as this can be an indication of difficulties or accounting irregularities.
- The date the accounts of the company were actually audited (not reviewed).
- The examination was made in accordance with FRS (UK) standards.
- Such tests of the accounting records and other auditing procedures were made as deemed necessary under the circumstances.
- The major assets and liabilities were verified with exceptions noted.
- In the opinion of the auditors, the facts and figures reported fairly present the affairs of the client and are in accordance with FRS which were applied in a manner consistent with the preceding year.

This last point is important because it assures that, in the absence of notice to the contrary, no changes in methods of evaluation of stock

and investments, or in determining depreciation, have occurred and that income statement items have not been shifted from one category to another.

Directors' information

In the UK, Directors now have to report on compliance with the *Combined Code* – published in 1998 (followed from Cadbury, Greenbury, and Hempel reports in corporate governance). These comments relate to remuneration of company directors and audit committees.

Different presentations of financial statements

In the globalized economy, bankers typically will analyse financial statements from borrowers domiciled in different countries. While the financial statements may be translated into English, the presentation of these financial statements can vary considerably.

In the USA and UK, financial statements in company annual reports follow accounting conventions, that is, they must be 'true and fair' but can be presented in differing formats from company to company. Also, the US model lists all of the assets on the left and liabilities and equity on the right, while in the UK, the balance sheet lists assets less liabilities to yield the net capital funds position. In Continental European countries, on the other hand, the format of company accounts is defined by the accounting standards bodies of the country in question and the format follows a rigid grille, with each account receiving a numerical code. The official tax statements for all companies therefore are filed according to the same format.

The main difference in this philosophy is that the accounting statements in Anglo Saxon economies are designed for investors while in Continental European countries, the accounting statements are designed for tax authorities and the banks.

We provide samples of the UK, French (Continental European) and US account presentations for sake of illustration and comparison.

Annex 1.1

Sample financial statements: British model

Profit and loss account
for the year ended 31 December

Note	200x	200x
Turnover	**0**	**0**
Cost of sales		
Gross profit	**0**	**0**
Distribution costs Administrative expenses Income from interests in associated undertakings Operating profit Other income/(expenditure)		
Profit on ordinary activities before interest	**0**	**0**
Net interest payable		
Profit on ordinary activities before taxation	**0**	**0**
Tax on profit on ordinary activities		
Profit on ordinary activities after taxation	**0**	**0**
Minority interests		
Profit for the financial year attributable to shareholders	**0**	**0**
Dividends		
Deficit for the year	**0**	**0**
Deficit incurred by – Subsidiary undertakings – Associated undertakings		
Earnings per ordinary share	**0**	**0**
Net basis Nil distribution basis		
Dividends per ordinary share	**0**	**0**

Balance sheet
at 31 December 200x

Note	Group		Company	
	200x	Restated 200x	200x	Restated 200x
Fixed assets	**0**	**0**	**0**	**0**
Tangible assets				
Investments				
Subsidiary undertakings				
Associated undertakings				
Current assets	**0**	**0**	**0**	**0**
Freehold property held for sale				
Stocks				
Debtors				
Cash at bank and in hand				
Creditors: amounts falling due within 1 year	**0**	**0**	**0**	**0**
Bank loans				
Other loans				
Proposed dividend				
Other creditors				
Net current assets	**0**	**0**	**0**	**0**
Total assets less current liabilities	**0**	**0**	**0**	**0**
Creditors: amounts falling due after more than 1 year	**0**	**0**	**0**	**0**
Provisions for liabilities and charges	**0**	**0**	**0**	**0**
Deferred income: government grants	**0**	**0**	**0**	**0**
Capital and reserves	**0**	**0**	**0**	**0**
Called up share capital				
Share premium account				
Capital redemption reserve				
P/L account				
Minority interests	**0**	**0**	**0**	**0**

Cash-flow statement
for the year ended 31 December

Note	200x	200x
Operating activities	**0**	**0**
Net cash flow from continuing operations		
Net cash flow from discontinued operations		
Net cash inflow from operating activities	**0**	**0**
Returns on investments and servicing of finance	**0**	**0**
Interest received		
Interest paid		
Interest element of finance lease rentals payments		
Dividends received from associated undertakings		
Dividends paid		
Minority interests		
Net cash outflow from returns on investments and servicing of finance	**0**	**0**
Taxation	**0**	**0**
Corporation tax paid		
– UK		
– Overseas		
Tax paid	**0**	**0**
Investing activities	**0**	**0**
Purchase of tangible fixed assets		
Sale of tangible fixed assets		
Repayment of loan to associated undertaking		
Acquisition of subsidiary undertakings		
Sale of businesses		
Net cash outflow from investing activities	**0**	**0**
Net cash outflow before financing	**0**	**0**
Financing	**0**	**0**
Issue of ordinary share capital		
New long-term loans		
Repayment of long-term loans		
Capital element of finance lease payments		
Net cash inflow from financing	**0**	**0**
Increase in cash and cash equivalents	**0**	**0**

Sample financial statements: French model
Balance sheet

Assets (millions of FF)	Gross	200x Depreciation and provisions	200x Net	Net
Fixed assets and investments	**0**	**0**	**0**	**0**
Intangible assets (note 1)				
Goodwill (note 2)				
Property, plant, and equipment (note 3)				
Investments in non-consolidated companies (note 4)				
Other financial assets (note 5)				
Investments accounted for by the equity method (note 6)				
Current assets	**0**	**0**	**0**	**0**
Inventories and work-in-process				
Accounts receivable – trade (note 7)				
Other accounts receivable (note 8)				
Loans and miscellaneous receivables				
Deferred tax assets (note 9)				
Marketable securities (note 10)				
Cash				
Accrued income and prepaid expenses	**0**	**0**	**0**	**0**
Currency translation adjustment	**0**	**0**	**0**	**0**
Total assets	**0**	**0**	**0**	**0**

Liabilities and stockholders' equity (FRF millions)	Before proposed appropriation		After proposed appropriation	
	200x	200x	200x	200x
Stockholders' equity (note 11)	**0**	**0**	**0**	**0**
Capital stock				
Reserves				
Reserves arising on consolidation				
Revaluation surplus				
Cumulative currency translation adjustment				
Net income for the year				
Minority interests (note 12)	**0**	**0**	**0**	**0**
In stockholders' equity				
In net income for the year				
Provisions for contingencies and charges (note 13)	**0**	**0**	**0**	**0**
Liabilities (note 17)	**0**	**0**	**0**	**0**
Borrowing (note 14)				
Accounts payable – trade (note 15)				
Advances and prepayments received				
Other liabilities (note 16)				
Deferred income and accrued liabilities	**0**	**0**	**0**	**0**
Currency translation adjustment	**0**	**0**	**0**	**0**
Total liabilities and stockholders' equity	**0**	**0**	**0**	**0**

Income statement (millions of FF)	**200x**	**200x**
Product sales	**0**	**0**
Services and other income		
Net Sales (note 18)	**0**	**0**
Changes in finished product inventories		
Costs and expenses capitalized		
Operating subsidies received		
Release of operating provisions		
Other operating income		
Operating revenues	**0**	**0**
Purchases of raw materials and goods for resale		
Changes in raw material and goods inventories		
Other purchases and outside services		
Taxes other than income taxes		
Personnel costs		
Depreciation and amortization		
Operating provisions		
Other operating expenses		
Operating expenses	**0**	**0**
Operating income	**0**	**0**
Income from non-consolidated investments		
Interest income		
Release of provisions		
Interest income	**0**	**0**
Amortization and provisions		
Interest expense		
Interest expense	**0**	**0**
Operating income after interest	**0**	**0**
Exceptional income – net (note 19)	**0**	**0**
Income from Co.'s accounted for by the equity method	**0**	**0**
Income before tax, employee profit-sharing and incentive plans and minority interests	**0**	**0**
Employee profit-sharing	**0**	**0**
Employee incentive plan	**0**	**0**
Current taxes (note 20.1)		
Deferred taxes (note 20.2)		
Income taxes (note 20)	**0**	**0**
Currency translation adjustment – net income for the year		
Currency translation adjustment – accumulated reserves		
Currency translation adjustment (note 21)	**0**	**0**
Net income before minority interest	**0**	**0**
Minority interests		
Net income	**0**	**0**

See accompanying notes to the consolidated financial statements.

Sample financial statements: US model
Income statement
(in millions of dollars, except per common share data)

years ended 31 December	**200x**	**200x**	**200x**
Revenues	**0**	**0**	**0**
Sales			
Sales from other operations			
Total revenues	**0**	**0**	**0**
Operating costs and expenses	**0**	**0**	**0**
Company operations			
Packaging			
Payroll and other employee benefits			
Occupancy and other operating expenses			
General, administrative, and selling expenses			
Other operating (income) expense – net			
Total operating costs and expenses	**0**	**0**	**0**
Operating income	**0**	**0**	**0**
Interest expense – net of capitalized interest			
Non-operating income (expense) – net			
Income before provision for income taxes	**0**	**0**	**0**
Provision for income taxes			
Net income	**0**	**0**	**0**
Net income per common share	**0**	**0**	**0**
Dividends per common share	**0**	**0**	**0**

The accompanying financial comments are an integral part of the consolidated financial statements.

Balance sheet **(in millions of dollars)** **31 December**	**200x**	**200x**
Assets		
Current assets	**0**	**0**
Cash and equivalents		
Accounts receivable		
Notes receivable		
Inventories, at cost, not in excess of market		
Prepaid expenses and other current assets		
Total current assets	**0**	**0**
Other assets and deferred charges	**0**	**0**
Notes receivable due after 1 year		
Investments in and advances to affiliates		
Miscellaneous		
Total other assets and deferred charges	**0**	**0**
Property and equipment	**0**	**0**
Property and equipment, at cost		
Accumulated depreciation and amortization	**0**	**0**
Intangible assets-net	**0**	**0**
Total assets	**0**	**0**
Liabilities and shareholders' equity	**0**	**0**
Current liabilities	**0**	**0**
Notes payable		
Accounts payable		
Income taxes		
Other taxes		
Accrued interest		
Other accrued liabilities		
Current maturities of long-term debt		
Total current liabilities	**0**	**0**
Long-term debt	**0**	**0**
Other long-term liabilities and minority interests	**0**	**0**
Deferred income taxes	**0**	**0**
Common equity put options	**0**	**0**
Shareholders' equity	**0**	**0**
Preferred stock, no par value		
Common stock, no par value		
Additional paid in capital		
Guarantee of Employee Stock-Options Plan (ESOP) notes		
Retained earnings		
Foreign currency translation adjustment		
Common stock in treasury		
Total shareholders' equity	**0**	**0**
Total liabilities and shareholders' equity	**0**	**0**

The accompanying financial comments are an integral part of the consolidated financial statements.

Cash-flow statement (in millions of dollars) years ended 31 December	**200x**	**200x**	**200x**
Operating activities			
Net income			
Adjustments to reconcile to cash provided by operations			
Depreciation and amortization			
Deferred income taxes			
Changes in operating working capital items			
Accounts receivable increase			
Inventories, prepaid expenses (increase) decrease			
Accounts payable increase (decrease)			
Accrued interest increase (decrease)			
Taxes and other liabilities increase (decrease)			
Other-net			
Cash provided by operations	**0**	**0**	**0**
Investing activities			
Property and equipment expenditures			
Sales of businesses			
Purchases of businesses			
Notes receivable additions			
Property sales			
Notes receivable reductions			
Other			
Cash used for investing activities	**0**	**0**	**0**
Financing activities			
Notes payable and commercial paper net			
borrowings supported by line of credit agreements			
Other long-term financing issuances			
Other long-term financing repayments			
Treasury stock purchases			
Preferred stock issuances			
Common and preferred stock dividends			
Other			
Cash used for financing activities	**0**	**0**	**0**
Cash and equivalents increase (decrease)	**0**	**0**	**0**
Cash and equivalents at beginning of year			
Cash and equivalents at end of year	**0**	**0**	**0**
Supplemental cash-flow disclosures			
Interest paid			
Income taxes paid			

The accompanying financial comments are an integral part of the consolidated financial statements.

Statement of shareholders' equity

Dollars and shares in millions except per share data	Preferred stock issued shares/ amount	Common stock issued shares/ amount	Additional paid in capital	Guarantee of ESOP notes	Retained earnings	Foreign currency translation adjustment	Common stock in treasury shares/ amount
Balance at 31 December 200x							
Net income							
Common stock cash dividends							
Preferred stock cash dividends							
Preferred stock issuance							
ESOP notes payment							
Treasury stock acquisitions							
Translation adjustments							
Stock option exercises and other							
Balance at 31 December 200x							
Net income							
Common stock cash dividends							
Preferred stock cash dividends							
Preferred stock issuance							
Preferred stock conversion							
ESOP notes payment							
Treasury stock acquisitions							
Translation adjustments							
Common equity put options issuance							
Stock option exercises and other							
Balance at 31 December 200x							

Problems with financial statements and auditors

It is important to note that there are several difficulties in using the information in a company's financial statements.

- There is no complete and comprehensive set of accounting standards. For example, in the same industry, a transaction can be presented in several ways, all in accordance with FRS. The analyst should be aware of the way a company is presenting its accounts.
- Financial statements represent the work of two parties – the directors/management and the auditors – with differing interests. There will be differences of opinion that must be reconciled to the satisfaction of both parties.
- Published financial statements are prepared for a wide audience. In addition to the shareholders, the annual report is targeted towards institutional investors, analysts, employees, and the public.
- Accounting involves approximations. For example, it is difficult to value assets such as partially finished 'work-in-progress' or provisions for bad or doubtful debts.
- There are different methods of valuing assets. Current assets such as receivables, less provisions for doubtful debts, are often estimates. Likewise, stock/inventories can be valued in a number of different ways such as LIFO (Last In, First Out), FIFO (First In, First Out), WACM (weighted average cost method), etc.
- In accounting there are honest differences of opinion. There are also ambiguities enabling companies to manipulate accounts and misrepresent the true and fair state of their company and often the auditors are colluding with the company in signing off on financial statements known to be misleading if not outright fraudulent. The analyst should be aware that these exist and that accounting in recent years has become unreliable. This is not only a breakdown in accounting practice but indeed goes to the very heart of the ethos of accounting.
- Accounting terminology can vary. For example, income statement, P/L statement, statement of income and retained earnings, and operating statement are all different ways of referring to the same statement: stock can be called inventory, and debtors either receivables or accounts

receivable. You should be familiar with the general characteristics of the accounting language.

- Accounting has evolved by convention and tradition over time, and that there are many anomalies and differences of opinion in the practice. Accounting attempts to quantify the approximate and at times unquantifiable.

To this traditional list one must add the impact of new developments witnessed in the USA with Enron (merely the first of a baker's dozen of scandals) and Parmalat in the EU.

Financial statements are hardly likely to explain fraudulent activities, how or why for example a company has several offshore Special Purpose Vehicles (SPVs) and whether these are part of the company's business operations or speculative, indeed illegal, structures designed to evade regulation and taxation laws. For example, the names of the Enron SPVs tell us something about the mentalities of the executives who set them up. Some of the partnerships were named after characters from Star Wars, such as Chewbacca (Chewco) and Jedi (Joint Energy Development Investments). Others were called Braveheart, Raptor, Porcupine, and Condor.

What is surprising in these developments is the banality of the deception. It seems that a great many other companies are doing the same thing, and not only in the USA as the Parmalat saga testifies.

This begs a host of questions: Why did Enron's accountants and lawyers approve of these activities? Why did Parmalat's auditors not see the EUR 15 billion 'hole' in the company's accounts growing over 10 years? Incompetence seems too tame an accusation to level at repeated audit teams over a decade. The term corruption comes to mind.

Wall Street is now ridden with fears that other companies have overstated earnings because of similarly misleading accounting practices that were devised by the major accounting and law firms. The SEC is investigating Global Crossing. The stocks of companies such as Worldcom, Reliant Services, the Irish drug firm Elan, and even General Electric have been falling in price for fear they will have to restate earnings as scrutiny of corporate books increases.

The former chief accountant of the SEC, Lynn Turner, estimates that investors have seen company stock prices fall by USD 200 billion as earnings were restated because of what were later deemed accounting errors. He finds the number of companies that have had to restate earnings has doubled since 1997[1].

Similarly, economists at the Levy Forecasting Center in Chappaqua, New York, believe that profits nationwide may be overstated on average by 20%.

Such developments render the traditional task of financial analysis effectively obsolete and new, perhaps more intuitive and judgmental or psychological elements may have to be factored into the analytical process given the dearth of reliable quantifiable data.

The sad fact is that the accounting profession has proven itself to be more concerned about fostering a 'positive and dynamic can-do spirit' with its bright young things in order to chase business and feed it into more lucrative consulting business, than applying accounting principles effectively. The result has been that the accounting profession as well as financial statements it audits has lost all credibility and the word 'Andersen' has become a joke. The exorcising of government and deregulation and emancipation of 'limits' on business are the very forces that threaten to undermine its credibility and expose the foundations of financial statements for all to see.

One cannot blame individual corporations since they are merely falling in line with the prevailing business environment (which is the result of currently prevailing corporate fads masquerading as economic policy) in order not to be left behind its competitors. The blame must be shared by the governments and regulatory bodies which, under pressure from corporate lobbyists, approved more and more lenient accounting techniques that enabled firms to estimate future profits liberally, especially when the profits came from trading in derivatives.

[1] Business Week, 'Accounting in Crisis', 28 January 2002.

This policy bears hallmarks of schizophrenia since two diametrically opposing tendencies are at play here:

- The first being the fostering of a completely deregulated environment that sees government as something essentially evil and to be eliminated, which resulted in the Enron and auditor dysfunctions and complete lack of credibility of accounting statements.
- The second being the current fad of governments' efforts extricating themselves from the anticipated shortfalls in pensions by encouraging individuals to invest in the stock market, whose investment criteria rely on analysing the shares of those companies tainted with corrupted accounting statements and overstated profits.

No wonder investors in the UK are eschewing the stock market for the 'buy to let' property market!

The Powers report is especially harsh on Arthur Andersen. It states that Andersen 'did not communicate the essence of the transactions in a sufficiently clear fashion to enable a reader of the financial statements to understand what was going on'. The Powers report also finds that Andersen had an integral part as consultants in creating Euron's Raptor partnerships, earning nearly USD6 million in fees on these and related partnerships alone.

The basic question arising from the Enron scandal is whether accounting statements can be required to reflect the true economic condition of the companies. In many companies, including Enron, there was at best a pretence of this, and often not even that. Perhaps the best overall reform, as Frank Partnoy suggests, might be to adopt legislation to make corporations, their officers, and their directors legally liable should the general requirement that disclosure reflect the economic reality of a company be violated. Treasury Secretary O'Neill has proposed that executives not be allowed to have insurance to cover any such liability, but few believe the White House will support his rather off-the-cuff proposal.

It is therefore important to bear these realities in mind when number crunching a spreadsheet and wonder about the true significance behind a change in an inventory turnover ratio from 57 to 64 days or speedup

in days' receivables from 37 to 34 days, when other larger problems may be in gestation.

Analytical methodology

Spreading the statements

Account presentations vary considerably from country to country, company to company, and even from year to year.

Analysis is therefore easier when the company accounts are reclassified into a standardized format that avoids distortions and is familiar to the credit analyst. Such standardized formats enable comparison with competitors and industry sectors.

This standardized format is known as a 'spreadsheet' and shows the assets and liabilities side of the balance sheet, income statement (with reconciliation of changes in retained earnings), and usually a ratio sheet incorporating a selection of financial ratios and a cash-flow model.

There is a range of industry specific spreadsheets for different companies including banks, insurance companies, finance houses, and manufacturers.

Spreadsheets are designed to present the company's financial details in a clear format which highlights key groupings of accounts and permits historical comparisons as well as comparisons with other companies. Most spreadsheets provide blank spaces for entering items peculiar to an individual concern or industry.

- The balance sheet spreadsheet format usually follows the standard arrangement in auditors' reports. Assets are arranged in descending order of liquidity: current assets such as cash, marketable securities, debtors (accounts receivable), and stock (inventory) are at the top, followed by fixed assets, investments, and other resources. Liabilities are arranged with short-term overdrafts and bank debt at the top, followed by long-term debt, subordinated debt, and equity.
- The income statement spreadsheet is likewise based on the statement and provides the means for studying the underlying financial condition of the company. Major items are also shown as ratios or percentages to the net sales figure, since consideration of these relationships

is necessary for a comprehensive analysis of operating efficiency. Following the net profit or net income figure the analyst must reconcile amounts paid out as dividends and amounts paid into reserves so that the retained earnings figure balances with the actual changes registered in the balance sheet.

- The Cash-Flow Reconciliation Statement is a statement incorporating elements from both the balance sheet and income statement spreadsheets. It is designed to highlight the movements in cash, on a cash basis (immediate) rather than accrual (based over time) basis. It enables one to see whether the company operated with a cash surplus or deficit and identify where the company's funds were utilized during the year.

Spreadsheets are now typically available from a number of providers of financial information – for example credit rating agencies sell CDs with the financial statements of banks or corporate which analysts can extract to form their own comparative tables. Financial statements can also be bought from other providers of financial information.

Nevertheless, it is important that the analyst understands how these summary spreadsheets are prepared and that their presentation can vary substantially from one bank to another. For example, spreadsheets in European banks often list fixed assets and intangibles at the top and liquid cash at the bottom whilst the US/UK favour the opposite – cash and liquid assets at the top and fixed assets/intangibles at the bottom.

Whilst spreading financial statements is tedious and time consuming, the bank as a lender needs to exercise due diligence in its lending activities. Lending decisions based on unaudited information provided by third parties leaves the bank in a vulnerable legal position; it is therefore essential that the bank using such preprepared financial statements understand how these spreadsheets are produced in order to be able to identify any potential anomalies.

Sample blank spreadsheet

Here is an example of a summary balance sheet and P/L spreadsheet for a corporate. Such a 'blank' spreadsheet is typically used by bankers to recast company accounts into a legible format, typically for entities which are not large enough to be included in databases.

Name	ABC Corporation				
Country	UK				
Business	Retail distribution				
Statement type	Consolidated				
Currency	GBP millions				
Audited/unaudited	Audited	Audited	Audited	Audited	Audited
Financial year end: 31 December	**2000**	**2001**	**2002**	**2003**	**2004**
Assets					
1 Cash					
2					
3 Marketable securities					
4					
5 Accounts receivable – trade					
6					
7 Inventory (sub total)					
8 Raw materials					
9 Work-in-progress					
10 Finished goods					
11 Other					
12 Total current assets	**0**	**0**	**0**	**0**	**0**
13 Land, plant, and buildings					
14 Machinery and equipment					
15					
16 Less: accumulated depreciation					
17 Net fixed assets	**0**	**0**	**0**	**0**	**0**
18 Investments					
19					
20 Loans to affiliates					
21					
22 Other assets					
23					
24 Sundry intangibles/goodwill					
25 Total assets	**0**	**0**	**0**	**0**	**0**
Liabilities					
26 Bank debt: short term					
27					
28 Current portion of LT debt					
29					
30 Accounts payable – trade					
31					
32 Accounts payable – other					
33					
34 Other					
35 Total non-current liabilities	**0**	**0**	**0**	**0**	**0**
36					
37 Long-term debt					
38					
39					
40					
41					
42 Other creditors					
43					
44 Total current liabilities	**0**	**0**	**0**	**0**	**0**
45 Minority interest					
46 Subordinated debt					
47 Common stock					
48 Preferred stock					
49					
50 Capital and legal reserve					
51					
52 Retained earnings					
53 Total equity	**0**	**0**	**0**	**0**	**0**
54 Total liabilities and equity	**0**	**0**	**0**	**0**	**0**
55 Continent liabilities					

Name	ABC Corporation				
Country	UK				
Business	Retail distribution				
Statement type	Consolidated				
Currency	GBP millions				
Audited/unaudited	Audited	Audited	Audited	Audited	Audited
Financial year end: 31 December	**2000**	**2001**	**2002**	**2003**	**2004**
Income statement					
56 Net revenues/sales	**0**	**0**	**0**	**0**	**0**
57 Less: cost of goods sold					
58					
59					
60 Gross profit	**0**	**0**	**0**	**0**	**0**
61 Selling, general, and admin expenses					
62 Depreciation and amortization					
63					
64 Net operating profit	**0**	**0**	**0**	**0**	**0**
65 Interest expense					
66 Interest income					
67 Prov. for doubtful receivables					
68					
69 Other expenses					
70 Other income					
71					
72 Net profit before tax	**0**	**0**	**0**	**0**	**0**
73 Income taxes					
74					
75 Net profit after tax	**0**	**0**	**0**	**0**	**0**
76 Extraordinary items					
77 Gain					
78 Loss					
79 Other					
80 Net profit	**0**	**0**	**0**	**0**	**0**
81 Dividends					
82					
83 Transfer to reserves					
84					
85 Balance to retained earnings	**0**	**0**	**0**	**0**	**0**
86 Equity raised					
87					
88 Change in capital reserves					
89					
90 Other					
91 Increase in net worth	**0**	**0**	**0**	**0**	**0**
92 Cross check RE	0	0	0	0	0
93 Cross check NW	0	0	0	0	0

Analysis and ratios	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 (%)
94 Return on sales (72/56)	0.00	0.00	0.00	0.00	0.00
95 Cash flow (80 + 62)	0.00	0.00	0.00	0.00	0.00
96 Tangible net worth (53 + 46 − 24)	0.00	0.00	0.00	0.00	0.00
97 Permanent capital (53 + 44)	0.00	0.00	0.00	0.00	0.00
98 Working capital (12 − 35)	0.00	0.00	0.00	0.00	0.00
99 Debt to equity ratio (53/(54 − 53))	0.00	0.00	0.00	0.00	0.00
100 Current ratio (12/35)	0.00	0.00	0.00	0.00	0.00
101 Quick ratio ((12–7)/35)	0.00	0.00	0.00	0.00	0.00
102 Trade receivable turnover (5/56) × 365	0 days	0 days	0 days	0 days	0 days
103 Inventory turnover (7/57) × 365	0 days	0 days	0 days	0 days	0 days
104 Trade payable turnover (30/57) × 365	0 days	0 days	0 days	0 days	0 days

Analysing the spreadsheets

Once the company's financial statements have been spread, the task of analysing the information in them can begin. In all likelihood, the annual report will not provide all the answers. The analyst should therefore be thinking about and analysing the numbers on the spreadsheet and asking questions such as:

- What element constitutes the greatest risk to the company? How does the company know this?
- Is the company selling sufficient volume? Is the stock too high, debtors too low?
- Is total debt too high (both in terms of gearing/leverage as well as in terms of cash-flow servicing interest payments)?
- Is the company progressing or regressing in its areas of activity?
- Are changes in various figures adequately explained in the annual report? What are their causes?
- What kind of job did the auditors do?

Much of the work in credit analysis consists of asking the right questions.

There are several approaches that can be adopted in a financial analysis of the spreadsheet.

It is important that the analyst has at least three, and ideally five years, of financial information available to enable identification of trends over time.

Debt, stock, share capitals, net worth, and sales all need to be considered as trends. This is one of the primary techniques in credit analysis.

Such approaches however are retrospective and in the dot-com era, other more forward-looking techniques need to supplement this approach. The goal is to understand a company's ability to cope with future growth or to repay outstanding loan facilities.

The analysis should look at balance sheet structure, sales growth, and income and expenditure. In this way you can establish whether the company has a policy of ploughing back profits into retained earnings and investing them in the company, or paying them out as dividends.

Financial ratios can also be compared to those of previous years in trend analysis, or against major competitors.

In assessing financial risk, it is important not just to look at the numbers, but to tie them into additional factors which could be affecting them. These will include: where the company operates, recent alliances, changes in management, ownership, operations, or the regulatory environment.

Such factors will not appear in the statements but will have a definite impact on the operations of the company, and even on its ability to remain a viable creditworthy entity in the future, for example, over the period of a long-term financing facility.

Using comparative financial ratios

Financial ratio analysis supplements the balance sheet and income statement analysis. In past ratios were manually calculated but today, the computerization of spreadsheets means that ratio calculations are already programmed into the computer spreadsheet. The analyst's task therefore involves selecting and interpreting the ratios rather than calculating them. Nevertheless, you should understand how these ratios are calculated.

The information provided by ratios can be a valuable tool in analysing the operations of a specialized company such as an airline, pharmaceutical, or chemical company. Ratios are a useful yardstick both to compare a company with competitors in a similar industry and to assess the strength of a company's financial structure. However, in using comparative ratios, you should be aware that most companies have evolved in different ways and that no two companies' operations are identical, even in the same industry.

Furthermore, no two companies follow the same accounting procedures although they may both follow SSAP. Therefore, although operating ratios (such as fuel costs or passenger seat revenues in the case of airlines) can be a useful basis of comparison, financial ratios will be measuring the

financial condition of two companies that are dissimilar, with separate histories and, most likely, different accounting practices. You should keep this fact in mind at all times.

Ratios, which are discussed at length in Ratio Analysis, fall into three groups, measuring a company's:

- financial performance,
- financial standing,
- investment prospects.

They help evaluate balance sheet structure (current ratios), over indebtedness (leverage), excessive levels of stock lying idle (stock days-on-hand), profitability (return on sales, return on assets), and ability to control operating expenses and generate cash flow sufficient to satisfy operating expenses and debt-servicing requirements.

Since banks usually lend at agreed rates of interest defined in the loan documentation, and know what the return on their investment is, they are more interested in financial ratios measuring a company's ability to generate cash flow, repay debt, and remain financially sound than in market value, or share-related ratios such as earnings per share (EPS), or price earnings (P/E) which measure ability to pay dividends out to shareholders.

In analysing a company's financial statements, there is a danger of being overwhelmed by the sheer volume of data. That is why the typical spreadsheet uses only a few salient groups of ratios to summarize the company's leverage, capitalization, liquidity, profitability, and market valuation. There are no 'right' ratios to use. Selecting and using ratios depends on what you wish to measure. It is for the analyst to be selective and decide which ratios are to be used in order to measure areas which may be of specific interest or which may warrant further examination.

To conclude, the following points should be noted in using ratios:

- Financial ratios do not provide answers but can help in finding the right questions to ask.

- There is no international standard for financial ratios. Ratios should be interpreted with common sense rather than blind use.
- Be selective in the use of ratios. Different ratios can often tell you the same thing. Ratios provided by the company should be treated with caution, as they can be misleading.
- Ratios are far more useful when compared with ratios of previous years, or with other companies in the same business.

Peer group analysis

Peer group analysis typically comes to the fore when one has a wealth of data to work with. Typically, one can compare the financial ratios calculated on the spreadsheet with published data, such as lists of industry standard ratios. The problem here is that one does not know how the spreadsheets and resulting calculations from the published sources have been arrived at, thereby rendering comparison between the published work and the analysts' spreadsheet meaningful.

Another approach is simply to rely on a complete set of data on companies such as those published by the credit rating agencies or purveyor of financial data and information such as Bureau van Dijk's AMADEUS (Analyse MAjor Database from EUropean Sources). Here, across-the-board comparisons become possible save for the fact that one has not been involved in or been able to control the spreadsheet classification process.

Outside information

Many other sources of information are available to supplement a company's financial statements. Much of this information is free and easily obtainable in the public domain and over the Internet.

This information can be of a general macroeconomic nature such as industry studies from the ratings agencies such as Standard & Poor's or Moody's or country and economic studies on countries or oil producers from web sites such as the US State Department Country Commercial Guides, Lobbying Organizations such as the Centre for Strategic and International Studies (www.csis.org), or the Energy Information Agency Country Analysis Briefs (www.eia.doe.gov).

While this information may not be subject to the broker reports' agenda of recommending dud shares on the stock market, there may be another agenda. It is a good idea therefore to bear in mind who is preparing this free information and why. In reality, 'free' does not exist, at least in a capitalist economy, and if this information is being provided 'free of charge', that is usually because it is satisfying someone's agenda somewhere. As long as you are aware of who is preparing this information (which is often pseudoacademic since it is crafted to propagate a particular *weltanschauugen* via selective use of facts rather than marshal all the evidence and analyse it in the classic process of scientific enquiry) and why, one can take it with a pinch of salt and use it to broaden one's overall view of the matter being analysed without being dragooned to the cause.

Such data should provide enough information to develop a complete picture of the company, its operations, and management. The normal scope of a credit analysis requires that a substantial amount of verified and consistent data be available on which to base a decision. Moreover, the use of such information should be cited so that the reader can make his own mind up about the validity or not of the information.

Information available direct from the borrower

The purpose of information is to enable effective credit decisions to be made, so that costly lending errors can be avoided. It is important therefore that information be reliable. Consider the essential information which is obtained directly from members of senior management, such as the CEO or finance director. How reliable is this information?

In Enron, for example, the Senior Manager was Kenneth Lay and the Finance Director Jeffrey Skilling, who in his testimony to Congress suffered from acute loss of memory most atypical of a senior executive's performance[2]. Despite the fact that 27 Enron managers have been charged with fraud and nine pleaded guilty, Lay and Skilling have yet (as of February 2004) to be brought into court on charges related to Enron's implosion[3]. In Europe,

[2] 'I do not recall'. Jeffrey Skilling, 26 times, in his testimony before Congress.
[3] Houston Chronicle, Houston, 13 February 2004.

CEOs include Asil Nadir of the early 1990s collapse of publicly quoted Polly Peck Plc, or Ruiz-Mateus of Spain's RUMASA. Following the collapse of Polly Peck, Nadir Sougnt refuge in the illegitimate state of Turkish North Cyprus, where he cannot be extradited for having perpetrated corporate fraud in the UK.[4] Likewise, Ruiz-Mateus absconded to Argentina while the Spanish government combed over the ashes of the collapsed RUMASA group.[5]

In Italy, Parmalat, hid a EUR 15 billion 'hole' in its accounts from its auditors for 10 years, and deceived its auditors by fabricating a forged photocopy of a deposit certificate with the pasted-on logo of an offshore subsidiary of a US bank[6] (see annex 6.2). One wonders what sort of audit guidelines the company had in its audit procedures manual and whether they were being followed or not.

It is normal to ask oneself how accurate such financial statements are likely to be both during a best case scenario (inflating corporate performance to please share and rating analysts) as well as a worst case scenario (hiding fraud). Moreover, one can pose the question of whether the company's auditors are colluding in the fraud in an effort to retain profitable business and indeed sell more profitable 'consulting' business (for example, many of the fraudulent mechanisms present in Enron were designed by Andersen, its auditors and the supporting documentary

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[4] Nils Pratley, 3 September 2003, The Guardian – Asil Nadir, the Polly Peck tycoon who fled to northern Cyprus in 1993 to avoid charges involving theft totalling GBP 34m, yesterday astonished friends, Turkish politicians and the Serious Fraud Office by pledging to return to Britain to clear his name.
The SFO immediately said it planned to pursue charges against him and the trial is likely to be a test of the agency's credibility after a series of courtroom failures. It will cover events that happened up to 15 years ago and culminated in 1990 in the collapse of Polly Peck, a fruit and electronics business that was a stock market star in the 1980s.
The Tory party was also a victim of Polly Peck's fall. It was acutely embarrassed by Mr Nadir's status as a major donor and Michael Mates, the Northern Ireland secretary, was forced to resign after it was revealed he sent Mr Nadir a watch inscribed 'don't let the buggers get you down' shortly before his escape.

[5] Gooch, Valencia Life Magazine.

[6] The Commission's complaint, filed in U.S. District Court in the Southern District of New York, alleges that Parmalat engaged in one of the largest and most brazen corporate financial frauds in history. 'SEC Litigation Release No. 18527, 30 December 2003'.After fraudulently certifying EUR 8 billion (USD 10 billion) in assets in their company's balance sheet, Parmalat entered bankruptcy protection last week and founder and former CEO Calisto Tanzi fled the country. He subsequently returned and was immediately detained by police. The scandal and its aftermath continue to unfold and Parmalat is being called 'the Europe Enron' for its massive fraud and illegal business practices. See the forged deposit certificate in Chapter 6 Annexes (Creative Accounting Exhibit No. 1).

evidence was destroyed by Andersen after it received a subpoena from the Securities and Exchange Commission[7]).

Since it is impossible to certify all accounts as having been properly audited, prudency dictates that these audited statements be considered as failing to satisfy the requirements of mission-critical reliability.

These audit shortcomings moreover have further knock-on effects, not only on the quality of financial statements but also on the relevance of credit ratings issued by the credit rating agencies, since the agencies rely on the financial statements for issuing credit ratings and cheerfully admit that they do not question the validity of accounting statements since this is the auditor's job.[8]

Financial statements, credit references, loan proposals, certificates of registration and incorporation, and lists of authorized signatories are all usually provided by the borrower, but as in the case of Parmalat creating SPVs with fraudulent accounts showing fictitious deposits, it is best to establish a clear-cut corporate structure and map the convoluted web-like structures of these entities. In addition, you can obtain this information by liaising with the account officers when they visit the company and by talking to the company's management or lawyers.

Given the ubiquitousness of accounting fraud witnessed in the financial scandals of 2001–2003, it is prudent to suggest that all such information of an 'official source' in any case be vetted by lawyers as bona fide and genuine if for any reason, to protect the bank from subsequent accusations that it failed to exercise due diligence by undertaking a thorough and complete risk analysis prior to extending financing.

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[7] FT.Com, Q&A: Enron finds itself in a Washington circus, Adrian Michaels, Gerard Baker, and Peter Thal Larsen, 13 February 2002 16:31GMT.

[8] Financial Oversight of Enron: The SEC and Private-Sector Watchdogs Report of the Staff to the Senate Committee on Governmental Affairs; 8 October 2002; 'When asked by Committee staff whether they considered as a qualitative factor in their analysis whether the company was engaging in aggressive accounting, the agencies indicated that they rely on the auditors' work. This was consistent with their testimony at the hearing. In the Committee staff interviews, the credit rating analysts resisted staff's suggestion that a company's accounting methods should be part of their analysis, because even when financial statements comply with GAAP, they nevertheless may not present all the information an investor would want to know, or all the information a credit rater would want to know. This is troubling, because the fact that a company may be using the flexibility of GAAP to hide problems should be a consideration, particularly if the credit raters take a long-term view'.

At risk of stating the obvious, the importance of verifying such basic information cannot be underestimated. For example, in a large multinational group it is important to know the exact name of the subsidiary to which you may be lending, whether it has been properly incorporated in its operating country and whether the officers of such companies are authorized to borrow money, offer guarantees, and sign agreements on behalf of the company. It is perhaps not complete cynicism to ask the question if the goal of erecting these convoluted and Byzantine corporate structures is to obfuscate the understandable.

This type of information can be crucial, not only in assessing the creditworthiness of the customer, but indeed their mentality, as well as evaluating and minimizing the risks involved in documentation relating to the loan, and in claiming assets in the event of default.

Bank and trade enquiries

A credit analyst should check internal bank records in the case of an existing or previous customer to see if the account has functioned smoothly, as well as enquiries made to the company's other banks. Direct enquiries can also be made with both suppliers and customers whose names can be provided by the borrower (for example by asking for a list of the company's 10 largest debtors and creditors – or accounts receivable and payable).

Business registry databases

For example, records of major secured debt can be held in a business registry office (Companies House in the UK). This is typically used when dealing with smaller-sized businesses which may be unknown to the investor/creditor community.

Bureau van Dijk AMADEUS electronic database

Subscription services via the Internet provide information on nearly anything one might need. Such information can be particularly useful to see what a company has been doing since its last published annual report.

For example, a company could have changed its corporate structure, dismissed certain members of management, sold or acquired a subsidiary, entered into an alliance or cooperative agreement with a competitor to market or distribute a product, or availed itself of the services of a rival bank in closing a transaction.

BvD AMADEUS[9] is a comprehensive, pan-European database containing financial information on 6 million public and private companies in 38 European countries. It combines data from over 35 information providers (IPs). AMADEUS is a modular product; you can choose the level of coverage that you require – the top 2,500,000 companies, the top 1.5 million or all companies.

AMADEUS is exclusive to BvD and its information providers and is not available over any other platform. BvD identifies the best source of information in each country and applies strict inclusion criteria to prevent any bias in coverage. A standard company report includes: 22 balance sheet items, 25 P/L account items and 26 ratios, descriptive information including trade description and activity codes (NACE 1, NAICS or US SIC can be used across the database), ownership information which is researched by BvD's own team of consultants, Reuters' news, security and price information, and links to an executive report with integral graphs plus a report comparing the financials of the company's default peer group. In addition to the existing ratios you can also create your own that you can display in the reports and also use in your searches and analyses.

Each company is part of a default peer group based on its activity codes; integral graphs illustrate its position in this peer group. A company tree diagram instantly illustrates the structure of the group.

In keeping with BvD's other Internet products AMADEUS offers two search formats. Quick multi-step search provides one screen searching using the 11 most popular criteria for fast answers to basic queries. The expert mode has over 100 search criteria and features such things as Boolean logic (and,

[9] http://amadeus.bvdep.com/

or, not) and times series searching. Integral analysis software allows you to compare companies against each other and produce tables and graphs to illustrate your results. These can be downloaded into most packages.

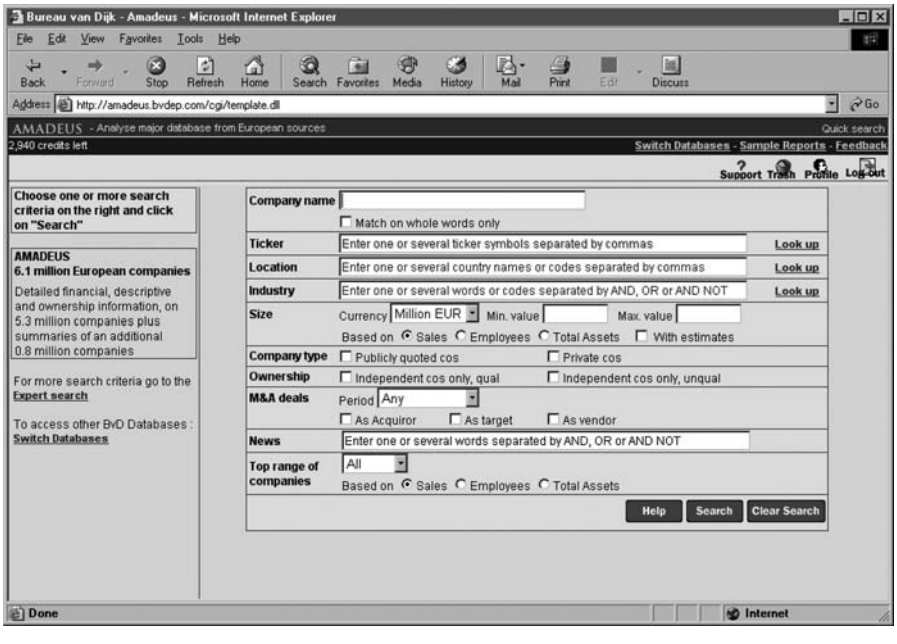
Further features include: an Addin function that facilitates the analysis of 'live' data from AMADEUS within Excel (XL)/Access and BvD's matching software, which allows you to compare your own database records with those that also occur in AMADEUS and update or enhance your data accordingly.

AMADEUS is available on CD/DVD-ROM, as an intranet feed and on the Internet.

The following two screencaps illustrate the company search mechanism:

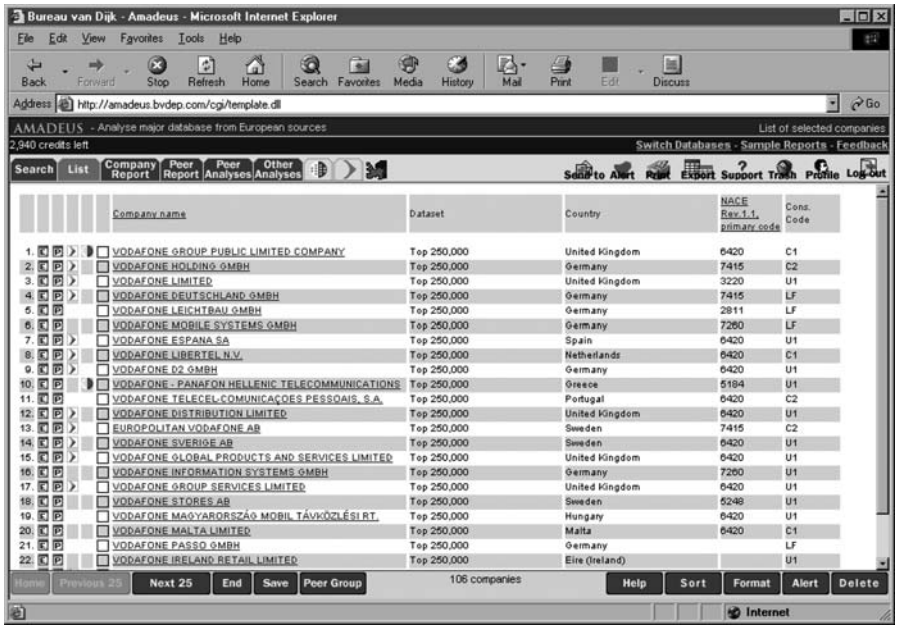
- The first is to key in the requisite search data.
- The second lists all the relevant companies identified by the BvD search engine.

AMADEUS – Search Screen



Source: Bureau Van Dijk, AMADEUS 2004

AMADEUS: Company Listing Screen



Source: Bureau Van Dijk, AMADEUS 2004

Such on-line databases are rapidly supplanting traditional paper based annual reports and idiosyncratic and heterogeneous spreadsheet models. We will be treating these issues in more detail later.

Complete AMADEUS spreadsheet (Vodafone)

Due to the labour intensive work involved in spreading financial statements, companies such as BvD specialize in electronic publishing, offering electronic databases with subscription access. Such databases for example cover over 1.5 million companies on a pan-European basis, and offer a data-rich functionality with extensively detailed financial statements and the possibility of combining that data to look at industry wide trends and peer group analyses, topics which we shall cover later.

The on-line database can be accessed by web browser and reports converted into exportable rich text format (RTF) or XL format for subsequent manipulation. Here, we provide the full spreadsheet for a major EU corporate, Vodafone, the mobile telephone operator.

Vodafone Group Public Limited Company

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RG14 2FN NEWBURY

UK

Phone +44 1635 33251

Web site www.vodafone.co.uk

Reporting basis	Consolidated data
BVD ID number	GB01833679
BVD account number	GB01833679C
ISIN number	GB0007192106
SEDOL number	0719210
VALOR number	000416029
Date of incorporation	17/07/1984
Legal form	Public, quoted
Latest account date	31/03/2003
Account published in	GBP
Type of account available	Consolidated

Status Active
Publicly quoted Yes

Main exchange London Stock Exchange SETS

Ticker symbol VOD

Operating revenue/turnover	30,375 million	**P/L for period**	−9,164 million
Market cap (9/01/2004)	100,893,417,000	**Employees**	66,667
Primary NACE Rev 1.1 code	6420 – Tele-communications		
Peer group	6420 VL – (very large companies)		
Number of recorded shareholders	6	**Number of recorded subsidiaries**	77
BvD independence indicator	A–		

Financial profile

Consolidated data	**31/03/2003 12 months million GBP**	**31/03/2002 12 months million GBP**	**31/03/2001 12 months million GBP**	**31/03/2000 12 months million GBP**	**31/03/1999 12 months million GBP**
Operating revenue/ turnover	30,375	22,845	15,004	7873	3360
Profit (loss) before tax	−6208	−13,539	−8095	1349	935
Cash flow	6690	−1837	1793	2084	965
Total assets	163,280	162,900	172,065	153,368	3644
Shareholders' funds	131,534	133,428	147,782	142,360	815
Current ratio	0.60	0.70	1.43	0.57	0.52
Profit margin (%)	−20.44	−59.26	−53.95	17.13	27.83
Return on shareholders' funds (%)	−4.72	−10.15	−5.48	0.95	114.80
Return on capital employed (%)	−3.41	−8.49	−4.35	1.17	48.70
Solvency ratio (%)	80.56	81.91	85.89	92.82	22.36
Number of employees	66,667	67,178	53,325	29,465	12,642

Vodafone Group Public Limited Company: Industry/Activities

Trade description
Group is principally engaged in the provision of mobile telecommunications, providing mobile voice, messaging, business, information and entertainment services to its global customer base.

UK SIC (2003) code(s)

Primary code:

6420 Telecommunications

Secondary code(s):

7415 Holding companies including head offices

NACE Rev. 1.1 code(s)

Primary code:

6420 Telecommunications

Secondary code(s):

7415 Management activities of holding companies

US SIC code(s) [derived from NACE Rev. 1.1 code(s)]

Core code:

489 Communications services, not elsewhere specified

Primary code(s):

4899 Communications services, not elsewhere specified

Secondary code(s):

6712 Offices of bank holding companies
6719 Offices of holding companies, not elsewhere classified
6722 Management investment offices, open-end

NAICS 2002 code(s) [derived from NACE Rev. 1.1 code(s)]

Core code:

5179 Other telecommunications

Primary code(s):

517910 Other telecommunications

Secondary code(s):

551111 Offices of bank holding companies
551112 Offices of other holding companies

Vodafone Group Public Limited Company: Balance Sheet

Consolidated data	**31/03/2003 12 months million GBP**	**31/03/2002 12 months million GBP**	**31/03/2001 12 months million GBP**	**31/03/2000 12 months million GBP**	**31/03/1999 12 months million GBP**
Fixed assets	154,689	153,462	154,375	150,851	2852
Intangible fixed assets	108,085	105,944	108,839	22,206	329
Tangible fixed assets	19,574	18,541	10,586	6307	2150
Other fixed assets	27,030	28,977	34,950	122,338	372
Current assets	8591	9438	17,690	2517	792
Stocks	365	513	316	190	45
Debtors	2858	3397	1863	977	385
Other current assets	5368	5528	15,511	1350	362
Cash and cash equivalent	475	80	68	159	6
Total assets	163,280	162,900	172,065	153,368	3,644
Shareholders' funds	131,534	133,428	147,782	142,360	815
Capital	4275	4273	4054	3797	155
Other shareholders' funds	127,259	129,155	143,728	138,563	660
Non-current liabilities	17,453	16,017	11,906	6567	1299
Long-term debt	13,175	12,584	10,772	6038	1137
Other non-current liabilities	4278	3433	1134	529	162
Current liabilities	14,293	13,455	12,377	4441	1530
Loans	1443	1329	3618	796	174
Creditors	2497	3335	1899	706	216
Other current liabilities	10,353	8791	6860	2939	1141
Total shareholders' funds and liabilities	163,280	162,900	172,065	153,368	3644
Working capital	726	575	280	461	214
Enterprise value	91,142	102,376	108,872	177,159	36,820
Number of employees	66,667	67,178	53,325	29,465	12,642

P/L account Consolidated data	31/03/2003 12 months million GBP	31/03/2002 12 months million GBP	31/03/2001 12 months million GBP	31/03/2000 12 months million GBP	31/03/1999 12 months million GBP
Operating revenue/ turnover	30,375	22,845	15,004	7873	3360
Sales	n.a.	n.a.	n.a.	n.a.	n.a.
Costs of goods sold	17,896	n.a.	8702	4359	1809
Gross profit	12,479	n.a.	6302	3514	1551
Other operating expenses	17,774	n.a.	12,741	2533	704
Operating P/L	−5295	−11,834	−6439	981	847
Financial revenue	210	−860	−500	756	183
Financial expenses	1123	845	1156	388	94
Financial P/L	−913	−1705	−1656	368	89
P/L before tax	−6208	−13,539	−8,095	1349	935
Taxation	2956	2140	1290	685	252
P/L after tax	−9164	−15,679	−9385	664	683
Extra and other revenue	n.a.	n.a.	n.a.	n.a.	n.a.
Extra and other expenses	n.a.	n.a.	n.a.	n.a.	n.a.
Extra and other P/L	0	0	0	0	0
P/L for period	−9164	−15,679	−9385	664	683
Export turnover	n.a.	n.a.	11,560	4972	1273
Material costs	n.a.	n.a.	n.a.	n.a.	n.a.
Costs of employees	2266	1987	1540	874	349
Depreciation	15,854	13,842	11,178	1420	282
Interest paid	1123	845	1156	388	94
Cash flow	6690	−1837	1793	2084	965
Added value	13,035	3135	5779	4031	1661
EBIT	−5295	−11,834	−6439	981	847
EBITDA	10,559	2008	4739	2401	1129

Vodafone Group Public Limited Company: Ratios

Consolidated data	31/03/2003 12 months	31/03/2002 12 months	31/03/2001 12 months	31/03/2000 12 months	31/03/1999 12 months
Current ratio	0.60	0.70	1.43	0.57	0.52
Liquidity ratio (%)	0.58	0.66	1.40	0.52	0.49
Shareholders' liquidity ratio (%)	7.54	8.33	12.41	21.68	0.63
Solvency ratio (%)	80.56	81.91	85.89	92.82	22.36
Gearing (%)	14.37	13.00	10.50	5.17	180.80
Share funds per employee (Ths.)	1973	1986	2771	4831	64
Work. capital per employee (Ths.)	11	9	5	16	17
Total assets per employee (Ths.)	2449	2425	3227	5205	288
Profit margin (%)	−20.44	−59.26	−53.95	17.13	27.83
Return on shareholders' funds (%)	−4.72	−10.15	−5.48	0.95	114.80
Return on capital employed (%)	−3.41	−8.49	−4.35	1.17	48.70
Return on total assets (%)	−3.80	−8.31	−4.70	0.88	25.67
Interest cover	−4.72	−14.00	−5.57	2.53	9.00
Stock turnover	83.22	44.53	47.48	41.44	75.17
Collection period (days)	34	54	45	45	41
Credit period (days)	30	53	46	32	23
Net assets turnover	0.20	0.15	0.09	0.05	1.59
Costs of employees/oper. rev. (%)	7.46	8.70	10.26	11.10	10.39
Operat. rev. per employee (Ths.)	456	340	281	267	266
Aver. cost of empl./year (Ths.)	34	30	29	30	28
Profit per employee (Ths.)	n.a.	n.a.	n.a.	46	74
Cash flow/turnover (%)	22.02	−8.04	11.95	26.47	28.73
Gross margin (%)	41.08	n.a.	42.00	44.63	46.15
EBIT margin (%)	−17.43	−51.80	−42.92	12.46	25.20
EBITDA margin (%)	34.76	8.79	31.58	30.50	33.60
Export turnover/total turnover (%)	n.a.	n.a.	77.05	63.15	37.87

Vodafone Group Public Limited Company: Board Members and Officers

Name	Function
Peter Bamford	Director
Michael Boskin	Director
Alec Broers	Director
John Buchanan	Director
Vittorio Colao	Director
Thomas Geitner	Director
Paul Hazen	Director
Julian Horn-Smith	Director
Penny Hughes	Director
Kenneth Hydon	Director
Ian Maclaurin	Director
Arun Sarin	Director
David Scholey	Director
Jurgen Schrempp	Director
Luc Vandevelde	Director
Stephen Scott	Company Secretary

Auditors

Deloitte & Touche

Mergers and Acquisitions

1. **28/01/2004:** Vodafone Group public limited company may increase stake in Polkomtel SA
2. **27/01/2004:** Vodafone may increase Safaricom stake
3. **26/01/2004:** Vodafone Group has increased its stake in Vodafone-Panafon
4. **23/01/2004:** Sistema declines to comment on rumour that it may sell its stake in Mobile TeleSystems
5. **5/01/2004:** Acciona SA has sold its stake in Vodafone Group
6. **2/01/2004:** Acciona sells shares in Vodafone
7. **4/12/2003:** Vodafone Panafon's stake sold
8. **2/12/2003:** Vodafone has bought back shares
9. **2/12/2003:** Vodafone has bought back shares
10. **2/12/2003:** Vodafone has bought back shares
11. **2/12/2003:** Vodafone has bought back shares
12. **2/12/2003:** Vodafone has bought back shares
13. **2/12/2003:** Vodafone has bought back shares
14. **2/12/2003:** Vodafone has bought back shares
15. **2/12/2003:** Vodafone has bought back shares
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20. **2/12/2003:** Vodafone has bought back shares
21. **2/12/2003:** Vodafone has bought back shares
22. **2/12/2003:** Vodafone has bought back shares
23. **2/12/2003:** Vodafone has bought back shares
24. **2/12/2003:** Vodafone has bought back shares
25. **24/11/2003:** Vodafone could launch takeover for Vivendi Universal
26. **12/11/2003:** Vodafone denies plans to increase Swisscom Mobile stake
27. **17/10/2003:** Vodafone Group public limited company has completed the acquisition of Project Telecom public limited company
28. **12/10/2003:** Vodafone to invest in Vodacom International
29. **6/10/2003:** Vodacom to acquire majority stake in Econet Wireless
30. **4/08/2003:** ATX acquires Vodafone PASSO
31. **30/07/2003:** Alba sells Vodafone shares
32. **29/07/2003:** Vodafone may hit the acquisition trail.
33. **6/06/2003:** Vodafone Group has sold its stake in RPG Cellular to Airtel
34. **22/05/2003:** Hutchison Whampoa Ltd has sold half of its stakes in Vodafone Group public limited company
35. **21/05/2003:** Vodafone may increase Telecel stake
36. **9/04/2003:** Vodafone Group public limited company acquires Vodafone Libertel NV
37. **8/04/2003:** Vivendi to sell Vodafone Egypt stake
38. **22/03/2003:** Kutxa plans to sell Vodafone stake
39. **26/02/2003:** Orange, Vodafone Group, T-Mobile, and Telefonica Moviles announce joint venture
40. **5/02/2003:** Vodafone begins compulsory acquisition of shares in Telecel-Comunicacoes Pessoais it does not own
41. **5/02/2003:** Vodafone Group has finalized an offer for the remaining stake of Europolitan Vodafone
42. **3/02/2003:** Tiscali buys Airtelnet
43. **21/01/2003:** Vodafone Group public limited company has bought stake in Transtel SA
44. **6/01/2003:** Vodafone may sell its stake in Verizon Wireless Inc.
45. **31/12/2002:** SCH sells part of Vodafone stake

(*continued*)

46. **28/11/2002:** Vodafone has increased stake in Libertel
47. **4/11/2002:** Unicaja sells part of Vodafone stake
48. **16/10/2002:** Vodafone Group denies rumours of Vivendi acquisition
49. **10/10/2002:** Vodafone increases stake in VRAM
50. **30/08/2002:** Vodafone has acquired the remaining stake in Vizzavi from Vivendi
51. **9/08/2002:** Vodafone Group public limited company increase stake in Vodafone Telecel-Comunicacoes Pessoais SA/Vodafone Sverige
52. **31/07/2002:** Tiscali reportedly close to buying Navegalia
53. **31/07/2002:** Vodafone may dispose of Verizon Wireless stake
54. **7/07/2002:** Vodafone Group public limited company may buy SFR
55. **23/05/2002:** VRAM Rt has increased its capital
56. **16/05/2002:** Vodafone Group public limited company is to increase its minority stake in China Mobile (Hong Kong) Ltd
57. **16/05/2002:** Vodafone Group public limited company is to increase its minority stake in China Mobile (Hong Kong) Ltd
58. **1/05/2002:** Vodafone Group public limited company is to buy Vodafone Australia in a 105 million Australian Dollar deal
59. **22/04/2002:** Vodafone Group public limited company is rumoured to be buying Promonte GSM do
60. **18/04/2002:** According to media speculation, Vodafone Group public limited company is interested in Mobilkom Austria
61. **3/04/2002:** Vodafone Group public limited company has taken a minority stake in Vodafone Spain
62. **2/04/2002:** Vodafone Group public limited company has increased its stake in Airtel Mobile SA
63. **25/03/2002:** France Telecom completes share buyback from Vodafone
64. **25/03/2002:** France Telecom SA has acquired back 49.7 million of its own shares for a consideration of XEU 4.97 billion from Vodafone Group public limited company

Vodafone Group Public Limited Company: Shareholders

BvD independence indicator: A–

Company name	Country	Type	Ownership		Source		Company information		
			Direct (%)	Total (%)	Source ident.	Date of information	Closing date	Op. revenue (million USD)*	Total assets (million USD)
Shareholders									
1. Bank of New York	n.a.	B	13.40	n.a.	RS	05/2002	n.a.	n.a.	n.a.
2. Unicaja – Montes de Piedad y Caja de Ahorros de Ronda, Cadiz, Almeria, Malaga Y Antequera	ES	B	0.13	n.a.	WW	05/2003	><	510	15,440
3. Gent C.C.	n.a.	I	–	n.a.	RS	03/2002	–	–	–
4. Horn-Smith J.M.	n.a.	I	–	n.a.	RS	03/2002	–	–	–
5. Hutchison Whampoa Ltd	HK	C	–	n.a.	OS	05/2003	><	9647	63,302
6. Hydon K.J.	n.a.	I	–	n.a.	RS	03/2002	–	–	–

* For an insurance the corresponding value is the gross premium written and for a bank it is the operating income (memo).

This is a quoted company.

Vodafone Group Public Limited Company: subsidiaries (roll-up structure)

	Company name	Country	Ownership				Source		Company information		
			Direct (%)	Total (%)	Level of own.	Status	Source ident.	Date of information	Closing date	Op. revenue (million USD)*	Total assets (million USD)
1.	**Project Telecom public limited company**	GB	100.00	100.00	1	UO+	OS	10/2003	><	508	123
2.	Vodafone Finance limited	GB	100.00	100.00	1	UO+	RM	03/2002	><	n.a.	6404
3.	Vodafone Americas Inc.	US	–	100.00	n.a.	UO+	RM	03/2002	n.a.	n.a.	n.a.
4.	**Vodafone Deutschland GMBH**	DE	–	100.00	n.a.	UO+	RM	03/2002	><	3579	n.a.
5.	**Vodafone Europe B.V.**	NL	–	100.00	n.a.	UO+	RM	03/2002	=	n.a.	6820
6.	**Vodafone International B.V**.	NL	–	100.00	n.a.	UO+	RM	03/2002	=	1325	7901
7.	Vodafone International Inc.	US	–	100.00	n.a.	UO+	RM	03/2002	n.a.	n.a.	n.a.
8.	Vodafone Ireland Limited	IE	–	100.00	n.a.	UO+	RM	03/2002	n.a.	n.a.	n.a.
9.	**Vodafone Limited**	GB	–	100.00	n.a.	UO+	RM	03/2002	=	6238	15,665
10.	Vodafone New Zealand Limited	NZ	–	100.00	n.a.	UO+	RM	03/2002	n.a.	n.a.	n.a.
11.	**Vodafone UK Limited**	GB	–	100.00	n.a.	UO+	RM	03/2002	><	0	32,523
12.	**General Mobile Corporation Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	159
13.	**Mobile Telecom Group Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	35	6
14.	**Voda Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	934
15.	**Vodacall Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	n.a.
16.	Vodafone (New Zealand) hedging Limited	GB	WO	WO	1	UO+	JO	05/2002	><	n.a.	253
17.	**Vodafone Asia Pacific Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
18.	**Vodafone Cellular Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	1828
19.	**Vodafone Corporate Secretaries Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0

20.	Vodafone EURO Hedging Limited	GB	WO	WO	1	UO+	JO	05/2002	><	n.a.	44,723
21.	**Vodafone Euro Hedging Two**	GB	WO	WO	1	UO+	JO	05/2002	><	n.a.	30,778
22.	**Vodafone European Investments**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	143,766
23.	**Vodafone European Portal Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
24.	**Vodafone Global Products and Services Limited**	GB	WO	WO	1	UO+	JO	05/2002	><	284	267
25.	**Vodafone Group (Directors) Trustee Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
26.	**Vodafone Group Pension Trustee Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
27.	**Vodafone Group Services Limited**	GB	WO	WO	1	UO+	JO	05/2002	><	113	164
28.	**Vodafone Group Share Schemes Trustee Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
29.	**Vodafone Group Share Trustee Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
30.	**Vodafone International Holdings BV**	NL	WO	WO	1	UO+	JO	03/2003	=	n.a.	20,433
31.	**Vodafone International Operations Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	260,557
32.	**Vodafone Investments Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	1063
33.	**Vodafone Mobile Communications Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	5172
34.	**Vodafone Mobile Enterprises Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	46,052
35.	**Vodafone Nominees Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	0
36.	Vodafone Overseas Finance Limited	GB	WO	WO	1	UO+	JO	05/2002	><	n.a.	4598
37.	Vodafone Pty Limited	AU	WO	WO	1	UO+	JO	03/2003	n.a.	n.a.	n.a.

(*continued*)

	Company name	Country	Ownership				Source		Company information		
			Direct (%)	Total (%)	Level of own.	Status	Source ident.	Date of information	Closing date	Op. revenue (million USD)*	Total assets (million USD)
38.	**Vodafone Satellite Services Limited**	GB	WO	WO	1	UO+	JO	05/2002	><	0	117
39.	**Vodafone Ventures Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	3
40.	**Vodafone Yen Finance Limited**	GB	WO	WO	1	UO+	JO	05/2002	=	n.a.	3788
41.	Vodafone Americas Inc.	US	WO	n.a.	1	UO+	WW	01/2003	><	5181	17,553
42.	**Vodafone D2 GMBH**	DE	–	99.70	n.a.	UO+	RM	03/2002	><	1533	10,363
43.	**Vodafone Holding GMBH**	DE	–	99.60	n.a.	UO+	RM	03/2002	><	12,478	70,881
44.	**Vodafone Information Systems GMBH**	DE	–	99.60	n.a.	UO+	RM	03/2002	=	283	201
45.	Vodafone Network Pty Ltd	AU	–	95.50	n.a.	UO	RM	03/2002	n.a.	n.a.	n.a.
46.	Vodafone Pacific Limited	AU	–	95.50	n.a.	UO	RM	03/2002	n.a.	n.a.	n.a.
47.	**Vodafone Espana SA**	ES	–	91.60	n.a.	–	RM	03/2002	><	2617	2597
48.	**Vodafone Magyarország Mobil Távközlési RT**.	HU	–	83.90	n.a.	UO	OS	10/2002	><	74	406
49.	Vodafone Malta Limited	MT	–	80.00	n.a.	UO	RM	03/2002	n.a.	n.a.	n.a.
50.	**Vodafone Libertel N.V.**	NL	77.56	n.a.	1	UO	OS	11/2002	=	2626	1834
51.	**Omnitel Pronto Italia**	IT	–	76.59	n.a.	UO	RM	03/2002	><	5096	7256
52.	**Arcor AG & CO. KG**	DE	–	73.59	n.a.	UO	RM	03/2002	=	1425	2013
53.	**Europolitan Vodafone AB**	SE	–	71.09	n.a.	UO	RM	03/2002	=	742	1096
54.	J-Phone Co Ltd	JP	–	69.70	n.a.	UO	RM	03/2002	n.a.	n.a.	n.a.
55.	Japan Telecom Holdings Co., Ltd.	JP	–	66.70	n.a.	UO	RM	03/2002	=	15,002	15,312
56.	Vodafone Egypt Telecommunications Co SAE	EG	–	60.00	n.a.	UO	RM	03/2002	n.a.	n.a.	n.a.
57.	Panafon Hellenic Telecommunications Company SA	GR	–	51.90	n.a.	UO	RM	03/2002	n.a.	n.a.	n.a.

58.	**Vodafone Telecel-Comunicacoes Pessoais, S.A.**	PT	–	50.90	n.a.	–	RM	03/2002	><	838	878
59.	**Mannesmann Italiana**	IT	–	MO	n.a.	UO	WW	05/2003	><	6	3
60.	Vodafone AG & Co. OHG	DE	–	MO	n.a.	UO	WW	04/2003	n.a.	12,200	n.a.
61.	Vodafone Americas Inc	US	–	MO	n.a.	UO	WW	06/2003	n.a.	21	n.a.
62.	Vodafone Fiji Limited	FJ	–	49.00	n.a.	UO–	RM	03/2002	n.a.	n.a.	n.a.
63.	Cellco Partnership	US	–	45.00	n.a.	UO–	RM	03/2002	n.a.	19	n.a.
64.	Verizon Wireless Inc.	US	45.00	n.a.	1	–	WW	10/2002	><	7659	15,843
65.	Grupo Lusacell SA DE CV	MX	–	34.50	n.a.	UO–	RM	03/2002	n.a.	n.a.	n.a.
66.	Vodacom Group (Pty) Limited	ZA	–	31.50	n.a.	UO–	RM	03/2002	n.a.	n.a.	n.a.
67.	**CIE Transatlantique Telecommunication (Transtel)**	FR	30.00	n.a.	1	–	SC	08/2003	><	0	1,264
68.	Safaricom Limited	KE	–	30.00	n.a.	UO–	RM	03/2002	n.a.	n.a.	n.a.
69.	**Belgacom Mobile**	BE	–	25.00	n.a.	–	RM	03/2002	><	2157	1787
70.	**Swisscom Mobile AG**	CH	–	25.00	n.a.	–	RM	03/2002	><	2965	2711
71.	RPG Cellular Services Limited	IN	–	20.80	n.a.	–	RM	03/2002	n.a.	n.a.	n.a.
72.	**Mobifon SA**	RO	–	20.10	n.a.	–	RM	03/2002	><	437	495
73.	**Societe Francaise Du Radiotele Phone (SFR)**	FR	20.00	n.a.	1	–	SC	08/2003	><	6658	5587
74.	**Polkomtel S.A.**	PL	–	19.60	n.a.	–	RM	03/2002	><	1283	1853
75.	**Cegetel Groupe**	FR	15.00	n.a.	1	–	WW	02/2003	><	5633	7556
76.	China Mobile (Hong Kong) Limited	HK	3.27	n.a.	1	–	PC	12/2002	><	15,804	34,419
77.	**Vodafone Group (Senior Managers) Trustee Limited**	GB	–	n.a.	n.a.	–	RT	04/2001	><	n.a.	0

*For an insurance the corresponding value is the gross premium written and for a bank it is the operating income (memo).

Credit reporting and rating agencies

Agencies such as Dun & Bradstreet and Standard and Poor provide commercial credit ratings as well as reports on a one-off basis if required. There may also be domestic credit reporting services operating in the country in question. Trade payment information can be obtained from agencies on a subscription basis, but you should be familiar with the characteristics of such reports and interpret them accordingly.

Industry information

Publications containing abbreviated financial data and ratios of companies in a business or industry can be useful in evaluating peer group averages of sales growth, stock turnover, or profitability:

- Experion publishes a yearly round-up of ratios for various UK industry groups called Experian Corporate Health Check.[10]
- Risk Management Associates (ex-Robert Morris Associates – the association of bank credit analysts in the USA) also publishes a book entitled Annual Statement Studies covering 300 industries.
- There are similar publications applicable for European countries such as the DAFSA/Kompass series published in France.
- The Organization for Economic Co-operation and Development (OECD) also publishes a monthly statistical abstract providing data on gross domestic product, exports, imports, national debt, and balance of payments figures on most countries.

Economic and industry reports including those prepared by major clearing banks are quite useful, especially if it concerns a foreign country.

Reference materials

You may have access to reference materials such as *Who's Who in Business*, providing biographies of key managers in a company or a Who owns What, a directory of companies and their cross-shareholdings in

[10] See http://press.experian.com

other companies, which can be invaluable in understanding a company and its relations with key industrial groupings and shareholders. Such information is also graphically depicted in AMADEUS (see screencap).

Such books on cross-shareholdings are particularly useful in analysing major companies in continental Europe where long-term shareholder groupings have been more static and important in determining banking relationships than in the more fluid, investor-oriented markets of the UK and US.

Periodicals

You should regularly refer to the web sites of business newspapers such as the *Investor's Chronicle*, *Financial Times*, *Wall Street Journal*, *The Economist*, or business publications of the country within which the company in question is based.

Since the web is in constant evolution, any interesting articles should be indexed and saved locally in a specialized directory regrouping all relevant articles featuring on the company for future reference since the web page may go offline in future. It is important to note details such as the author, publication, and publication date should the source need to be cited in future. All relevant data can be burned onto a CD for placing in the credit file.

Exercises

Questions

1 For each of the companies C1, C2, and C3, select what you consider to be the single most important environmental risk from the list A, B, C, and D below.
C1: A medium-sized computer manufacturer
C2: A crusading investigative magazine
C3: A manufacturer of genetically enhanced corn.
Note that it is only possible to isolate a single environmental factor for companies that are highly specialized.
(A) Political/Regulatory/Legal
(B) Economic
(C) Social
(D) Technological.

2 Classify each of the loan requests below as one of:
(A) Cash-flow lending
(B) Temporary or seasonal lending
(C) Working investment lending.
C1: A vineyard approaches you for a loan to finance the production and harvesting of grapes for that year's vintage (they need fertilizer, seed, and pickers). The company states that the expected source of repayment will be the proceeds realized from the sale of the wine to a various wine wholesalers.
C2: Disk Jockey Drives (DjD), a hard drive manufacturer, approaches you for a loan to finance the acquisition of the highly specialized and expensive equipment required to make its new patented product – the DjD 2000 GB hard drive for the Apple iPod that can contain over 40,000 songs enabling 'poddies' to hermetically isolate themselves with 6 months of non-stop music. This equipment will enable DjD to have a monopoly position supplying iPod DjD 2000 GB hard drives in buoyant market where downloads kill the classic CD. DjD proposes to repay the loan over 5 years from the profits generated by the increased sales.

C3: AmaOS Computers is expanding in a new region of the country. The company approaches you for a short-term renewable facility in order to finance the expansion of their inventory of consumer electronic products. AmaOS proposes to service the payments on the loan through the high profits it makes supplying these consumer electronic products to its clientele.

3 Operating statement is an alternative name for which of the statements listed below?
(A) The balance sheet
(B) The P/L statement
(C) The funds flow statement.

4 What is an unqualified opinion on company's accounts?
(A) A statement to the effect that the accounts as presented by the company directors provide a 'true and fair' view in the opinion of the accountants
(B) An endorsement of a company's creditworthiness
(C) An opinion about company accounts put forward by a bank rather than a firm of accountants
(D) A sell-out by Andersen to keep lucrative corporate consulting business.

5 Which of the following is true?
(A) The statement of sources and applications of funds is a snapshot of the business on one day
(B) The P/L statement is a snapshot of the business on one day
(C) The balance sheet shows the growth of sales over a year
(D) The balance sheet lists assets and liabilities as at a particular date.

6 What is a pro-forma financial statement?
(A) An unaudited estimate made by the company of the previous month's activities

(B) A statement showing what would have happened/might happen if certain events had taken place or will take place
(C) A statement giving interim balances.

7 A spreadsheet will normally do which of the following?
(A) Calculate all known ratios
(B) Compare a company's ratios with the relevant ratios of other companies
(C) Tell you whether or not to lend to the company in question
(D) Reveal facts about the company's finances which are not immediately obvious from the annual reports.

8 What is a 'Z score'?
(A) A credit rating score devised by Standard and Poor
(B) A predictive coefficient of corporate failure developed by Edward Altman
(C) A subjective grade of management classification
(D) Michael Schumacher's latest score on the Monte Carlo Grand Prix race circuit.

9 Which of the following are true of ratios?
(A) Ratios concerning the market value of a company's shares are particularly important to a credit analysis
(B) Ratios are calculated in an identical way all over the world
(C) Ratios are more useful when compared with previous years' ratios for the same company
(D) Ratios raise questions rather than give answers.

10 Solvency analysis is which one of the following?
(A) Not very accurate
(B) Less accurate the further ahead you look
(C) Only of use to a shares analyst
(D) Easy to alter so that it will work in a range of countries.

11 Information obtained from the borrower is:
   (A) Best ignored
   (B) Only to be used as a last resort if nothing else can be found
   (C) To be checked against publicly available information.

12 Which of the following are true?
   (A) The principal source of audited financial information on a company is the annual report and accounts
   (B) Shareholder groupings are more static and have more influence on banking relationships in the UK and US than they do in most European countries
   (C) Information available through the press is unlikely to be of use in a credit analysis.

13 A UK company's major secured debts are which of the following?
   (A) Known only to the company's bankers
   (B) Registered at Companies House
   (C) Known only to the company's accountants.

Answers

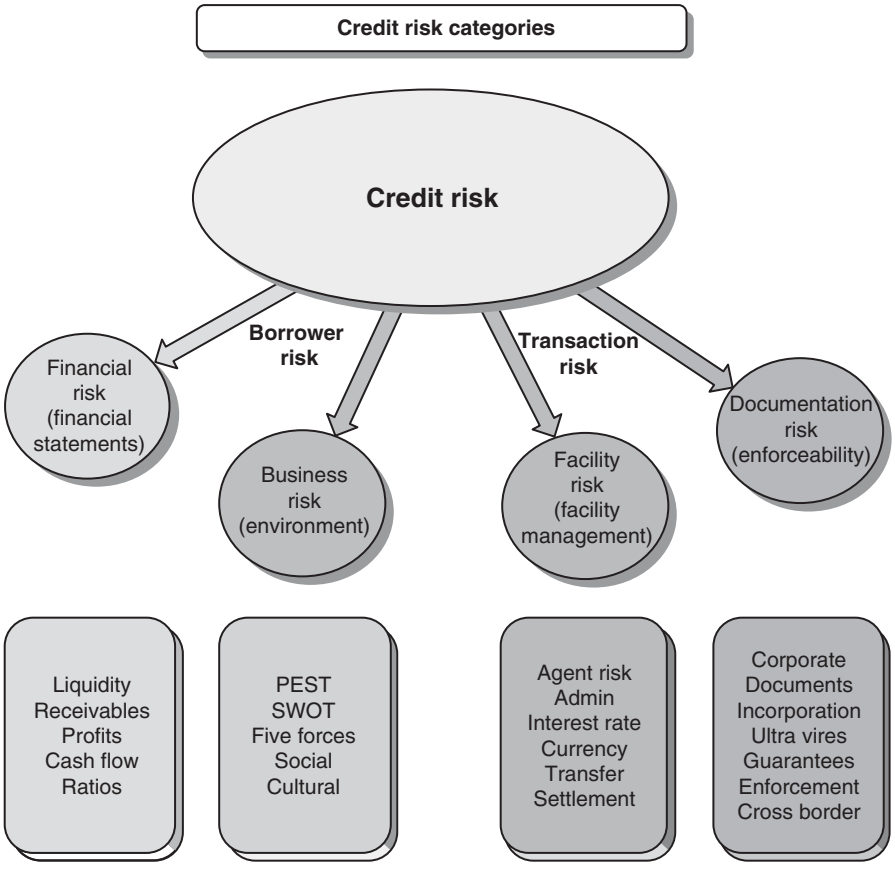
1 C1. D
C2. A
C3. C
2 C1. B
C2. A
C3. C
3 B
4 A
5 D
6 B
7 D
8 B
9 C, D
10 B
11 C
12 A
13 B

Chapter 2

Business risks

Introduction to business risks

The risks in lending to a borrower can be summarized as follows:



Borrower risk

Borrower risk represent risks which must be assessed and understood for what they are prior to committing funds:

- Financial risk traditionally focuses on elements surrounding the borrower and his financial situation. This includes analysing elements such as the nature of the obligor (limited vs. unlimited liability), financial performance indices (which we will consider later) and management effectiveness in managing successive business cycles as evidenced by financial stability.
- Business risk focuses on the risks the company faces in its environment. Such risk analysis uses models (SWOT, PEST, Porter's Risk Assessment Matrix and the Five Forces model) to assess competitor positions, business strategy and plans, industry, market, and products, and situate these factors into various models that help to compare, position, and assess the various risks involved.

It is interesting to note that the credit rating agencies place great emphasis on the stability of company performance from year to year (looking to financial ratios, etc), but that the reality is that companies are in a constant state of flux, buying and selling operations, moving funds into and out of special purpose vehicles, and replacing various managers with the frequency of light bulbs. Accordingly, all these factors which one could loosely categorize as the 'new economy' (a deregulated free-for-all underpinned by the quicksands of compromised accounting practice might be a more appropriate description) needs to consider new analytical approaches.

Likewise, this new economy is providing bankers with new lending opportunities, often with technologically oriented start-ups or ventures in new areas. These companies' lack of historical data means that assessing these new companies require new analytical methods since the classic analysis technique is largely retrospective and hence of limited use.

It would be misguided however to err on the side of extreme caution and avoid the risks of the new economy altogether, since this would not only result in lost opportunities to the bank but also would be an abdication

of their role as intermediate providers of capital destined to stimulate the development of new concerns which constitute economic progress.

Therefore, we will also be looking at the importance of the 'new investment criteria' of the 'dot-com' economy – criteria which basically aim to understand a company's ability to cope with future growth or to repay outstanding loan facilities.

Transaction risk

Transaction risks are typically 'control function' risks:

- Facility risk represents the risks inherent in the facility itself, from ongoing management of a complicated transaction such as a multi-tranch multi-currency syndicated loan with many participants, prorate interest calculations, and coordinations of drawdowns and repayments, as well as hedging of interest and currency rate variations.
- Documentation risk finally refers to the risks in the legal documentation, mainly referring to an accurate description of the roles and responsibilities of participants, and issues such as the enforceability of claims in various jurisdictions.

The 'new economy'

According to Ernst & Young's research, non-financial performance indicators drive at least 35% of investor decisions, as depicted in the graph below: Given the new economy's high-risk environment, the City wants evidence that managers are capable of fulfilling their companies' future growth potential.

Traditional valuation methods no longer apply and capital market analysts are as interested in 'soft' features such as strategy and management as they are in hard numeric models.

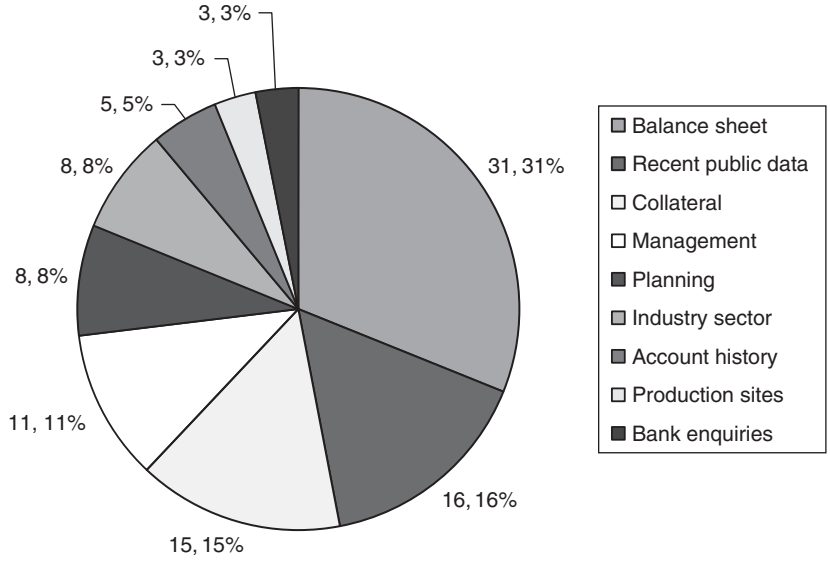
E & Y identifies the top 10 non-financial investment criteria to include:

- execution of corporate strategy,
- quality of corporate strategy,
- market position,
- management credibility,

- innovativeness,
- management experience,
- research leadership,
- quality of major business processes,
- global capability,
- ability to attract and retain talented people.

Indeed, this tendency has been exacerbated by the spate of financial scandals witnessed and the increasing lack of credibility relating to the reliability of financial statements that we mentioned in the preceding chapter.

Factors influencing the lending decision



Source: Ernst + Young

Introduction to non-financial and transactional risks

As we saw in the preceding diagram, there are a variety of risks involved in a credit situation:

- Borrower risk – actually lending money or giving a period of time for payment of an obligation, to relying upon the other entity to satisfy or

perform another form of financial obligation, for example, the successful completion of a project or the provision of adequate collateral.

- Business risk – the generic business and environment risks the borrower is subject to in its day-to-day operating environment. Accurately assessing a borrower's creditworthiness in the light of the economic environment is therefore crucial if the bank is to be a successful lender.
- Transaction risk – once the borrower (financial and environment) risk analysis is completed, the facility structure needs to be set in place appropriately (in light of the borrower's condition). This is known as the transaction risk. The facility needs to be structured so that it works smoothly, especially in a complex multi-currency cross-border syndicated loan (facility risk).
- Documentation risk – defining and controlling the structure of the loan facility is achieved via drafting appropriate loan documentation which is enforceable. The risks arising from improperly drafted loan documentation is known as documentation risk. While legal documentation is a subject of study in itself, we will touch on some of the more basic matters of legal and documentation risks as they relate to the financial analyst (in drafting loan covenants and assessing security for example) as well as the role of auditors.

The method of analysis required varies from borrower to borrower. It also varies in function of the type of lending being considered, as we saw in the table of lending types in the preceding chapter.

For example, the banking risks in financing the building of a hotel or rail project, of providing lendings secured by assets, or a large overdraft for a retail customer, would use the same risk model but the breakdown of those risks would vary considerably.

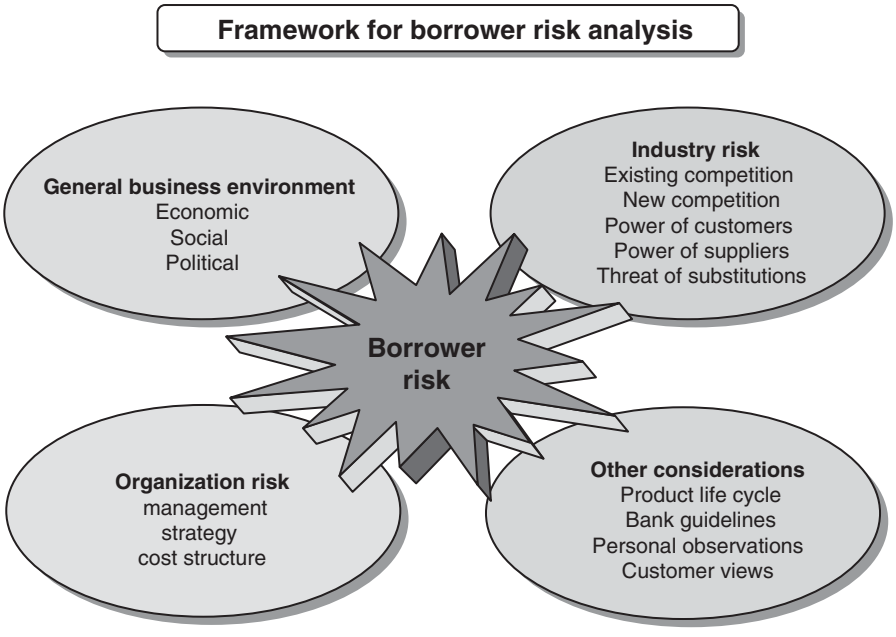
For example:

- for financing a project, you would mainly look at future cash flows generated by the project (cash-flow risk and documentation risk);
- for asset secured lending, you would look at the assets and ability to claim those assets (quality of assets and documentation risk);

- for an overdraft facility, you would look at the way the account has been run over the past few years (facility risk).

In making the decision to take a risk and extend credit, it is important to understand and minimize that risk as far as possible. This requires a system to categorize and isolate individual elements of risk in order to fully assess them.

Borrower risk



Financial risk

Financial risks relate to the borrower's financial condition and performance and are typically assessed via spreadsheet analysis that looks at the inner characteristics and financial situation of the borrower. This provides insight as to the borrower's financial strengths and weaknesses and enables the running of sensitivity analyses to gauge how much margin of error (fall in sales, rise in expenses, ability to take on debt) the borrower has available before encountering cash flow difficulties.

In order to grant a credit, the lender needs to be convinced that there exists, from a financial perspective, minimal risks regarding the obligor's ability to honour its financial commitments in future.

Hence, it is important to understand and evaluate all the components of the borrower and its business in order to establish a prudent opinion that an obligation is likely to be satisfied.

This opinion should identify the primary source for settlement or repayment of the obligation, plus if possible a secondary source of repayment and ultimately, the nature of the security taken.

Hence, the primary source of repayment typically resides on financial analysis (and drafting appropriate loan covenants) while the secondary risk reside on identification and valuation of security and the definition of appropriate seizure and liquidation procedures by the banks.

A clear understanding of the primary and secondary sources of repayment is essential in order to properly assess the risks and price the facility for syndication. This analysis is also important in tailoring the credit facility (repayment schedules, loan documentation and security arrangements).

In the following section we will introduce a structured approach to the process of investigating, analysing and understanding the various components of credit risk.

These principles are appropriate for any form of credit whether the lending of money or the granting of trade related credit.

Business risk

PEST analysis

Environmental risks can be summarized by the acronym PEST which stands for

- Political/regulatory/legal
- Economic

- Social
- Technological.

We shall consider some questions to ask when analysing these environmental risk categories.

Political/regulatory/legal

- Does the government restrict entry to the market? (e.g. by awarding concessions)
- Do governments impose import quotas/tariffs on the products?
- Are there government grants or subsidies available? In a global market how do these compare to those available to the competition?
- Does the government impose duty or taxes on the products?
- Are there regulatory requirements? (e.g. for safety, consumer protection, and free competition reasons)
- Are companies in the industry exposed to lawsuits which could have a material adverse effect on any individual company? e.g. product liability claims (e.g. tyre manufacturer, pharmaceutical companies), passenger liability claims (e.g. airlines), pollution claims (e.g. oil and chemical companies) and employee death/accident claims (e.g. oil exploration and production companies).

These risks can be mitigated through insurance. However, claims, particularly in the US, have in some instances limited the maximum cover the insurance market is prepared to provide.

Economic

- How is your company and the industry in which it operates affected by high interest rates?
- How does this impact on customer demand as well as the necessity to make higher interest payments.
- How is the industry/company affected by fluctuating foreign exchange rates? (Such fluctuations are important with a company that for example has its costs in GBP but sales in EUR and USD.)
- How cyclical is the industry?
- How does the industry relate to the general economic cycle? Does it lead or lag the economic cycle, or is it countercyclical? (to check this,

try to evaluate the company's performance over the last economic cycle or past 5–10 years)
- How is the industry affected by high inflation rates?
- How price-elastic are the industry's products and its raw materials?

Social
- Is the industry inherently stable?
- Is the industry affected (either positively or negatively) by changes in social tastes or fashions?
- Are there 'green' issues? What is the industry's record on pollution?

Technological
Technological issues affect the industry/company in two main ways:

- Firstly, is the product obsolete and likely to be superseded by a better new product? ('Better' might be in terms of price or quality.)
- Has there been a fundamental change in the cost structure of manufacturing the product?

SWOT analysis
Another technique for assessing a borrower's competitive position is SWOT analysis. This is a structured assessment of the:

S Strengths
W Weaknesses
O Opportunities
T Threats

that the company faces in successfully conducting its business.

Strengths and weaknesses are internal to the company and relate to the quality of its products, the abilities of its management, the experience of skills amongst its staff, operational flexibility, cost structures, etc.

Opportunities and threats are external to the company, and relate to the markets, competition, and environmental influences such as government regulation and economic changes.

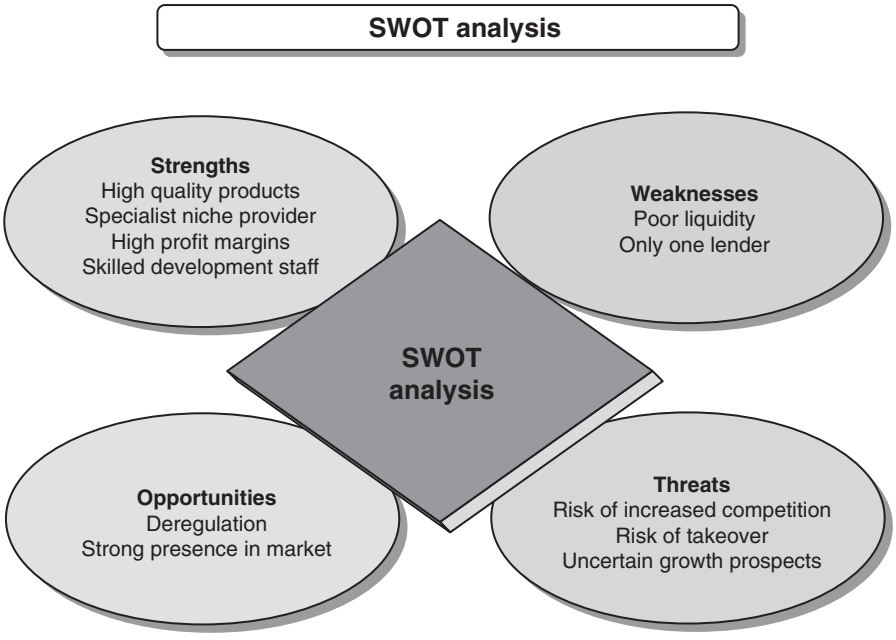
SWOT analysis is a simple technique which can only be used at a fairly superficial level but which can help focus on pertinent factors.

Laying out the SWOT analysis in a table format makes it easier to summarize and reach a judgement.

An overall analysis of the strategic position of a corporate leads to the following SWOT diagnostic:

In this example, the SWOT analysis suggests that it is successful in its existing market segments but has certain organizational deficiencies and some financial weaknesses, and the threat of increased competition.

The analysis suggests that a study of the company's resources and strategic orientation be made before a strategic plan is implemented and a monitoring/feedback loop is created for future fine tuning of the strategic plan.

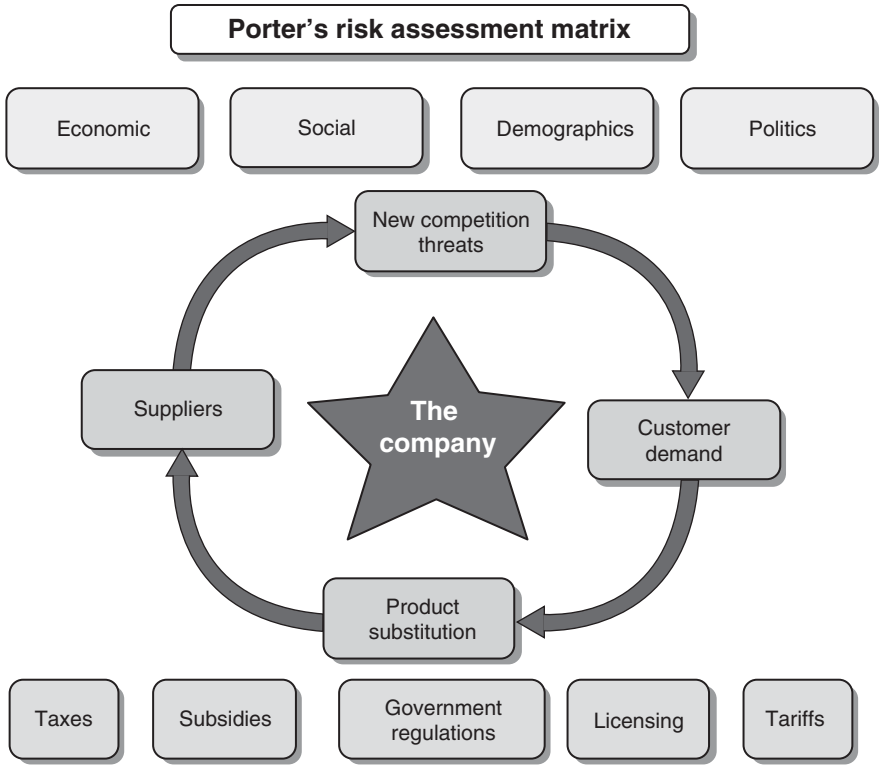


Porter's risk assessment matrix

Another model enabling the assessment of company risks and operating risks in the economy is Michael Porter's Risk Assessment Matrix.

This matrix positions a company within its operational context. The company is surrounded by the operational elements which can subject its ongoing operations to risk, namely:

- New competitors – any company can lose market share to competitors and needs to be aware of developments which may affect it.
- Market demand for its products – a shift in consumer perceptions or needs can impact the demand for the company's products.
- Product substitution is another risk – customers may become disenchanted with one product and favour an alternative (e.g. buses instead of trains).
- Stable and reasonably priced flow of raw materials necessary to its manufacturing process is another risk which can impact the company's ongoing operations.



These are all risks that are non-financial but which can impact a company's ongoing operations. These risks moreover are situated within a larger macro-economic context – environmental (the economy, social issues, political perceptions, and demographics which affect the social climate and impact consumer demand) and political (taxation, government regulation, licensing, and tariffs).

Understanding company risk therefore requires placing the company within this risk matrix in order to identify and appreciate pertinent risks.

Porter's five competitive forces

Another way of looking at the pressures on a company is graphically depicted in the 'Five Competitive Forces' model. This model identifies five external environmental factors that influencing the market positioning of a company and the way it conducts its business.

Transaction risk

This requires identifying and understanding all of the operational and functional aspects of the risk to be taken.

This covers not only the nature, structure, amount, and period of the risk but the legal, policy and practical implications both for the obligor and the giver of the credit (creditor), as well as an understanding of any circumstances which could affect or change the risk itself.

The risk taken may change for a variety of reasons all of which will at some stage have an effect upon the obligor and its ability to satisfy its obligations and therefore have an effect on the creditor.

Which of the following items are transactional risk and which are credit risk?

		T	C
(A)	Is the source of repayment clearly identifiable?	☐	☐
(B)	What is the background to the obligor?	☐	☐
(C)	What alternative sources of repayment are there?	☐	☐
(D)	What is going on in the business, its market, product range which may effect its future financial health?	☐	☐
(E)	What is the financial condition of the obligor today?	☐	☐
(F)	Where will repayment come from?	☐	☐
(G)	Can the business meet its obligations as they fall due? Today and in the future?	☐	☐
(H)	Who will make the payment?	☐	☐
(I)	How did the obligor arrive at this financial position?	☐	☐
(J)	What needs to happen to ensure payment is made?	☐	☐
(K)	Is there sufficient financial resource in the business to effect repayment of the risk whatever the circumstances?	☐	☐
(L)	When are payments to be made? To whom? Why?	☐	☐
(M)	What is the likely future financial condition of the business?	☐	☐

Some questioning techniques

Who, What, Where, When, Why, and How

In order to fully understand and interpret the information obtained it is useful to have a structured method of questioning.

A successful technique is to apply to the whole and to every component to be analysed, a series of standard questions. The answers to the questions will often then identify another aspect or component which should be further investigated. By applying the questions again, and if necessary again, a full and detailed understanding can be obtained.

Experience will enable the analyst to develop his or her own systems of enquiry. The tried and tested journalist questions are a good starting point:

- Who?
- What?
- Where?
- When?
- Why?
- How?

Example:
Consider reviewing the most recent historic balance sheet of a business, particularly accounts receivables or debtors.

The questions are applied:

- **Who owes the money to the business?**
  - Answer – Obtain a list of debtors.
- **What do they owe to the business?**
  - Answer – Identify outstandings and any particular concentrations.
- **Where are the clients which form accounts receivable based, are there any particular concentrations, domestic or international?**
  - Answer – Identify any particular concentrations of debtors (e.g. 40% come from two clients; 75% are due from foreign clients…).
- **When was the receivable created? How long has each been outstanding? Have they been paid when due?**
  - Answer – an analysis showing time by client and amount is provided.
- **Why do they owe the money to the business?**
  - Answer – Identify which amounts relate to products sold on credit, and which relate to services provided.

- **How are the accounts receivable to be settled? What are the terms of trade?**
  - Answer – The domestic receivables are all on open account. The export receivables are 50% open account (payment of invoice in the future) and 50% on a documents against payment, or collection basis.

The responses have provided a significant amount of understanding of the activity of the potential obligor.

The responses show a business which has substantial exports and some domestic business. They show the different components of goods and services. With the collection of 50% of the export receivables by documentary collection this gives the business some opportunity to control the release of its goods and control its physical assets if it is not paid. It indicates an attitude to the risk on the receivables by the management. The client analysis will show any dependence upon individual clients, whether domestic or export. It will highlight any problem areas which can be further investigated.

By now another series of more specific questions can be asked, resulting in a further understanding of the obligor's situation:

- Who exactly are the major credit clients?
- What is the standing of those clients?
- When do they pay – on time or late?
- How do they pay?
- Where do they pay from; are there any limitations on the remittance of the money from abroad?
- What is the experience of collection of the open account export sales?
- What substantial amounts have been outstanding for long periods?
- What are the policies regarding granting of credit?
- What procedures does the business have to be satisfied their client will be able to pay?
- How does the business credit control process work?
- What have they done to collect the long outstanding receivable amounts?
- If foreign open account clients do not pay on time how is the debt recovered?

The example shows how, by repeatedly applying a routine series of simple questions, a substantial insight and understanding can be obtained. The analyst will, with experience, establish a routine to obtain sufficient information and understanding.

Whilst it is important to pursue all significant aspects of the credit, it should be noted that this technique can result in an information overload. It is the analyst's responsibility to ensure that the proposal is not over-analysed to the extent that a decision or opinion is either never reached or that the decision deadline is missed.

Nature of the obligor

It is important to understand the nature of the borrower if the technical analysis is to be valid. The understanding of the nature of the obligor can be split into two components:

- its formal or legal nature, and
- its general standing (in the industry, locality, country or internationally).

The formal or legal structure of the obligor, whether an entity incorporated with limited liability (e.g. a Public Limited Company (PLC), or limited company) or an entity without limited liability (e.g. a partnership or sole trader) will each have differing legal implications, responsibilities and risks.

Without an understanding of the legal nature of the obligor there exists a possibility that any debt or obligation could never be enforced legally against the obligor.

The legal nature of the entity defines specific aspects of the risk profile:

- 'Who' and 'What' the obligor entity is;
- 'Where', 'When', 'Why' – how it may operate;
- 'How' and 'Why' could the obligation be avoided and
- 'What' implications are there in situations where the debt needs to be recovered.

Other factors may have an effect upon the decision to grant credit. Investors subject to 'green' guidelines may be favourable to lending to entities such as Body Shop or not give credit to another entity which does not operate in an environmentally friendly way. Likewise, some lenders may have internal policies restrict the granting of credit to the armaments industry:

- Limited vs. unlimited liability,
- Obligors with limited liability.

These entities have a legal structure to limit the owner's risk to the amount of the capital they have invested in the entity. Such entities are effectively 'legal persons' which may enter into contracts of almost any type. They may be incorporated with limited liability in most jurisdictions of the world.

These entities have their own Corporate Laws which define how the management must operate and in the practical operations the entity may undertake.

It is important, therefore, particularly when dealing with entities incorporated in a jurisdiction where the analyst is not fully conversant with the local law, that a full understanding is obtained – if necessary, via expert local legal advice so that any loan contract be fully effective.

It is possible in most countries to obtain independent data from the registration authority which will show the current formal status of the entity in terms of its share capital structure, its controlling documents, often the names of the officers or directors, and sometimes their respective shareholdings and any other directorships they may hold will be disclosed. Any information obtained independently from this type of 'search' of the registration information, will provide a further insight into the obligor (and possibly its directors and owners).

Example A – Memorandum and Articles of Association

A UK incorporated 'Limited' company will have as its controlling document a Memorandum and Articles of Association. The Memorandum of

Association establishes the purpose, goal and any limitations on the entity, and the Articles of Association establish the operating rules. The purpose of the company and the business it intends to undertake is detailed in the Memorandum.

It is possible for a credit to be requested to finance a purpose not included in the Memorandum. In this case, there exists a possibility that the debtor may be able to avoid any liability in the future by claiming the debt relates to a situation which is 'ultra vires' (or outside the authority of) and it may be successful in avoiding the debt. Although it is quite uncommon today, it is possible that the Directors' authority in the Articles may be different from that of the company as contained in the Memorandum.

Another example is a limitation on the total financial debt the company may have compared to the nominal value of the shares issued. In each of these there exists a possibility that the obligation to service the debt may be avoided if a problem arises, so investigation and understanding is imperative.

Example B – corporate registration fees

In most jurisdictions and countries there exists a legal requirement that a limited liability entity (or company) must annually deliver information and pay registration fees to some type of corporate registration organization (e.g. Companies House in the UK). If the requirements are not satisfied on time or within a stipulated period the legal entity itself may be detrimentally effected. For example non-payment of annual fees in Panama (or the non-submission of annual accounts in the UK) may result in the entity being dissolved. If this happens the creditor has a very limited or possibly zero opportunity to recover the credit.

These examples show that not only is there a need to establish and understand the nature, structure and authority of the entity at the time the credit is granted but a system of monitoring has to be established in order to protect the credit after it has been granted.

Obligors with unlimited liability

This type of entity is generally either a partnership (of individuals, companies or both) or a sole individual undertaking some sort of business activity.

These entities are not necessarily small business enterprises.

For the sole trader it is clear that the individual will have a liability and authority for any debt of obligation he or she may have undertaken. For a partnership however, it is important to understand 'Who' may commit all the partners, 'How and Why and When' commitments may be established. 'How' much personal liability the individual partners have for the partnership obligations.

This is particularly important when one partner is a limited liability entity. In the case of these types of entity (excluding sole traders) it is important that the partnership documentation be reviewed prior to drafting legal documentation in order to ensure that the loan agreement is effective.

Management

If a business is not effectively managed and the senior managers do not have the skills to manage all components of the business, it will fail.

One of the skills of these senior managers will be reflected in their ability to structure the organization with appropriate junior level managers or supervisors. The consideration of the strength of the management of a business may be split into a number of components:

- track record and ability;
- structure, responsibilities and succession;
- incentives.

Whilst each of the components may have a significant effect upon the future success of the business it is the overall view that will lead the analyst to a satisfactory conclusion. Again, application of the questioning techniques will lead to a good understanding of each of the components.

Some questions you may want to ask about the company's management are as follows:

- Track record
  - How have the management team performed overall?
  - What has been their joint record on profitability; on industrial relations?
  - Who are they?
  - What skills, experience and expertise does each individual bring?
  - Have there been substantial or frequent changes in management?
  - Do they have a reputation of good morality and integrity?
  - Have any individuals become famous or infamous for some reason?
- Structure, responsibilities, and succession
  - What is the management structure?
  - Who has what responsibilities?
  - Is there a skills spread appropriate to managing the business? (finance, marketing, production, delivery, and human resources),
  - Are there the necessary general management skills to bring individual skills together?
  - Are there sufficient industry specific skills in the group?
  - What is the structure and interrelationship between executive and non-executive management.
  - Is it effective?
- Incentives
  - Does management have appropriate incentives to ensure their dedication to their responsibilities?
  - The legal responsibilities are not sufficient to encourage effective and profitable management. Do they have existing shareholdings, share option schemes, and adequate remuneration?
  - What security of position do they have? If too much it may be detrimental to the business if change is needed. If too little then the individuals will be less willing to 'rock the boat' to make effective and possibly imperative changes.

The following matrix helps to bear in mind the significance of the answers to the various questions above in assessing management acumen and the likely results of future performance.

Management strategy – operations relationship

	Clear	Unclear
Effective	**I** Clear strategy and effective operations have equalled success in the past and will in the future	**II** Unclear strategy but effective operations have equalled success in the past but success is doubtful in the future
Ineffective	**III** Clear strategy but ineffective operations have sometimes worked in the past in the short run but increased competition makes success doubtful in the future	**IV** Unclear strategy and ineffective operations have equalled failure in the past and will in the future

Macro-economic risk areas

In considering a structured approach to credit, the process requires a categorization of each risk element. It should be noted that there exists considerable overlap and interrelationship between these elements. The aspects considered in this section have substantial interconnections and interrelationships with each having an effect upon another.

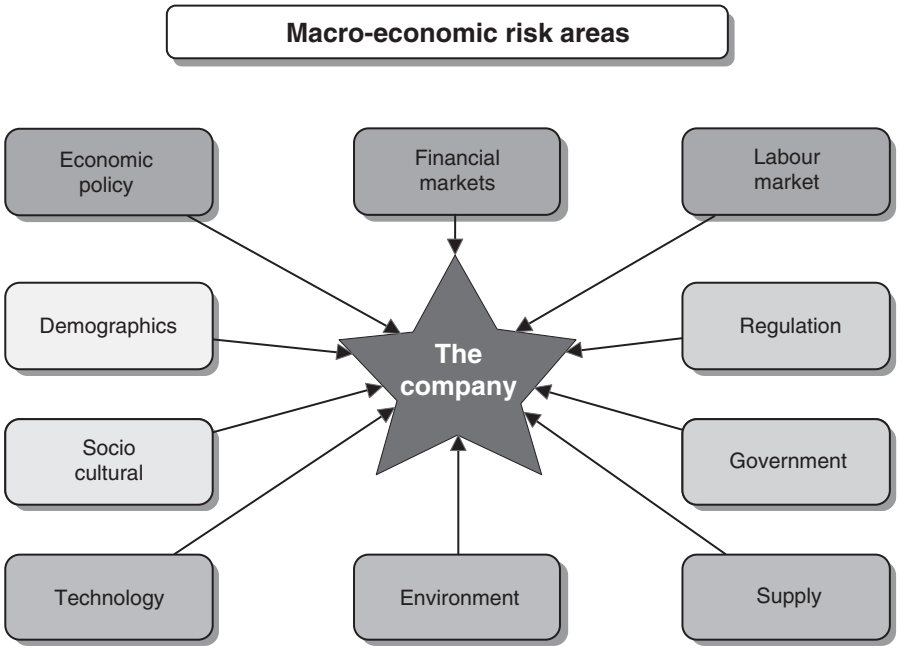
Understanding the industry

The industry sector in which the borrower operates will have significant impact upon the way the business is managed. It will also produce different financing and asset structures in the balance sheet of the business. The exact nature of the industry and the differentiation within each industry sector will develop the basis for understanding the other components in this section as they are all interlinked. The terms of trade which exist between the buyer and the seller in the industry and the methods by which the contracts of sale are controlled both legally and practically will all have an effect upon the borrower's activity in the industry and a financial implication in its business.

Understanding the industry – some questions

- What is the nature of the industry? (e.g. heavy or light industrial, services or financial).

- Is it based upon high or low technology? Is it at the forefront of technological development? (e.g. new microchip production) or is it based upon relatively simple techniques used for many years (e.g. metal pipe production).
- What form does the industry take, does it relate to a manufactured product or to a service?
- Is it a capital intensive industry requiring substantial investment in plant and equipment? (e.g. steel production) or relatively low capital investment (e.g. engineering consultancy).
- Is the industry vulnerable to changes in fashion or is it classical?
- In times of economic change will it suffer or contract? What is the growth potential?
- What stability exists in the industry?
- Where is the industry located?
- What legal limitations exist which influence the industry? (e.g. Health and safety regulations, environmental legislation).



Understanding the markets

The nature of the market in which the customer operates or in which its products are sold is important to understand. It has a major influence on the level and style of activity and the financial results. In investigating the market the analyst will be able to establish a point of view of both macro- and micro-economic elements that may affect the future of the debtor or obligor. In addition significant understanding of the potential effectiveness of plans and strategies can be achieved when comparing the obligors' view of the market compared to independently sourced information.

Understanding the market – some questions

- Where are the markets for the products or services?
- Is the market large or small?
- Is the market local, national or international?
- What affects the supply and demand in the market?
- How large is the market and what is the obligor's current and anticipated market share?
- What section of the total market does it operate within?
- Who are the competitors?
- How substantial is the competition? In financial and resource strength, existing market share?
- Does the obligor have a reliance on one market, or one sector?
- Does the obligor have a dominance in the market?
- Is the market really quantifiable? How? When and Who by?
- Where can reliable independent verification be obtained?
- What will be the effect of a change in technology?
- Is there a cyclicality in the market? A volatility in demand?
- What freedom is there in the sales pricing structure?
- What is the position of the obligor? (e.g. manufacturer, distributor, and retailer).
- What timescales exist in the market? (e.g. compare ship construction to a dairy processing milk).

Understanding the products

The nature of the product may be physical or intangible. Physical products may be the result of a repetitive process (whether simple or complex) or

the result of a specific 'tailor made' process. It is important to understand the different nature of the processes and the potential risks involved in the production. The production risk will vary dependent upon its speciality and size.

Consider the construction of a crude-oil tanker compared to the operation of a dairy:

- The building of a crude-oil tanker is a large, complex and long-term process requiring the collation of many diverse components. The construction will be made according to the terms of a comprehensive contract detailing every aspect of the vessel to be built. The vessel, while basically to be built to an internationally acceptable standard structure, will have specific requirements of the buyer included. These specifications may impact on the construction process from the first day of commencement of construction (and in reality in the planning process) and will affect the potential market for the finished vessel in the event the buyer is unable to complete the purchase.
- The production process of a dairy deals with a perishable product which has to be processed and delivered (and ultimately sold for consumption) in a limited timescale. The process of bulk purchase and bulk sales will almost certainly be subject to specific contracts detailing volumes, quality, pricing and timing of delivery. There will exist legislation establishing an acceptable standard for the product.

Using this extreme comparison it can be seen that it is necessary for the analyst to understand the nature and component influences on the product in order to analyse and interpret the potential financial implications.

Understanding the products – some questions

- What are the products?
- Are they the result of a physical process (e.g. manufacturing) or a technical, academic process (e.g. training or consulting).
- Where and how are they produced or sourced?
- Are they proven or new products?
- Are they staple products (e.g. bread, soap, etc.) or are they luxury, specialist or speculative in their nature?

- Are they standard and therefore repetitive in production or are they special production (one-offs).
- What is the nature of supplies of raw materials?
- Is the product perishable?
- How long does the product take to make?
- Is it labour intensive or automated?

Understanding manufacturing/performance risk

Manufacturing and performance risk are another risk category. All companies undertaking business operations are subjected to this risk. For example, manufacturing risk can relate to the ability of the company to successfully manage production cycles without experiencing negative tendencies. A car manufacturer for example will have several aspects relating to manufacturing risk: work stoppages, machinery breakdown, faulty cars needing recall, etc. Similarly, a manufacturer of LCD screens may experience a higher than acceptable rate of manufacturing defects, thereby adversely impacting profitability.

Performance risk is similar but focuses more on service oriented companies, for example, can the company successfully manage the hotel or airline in question? If the ongoing performance management of the business is unacceptable, then the business will be correspondingly impacted.

It is for the analyst to carefully consider the nature of the business and identify the key manufacturing risks involved in order to ascertain the manufacturing and performance risks involved.

Understanding manufacturing/performance risk – some questions

- What is manufacturing risk?
- What is the difference between manufacturing risk and performance risk?
- Is financial statement analysis appropriate in analysing manufacturing risk?
- Is the company's management team up to the task of managing manufacturing risk?
- Is analysing management appropriate in analysing performance risk?

- Is an aircraft manufacturer more concerned by manufacturing risk or performance risk?
- Is a supermarket more concerned by manufacturing risk or performance risk?

Micro-economic risk areas

One of the most fundamental non-financial aspects crucial for the long-term success of a business is its strategy and plans.

Corporate strategy is developed by management and will reflect their judgement using their skills, expertise, experience and entrepreneurial flair. At the strategic level they will establish the fundamentals of the business and the basic direction for the future. At the business plan level they will address the practical implementation of the strategic decisions.

Growth

The business also needs to grow organically from its ongoing activities, generating cash flow and profit in order to grow and develop. It will require overall management of its activity and direction of both from a short-term and long-term perspective. Management will have to provide support, direction and (almost certainly) redirection as the surrounding influences change. There will be internal situations within the activity (e.g. organizational, staffing issues) and external situations (e.g. changes in demand) all of which have to be dealt with for the success of the activity.

Corporate strategy and plans

To define corporate plans, management has to determine the starting point and the ultimate goal. This typically begins by defining a strategy to take the business from one specific point to another in the future and achieve certain goals such as making the business grow for the benefit of the ordinary shareholders.

This entails identifying both macro- and micro-economic factors, and the opportunities/risks for the business in a specific market, and then address each component with a solution to effect successful entry into the market. This will set the strategy for the business and an outline for the next stage which is practical planning.

This requires management to undertake a process of structured analysis similar to that considered in this chapter.

Managers and lenders obviously have different viewpoints in how they perceive risk and reward.

Business plan

A comprehensive business plan will contain all the elements needed for a prudent credit analysis:

- Nature of the business.
- Strategies for the future.
- Industry, market and products – existing and proposed.

Management

Management of any business irrespective of its size or nature must have a strategy and a plan to achieve the goals of the strategy:

- Resources – staffing, assets, organizational structure.
- Financial performance – historic and current balance sheet, profit and loss account, sources and uses of funds, working capital and cash-flow management.
- Financial forecasts – Based upon the assumptions made in the balance sheet, profit and loss account, sources and uses of funds, working capital and cash-flow forecasts identifying the type and nature of financing required.

Without a longer-term view, this should raise a significant question for the analyst about the quality of the management, its expertise and

likelihood of successfully dealing with situations which arise in the business in the future.

People

Any business will be affected to some extent by the staff. Some will be more significantly dependent upon the technical skills of the staff, some will be more dependent upon the presentational skills of the staff.

The analyst should establish a perception of the needs of the business and identify how the management deal with each area.

The identification of the skills needed in the business, the current effectiveness in the performance of the staff; the flexibility in the workforce, the overall quality and availability of the needed skills in the locality or in the entire country, are important factors to understand. Without the right people, without appropriate skills, in the right place, at the right time, then no matter how well every other aspect of the business is managed it will not be successful.

The strategies and policies towards the staff in particular development, training, staff satisfaction and the industrial relations record will give the analyst a good measure of the quality of the management and an indicator of the ability of the business to continue to develop and have a successful future.

Land and buildings

The nature of the business premises used and the plans for the future will affect the ongoing future health of the business. The practical adequacy and suitability of the buildings in the short and medium term is clearly paramount.

Any aspects of the business activity which may create legal or community obligations and responsibilities should be understood.

For example, a business dealing in toxic chemical products for example must have suitable premises and controls in place.

Some questions to ask regarding land and buildings are as follows:

- Is the usage of the building freehold, leasehold or rental?
- If leasehold or rental, how long will the premises be available?
- What contingency plans do management have if a move is necessary?
- What value is there in the buildings?
- What is the market value compared with the book or accounting value?
- Is there adequate insurance coverage?
- What financial obligations do the premises have.
- Is there a specific debt which financed the purchase?
- What are the financial obligations under the lease or rental agreement?

Plant and machinery

The fundamental quality, age and general condition of the equipment used in the business will affect the overall financial performance.

The effect of the introduction of new technology in the industry, making the borrower's product no longer cost effective for its customer will significantly impact future prosperity.

The capacity of the existing equipment compared to the expectations and demand of the productive activity need to be questioned and understood.

A business using older equipment, even if reliable, will have more maintenance and therefore non-productive time, compared to a business using newer equipment.

Some questions to ask are as follows:

- The value of the equipment (market and book or accounting value)
- Any debt or obligations relating to the equipment must be investigated (especially if equipment is not owned or is subject to leasing or hire purchase agreements).
- The necessity for some equipment is worth questioning. For example in small businesses with modest performance and profit (or losses) is it really necessary for all the directors and managers to have cars?

Infrastructure

This is probably the most subjective component of non-financial analysis. It has two components.

The first component is the structure of the organization of the activity itself. Who does what, to and with whom, why, when, and how? The structure of the activity for example the existence of two production plants 100 miles apart, each undertaking different parts of a single production process will have implications on reliability, cash flow, and possibly profitability.

The second component is the structure of the organization of the management and staff. An organization chart will show the components of management, their areas of responsibility and the structure under their control. It will evidence the skill of management in organization, and should establish lines of responsibility and a logical organization of the processes necessary for the business to work effectively.

For example, an organization chart which does not show a senior manager responsible for finance and accounting will raise significant questions for the analyst.

A chart showing huge structures and numbers of people involved in marketing relative to staff involved in the actual process of the business (e.g. domestic waste disposal or some similar labour intensive industry) should also raise questions for the analyst.

Exercises

Questions

1 What is the main purpose of undertaking an analysis of risk?
   (A) To understand company strategy
   (B) To understand if the company is performing well
   (C) To understand a credit decision
   (D) To understand the risks in a credit
   (E) To best obtain collateral and security for the credit.

2 Identify at least five pieces of information you would consider necessary to obtain in order to consider a credit risk.
   (A) Annual report and financial accounts
   (B) List of directors
   (C) List of products manufactured
   (D) Details of other credit or loan agreements
   (E) List of borrowers
   (F) Management accounts
   (G) Business plan
   (H) Corporate mission statement.

3 What is the purpose of having a structured approach to credit risk?
   (A) To obtain the maximum amount of information
   (B) To enable informed credit decisions
   (C) To identify all the repayment risks and adopt appropriate measures
   (D) To estimate the maximum amount of prudent lending
   (E) To identify all of the managers and their management skills.

4 What of the following risk components affecting the future financial health of a business are quantifiable?
   (A) Decisions by management with regard to product type, production
   (B) Decisions by management with regard to planning, organizational structure

(C) Change in legislation covering product safety which is overlooked
(D) Omission of a policy regarding staff annual reviews and salary levels producing a dissatisfied staff.

5 Which of the following statements regarding financial forecasts are correct?
(A) Financial forecasts indicate where the company is likely to go
(B) Financial forecasts are useful to establish the margin of manoeuvre of the company
(C) Cash-flow forecasts are based solely on company information and are accurate
(D) Financial forecasts should reflect the management's best efforts at determining the future of the business.
(E) Cash-flow forecasts can be used to help draft loan financial covenants.

6 What components of a business do you consider are necessary to be included in a financial forecast?
(A) Business plans
(B) Competitor strategy
(C) Projected expenses
(D) Product development strategy
(E) Sales projections
(F) Financial statements.

7 Which of the following questions would you ask vis-à-vis a new credit risk with regard to its nature or legal status?
(A) Does the company anticipate strong growth in sales?
(B) Does the company have a stable management structure?
(C) Is the company incorporated as limited liability company
(D) What are the company's Articles of Association
(E) Does the company have a good credit rating.

8 What questions would you want to ask about the management of a business?
(A) Does the company anticipate strong sales growth?
(B) What is the management structure of the company?

(C) Who are the company's main competitors?
(D) The professional background of the directors
(E) The number of Managing Directors in the last five years.

9 You have a potential new borrower in the UK manufacturing computer hardware for the PC market. Which of the following five questions would you ask about their market and products?
(A) How long is their collection period?
(B) Is the company highly geared?
(C) What exactly do they make?
(D) Who are their main competitors
(E) Does the company have any bank credit lines available?
(F) What share of the market does the company have
(G) Does the company have a positive cash flow?
(H) What is their inventory turnover ratio
(I) What new products does the company have under development?
(J) What unique selling points are there in the product?

10 An existing obligor has purchased another company and its business. What would you want to know? Which of the following statements would you agree with?
(A) You need to verify if the acquisition violates any covenants in the company's various loan agreements
(B) You need to undertake a due diligence to ensure that the other company is not subject to or potentially subject to any lawsuits
(C) The acquisition will be positive since it enlarges the company and its market position
(D) The acquisition is dangerous for the buyer because there will be management conflicts
(E) The situation is tantamount to a new credit and needs careful analysis.

11 What questions would you want to ask regarding a new credit risk with regard to its nature or legal status?
(A)
(B)

(C)
(D)

12 You have a potential new borrower in the PC hardware market in the UK manufacturing their own hardware products. Identify five questions you would ask about their market and products?
(A)
(B)
(C)
(D)
(E)

13 An existing obligor has purchased another company and its business. What would you want to know?
(A)
(B)
(C)
(D)
(E)

Answers

1 ANSWER: D
2 ANSWER: A, D, E, F, G
3 ANSWER: C
4 ANSWER: A, B
5 ANSWER: B, E
6 ANSWER: A, C, E, F
7 ANSWER: C, D
8 ANSWER: B, D, E
9 ANSWER: C, D, F, I, J
10 ANSWER: A, B, E
11 ANSWER: (A) Is the company a stand-alone obligor?
(B) Is there a parent company available to provide financial support?
(C) Where is the ultimate legal recourse for repayment?
(D) Is there a guarantee that the obligations of the subsidiary will be supported by the parent?

12 ANSWER: (A) What do they make? Who else makes it? What is the market for the product?
(B) How substantial is the competition in terms of reputation, capital, and size of business?
(C) How will the demand for the obligor's product change with technological developments?
(D) Who are the buyers, individuals, other businesses?
(E) Who is also planning to produce further new product to use the technological developments.

13 ANSWER:
This situation gives the lender a problem as the potential effect on the obligor can be both very successful but can also be disastrous. In any substantial credit exposure the lender needs to know about this type of change in the obligor before the acquisition takes place and should always strive to restrict the obligor by legal agreement from undertaking any change in structure or investment without the

prior agreement of the lender. The purchase of the other company in this exercise will change the nature of the obligor and the lender needs the legal right if possible to reconsider the credit decision. This gives the lender the opportunity to ask for repayment earlier than originally proposed if not satisfied with the nature of the new obligor.

The questions to be asked about the situation are exactly the same as those necessary for a completely new credit. It is imperative that the lender fully understands the potential future financial position of the business and is satisfied that it is still an acceptable risk for the reward. The significant change in the nature of the obligor may make the credit unacceptable and it is a matter of prudence that if the loan exposure is of any magnitude the lender must have the legal right to demand and obtain repayment.

- Who prepared the accounts? The accounting division? Are they trustworthy?
- What do they contain? Was the data from a centralized accounting system? Does it have appropriate controls? Is the information likely to be complete?
- Why were they prepared? Are they a management tool or specifically for the credit? If so, why?
- Where were they prepared? Did they come from a management accounting source or are they a 'one off' prepared by someone without a full knowledge of the business?
- When were they prepared? How up to date are they? What exchange rates have been used?
- How are they presented? Are they fully understandable? Are they in a form used in the business? Do they accord with the accounting standards? How do they differ?
- If they reflect a realistic situation? Have tax implications been included?

Chapter 3

Financial risks

Financial statement analysis

This chapter on financial statement analysis begins with an introduction to financial statement analysis and discussion on the purpose and use of company annual accounts.

It then takes a detailed look at the background to the annual report and accounts including the background to the Companies Acts and Statement of Accounting Policies. It also examines the content and relevance of auditors' report and directors' report.

The balance sheet is then treated thematically, covering the principal accounts:

- debtors,
- creditors,
- stock and work in progress,
- borrowings,
- fixed assets,
- share capital,
- reserves.

The chapter then examines the workings of the profit and loss (P/L) account and cash flow statements and ends with a simple ratio analysis and discussion of the limitations of published accounts.

Introduction to financial statement analysis

What is the goal of a corporate credit analysis? One answer is that it is to assess an obligor from a financial perspective to confirm that he will be able to meet his obligations when they are due, to identify the potential risks, and to perfect the security and collateral and loan documentation in order optimally to manage these inherent risks.

This chapter aims to give you an overview of the financial statements that companies produce, why they produce them and what their constituent parts are by using concrete examples and illustrations.

Company accounts follow certain standards in their content and presentation. Whilst these statements may appear to be confusing to the newcomer, once dissected and recast into a standardized spreadsheet presentation, the financial statements can provide answers to a wide range of questions and help a prospective lender reach certain decisions about the company and the nature of our relationship with it.

The annual report and accounts

About published accounts

The emergence of the large scale limited liability company has been the single most important factor stimulating the need for financial reports.

The larger and more complex the company the more remote the management can become from day-to-day operations, and the more reliant they become on accounting information.

In addition, companies that borrow money will need to demonstrate their financial solidity to its bankers, and financial statements are used by bankers and others as part of the basis for lending decisions.

Many different parties have a legitimate interest in a company's performance, for example:

- Equity investors – existing and potential shareholders.
- Loan creditors – existing and potential holders of debentures and loan stock, and providers of short-term unsecured loans and finance.
- The company's bankers.
- The company's employees.
- The analysts/advisers – this will include financial analysts and journalists, economists, researchers, stockbrokers, etc.
- Customers, trade creditors, and suppliers.
- Tax authorities, supervisory bodies, and local authorities.
- The general public – including taxpayers, consumers, political parties, consumer and environmental groups.

Each of the groups has a common interest in financial statements of a company but will use the information as the basis for different types of decisions.

There are differences in the amount of financial information made available to each of these groups, caused by different legal requirements and the company's management decisions as to what they wish to make available and to each group.

Introduction

All companies produce an annual report and accounts.

The style and content of the annual report and accounts vary considerably from company to company. Often, the annual report is an exercise in graphical arts design and a flattering self-promoting presentation of the company's activities – making it effectively a marketing exercise.

However, there is a minimum amount of information that the law requires a company to print in the report and accounts.

The four basic components required are as follows:

- the directors' report,
- a report by the company's auditors,

- a balance sheet and a P/L account,
- a statement of accounting policies and notes to the accounts.

Companies listed on the London Stock Exchange have to produce a half-yearly, interim, report. Their annual report and accounts have to contain more information than for unlisted companies.

The Companies Acts

The Companies Acts (1985 and 1989) imposes certain requirements on companies and their directors:

- Directors have a legal responsibility to prepare and publish accounts which give a 'true and fair' view of their company's financial affairs.
- Company accounts must be put before its members at the annual general meeting (AGM), and must be circulated beforehand to all shareholders, debenture holders, and any other persons entitled to attend the AGM.
- Directors must file a copy of the company's accounts with the Registrar of Companies, where they will be available for public inspection (small and medium size private companies may present abridged versions because they do not require the same level scrutiny as larger, public companies).
- Accounts must be delivered to the Registrar within a time limit fixed by reference to its accounting year end. The limit for a public company is 7 months from its accounting year end. The Stock Exchange requires listed companies to issue an annual report within 6 months of the date of their financial year end.

Filing information with the Registrar of Companies

Companies are also required to file the following information with the Registrar of Companies:

- copies of their Memorandum and Articles of Association, and details of subsequent changes;
- address of their registered office, and the place at which the company's registers are kept;

- details of the company's share capital and debentures;
- details of each mortgage and charge on the assets of the company;
- a list of the directors and secretary and any changes.

Companies' files are now maintained at the company's registration office in Cardiff or at City Road in London, on payment of a small fee.

The Companies Act requires companies to file annual returns, which contain a summary of points 2–5 along with a list of past and present members. Every 3 years a list is prepared of shareholders and it is therefore possible to find out, who has been a registered shareholder of the company.

The statement of accounting policies

There are various methods available for valuing and accounting for business assets and liabilities. It is therefore important that the company states which policies have been used in preparing the accounts in order to enable the reader correctly to interpret the company's financial statements.

For example, the way in which a company's assets are valued has direct implications for the level of reported profits.

The Accounting Standards Committee (set up in 1970) issued 25 Statements of Standard Accounting Practice (SSAPs) up to its replacement by the Accounting Standards Board (ASB) in 1990.

The ASB adopted all of the SSAPs and in addition have been issuing further accounting standards, which are known as Financial Reporting Standards (FRS).

The SSAPs and FRSs are guidelines for the production of company financial statements by accountants and the company, and some of their recommendations have been incorporated into the Companies Acts and have the force of law.

Example
SSAP2 relates to the disclosure of accounting policies. SSAP2 aims to ensure that companies prepare their accounts in accordance with certain

fundamental accounting 'concepts' which it specifies. Companies report which accounting 'policies' they have chosen from the accounting bases available for the purpose of valuing the assets and liabilities which appear in their accounts. The statement does not establish accounting standards for individual assets and liabilities as this is done in other SSAPs (e.g. SSAP9 which deals with valuation of stocks).

Accounting premises

Company accounts are based on the following four premises:

- The going concern concept: This assumes that the company will continue in business for the foreseeable future. The main effect of this assumption is that the liquidation value of fixed assets (which may be significantly different from the book value) may be ignored.
- The accruals (or matching) concept: This requires that the revenues be matched with related expenses when measuring profit and that revenues and expenses be included in the P/L account as they are earned and incurred rather than when they are received and paid.
- The consistency concept: This requires the company to use the same accounting policies for valuing similar assets both within the accounting period and during consecutive accounting periods.
- The concept of prudence: This states that companies should not anticipate profits, but requires them to provide for all foreseeable losses.

Accounting bases

These have been developed for the purposes of valuing a company's assets and liabilities. For example all of the different methods developed for calculating the depreciation of assets comply with the fundamental accounting concepts listed above, but will produce significantly different figures from each other and this can have an enormous effect on a company's reported profit.

Accounting policies

This is the term used to describe the accounting bases chosen by a particular company for the purposes of valuing assets and liabilities. The main

provisions of SSAP2 are given statutory backing by the Companies Act 1985. The accounting policies on which a company's accounts are based are shown at the beginning of the notes to the accounts, and typically will include the basis of accounting for:

- sales,
- deferred taxation,
- depreciation of fixed assets,
- investment grants,
- research and development,
- stocks and work in progress,
- extraordinary items,
- translation of foreign currencies.

Points of interaction between the balance sheet and P/L

There are at least three important points of interaction between the P/L account and the balance sheet, where, if abnormal accounting policies are used, they can materially alter the company's reported profits:

- Valuation of stock – the higher the value at the end of the accounting period, the lower the cost of goods sold (COGS) and therefore the higher the profit.
- Depreciation – the lower the charge for depreciation in the accounting period the higher the book value of assets carried forward and the higher the reported profits.
- Capitalizing expenditure – expenditures incurred by the company must either add to the total asset value in the balance sheet or be charged in the P/L account. Amounts that can be capitalized will increase profits directly (as it would otherwise be a charge against profits). There will be an increased profit today against future years, when the higher capital value of fixed assets will require a higher depreciation charge and therefore reduce profits in the future. Items which are sometimes capitalized include research and development costs, interest incurred on projects during construction, and start-up costs (e.g. advertising and promotional costs associated with launching a new product).

Consequences of abnormal accounting policies

If the company overstates its profits in the accounting period it may be difficult to sustain them in the future. Once abnormal accounting policies have been used, their use will need to be perpetuated. Another commonly used term for abnormal accounting policies is 'creative accounting'.

The auditor's report

Auditor's rights

Every company is required to appoint during the AGM, an auditor to hold office from the date of that meeting until the next AGM. This will usually be a firm of accountants.

The Companies Act 1985 made it an offence for a director or company secretary of a company to give false or misleading statements to their auditor.

The auditor has right of access at all times to the books and accounts of the company and can require any information and explanations from the officers of the company as he or she thinks fit and necessary for the performance of the auditor's duties.

The auditor also has the right to attend any general meetings and to speak on any part of the business which concerns him or her.

Auditor's duties

The auditor is required to report to the shareholders of the company whether in their opinion the balance sheet, P/L and other financial statements have been properly prepared in accordance with legislation and if they give a true and fair view of the profitability and state of affairs of the company.

If they feel that the accounts have not been properly prepared; that the records do not accord with fact and/or they have not been able to obtain all the information that they need in order to give an informed opinion they must state this in their report; this is known as qualifying the audit report.

Auditing Practices Board

The Auditing Practices Board (APB) was established in 1991 by the Consultative Committee of Accountancy Bodies (CCAB) to provide a framework of practice for the exercise of the auditor's role.

The APB produces Statements of Auditing Standards, auditors who do not comply with these can become liable to regulatory action.

A particular statement, Statement of Auditing Standards 600, published in May 1993 requires that auditors' reports contain the following:

- A title identifying the person(s) to whom the report is addressed.
- An introductory paragraph identifying the financial statements audited.
- Sections dealing with responsibilities of the directors, the basis of the auditor's opinion and the opinion itself.
- The signature of the auditor.
- The date of the audit report.

Summary

The auditor's report covers information contained in the three main financial statements: the P/L account; the balance sheet; and the cash flow statement. In preparing their report the auditor is also required to consider whether the information contained in the directors' report is consistent with the accounts, and if it is not, they are required to say so.

It is important to note that the auditor's report does not certify the accuracy of the accounts, but expresses the opinion that the accounts show a true and fair view of the company.

Auditor's opinion

An auditor's report should contain a clear expression of opinion on a company's financial statements. The opinion will be:

- An unqualified opinion. Everything appears to be in order as laid down by the Institute of Chartered Accountants Audit Policies.

- A qualified opinion. This will be expressed by the auditor when there is either:
  - a limitation on the scope of the auditors examination of the company's accounts and affairs;
  - if the auditor disagrees with the way a matter has been treated or disclosed in the financial statements.
- An adverse opinion expressed by the auditor if their disagreement with the company is so material or pervasive that they feel that the company's accounts are seriously misleading and do not give a true and fair view of the company's situation.

Other opinions

- A disclaimer of opinion. This is expressed by the auditor when the possible effect of a limitation on the scope of the audit is so material that the auditor has been unable to obtain sufficient material to support or express any opinion on the financial statements.
- Fundamental uncertainty. Where an inherent uncertainty exists which in the auditor's opinion is fundamental and is adequately accounted for and disclosed in the accounts, the auditor will include an explanatory paragraph in their report, making it clear that their opinion is not qualified by this.

The directors' report

The content of the directors' report is laid down by the Companies Act. These may include, where relevant to the company's activities, sections on:

- Results and dividends.
- Review of the business.
- Market value of land and buildings, fixed assets.
- Research and development; future developments.
- Events since the end of last year.
- Directors' names and their interests in the share capital of the company.
- Political and charitable contributions.
- Transfers to and from reserves.

The contents of the directors' report can be classified into three categories:

- Information required by law – e.g. the review of the year.
- Information required by the Stock Exchange (for listed companies).
- Voluntary information – additional useful comments.

Statutory requirements
Under the Companies Acts, a directors' report must give the following information:

- A fair review of the development of the business during the year and an indication of likely future developments.
- The names of the directors and details of their interests in the shares of the company.
- Important events which have occurred since the end of the year (post balance sheet events).
- Significant changes in fixed assets.
- Political or charitable donations.
- Details of any repurchase of the company's shares by the company during the year.

Stock Exchange requirements

There also exist additional reporting requirements in the annual report and accounts for the directors' report of listed companies, designed to protect shareholders' interests:

- Any departures from UK Accounting Standards and reasons for the departure.
- Explanations if the results for the accounting period under review differ by 10% or more from any prior published forecast made by the company.
- Particulars of the waiving of emoluments by directors.
- A statement of any interest capitalized.
- The name of the principal country in which each subsidiary operates.
- Details of bank loans and other borrowings.
- The identity of non-executive directors, plus short biographies on each.
- A statement as to whether the company has complied with the Code of Best Practice published in 1992 by the Cadbury Committee.
- Details of directors' interests in the company's shares and options.

- Information on holders of blocks of the companies shares over 3%.
- Details of any authority for the purchase by the company of its own shares.
- Details of any shares issued for cash.
- Particulars of significant contracts which the company carried out during the year in which any director of the company was materially interested.

Example of a directors' report

Lazer Drives public limited company directors' report

The directors submit their report and accounts for the year ended 31 December 200x

Results and dividends

The operating profit for the year, after taxation, was GBP 850,000. The directors recommend a final ordinary dividend of GBP 190,000 amounting to GBP 270,000 for the year which leaves a profit of GBP 580,000 to be retained.

Review of the business

The company's principal activity during the year was the manufacture of laser disk drives for the PC industry. Turnover has increased by 7.6% from GBP 9,765,000 to GBP 10,502,000. The directors believe that the trend will continue. The market for their products is growing steadily and the company is in a good position to take advantage of any opportunities which might arise in the future.

Market value of land and buildings

The freehold properties were revalued at 1 January 200x. The valuation of GBP 750,000, which was GBP 250,000 higher than the former net book value, has been incorporated in these accounts.

Fixed assets

The company has continued to improve plant and machinery during the year, involving an expenditure of GBP 463,000.

Research and development

The company continues to increase its commitment to research and development as work in this area is vital if the company is to retain its strong market share.

Future development

The directors consider that next year will be another successful year with forward order book already looking strong and new contracts in the pipeline.

Directors and their interests

The directors at 31 December 200x and their interests in the share capital of the company (all beneficially held except for those marked with an asterisk which are held by trustee) were as follows:

	At 31 December 200x	**At 1 January 200y or subsequent date of appointment**
	Ordinary shares	Ordinary shares
P Kingsland (Chairman)	50,000	50,000
K Kingsland	150,000	150,000
	30,000	30,000
L Phillips	500	500
B Bird (appointed 31 March 200x)	500	

L Phillips retires from the board at the AGM and, being eligible, offers himself for re-election.

Political and charitable contributions

During the year the company made a political contribution of GBP 15,000 to the Labour Party and various charitable donations totalling GBP 3000.

The balance sheet

Introduction

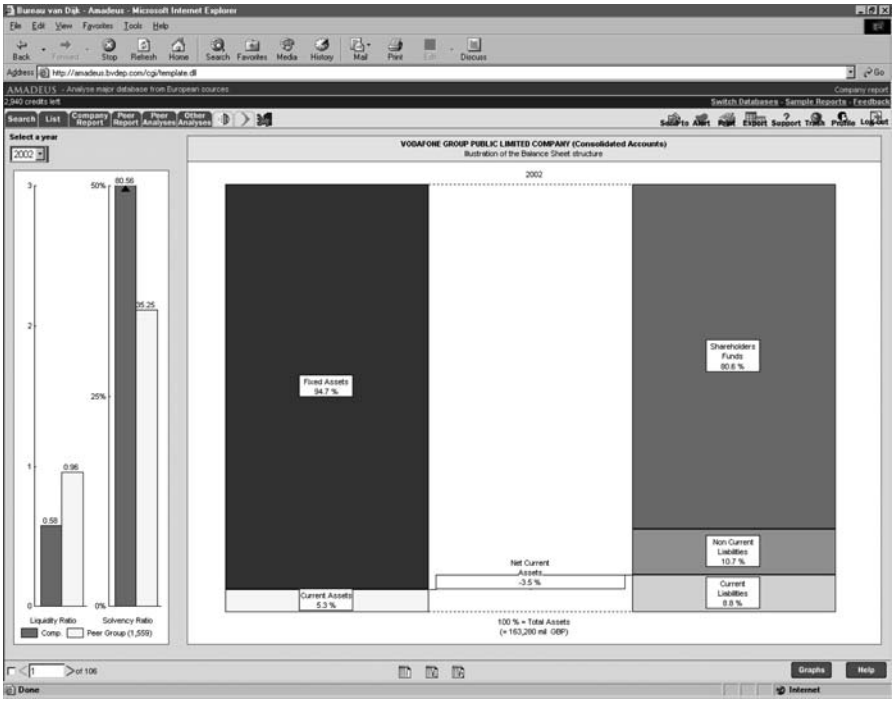
The balance sheet is one of the basic components of the company's report and accounts. It is a statement of the assets (what the company owns) and liabilities (what the company owes) of a company at the close of business on a stated date, 'the balance sheet date'.

The balance sheet shows:

- How cash is invested in the business
- How the assets are balanced with the liabilities
- How the company is financed

Below find a graphical depiction of a balance sheet from BvD AMADEUS

AMADEUS: Balance Sheet Graphic



Source: Bureau Van Dijk, AMADEUS 2004

When a company is formed its members subscribe for shares.

For example, in our simple balance sheet there is a figure of GBP 250,000 shown as ordinary share capital (we will discuss different types of shares later in this chapter); this represents the total sum which the members of the company have between them contributed to get the company started.

The cash raised by issuing these shares will be used in the business to buy fixed assets, such as an office or factory for the company's operations, to buy machinery and other fixed assets such as motor cars, and to buy stock ready to start trading.

Share capital itself may not suffice to pay all of the company's initial costs and to enable it to start trading. For example in the balance sheet there may be various liabilities such as 'overdraft', various negotiated credit terms with suppliers that do not require immediate payment and hence become creditors of the company.

Simple balance sheet

Assets	*GBP*	*Liabilities*	*GBP*
Cash (at bank and in hand)	15,000	Overdraft	70,000
Stock	190,000	Creditors: within 1 year	120,000
Current assets		Current liabilities	
Motor vehicles	15,000		
Fixtures and fittings	70,000		
Freehold land and buildings	150,000		
Fixed assets		Ordinary share capital	250,000
	440,000		440,000

On the assets side we have various categories of assets such as current assets, fixed assets, and intangible assets.

The balance sheet will always balance, that is the figure for total liabilities (GBP 440,000) must always be the same as for total assets – if it is not, something has been missed or wrongly accounted for.

Annual report balance sheet

Goodenuff public limited company as at 31 December 2003
Consolidated balance sheet

1, 12		*Notes*	*2003 (GBP million)*	*2002 (GBP million)*
2	Fixed assets			
	Intangible assets			
	Tangible assets			
	Land and buildings		781	753
	Fixtures, fittings, and equipment		96	74
	Assets in the course of construction		23	18
	Assets leased to third parties		70	31
			970	876
3	Current assets			
4	Stocks	14	136	114
	Debtors	15	34	40
	Investments		43	76
	Cash at bank and in hand	16	52	44
			265	274
5	Current liabilities			
	Creditors: amounts falling due – 1 year	17	316	303
	Net current liabilities		51	29
	Total assets less current liabilities		919	847
6	Creditors: amounts falling due + 1 year		38	37
	Provision for liabilities and charges			
	Deferred tax		17	12
	Net assets		864	798
	Capital and reserves			
7	Share capital		231	230
8	Share premium account		11	10
9	Revaluation reserve		274	272
10	P/L account		342	282
11	Shareholders' funds		858	794
	Minority interest		6	4
	Total capital employed		864	798

Explanation of balance sheet illustration

Figures have to be given for the end of the previous accounting period.

- Fixed assets show capital (funds) that is tied up on a long-term basis, i.e. assets that are not quickly and easily realizable. Tangible assets are the assets used in the operation of the business and may include land, buildings, plant, and machinery. Intangible assets may comprise goodwill, patents and licences, rights, monopolies, and contracts.
- Current assets can be readily converted into cash within a short period, normally 1 year.
- Stocks. Reported profits are affected by the valuation a company places on its stock – as high value produces high profits. Accountants therefore insist that stocks are valued at the lower of cost or net realizable value.
- Current liabilities are debts due for payment in less than 1 year. These include bank overdrafts and payment to suppliers, and expiring loans.
- Long-term liabilities are debts that need not be repaid within 1 year. These may include bank loans and mortgages.
- Called up share capital represents the number of shares that have been issued by a company. (If trading ceased, any money left over after settlement of all of the company's other liabilities would be distributed amongst the shareholders pro rata according to the number of shares that each of them have.)
- Share premium is the difference between the nominal (face) value of a share and the amount at which it is offered for sale to shareholders. Successful companies issue shares at a premium to their nominal value.
- Revaluation reserve. Assets valued, such as land, may actually be worth more than their original cost. The difference between these two figures is the revaluation reserve – it is not profit which the company has actually realized in cash terms and, therefore, is not distributable to shareholders.
- P/L account figure. This is the sum total of profits accumulated by the business and retained for use in the growth and expansion of the business.
- Shareholders' funds (owner's equity).
- Notes. Several of the figures given in the balance sheet will be given more detailed explanation in the notes which appear towards the end of the accounts.

Debtors

Debtors (also known as accounts receivables) are a current assets and represent amounts owed to the company. The Companies Act 1985 requires the company to split their debtors figure into the following categories:

- Trade debtors – debts owed to the company arising from sale of goods to customers of the company on credit terms.
- Amounts owed by group companies – these amounts will represent inter-group trading activities, i.e. sums owed to the company by its parent company, fellow subsidiaries or subsidiaries of its own.
- Amounts owed by companies and other institutions in which the company has a participating interest (debts owed to the company by institutions in which the company has a holding of 20% or more of that institution's shares).
- Other debtors – for example debts due to the company from the sale of fixed assets or investments.
- Prepayments and accrued income – for example rent and rates paid by the company in advance.

Most companies will show a single figure for debtors in their balance sheet but then break out the various categories in the notes section of their accounts.

Unfortunately in some instances the company will grant credit to a customer only to find that payment is not forthcoming. The debt then becomes classified as a bad debt. When the company recognizes that a debt is bad, the debt is written off as a charge to the P/L account. The balance appearing as debtors in the accounts will be reduced by the amount of the bad debt, and bad debts will be shown as an expense (which will only be shown separately in the accounts if the amount involved is material).

Companies have different debtor profiles

Supermarket chains will have very little showing in their accounts in the way of debtors, as most of their sales will be for cash, any debtors shown in their accounts are likely to be non-trade or prepayments. Other companies in contrast may conduct most or all of their trade on credit terms and will have large debtor balances.

Trade debtors/turnover

It is interesting to be able to look at a company's credit control policy. This can be done by using the Trade debtors/Turnover ratio (measuring this in terms of time), and then comparing this ratio to that of other companies in a similar industry:

Debt collection period (in days) = Trade debtors/Sales (turnover) × 365

In a seasonal business it may be more accurate to calculate the debtor collection period on a monthly basis, but this would require monthly figures for trade debtors and turnover and knowing the seasonality of the company under review. This would require information beyond that required by law. For example:

- Customer concentration – Is there too much reliance on one customer, or on one major industry? What would be the consequences to the company if they were to lose a major client?
- What is the age pattern of the debtors? – Are some very old debts?
- Is there adequate provision for bad and doubtful debts?
- What is the company's credit granting policy?

Creditors

Creditors are those to whom the company owes money, e.g. suppliers of raw material, who have given the company a credit period in which to pay and are shown as liabilities in the balance sheet.

There are two balance sheet formats prescribed in the Companies Act 1985, and each present creditors in different ways.

- Format 1 is most used by companies and shows creditors under two headings – Creditors: amounts falling due within 1 year and Creditors: amounts falling due after more than 1 year, whereas:
- Format 2 shows creditors under just one heading.

Format 1 is useful in that it nets out creditors falling due within 1 year against current assets to produce a net current assets (liabilities) figure.

Various types of creditors

- Trade creditors – suppliers to whom the company owes money i.e. those from who the company has purchased goods on credit terms. The size of the trade creditors' figure will reflect the extent to which suppliers are financing the company's business.
  The formula for calculating creditor days is as follows:

  Creditor days = Trade creditors/Sales (turn over) × 365

  It is useful to compare debtor and creditor days to see if there are any significant variations between them. For example, if the company's credit period is 30 days (it is paying its bills in a 30 day period), and it is giving 100 days credit this could produce serious cash flow problems or be indicative of deficiencies in the company's debt collection procedures and very possibly bad debts.
  Debenture (secured) loans – when a company wishes to issue loan capital it can offer the lender some specific security on the loan. If it does so the loan is called a debenture, or debenture stock.
- Bank loans and overdrafts.
- Payments received on account – e.g. deposits from customers paid in advance for work which the company is undertaking or will undertake.
- Bills of exchange payable – a way of raising short term capital for the company. A bill of exchange is used to finance the sale of goods when the seller wishes to obtain payment at the time the goods are despatched to the buyer, and the buyer wants to defer payment until the goods are received by him, or later. A bill of exchange payable in a company's creditors would indicate that the company has purchased goods and has accepted a bill of exchange acknowledging its debt to the supplier and promising to pay at some future time.

Amounts owed to group companies

- Other creditors – including tax and social security which are shown separately.
- Accruals – apportionments of a known future liability in respect of a service which the company has already partly received.
- Deferred income – money received by or due to the company which has not yet been earned.

- Dividends proposed – although the company cannot pay proposed dividends until they have been approved at the AGM they will always show them as a liability.

Stock and work in progress

Stock (Inventories)

While companies have traditionally shown stocks as a single figure under current assets (described as 'stocks' or 'inventories' or 'stocks and work in progress'), this figure groups three very different classes of assets:

- Raw materials: these are materials, components, or consumables (such as paint and oil) used in the making of a product.
- Work in progress: these are partially complete items in the process of being turned from raw materials into the finished product (partially completed cars for example).
- Finished goods and goods purchased for resale.

SSAP9 requires that companies now show the classes of stock and work in progress in a way which will show the amount held in each category. Further, the Companies Act 1985 requires stocks to be analysed under the following sub-headings:

- Raw materials and consumables.
- Work in progress.
- Finished goods and goods for resale.
- Payments on account (for items of stock not yet received).

Valuing stock

The accurate and consistent valuation of stock is crucially important to the company, because quite small variations can have a significant effect on the profits reported by the company.

Valuing stock however poses certain difficulties:

- Establishing the value of the materials if they have been supplied over the course of the year at varying prices;

- Establishing the value that is added to the item during the manufacturing process;
- Assessment the net realizable value of the items.

Inventory valuation methods

There are a number of different methods used to put a value on stock, of which the following are examples of the most commonly used:

- First in first out (FIFO). This method of stock pricing assumes for accounting purposes that the stock has been used in the order in which it had been received by the company. Therefore if there have been price rises the stock which has not been used will be likely to be that which was purchased by the company at the higher price and the stock can be valued accordingly.
- Average, or weighted average cost calculation (WACC). Where a company receives a number of stock deliveries during an accounting period at different prices, the average price, or weighted average price, will be used.
- Standard price. Some businesses will employ a standard cost system. They predetermine for each item that they manufacture the price which should be paid for material, wages, and so on. Materials issued from store are priced at a standard cost, as are work in progress and finished goods. Any variances from standard are written off as operating losses (or profits) at the time they occur. As long as the standard price fairly represents the average cost of the material in stock it can be used for accounting purposes.

SSAP and stocks

SSAP9 requires that the amount at which stock and work in progress are shown in the company's accounts should be the 'total of the lower of cost and net realizable value of the separate items of stock and work in progress or groups of similar items'.

The Companies Act 1985 allows the use of methods such as FIFO to be used for fungible assets (assets which are substantially indistinguishable from one another) but, where the amount shown differs materially from replacement cost the amount of that difference must be disclosed.

The Companies Act and SSAP9 both regard that work in progress and finished goods should be valued at the full cost of purchase of the constituent parts plus the cost of conversion (including fixed overheads).

Net realizable value of work in progress and finished goods

This is the actual or estimated selling price of the company's product (net of trade but before early payment discounts) less all further costs to completion of the product and all costs to be incurred in marketing, selling, and distribution.

When stocks are held which are unlikely to be sold within the turnover period normal to the company (e.g. excess stocks) this results not only in delayed profits but also the risk that the products deteriorate or become obsolete. This factor will need to be taken into account when calculating net realizable value.

Other factors affecting net realizable value could include perishability of goods, the whims of fashion, and (if the goods are sold abroad) changes in exchange rate between the selling and purchasing countries.

Borrowings

A company's borrowings will broadly fall into three categories:

- Bank overdrafts.
- Loans from financial institutions.
- Debentures and unsecured loan stock and bonds. These can be bought and sold in the same way as shares in a company, and can be held by the general public.

Bank overdrafts are shown under the current liabilities heading in the balance sheet, although this only tells us the outstanding balance and not the amount of the overdraft facility granted by the company's bank.

The next two categories of borrowings are shown separately in the balance sheet.

Descriptions of the terms under which each loan is repayable, the rates of interest applicable on each loan and whether they are secured or unsecured will be in the notes to the accounts

Limitations on borrowings

The amount that a company can borrow may be limited by several factors such as:

- The company's borrowing powers as limited by its Articles of Association (the internal rules upon which the directors run the company). These cannot be altered except by gaining the approval of the company's shareholders at a general meeting.
- Restrictions imposed by existing borrowings. Terms of existing loan agreements may preclude the company from borrowing further.
- The lender's requirement for capital and income cover.
- The lender's general opinion of the company and its overall borrowing position.

Banking facilities

There are three main methods by which a company can borrow money from a bank:

- Bank advances on overdrafts are technically repayable upon demand by the bank and can leave the company vulnerable to increases in interest rates. However, they are a simple method by which to fund day-to-day working capital requirements and the balance overdrawn is shown under current liabilities in the company's balance sheet.
- Bank loans are shown in the balance sheet under two headings, one in current liabilities which shows the amount of principal due to be repaid under bank loans within the next 12 months and the balance under long-term liabilities which shows the amount due to be repaid after 12 months.
- Bills of exchange are a funding instrument to finance the sale of goods when the seller or exporter wishes to obtain payment at the time the goods are despatched and the buyer or importer wants to defer payment until the goods reach them, or later.

For example, in these circumstances company A, the supplier of the goods to company B will draw up a bill of exchange for the goods which company B will accept as representing the debt to company A which is payable at some future time. Bills of exchange of this type are called trade bills. These will be represented in different ways in company A's and company B's balance sheets. Company A will include the bill in debtors, as a bill of exchange receivable, and company B will show the bill of exchange under creditors as a bill of exchange payable.

Fixed assets

The Companies Act 1985 requires fixed assets to be set out in the balance sheet under three headings:

- Intangible fixed assets will include such items as patents and trademarks; brand names; goodwill; concessions; and capitalized development costs.
- Goodwill is the amount by which the value of a business as a whole exceeds the balance sheet value of its individual assets less liabilities. It is normally only recognized in the accounts of a company when it acquires another business, and it relates to the amount that the purchasing company has paid for the company being purchased over and above its balance sheet value.
- Tangible fixed assets are assets with a long working life which have not been bought by the company for resale purposes in the ordinary course of their business, but for the purpose, directly or indirectly of revenue generation. They will include items such as machinery on which the company's product is made, land on which the head office or factories are based, buildings such as the offices and factories, and motor vehicles (lorries, sales representatives, cars, etc.).

Investments

Investments fall into four categories:

- Investment in subsidiary companies.
- Investment in associated undertakings.

- Participating interests (these are interests held by the company on a long-term basis to secure a contribution to its activities by the exercise of control or influence over another party or parties). This would involve a holding of 20% or more of the shares of another institution. A participating interest becomes an interest in an associated undertaking if the company exercises a significant degree of influence over the operating and financial policy of the company in which it has a participating interest.
- Other investments. Share holdings in other companies which are none of the above, but which the company feels is a good investment for it and will bring a good return.

Depreciation

This is a measure of the loss of value of an asset due to use, the passage of time, and obsolescence (obsolescence is particularly a problem in the field of high technology such as computers and electronic equipment). This includes the amortization of fixed assets which have a pre-determined future life and the depletion of wasting assets.

Factors affecting the depreciation of an asset will include the original cost of the asset, the estimated life of the asset, the method of depreciation calculation used, and the likely residual value.

Depreciation methods

Depreciation methods include

- straight line,
- reducing balance,
- sum of digits method.

Straight line is the most commonly used method and involves the following calculation:

(Cost − residual value)/Expected useful life = Book value

Traditionally fixed assets are shown in the balance sheet at cost less aggregate depreciation to date – this is known as 'net book value'. It should be noted that this is in no sense related to the present market value of the asset.

The Companies Act 1985 specifies the following treatment in relation to fixed assets in a company's balance sheet:

- Fixed assets may be shown on a historical cost basis (what it cost to purchase), at valuation, or at current cost.
- Land assets must be classified as either freehold, long leasehold (if over 50 years unexpired), or short leaseholds.
- Where fixed assets are included on a historical cost basis, the figures for cost, provision for depreciation since acquisition, and the current book value must be shown.
- Where fixed assets are included at valuation the years and amounts of the valuations must be shown, along with the names of the valuers and the basis of valuation.
- Where fixed assets are included at valuation or at current cost, historical cost details must also be disclosed.
- Details must be given of additions and disposals during the period.

Share capital

Authorized and issued share capital

When a company is formed the authorized share capital and the nominal value of its shares are written into the company's Memorandum of Association. Both the authorized and issued share capital are shown in the company's accounts.

There are a number of different types of share capital, which carry different levels of risk dependent upon where they would rank for distribution in the event of liquidation of the company. The types of share capital in ascending order of risk are:

- Preference (or non-equity) shares
- Ordinary shares
- Deferred shares
- Warrants to subscribe for shares.

Preference shares

Preference shares earn a fixed rate of dividend, which is normally payable half-yearly, but preference shareholders have no right of legal redress

against the directors of the company if they decide that no preference dividend should be paid. However, if no preference dividend is paid for an accounting period then no other share dividend can be declared for the accounting period concerned. Preference shares can include these following features:

- Cumulative – if a dividend is not paid on time it is deferred to be paid later rather than omitted. The preference dividend is then said to be in arrears and must be paid at some future time before any other share dividend can be declared and paid.
- Redeemable – the shares are repayable at their nominal value in a given year or when the company chooses within a given period.
- Participating – in addition to any fixed dividend the participating preference shareholders participate in an additional dividend, usually a proportion of any ordinary dividend declared.
- Convertible – shareholders have the option of converting their preference shares into ordinary shares within a given period of time (the conversion period).

Ordinary shares

Ordinary shares comprise the main part of the share capital of a company. Ordinary shareholders are entitled to vote at the company's general meetings, giving them a say in company decisions including appointment of directors. They are entitled to the profits of the company which remain after tax and preference dividends have been deducted.

Deferred shares

Deferred shares are a class of share on which a dividend is not payable until ordinary shareholders' dividends have reached a certain level or until the deferred shares have themselves been converted into ordinary shares.

Warrants

Warrants are transferable options granted by the company to purchase new shares from the company at a given price, called the 'exercise price'. The warrant is exercisable only during a specified time period, called the 'exercise period'.

Warrants can be issued on their own or attached to new issues of loan stock or bonds. They provide a high risk/high reward form of equity investment as their value depends on the price at which they are purchased compared to the then current share price.

Details of the exercise rights of warrants are also shown in the notes to a company's report and accounts.

Share details

Details of shares and debentures issued during the accounting period will be shown in the company's balance sheet. The terms of redemption of all redeemable shares and the details of all outstanding rights to acquire shares should also be given. In addition, a brief summary of the rights applicable to different shares will be given, including rights to dividends, redemption date, voting rights and priority in the event of the company going into liquidation.

Reduction of share capital

A company may reduce its share capital with court approval. It may reduce, or do away with completely, liability on any share capital not fully paid up, it may cancel any paid up shares which is unrepresented by available assets, and it may repay any paid up share capital which is in excess of its requirements.

Reserves

Reserves can arise in several ways:

- by the accumulation of profits, from trading and from the sale of assets,
- by the issue of shares at a premium, i.e. at more than their nominal value,
- by the issue of warrants,
- by the upward revaluation of assets,
- by the acquisition of assets at below their balance sheet value.

Reserves can be reduced by:

- losses,
- share issue and share redemption expenses,
- revaluation expenses,
- revaluation deficits,
- writing off of goodwill.

Types of reserves

Reserves include capital and revenue reserves. By law certain of these reserves are non-distributable, these are:

- Share premium account – When shares are issued at a premium over their nominal value, the premium element must be credited to the share premium account. The share premium account has to be shown separately on the balance sheet and may not be paid out to shareholders except on liquidation or under a capital reduction scheme.
- Capital redemption reserve – Shares may be redeemed or purchased by a company out of distributable profits or out of the proceeds of a new issue of shares. Where redemption or purchase is out of distributable profits an amount equal to the amount by which the company's share capital is diminished must be set aside by the company in a reserve called the capital redemption reserve. This is shown separately under other reserves.
- Revaluation reserve – The surplus (or shortfall) on the revaluation of assets should be credited (or debited) to a separate reserve, the revaluation reserve.
- Other reserves – prohibited from distribution by the company's memorandum articles.

The P/L account

The P/L account is also one of the basic components of the company's report and accounts. It is a record of the trading activities of a company for a given period of time. This period is called the accounting period

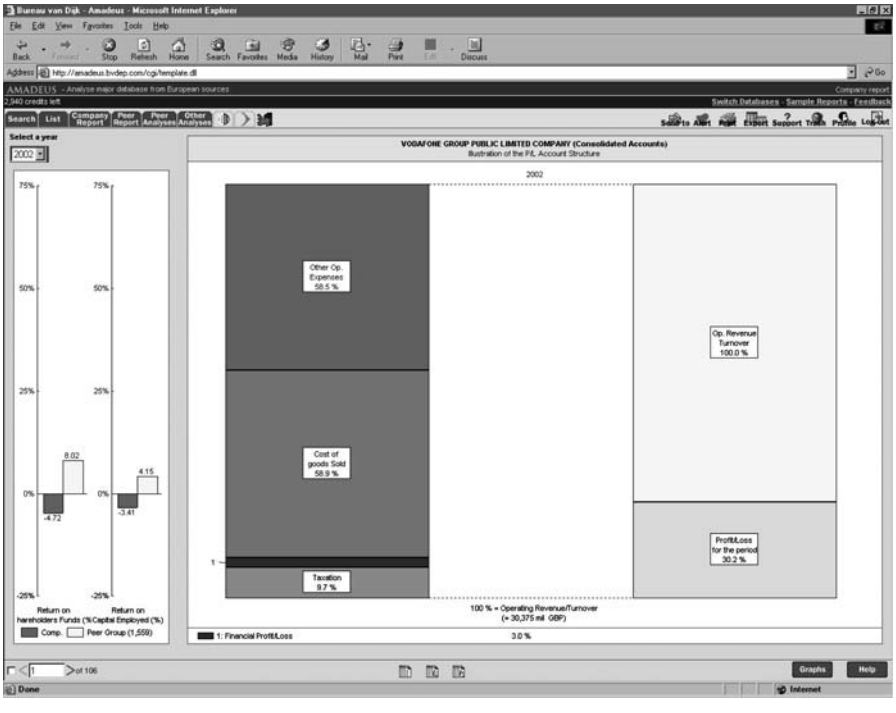
and is normally a year. The balance sheet is always drawn up on the last day of the company's accounting period.

The P/L account:

- Compares revenue for the year against the COGS and other expenses – disclosing the P/L made.
- Measures the current performance of the business and shows turnover and expenses.
- Reveals the pre-tax P/L figure, which is an important pointer to overall efficiency of the company.

Below find a graphical depiction of a P/L statement from BvD AMADEUS.

AMADEUS: Profit and Loss Graphic



Source: Bureau Van Dijk, AMADEUS 2004

The next page shows an example of a P/L account.

Annual report P/L

Goodenuff public limited company As at 31 December 2002
Consolidated P/L

		Notes	2001 *(GBP million)*	2002 *(GBP million)*
1	Turnover		1998	1753
2	Cost of sales		1434	1265
5	Gross profit		564	488
3	Distribution costs		153	110
4	Administrative expenses		215	211
6	Operating profit		196	167
	Net interest payable		30	35
	Profit on ordinary activities before taxation		166	132
	Tax on profit of ordinary activities		48	37
	Profit on ordinary activities before taxation		118	95
7	Extraordinary items			
8	Minority interests		1	1
9	Profit for the financial year		117	94
11	Dividends		19	17
	Interim		38	30
	Final		57	47
	Undistributed surplus		60	47
10	Earnings per share (EPS)		9p	7p

The Companies Act 1985 offers the company a choice of four P/L account formats.

- Format 1, which is followed by most retailing and some manufacturing companies starts with the turnover (sales invoiced) figure and then deducts operating costs to produce a trading or operating profit. The operating costs in this format are broken down into functions such as cost of sales (e.g. wages, materials, etc.), distribution costs, and administration expenses.
- Format 2, which is used by some manufacturing companies breaks down operating costs by their nature. For example raw materials and

consumables, staff costs, depreciation, etc. Both of these formats are commonly used by listed companies.

- Formats 3 and 4 are rarely used by listed companies and show charges and income separately and are two sided versions of formats 1 and 2.

Whatever the format the P/L account will show three things; how the profit (or loss) was earned, how much was taken in taxation, and what happened to the profit (or loss) after taxation was deducted.

After the operating profit figure the formats then add other income and deduct other charges to reach the pre-tax profits figure.

The main categories of the P/L statement are categorized as follows:

- Turnover of the company is the figure representing the total sales of goods and services made by the company (after deduction of trade discounts and before addition of Value Added Tax (VAT) and other sales based taxes) from its ordinary activities during the accounting period.

  Under the Companies Act 1985 the following information must also be given by the company relating to its turnover:

  – If the company has carried on two or more classes of business during the year which in the directors' opinion differ substantially from each other, it should describe the classes of business and split out each business's turnover and pre-tax profits.
  – If in the accounting period the company supplied goods and services to different geographical markets, the amount of turnover attributable to each market should also be stated.
  – SSAP 25 requires companies which have two or more classes of business or which operate in two or more different geographical markets to report separately each market's turnover, pre-tax profits, and net assets.

- Cost of Sales (opening stock + purchases − closing stock) are the costs directly attributable to sales of the company's goods and services. Other sales costs shown here may include wages, materials, and manufacturing overheads including depreciation of machinery.
- Distribution costs are the costs incurred in getting the goods to the customer.

- Administrative expenses are for example office expenses, directors' and auditors' fees.
- Gross profit is obtained by deducting cost of sales from turnover.
- Operating profit (or trading profit) is gross profit less operating costs.
- Extraordinary items are amounts outside normal activities of the business which are not expected to recur, for example the profit from selling a fixed asset such as a piece of land.
- Minority interests are shareholdings in a subsidiary company not owned by the parent company.
- Profit for the financial year is partly allocated to shareholders in the form of a dividend and partly retained by the business to finance its continuing operations.
- Earnings Per Share (EPS). To calculate this we divide profit for the year (before extraordinary items and preference dividends) by the number of shares issued. This indicates the total earnings – dividends plus the amount retained for future company expansion – which has been generated during the accounting period for each share. This figure influences the market value of the shares and companies will strive to increase their EPS each year.
- Dividends are sums distributed amongst the shareholders dependent upon the company's profitability in the accounting period. In deciding what profits to distribute the directors of a company will have in mind the company's cash position, what is prudent from an accounting viewpoint and what is legally permissible. Prior to the Companies Act 1980 companies could distribute profits arising in an accounting period without making good previous revenue or capital losses, and could also distribute unrealized surpluses on asset revaluations. Companies are now allowed to distribute only the aggregate of accumulated realized profits not previously distributed or capitalized less accumulated realized losses not previously written off in a reduction or reorganization of capital (Companies Act 1985). The interim dividend is declared and paid at the company's half year and the final dividend at the end of the accounting year.

Schedule 4 of the Companies Act requires that the following be shown separately in the P/L account or in the notes annexed:

- Chairman's emoluments.

- Directors' emoluments (including pension costs and other benefits).
- Particulars of staff, the average number of persons employed during the year and the aggregate amount of their wages and salaries; social security costs and pension costs.
- Auditors' remuneration (including expenses).
- Hire of plant and machinery, if material.
- Depreciation and diminution in value of fixed assets.

To summarize, the P/L account performs three functions:

- It shows how much profit has been earned by the company, and whether this is sufficient to cover the dividends and to provide for expansion of the business.
- Explains how the reported balance of profit was computed.
- Shows how the reported profit has been distributed and what has been retained.

Cash flow statements

Cash is the 'lifeblood' of a business, and the company will only be able to survive if it is able to generate sufficient cash inflows to cover its cash outflows.

Companies can be profitable with negative cash flows and loss making with positive cash flows. A company can report a large profit for a year in which the cash balance may have fallen, perhaps as a result of heavy expenditure on fixed assets. Likewise, a company can be losing money and generating cash via asset disposals. It is important to understand that cash and profit are different.

The purposes of the cash flow statement are, therefore, to report the net change in the cash balance and to help explain how the surplus or deficit in cash arose.

This is done by listing the cash inflows and cash outflows during the accounting period.

In summary the cash flow statement:

- Reports the financial effect of all transactions during the accounting period.

- Mixes capital and revenue transactions and is entirely backward looking.

Annual report cash flow statement

Best public limited company Cash flow statement for the year ended 31 December 200x

	Note	*200x* GBP 000	*200x* GBP 000
Net cash flows from operating activities	12	878	885
Returns on investment and servicing of finance			
Interest received		20	15
Interest paid		−135	−90
Dividend paid		−200	−200
Net cash flow from returns on investment and servicing of finance		563	610
Taxation			
Tax paid		−246	−207
Investing activities			
Payments to acquire tangible fixed assets		−335	−308
Receipts from sale of tangible fixed assets		20	30
Net cash outflow before financing		2	125
Financing			
Repayment of debentures		−100	−100
Increase in cash and cash equivalent		−98	25

It is important to realize that a company can be profitable and have a shortfall of cash, likewise a company can be losing money but have a surplus of cash. This can be summarized as follows:

- Increases in assets and decreases in liabilities represent an outflow of funds.
- Decreases in assets and increases in liabilities represent an inflow of funds.

Refer to diagram ‘Sources & Uses of Cash’ on page 145.

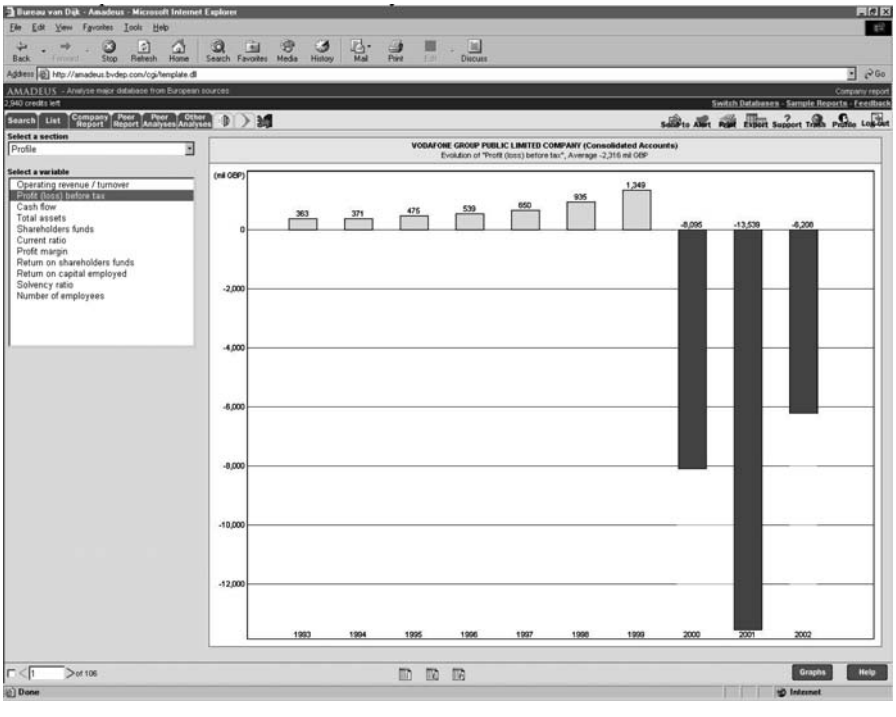
This paradox is illustrated by the French national railways in the late 1990s selling land on discontinued rail lines which had been carried at

book value: the company had been generating record losses at the operating profit level due to the substantial investments carried out in the new high speed rail lines but generated record net profits via the extraordinary sales of the land on the discontinued lines. During salary negotiations with the trade unions, the unions argued for salary increases with the argument that the company could afford it due to the record profits achieved via the sale of lands which formed the overall 'heritage' of company operations over time, while the management countered with the argument that it could not afford the salary increases since it was the underlying operations and operating results (losses) which counted, not the net profit impacted by the asset disposals (extraordinary items). Who do you think has the valid argument?

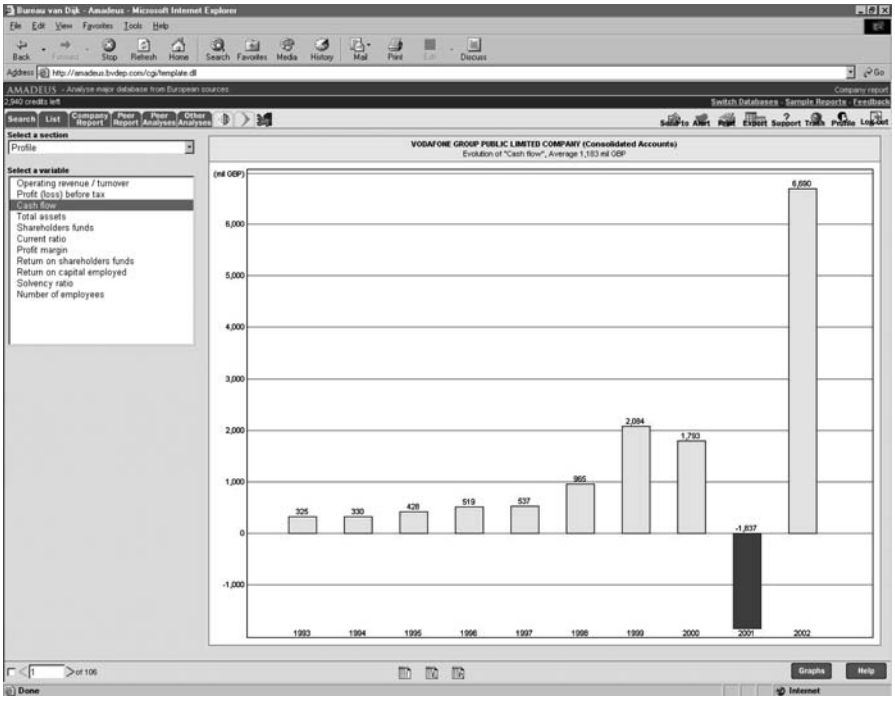
These relations between various elements impacting cash flow are summarized in the following two screencaps:

In the first, Vodafone exhibits pre-tax losses for three years while in the second, cash flows are positive for two out of the three years.

AMADEUS: Vodafone Annual Profit and Loss Graphic



AMADEUS: Vodafone Annual Cash Flow Graphic



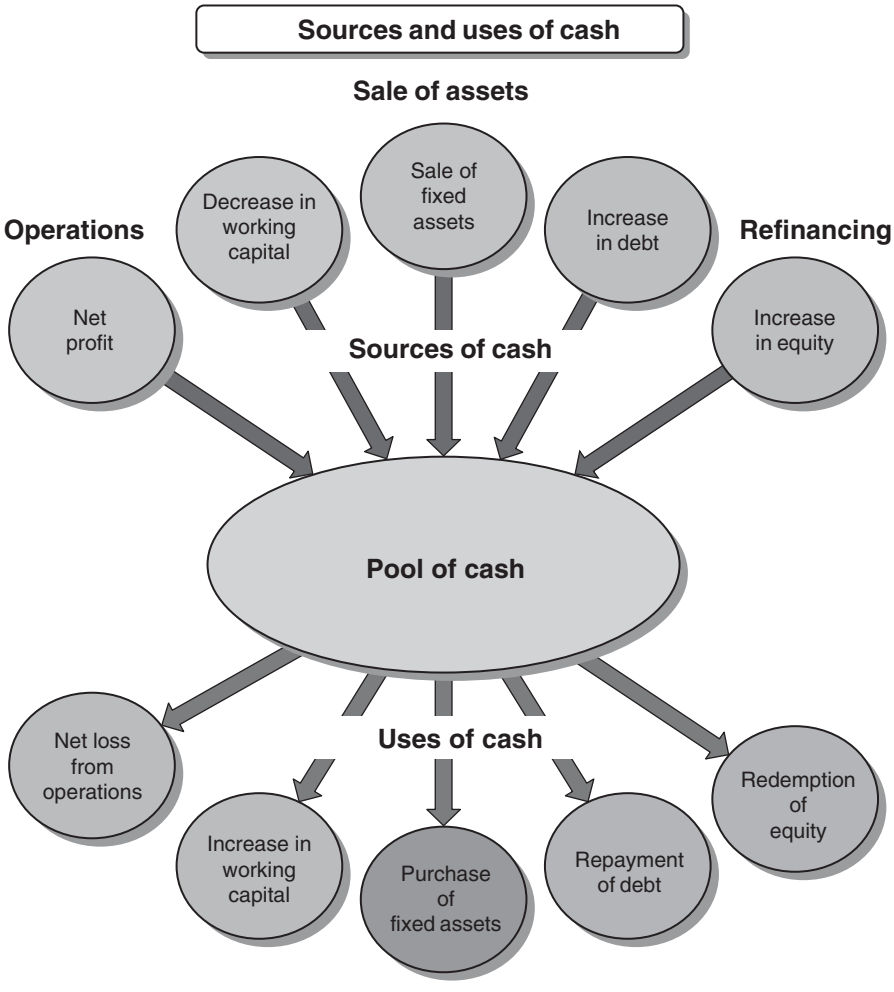
Source: Bureau Van Dijk, AMADEUS 2004

Dissatisfaction with the 'Statement of source and application of funds' led to the introduction of cash flow statements in the UK with the publication of FRS 1, Cash flow statements in 1991.

FRS 1 requires companies to produce a cash-flow statement, although this does not apply to small companies (defined in the Companies Act 1989 as having a turnover less than GBP 2 million, less than 50 employees, and a balance sheet total of less than GBP 975,000), or to wholly owned subsidiaries.

FRS 1 sets out a clear format for the cash flow statement, it should list the inflows and outflows of cash and cash equivalents for the accounting period, classified under the following five headings (and in the same order):

- Net cash inflow from operating activities
- Returns on investments and servicing of finance
- Taxation
- Investment activities
- Financing.



A definition of cash is 'Cash in hand and deposits repayable on demand with any bank or other financial institution (this includes foreign currencies)'. Cash equivalents are 'short term, highly liquid investments which are readily convertible into known amounts of cash without notice and which were within 3 months of maturity when acquired', this also includes foreign currencies.

Simple ratio analysis

Interpreting and analysing financial statements enable us to discover what a company's accounts disclose, although the conclusions from the ratios will obviously only be as good as the figures from which they are drawn.

Ratio analysis is a device which can be used to:

- Compare the performance of a company this year with last year.
- Compare the performance of a company with its competitors.
- Detect specific weaknesses.
- Determine a company's liquidity (ability to meet debts).
- Determine a company's profitability.
- Provide an indicator of trends.

Financial ratios can be divided into four categories:

- Liquidity measurement ratios
- Asset management ratios
- Capital structure ratios
- Profitability measurement ratios

We treat these briefly below:

Liquidity measurement ratios

The current ratio

Is the company able to meet its short-term obligations?
Calculating the current ratio = Current assets/Current liabilities

For example:

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{265}{316} = 0.84$$

In this example liabilities exceed assets giving us some concern for the company.

The quick ratio

Assess a company's ability to pay its debts at short notice. It omits stock which may be difficult to realize in a hurry.

Calculating the quick ratio = Current assets − Stock/Current liabilities

For example:

$$\frac{(\text{Current assets} - \text{Stock})}{\text{Current liabilities}} = \frac{265 - 136}{316} = 0.41$$

The larger the part of current assets made up by stock the less liquid the company.

Asset management ratios

Debtors to sales

(Average debt collection period)
Used to indicate the period of credit given to customers and measured in days:

Calculating trade debtors to sales = Trade debtors/Sales (turnover) × 365

This figure should be examined in relation to the prevailing credit terms for the business.

Stock turnover

The figure of Cost of Goods Sold (COGS) is compared with the investment in stock.

Calculating stock turnover (expressed in days) = Stock/COGS × 365

The higher the number of days of stock held, the slower the turnover of stock.

This figure must be examined in relation to the nature of the business (e.g. manufacturers will have a slower stock turnover than retailers).

Capital structure ratios

Gearing ratios

Gearing is concerned with the proportion of capital employed that is borrowed, the proportion provided by the shareholders' funds and the relationship between the two.

Calculating the gearing ratio = Borrowings/Net assets × 100

A company with 'low gearing' is one financed predominantly by equity, whereas a 'highly geared' company is one that relies on borrowings for a significant proportion of its capital. What constitutes 'significant' can

vary from industry to industry, with some companies experiencing high gearing as a result of seasonality of its business and a need to borrow heavily to complete forward orders.

Capital structure

As well as looking at the gearing ratio it is important to look at the P/L account to see if there is a healthy margin of profitability to meet the interest repayments on debt.

An overgeared company may show signs of running out of cash to pay interest on their borrowings.

Interest cover

Profit before taxes/Interest charges

To assess if their dividend payment is safe shareholders will compare profits generated to dividend payable.

Dividend cover

Profit for the financial year/Dividend payable

Profitability measurement ratios

Profit margin

Profit before taxes/Sales (turnover) $\times$ 100

This ratio shows the management's use of the resources under its control. Extraordinary items are excluded from this calculation as they do not represent normal operating profit.

Return on capital employed

Trading profit/Capital employed $\times$ 100

Amount the company is earning on the capital that is invested in it.

Limitations of published accounts

Users must however be aware of the fact that financial statements do suffer important limitations. Financial statements have a comforting appearance of complete accuracy because precise figures are given for each of the items reported in the P/L account and balance sheet and the principal accounting statements link with each other and balance.

The reality is very different. Many of the balances reported in the accounts have been reached using a large measure of estimation and subjective judgement.

The figures contained in the accounts are the result of decisions made and opinions held by the people responsible for making the calculations, and that different individuals would be unlikely to all produce the same results.

The following are further major criticisms of published accounts:

- they are backward rather than forward looking,
- they are illustrating just one point in time,
- they contain information which is usually based on out-of-date historical costs rather than current values,
- they are based on an unsatisfactory framework of accounting standards (which cannot possibly apply in the most effective way to all the different types of company which may use them),
- they report some but by all means not all of the company's assets and liabilities (window dressing).

Finally, whilst there are many criticisms that can be levelled at financial statements they remain useful indicators of the financial situation of companies, and the work carried out by the ASB over the past few years has helped to make accounts more informative and to close accounting loopholes.

Exercises

Questions

1 Which of the following are basic components of a company's report and accounts?
   (A) Report on the activities of the group
   (B) Report by the company's auditors
   (C) Statement of accounting policies and notes to the accounts
   (D) Balance sheet and a P/L account
   (E) Directors' report

2 Which of the following is a company not required to give to the Registrar of Companies?
   (A) Details of the company's share capital and debentures
   (B) A copy of its annual report and accounts
   (C) An annual return giving details of subsequent changes to the Memorandum and Articles and to the address of the company's registered office
   (D) Details of each mortgage and charge on the assets of the company
   (E) Memorandum and Articles of Association
   (F) List of the directors and secretary

3 Which of the following states what is required to be contained in a company's report and accounts by current legislation?
   (A) The Directors Acts
   (B) The Disclosure Acts
   (C) The Companies Acts
   (D) The Going Concern Act
   (E) SSAP 9

4 What is the time limit within which a public company must deliver its report and accounts to the Company's Registrar?
   (A) 3 months from the company's accounting year end
   (B) 6 months from the company's accounting year end
   (C) 7 months from the company's accounting year end
   (D) 12 months from the company's accounting year end

5 What are the accounting standards issued by the ASB called?
   (A) Financial Reporting Standards (FRS)
   (B) Generally Accepted Accounting Principles (GAAP)
   (C) Standard Set of Accounting Principles (SSAP)
   (D) International Accounting Standards (IAS)

6 What is the going concern concept?
   (A) Statutes ensuring that the management changes are continuous
   (B) An assumption that a company will continue in business for the foreseeable future
   (C) A method of inventory valuation
   (D) Status governing the procedures for management changes
   (E) A method of calculating non-performing debtors (accounts receivable)

7 What does SSAP 2 relate to?
   (A) Delayed accounts receivable
   (B) Method of inventory valuation
   (C) Disclosure of accounting policies
   (D) Valuation of intangible assets
   (E) Hidden provisioning for doubtful loans

8 Which of the following does the Statement of Auditing Standards 600 not require an auditors' report to contain?
   (A) A title identifying the persons to whom the report is addressed
   (B) An introductory paragraph identifying the financial statements audited
   (C) Sections dealing with responsibilities of the directors, the basis of the auditors' opinion and the opinion itself
   (D) The signature of the auditors
   (E) The date of the audit report
   (F) The valuation of premises and property

9 Which of the company's financial statements does the auditors' report address?
   (A) P/L account

(B) The balance sheet
(C) Shareholder's statement
(D) Cash flow statement
(E) Operating statement

10 Which of the following parties issues a 'qualified opinion' on financial statements?
(A) Company director
(B) Company auditors
(C) Financial director
(D) Investment advisor
(E) Company banker

11 What are the three categories of information included in a director's report?
(A) Information on company
(B) Information required by law
(C) Information required by investors
(D) Information required by the Stock Exchange
(E) Voluntary information

12 Which of the following three things does a balance sheet show about a company?
(A) How the company is funded?
(B) How profitable the company is?
(C) How the assets are balanced with the liabilities?
(D) How cash is invested in the business?
(E) How much the company pays in interest expenses?

13 What is called up share capital?
(A) The amount of shares a company is allowed to issue
(B) The number of shares that have been issued by a company

14 Which of the following are tangible assets?
(A) Land
(B) Plant

(C) Accounts receivable
(D) Inventory
(E) Trademarks
(F) Machinery

15 Calculate the Trade debtors/Turnover ratio, where a company's turnover is GBP 3,000,000 p.a. and trade debtors figure is GBP 250,000.
(A) 25
(B) 30
(C) 32
(D) 33.5
(E) 36

16 What are trade debtors?
(A) Debts owed to the company by customers of the company on credit terms
(B) Debts the company owes to suppliers of the company on credit terms

17 Are 'creditors' assets or liabilities of the company?
(A) Assets
(B) Liabilities

18 Calculate the creditors days figure where the Trade Creditors figure is GBP 500,000 and the company's turnover is GBP 5,000,000.
(A) 28.3
(B) 30.2
(C) 33.0
(D) 36.5
(E) 40.2

19 What is a trade creditor?
(A) Suppliers to whom the company owes money, i.e. people from whom the company has purchased goods on credit terms
(B) Clients who owe money to the company, i.e. people who the company has sold goods to on credit terms

20 Which of the following are not classes of stock assets?
(A) Production goods
(B) Finished goods
(C) Sales goods
(D) Work in progress
(E) Raw materials

21 What are the sub-headings under which the Companies Act 1985 requires stocks to be analysed?
(A) Work in progress
(B) Raw materials and consumables
(C) Payments on account
(D) Sales goods
(E) Finished goods and goods for resale

22 FIFO is a method of stock pricing which assumes for accounting purposes that the stock:
(A) Has been used in the order in which it had been received by the company
(B) Has been priced on the average value of the stocks purchased over the year
(C) Has been formally valued by appraisors
(D) Is obsolete and needs to be written down

23 What are the broad categories into which a company's borrowings will fall?
(A) Accounts receivable
(B) Debentures and loans from financial institutions
(C) Retained earnings
(D) Bank overdrafts
(E) Unsecured loan stock and bonds

24 What does the balance shown under the heading bank overdraft tell us?
(A) The amount of the company's authorized overdraft with its banks
(B) The amount of the company's overdraft with its banks

25 Under what headings are fixed assets set out in the balance sheet?
   (A) Intangible assets
   (B) Valued assets
   (C) Manufacturing assets
   (D) Tangible assets
   (E) Investments

26 What are tangible fixed assets?
   (A) Cash
   (B) Bonds
   (C) Plant and equipment
   (D) Fleet of lorries
   (E) Goodwill

27 What is Goodwill?
   (A) A good relationship between a company and its auditors
   (B) A non-confrontational attitude between a company's management and its employees
   (C) Goodwill is the amount by which the value of a business as a whole exceeds the balance sheet value of its individual assets less liabilities
   (D) The trust that the company's clients have in the company's products
   (E) Funds that companies contribute to political parties

28 What is depreciation?
   (A) A fall in the company's profits
   (B) A loss in value of the company's operating cash flow
   (C) Depreciation is a measure of the loss of value of an asset due to the passage of time and obsolescence
   (D) The loss in EPS due to a share issue resulting in share dilution
   (E) When companies restate their profits downwards due to previous errors in inflating profits

29 What are the different types of share capital?
   (A) Preference (or non-equity) shares

(B) Ownership shares
(C) Deferred shares
(D) Warrants
(E) Performance shares
(F) Ordinary shares

30 Which shares feature the option that if a dividend is not paid on time it is will deferred to be paid later rather than omitted?
(A) Warrants
(B) Ownership shares
(C) Deferred shares
(D) Cumulative preference shares
(E) Performance shares
(F) Ordinary shares

31 If preference shareholders' dividends have not been paid in the course of the financial year, can holders of other categories of shares receive dividends?
(A) Yes
(B) No

32 What of the following three things will the P/L account show us?
(A) The company's liquidity as generated by cash surplus
(B) Revenue for the year against the COGS and other expenses
(C) The amount of long-term debt taken on by the company during the year
(D) The current performance of the business and shows turnover and expenses
(E) Reveals the pre-tax profit figure

33 Name three things that Schedule 4 of the Companies Act requires separately in the P/L account or in the notes annexed thereto
(A) Chairman's emoluments
(B) Directors' emoluments
(C) Particulars of staff

(D) Auditors' remuneration
(E) Hire of plant and machinery
(F) Depreciation

34 The purposes of the cash flow statement are to report the net change in the cash balance and to help explain how the surplus or deficit in cash arose.
(A) True
(B) False

35 What reporting standard governs the format of the cash flow statement?
(A) SSAP1
(B) ACA 1
(C) FRS 1
(D) GAAP 1
(E) IAS 1

36 Using the P/L account set out on page 134 and balance sheet from page 118, calculate the ratios from this chapter.
1 Current ratio
2 Quick ratio
3 Debtor days
4 Stock days
5 Gearing
6 Interest cover
7 Dividend cover
8 Profit margin
9 Return on capital employed (ROCE)

Answers

1 B, C, D, E – A company is required to give the Registrar of Companies copies of its Memorandum and Articles of Association when it is first established, and each year a copy of its annual report and accounts and an annual return giving details of subsequent changes to the Memorandum and Articles and to the address of the company's registered office, details of the company's share capital and debentures, details of each mortgage and charge on the assets of the company, and a list of the directors and secretary.
2 E
3 C
4 C
5 A
6 B
7 C
8 F
9 A, B, D
10 B
11 B, D, E
12 A, C, D
13 B
14 A, B, D, F
15 B – GBP 250,000/GBP 3,000,000 $\times$ 365 = 30.416 (30 days in round days)
16 A
17 B
18 D – GBP 500,000/GBP 5,000,000 $\times$ 365 = 36.5 days
19 A
20 A, C
21 A, B, C, E
22 A
23 B, D, E
24 B

25 A, D, E
26 C, D – Tangible fixed assets are assets with a long working life which have not been bought by the company for resale purposes in the ordinary course of their business, but for the purpose, directly or indirectly of revenue generation.
27 C
28 C
29 A, C, D, F
30 D
31 B
32 B, D, E
33 A, B, C, D, E, F
34 A
35 C
36 1 Current ratio: 265/316 = 0.838
2 Quick ratio: (265 − 136)/316 = 0.4082
3 Debtor days: (34/1998) × 365 = 6.2112 (6 days)
4 Stock days: (136/1434) × 365 = 34.61 (34 days)
5 Gearing: We do not have separate figures for borrowings.
6 Interest cover: 196/30 = 6.53 recurring.
7 Dividend cover: 117/57 = 2.052
8 Profit margin: 166/1998 × 100 = 8.308%
9 ROCE: 196/864 × 100 = 22.685%

Ratio analysis

This chapter on ratio analysis discusses an introduction to the underlying concepts of ratio analysis

- Liquidity Measurement Ratios
- Asset Management Ratios
- Capital Structure Ratios
- Profitability Measurement Ratios

Financial statement analysis describes how to start this process and ratio analysis shows ways of continuing it.

In recent years, ratio analysis has been eclipsed by cash-flow analysis.

This is due to the reputation of ratio analysis being a retrospective diagnostic system. Many market practitioners feel that financial data on a balance sheet up to 2 years old is not of much relevance in the 'dot-com' era.

This has accordingly led to financial analysts developing other analytical methods such as cash-flow analysis. This technique is based on the importance to the banker of a company's ability to pay cash at present and in future, which is when the repayment period on loans which are the banker's concerns will occur.

Ratio analysis however has also evolved and also has its uses. It can help in analysing trends by comparing year on year statistics. A minimum of 3 years' accounts should be used. Ratio analysis moreover and has direct relevance to three areas of banking:

- Ratio analysis can provide useful clues as to the state of a company's health. Various mathematical models have been constructed in which a large number of ratios are compared and given different weightings to produce an overall credit score. Although there is a tendency here to quantify risks that are in part subjective, the credit score is a significant advance on reliance on one or two simple ratios.
- Ratio analysis can help in assessing a company's profitability and financial structure vis-à-vis its competitors via peer group analysis – an analytical technique comparing the financial ratios of one company against competitors in a similar industry sector (peers). While this approach has a tendency to generalize, it enables the identification of anomalies pertaining to a specific entity or industry sector.
- Ratio analysis can assist in perfecting security arrangements – to enhance the lending bank's ability to manage the loan and call in the loan for prepayment, certain conditions known as financial covenants can be incorporated into the loan agreement. Financial ratios are often used in defining financial covenants and knowledge of financial ratio analysis can be useful in enabling the drafting of effective financial ratio covenants.

As long as the analyst is aware that not all ratios are equally relevant for every company and every loan, and that ratios are on some occasions misleading, there is much to be gained from their use.

What is ratio analysis?

A ratio is simply a means of highlighting, in arithmetic terms, the relationship between two figures (it is only useful if a significant relationship exists between the two figures). If the first figure (the numerator) is divided by the second (the denominator), a ratio is derived which can be expressed as a number in the mathematical notation for a ratio, or as a percentage.

Example
The chief executive in a company is paid GBP 45,000
The average wage for all employees is GBP 10,000

The ratio of the chief executive's salary to the average employee is 4.5× (times) or 4.5:1 or 450%. Very often the '×' and the ':1' are omitted, leaving the ratio expressed as a number standing alone (4.5).

The users

The purpose of financial statements is to provide information about a company's performance and financial standing. Many different parties have an interest in this information:

- Shareholders are interested in maintenance and growth of profits and dividends.
- Management is interested in the effective use of resources and future growth.
- Employees and trade unions are interested in profit and wages.
- Tax authorities are interested in collecting VAT (on sales) and corporation tax (on profits).
- Trade suppliers are interested in solvency and short-term creditworthiness.

- Customers wish to assess the risk of not being supplied.
- Bankers are interested in solvency, creditworthiness, debt levels, and the value of security.

Each user group will focus on different aspects of a company's business and will be looking at information from different sources.

It should be stressed that there is no 'standard set' of ratios, and there is no particular method of calculating ratios. The selection of and calculation of ratios is at the analyst's discretion. While some database spreadsheets may calculate up to 40 different ratios, depending on the nature of the company and lending risk, the analyst may only be interested in four or five of these ratios and the others may be irrelevant.

Some analysts have asked what are the proper ratios to use in an analysis and how do you calculate them? The answer to that is what is the nature of the company and what risks are you trying to analyse? Indeed one could calculate ratios on any facet of the company for example, the number of employees per building, the number of employees per square foot of office space, the number of company cars per building, the ratio of cars to employees, etc. Ratios are merely a technique, it is for the analyst to understand the nature of the company and the lending risks and to select and calculate the ratios accordingly.

Internal and external information

Financial data provide the raw material for ratio analysis. This data can be historic, current, or forecasted.

The importance of specific ratios will vary from company to company (e.g. the rate of stock turnover is important to a wholesaler but not to an advertising agency) and from user to user (e.g. the purpose of the credit facility).

The main problem is usually lack of detailed information and the historic nature of such information. The main source of information is the annual audited financial statements, i.e. the annual report, which may be published up to a year after the events have actually taken place.

Bank analysts are in a better position to obtain more detailed information from a company if a loan application is being considered, although comparative information about competitors may still be difficult to obtain.

Classifying ratios

We will now consider a detailed ratio analysis of a set of financial statements. As noted in the financial statement analysis chapter in this series, the P/L account, balance sheet, and cash flow statements are interrelated.

Whilst specific ratios relate to each statement, it is more useful to consider ratio analysis within the framework of their objectives. In other words, financial ratios exist to measure:

- Performance
- Financial standing
- Return on investment.

The specific ratios examined in this chapter are set out below:

Table of ratios

Type	*Performance*	*Financial standing*	*Investment*
%	ROCE Return on equity (ROE) Profit margin	Current ratio# Quick ratio# Gearing ratio#	
x or a:b	Net asset turnover Working capital ratio	Current ratio# Quick ratio# Leverage ratio Gearing ratio#	Dividend cover Earnings per share (*) Price/earnings ratio Earnings yield
Days+	Stock turnover Debtor turnover Creditor turnover		

(*) means this ratio is expressed in currency terms (e.g. cents and pence).
+see next chapter for an explanation of ratios expressed in days.
can be expressed as a per cent, or as a multiple.

Astute readers will note that this classification model differs from the introductory model described in the preceding chapter:

- Liquidity Measurement Ratios
- Asset Management Ratios
- Capital Structure Ratios
- Profitability Measurement Ratios.

This is indeed a correct observation. The above four ratio categories are of concern to financial analysts looking at the financial condition of the company from a lending viewpoint and in effect form a subset of a larger set of ratios. In the table of ratios above, the reader will note a different classification order.

This is because the user base in this case is broader, and the range of ratios reflects this. The users in this case are not only banks but investors, hence one can look at the performance of the company, its financial condition, as well as investment criteria.

Banks for example may be interested in the cash flow margin to debt service ratio while equity investors may be more interested in the ROE ratio. That does not mean to say the banks are not interested in the ROE ratio (or the investors in the cash flow ratio) since a harbinger of future problems may become apparent in the ratio of secondary interest. What does it mean is that some ratios are of more interest than others to the user but all of them can help form an overall picture of the company's situation.

We will explain these categories in more detail below.

Performance ratios

Companies exist to generate wealth (i.e. money), for their investors and shareholders. These shareholders are only encouraged to invest in a specific company by the prospect of receiving superior gains than those obtained by investing elsewhere (e.g. government bonds).

The function of management is to invest the funds under its control (including the funds from shareholders, banks and creditors) to generate the maximum return, or profit, on those invested funds.

Performance ratios are used to measure how well management is succeeding, the prime measurement being ROCE. This ratio is also known as return on net assets. Note that for these purposes net assets are defined as total assets minus current liabilities. It can also be defined as total assets minus total liabilities. This differentiates between the return achieved on the total capital employed in the business, which can be regarded as shareholder funds plus long-term debt, and the return achieved merely on the amount of shareholders' funds.

It should be noted that bankers like to see a well capitalized company. Most equity is accumulated via retained earnings but can also be augmented by share issues. Here we have a tradeoff dilemma since the banker likes to see a strongly capitalized company, however if the company issues more shares, there will be less EPS, meaning that dividends will fall. This is known as 'share dilution'. Share dilution can have the effect of making ROE less attractive to the shareholder, hence the price of the share will fall, which can be adverse to the company.

Certain economists have attempted to devise mathematical models determining the optimal level of debt vs. equity, also known as the 'debt–equity tradeoff theory'.

PYRAMID OF RATIOS
Profit/Net assets

Profit/Sales		*Sales/Net assets*	
Gross profit/ Sales	Operating expenses/ Sales	Sales/ Fixed assets	Sales/ Working capital
Material/ Sales	Selling expenses/ Sales	Sales/ Land and buildings	Cost of sales/ Stock
Labour/ Sales	Administration expenses/Sales	Sales/ Plant and machinery	Sales/ Debtors
Overheads/ Sales	Financing expenses/ Sales		Cost of sales/ Creditors
P/L ratios		Balance sheet ratios	

	Net assets and capital employed		
50	Current assets	Current liabilities	25
		Long-term debt	35
50	Fixed assets	Shareholders' funds	40
Net assets or capital employed	Total assets minus current liabilities	Long-term debt plus shareholders' funds	=75

As shown in the pyramid of ratios, it is from this basic profit performance ratio that all other performance ratios are derived.

We will now examine each of the key ratios in detail.

ROCE (Return on Capital Employed)

This is the precise measure of a company's performance and is defined as:

ROCE = Earnings before interest and tax/Capital employed
= Earnings before interest and tax/Net assets
= (Earnings/Sales) × (Sales/Net assets)

Capital employed represents the total funds invested in the company: shareholders' funds + long-term debt, which equates to net assets.

'Earnings before interest and tax' is often shortened to 'EBIT'.
'Profit before interest and tax' or 'PBIT' means the same.

'Capital employed' must also be defined carefully. Bank overdrafts, usually temporary, may in some cases be part of the long-term funding requirement of the business (e.g.: if the overdrafts are used to fund an acquisition or major capital expenditure programme). In such cases, this must be counted as part of the capital employed.

Goodwill and other intangible assets should be deducted in determining capital employed. It can also be argued that asset values, particularly property values, should be included in capital employed at current values rather than at historic book value. (Historic book value, being usually a lower figure, will yield a higher ROCE than would be achieved by calculating on assets at current values.) FRS10 deals with such intangibles.

ROCE measures a company's performance regardless of how it has been financed, i.e. profit is measured pre-interest and thus the level of debt vs. equity is disregarded. The impact of debt is considered later in this chapter.

ROCE will vary from industry to industry but, as a guideline, a company in the UK should achieve an average ROCE of around 12%, with those achieving closer to 20% exhibiting a very strong performance.

ROE (Return on Equity)

A shareholder is more interested in the return on shareholders' funds (or equity and reserves) after all the interest has been paid. The analyst is also interested, since this ratio demonstrates that acceptable performance is being achieved after taking into account the cost of debt.

ROE = Earnings after tax/Shareholders' funds*

This ratio is related to ROCE by deducting interest and tax from profits and long-term debt from capital employed. An ROE of 20% or more usually represents a very strong performance by a company.

Profit performance measurements

Operating profit margin: ROCE
ROCE = EBIT/Net assets = (EBIT/Sales times) (Sales/Net assets)

The ratio of EBIT to sales is a major component of ROCE and a key measurement of profitability. It is known as the operating profit margin and is normally expressed as a percentage. This profit margin (and ROCE) can be increased by increasing selling prices or sales volumes, increasing efficiency, or reducing costs.

Profit margin may also be defined as net profit margin as follows:

Net profit margin = Earnings before tax*/Sales

*(i.e. after all expenses, sales, and interest costs are deducted)

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*also known as equity.

It is important to be clear about which definition of 'profit' you are using when dividing by sales to calculate profitability (e.g. gross profit, EBIT, pre-tax earnings, post-tax earnings, or net income). Using EBT, for example, will highlight the impact of borrowing costs on margins.

Profit margins moreover may vary from industry to industry since each has its own characteristic levels. Peer group analyses therefore need to be consistent, thus enabling the identification of changes over time.

From the earnings (profit), costs and sales figures, a number of useful ratios may be calculated. These are useful in determining if expenses are increasing or are being controlled effectively. They can be divided into the following items:

- Expenses associated with production
  - Gross profit margin = Gross earnings/Sales
  - Gross earnings are the profit after deducting COGS from sales, but before deducting general and administrative expenses.
- Further ratios associated with these costs include:
  - Materials cost/Sales
  - Direct labour costs/Sales
  - Factory costs/Sales

Note that the costs here, when taken together, form the P/L item, COGS.

- Operating expenses of the company. These ratios include:
  - Selling expenses/Sales
  - Administration expenses/Sales
  - Finance expenses/Sales
  - Distribution expenses/Sales

  Note that these expenses, with the exception of financing expenses, form the P/L item, selling general and administrative expenses.

By analysing these ratios it should be possible to discover why changes have taken place in the profit margin pre-tax and interest. Management can control the profit margin by manufacturing products more cheaply or efficiently or by better purchasing strategies.

Asset performance measurements

Net asset turnover

ROCE = EBIT/Net assets
= EBIT/Sales × Sales/Net assets

The ratio of Sales to Net assets is the other major component of ROCE and is a key measure of the efficiency of asset use. It is known as the net asset turnover ratio and is simply the number of times that assets are covered by sales.

Net asset turnover = Sales/Net assets

It can be improved, thereby increasing ROCE, by reducing investment in net assets (i.e. reducing capital employed) for each GBP 1 of sales. The higher the net asset turnover, the more sales for each GBP 1 invested and hence the more profit generated.

The efficiency of asset use can be analysed further by calculating the **fixed asset turnover** and **working capital ratios** which are components of the net asset turnover ratio.

Fixed asset turnover = Sales/Fixed assets
Working capital ratio = Sales/Working capital
(Defined as current assets less current liabilities).

The reduction in the value of assets necessary to improve the net asset turnover ratio can be made either by reducing the fixed asset investment or by reducing the working capital required for each GBP 1 of sales.

The former can be achieved by improving utilization rates, e.g. by introducing shift work in order to use machines 24 hours a day rather than 12 hours a day, or by investing in more efficient machinery.

The latter can be improved by controlling stock levels more efficiently, collecting debtors more quickly or by taking more credit from suppliers. Any investment in working capital should be minimized and carefully controlled if ROCE is to be maximized.

The working capital ratio can be analysed in turn into stock, debtor, and creditor ratios:

Stock turnover = Cost of sales/Stock

A high stock turnover figure means a rapid rate of sale for stock and hence higher profits.

An alternative way of expressing the stock turnover ratio is as the number of days' stock in hand.

Days' stock outstanding = Stock × 365/Cost of sales

Care should be taken with the stock figure since it may vary appreciably over time subject to production methods, the need to avoid raw material shortages and the need to hold higher levels of finished goods to support a major sales initiative. The breakdown of stock into raw materials, work in progress, and finished goods is normally available and the ratio for each category should be calculated to identify any major changes such as seasonal variations or slowdowns in delivery. It is also important when comparing different companies to ensure that stock is valued on a comparable basis, e.g. including, or excluding overheads, or on a first in first out (FIFO); last in, first out (LIFO) basis.

Case study

In 1998 and 1999 Buildem Engineering Ltd produced the following performance. You judge that the stock figures are representative and set about calculating the change in stock turnover.

	2003 GBP million	*2002 GBP million*
Cost of sales	220	200
Stock	40	30

In 2003 it had a stock turnover of 66 days: 40 × 365/220
compared to 55 days in 2002: 30 × 365/200

This means that, in relation to sales it is now holding more stock and hence stock turnover has slowed down, or, in other words, worsened over the year.

The debtor ratio can be expressed as the number of days' sales outstanding or the average collection period:

Days' debtors outstanding = Debtors × 365/Sales

Care should be taken as the debtors outstanding will vary over time. A long collection period normally implies poor credit control procedures. Equally, one major debtor can have a disproportionate effect on this ratio, depending on their payment terms.

This is why it is useful when analysing a company to ask it for a list of its 10 largest debtors to see if they are evenly distributed or whether there are any disproportionately large clients.

The creditors' ratio, which indicates how long the company takes to pay its suppliers, can be expressed as the number of days' purchases outstanding or average payment period.

Days' creditors outstanding = Creditors × 365/Cost of sales

This ratio illustrates how adept the company is in using supplier credit.

Financial standing ratios

The performance ratios we have been looking at give an indication of how well a company is controlling expenses and managing assets to produce sales and profit. Each ratio compared either two items from the P/L statement or an item from the P/L with one from the balance sheet.

These are important considerations in helping establish whether the company is moving towards greater or lesser profitability.

Lending however includes other risks relating to the company's financial structure.

Financial standing ratios therefore are primarily balance sheet oriented and examine levels of debt in relation to both assets and other equity. Although they are to some extent indicators of ability to repay debt, it should be remembered that they do not give direct information. They tell you more about what would be left if a company were to stop trading at the date of the balance sheet than about the availability of cash to make regular interest payments.

It is therefore important to use these ratios in conjunction with a cash flow analysis. The two methods together will tell you a great deal about a company's present and future condition.

Short-term liquidity measurements

The two key ratios normally calculated are the current ratio and the quick ratio.

Current ratio = Current assets/Current liabilities

The current ratio is used to compare assets which will be realized into cash as part of the company's normal working capital cycle with liabilities which should be paid during that cycle.

Traditionally, the average for the current ratio in the UK has been 120% (or 1.2 times) with significant differences from industry to industry,

Sample ratios of large UK industry sectors over 2 years

Ratio	*Mail order*		*Chemicals*		*Pharmaceuticals*		*Fashion retail*		*Manufacturing*	
	Year 1	*Year 2*	*Year 1*	*Year 2*	*Year 1*	*Year 2*	*Year 1*	*Year 2*	*Year 1*	*Year 2*
ROCE (%)	10.58	11.63	12.40	12.12	34.72	32.06	14.74	16.98	14.06	18.66
Gross profit margin (%)	37.67	36.02	9.12	10.35	36.53	38.44	28.6	30.9	7.1	7.3
Profit before tax/ Sales (%)	12.99	14.58	8.50	10.02	44.80	43.12	9.8	10.2	6.4	7.7
Debtor turnover (days)	192	198	66	73	94	92	10	10	66	68
Current ratio	3.88	3.90	1.73	1.75	2.18	2.33	1.06	0.88	1.49	1.45
Quick ratio	1.18	1.16	1.05	1.07	1.69	1.92	0.44	0.52	0.74	0.74

Source: Company reports

depending on the amount of stock that has to be held and the terms of trade. These factors are to a large extent fixed by market conditions, but will vary according to the amount of cash or short-term debt a particular company is carrying.

Practice will enable you to understand terms of trade, production cycles, seasonal requirements, etc., and how this translates into an acceptable ratio for a particular company in a specific industry sector.

Another rough and more severe measure of short-term liquidity is the quick ratio, which deducts stock from the asset side of the ratio. This conservative ratio accounts for the fact that the stock may take a long time to convert to cash (e.g. a semi-manufactured aircraft), or there may be obsolete stock (e.g. unfashionable clothing) which cannot be sold.

Quick ratio = Cash + (Short-term investments + Debtors)/Current liabilities

= Liquid assets/Current liabilities

The quick ratio should be treated with care since not all liabilities will be payable at once, nor will all debtors be collectable in the short term.

The current and quick ratio norms of some differing UK industries are as follows:

	Current ratio	*Quick ratio*
Pharmaceutical manufacturers	1.9	1.4
Jewellery retailers	1.6	0.5
Car dealers	1.1	0.5
Supermarkets	0.7	0.3

On reflection, these differences are not surprising. Pharmaceutical manufacturers have to give significant amounts of credit, making their debtors a large item. Jewellery retailers will have a very high element of current assets in relatively slow moving stock. To a lesser extent, the same is true of car manufacturers. Supermarkets sell only for cash and therefore have few debtors and exact generous credit terms from suppliers, which more than finance their total stock levels. It is normal, therefore, to see low current and quick ratios.

Longer-term solvency measurement

To assess a company's longer range solvency, three ratios are commonly used:

- Leverage ratio
- Gearing (interest bearing debt/capital resources) ratio
- Interest cover ratio

Indirectly, each is a measure of a company's ability to raise additional capital in the future, whether via additional bank debt or by the issue of new share capital.

Leverage ratio = Total liabilities (including both long term and current)/ Shareholders' funds

Leverage depends on the nature of a company's activities and is typically in the range of one or two times.

Gearing ratio = Total interest bearing debt/Capital resources (Shareholders' funds)

A ratio in excess of 1:1 is normally considered to be excessive for production companies, since the banks would probably be funding more than 50% of the permanent asset needs which should ideally be funded by permanent capital. Service and distribution companies can typically have more debt, as their assets are of a more liquid and seasonal nature for which short-term finance is more appropriate. The key element, however, is the cash generative nature of that particular business.

Typical UK gearing ratios

Vehicle rental and leasing companies	5.2 or 520%
Confectioners, tobacconists, and newsagents	1.7 or 170%
Launderers and dry cleaners	0.9 or 90%
Motor component accessories manufacturers	0.7 or 70%
Clothing manufacturers	0.5 or 50%
Textile machinery manufacturers	0.2 or 20%

Remember that shareholders' funds = Equity + Reserves. If a company has intangible assets in its balance sheet then these should be deducted from shareholders' funds to give the tangible net worth (TNW) of the business, and this figure should be used in calculating the leverage and gearing ratios. If a balance sheet has no intangible assets then TNW = Shareholders' funds.

A high gearing ratio implies a higher financial risk, but can be tolerated if the profitability of a company is high, is relatively consistent and is a good generator of cash. In the case of car leasing companies, the financing costs and income are fixed so the profit margin can be predicted. Furthermore, there is a relatively large and liquid market for their products if a customer defaults on payments. As you move down the above list, recurrent and high fixed costs mean a higher level of volatility in earnings, and a lesser ability to cover the interest payments that the higher gearing

entails. A lower level of gearing is therefore appropriate, or measures should be taken to reduce the interest rate risk via financial instruments, or the conversion of a certain amount of debt into fixed rate borrowings.

The last test of longer-term solvency is the interest cover ratio.

Interest cover = Profit before interest and tax/Interest payments

This ratio, which is derived from the P/L account, demonstrates the amount of cover available before interest payments might be jeopardized. In theory this occurs when interest cover falls below 1:1 but interest payments are made out of cash flow and, depending on the timing of payment of liabilities, a company could still make its interest payments on time. Thus cash-flow analysis is a better method of assessing interest cover. Interest cover in excess of 2.5:1 may be considered satisfactory, depending on the volatility of the company's earnings.

Investment ratios

These ratios relate specifically to shareholders, particularly investors on the stock market. Several different ratios are used to measure the performance of the investment and to assess the likely future performance.

Although they do not relate specifically to a company's use of working capital or its ability to meet interest payments, investment ratios can yield useful information. The size of a company's dividend, for example, is important when looking at cash flow. In difficult times, how prepared will management be to cut the dividend and lower the yield for shareholders? The price/earnings (P/E) ratio can be used to make an estimate of a company's value if sold as a going concern – information you may require in the last resort!

Investment Income Measurements
With regard to dividends, two ratios are normally calculated:

- Gross or net dividend yield
- Dividend cover

They are used to ascertain both that an acceptable annual income is being paid in relation to the value of the investment and that sufficient profits are being generated to enable the appropriate dividend payment levels to be maintained.

Gross or net dividend yield

(Gross or net dividend per share/Market price per share) × 100

This ratio indicates the current income yield provided for an investor in relation to the current market price of the share. The current market price is unlikely to be the amount originally paid for the shares. Using the current market price as a yardstick, the investor can compare the company's yield directly with other investments and if he is not satisfied he can sell the shares and invest the proceeds elsewhere to achieve a higher income return.

Take care to check whether the dividend per share has been quoted gross (before tax) or net (after tax). When calculating the ratio in the UK, a company will deduct basic rate tax (currently 10%) on behalf of the UK tax authorities before making a dividend payment to the investor. The investor can then claim the tax back at a later date if he or she is not subject to the tax. Dividend yield can be calculated on a net basis, but this makes direct comparisons with other investments which pay interest gross difficult.

Note that dividend payments are often expressed as a percentage of the nominal value of a share. Hence, a dividend of 10% on a 25p share (whose market value may be currently valued at 120p) will be 2.5p. Thus the yield on that share will be dividend payable × 100/market price, which will be:

2.5 × 100/120 = 2.08%.

Dividend cover

EPS/Dividends per share =
Earnings attributable to ordinary shareholders/Dividend paid to ordinary shareholders.

Dividend cover is the number of times profits available for distribution, i.e. after tax and interest as a dividend to shareholders exceeds dividends actually paid.

A dividend cover approximating two times is normally considered reasonable. For a company to pay away all its earnings (or use previous years' earnings from the retained earnings account in the balance sheet) in dividends suggests that management is not guaranteeing satisfactory returns but trying to keep shareholders happy in the short term by maintaining or increasing dividends.

The growth in the EPS amount of the dividend cover ratio is particularly important to a company's share price, since no growth implies:

- Static profits
- An inability to pay increased dividends
- An inability to reinvest sufficient retained profits to ensure future growth of the company.

Historical and peer group analysis

Much useful information can be obtained by comparing ratios from the same company over time (from historical data) or comparing the same ratios in similar companies (from industry studies from sources such as ratings agencies).

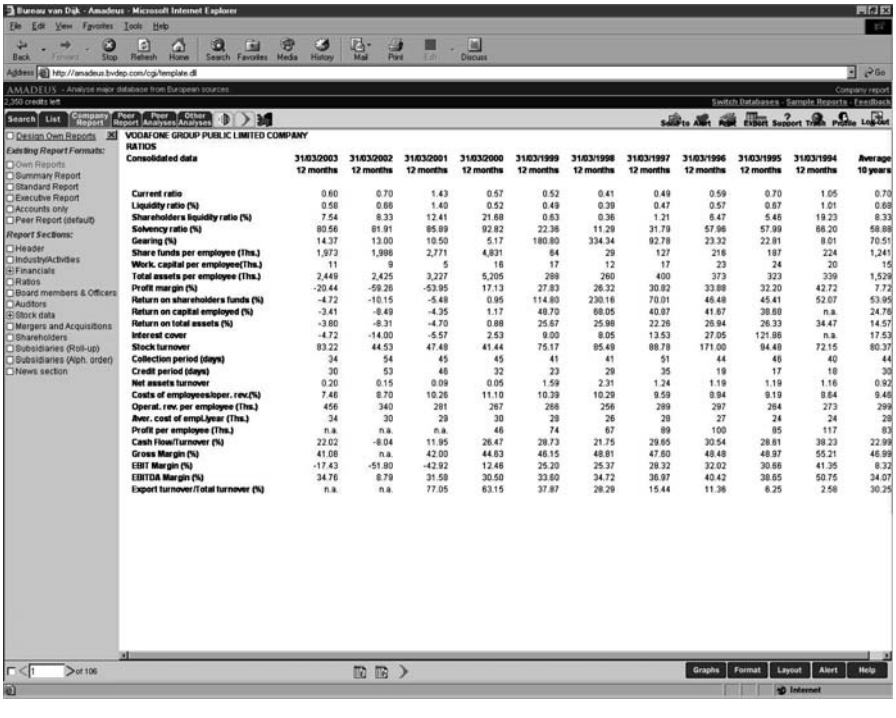
These techniques help to establish whether a company is becoming more or less efficient over time and more or less efficient than the competition.

The advantage of using historical ratio analysis from the same company is that the information is easily obtained and directly comparable. The disadvantages include the fact that the results may have been influenced by different economic conditions, different production methods, inflation, or changes in accounting policies. It is therefore crucial to have a good understanding of the business operation of a company before attempting to interpret any ratios.

The following screencaps are extracted from the AMADEUS database and illustrate how peer group tables can be generated, for extraction and comparison:

- The first screencap illustrates a range of ratios for Vodafone public limited company over a range of time.
- The table in turn is extracted from the BvD web site of the first screencap and is sent in rich text format (RTF) or Excel (XL) format via e-mail to the user.
- The second screencap is generated from Vodafone's key ratios and graphically depicts various ratios over time enabling a quick verification of trends to be visually made.

AMADEUS: Vodafone Financial Ratios



VODAFONE GROUP PUBLIC LIMITED COMPANY

RATIOS

Consolidated data	31/03/2003 12 months	31/03/2002 12 months	31/03/2001 12 months	31/03/2000 12 months	31/03/1999 12 months	31/03/1998 12 months	31/03/1997 12 months	31/03/1996 12 months	31/03/1995 12 months	31/03/1994 12 months	Average 10 years
Current ratio	0.60	0.70	1.43	0.57	0.52	0.41	0.49	0.59	0.70	1.05	0.70
Liquidity ratio (%)	0.58	0.66	1.40	0.52	0.49	0.39	0.47	0.57	0.67	1.01	0.68
Shareholders liquidity ratio (%)	7.54	8.33	12.41	21.68	0.63	0.36	1.21	6.47	5.46	19.23	8.33
Solvency ratio (%)	80.56	81.91	85.89	92.82	22.36	11.29	31.79	57.96	57.99	66.20	58.88
Gearing (%)	14.37	13.00	10.50	5.17	180.80	334.34	92.78	23.32	22.81	8.01	70.51
Share funds per employee (Ths.)	1,973	1,998	2,771	4,831	84	29	127	216	187	224	1,241
Work. capital per employee(Ths.)	11	9	5	16	17	12	17	23	24	20	15
Total assets per employee (Ths.)	2,449	2,425	3,227	5,205	288	260	400	373	323	339	1,529
Profit margin (%)	-20.44	-59.26	-53.95	17.13	27.83	26.32	30.82	33.88	32.20	42.72	7.72
Return on shareholders funds (%)	-4.72	-10.15	-5.48	0.95	114.80	230.16	70.01	46.48	45.41	52.07	53.95
Return on capital employed (%)	-3.41	-8.49	-4.35	1.17	49.70	68.05	40.87	41.87	38.88	n.a.	24.76
Return on total assets (%)	-3.80	-8.31	-4.70	0.88	25.67	25.98	22.26	26.94	26.33	34.47	14.57
Interest cover	-4.72	-14.00	-5.57	2.53	9.00	8.05	13.53	27.05	121.88	n.a.	17.53
Stock turnover	83.22	44.53	47.48	41.44	75.17	85.49	88.78	171.00	94.48	72.15	80.37
Collection period (days)	34	54	45	45	41	41	51	44	46	40	44
Credit period (days)	30	53	46	32	23	29	35	19	17	18	30
Net assets turnover	0.20	0.15	0.09	0.05	1.59	2.31	1.24	1.19	1.19	1.16	0.92
Costs of employees/oper. rev.(%)	7.46	8.70	10.26	11.10	10.39	10.29	9.59	8.94	9.19	8.64	9.46
Operat. rev. per employee (Ths.)	456	340	281	267	266	256	289	297	264	273	299
Aver. cost of empl./year (Ths.)	34	30	29	30	28	26	28	27	24	24	28
Profit per employee (Ths.)	n.a.	n.a.	n.a.	46	74	67	89	100	85	117	83
Cash Flow/Turnover (%)	22.02	-8.04	11.95	26.47	28.73	21.75	29.65	30.54	28.81	39.23	22.99
Gross Margin (%)	41.08	n.a.	42.00	44.63	46.15	48.81	47.80	48.48	48.97	55.21	46.99
EBIT Margin (%)	-17.43	-51.80	-42.92	12.46	25.20	25.37	28.32	32.02	30.66	41.35	8.32
EBITDA Margin (%)	34.76	8.79	31.58	30.50	33.60	34.72	36.97	40.42	38.65	50.76	34.07
Export turnover/Total turnover (%)	n.a.	n.a.	77.05	63.15	37.87	28.29	15.44	11.36	6.25	2.58	30.25

Source: Bureau Van Dijk, AMADEUS 2004.

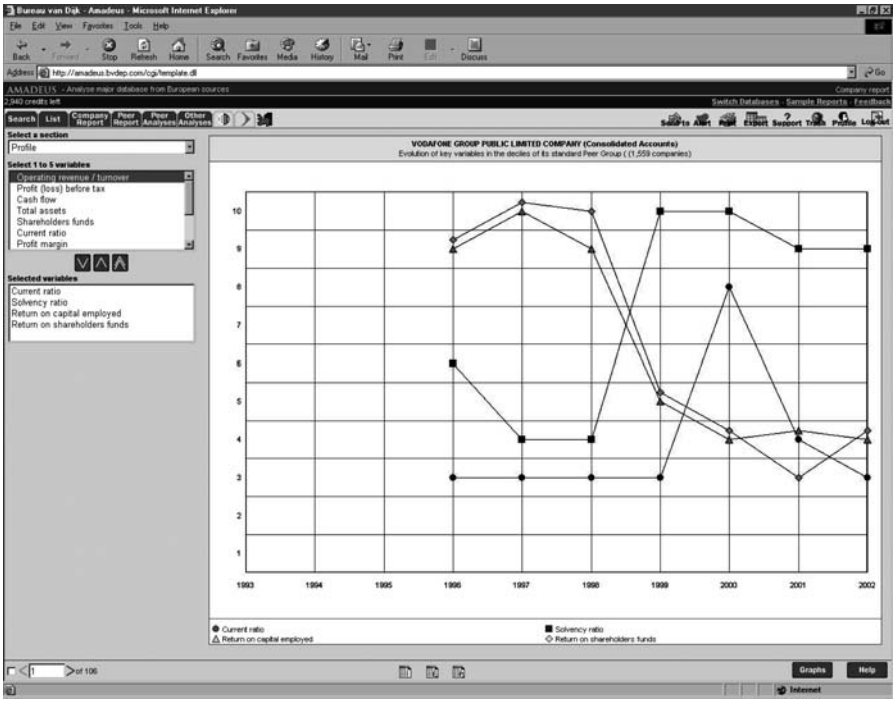
Ratios Consolidated data	31/03/2003 12 months	31/03/2002 12 months	31/03/2001 12 months	31/03/2000 12 months	31/03/1999 12 months
Current ratio	0.60	0.70	1.43	0.57	0.52
Liquidity ratio (%)	0.58	0.66	1.40	0.52	0.49
Shareholders' liquidity ratio (%)	7.54	8.33	12.41	21.68	0.63
Solvency ratio (%)	80.56	81.91	85.89	92.82	22.36
Gearing (%)	14.37	13.00	10.50	5.17	180.80
Share funds per employee (Ths.)	1973	1986	2771	4831	64
Work capital per employee (Ths.)	11	9	5	16	17
Total assets per employee (Ths.)	2449	−425	3227	5205	288
Profit margin (%)	−20.44	−59.26	−53.95	17.13	27.83
Return on shareholders' funds (%)	−4.72	−10.15	−5.48	0.95	114.80
ROCE (%)	−3.41	−8.49	−4.35	1.17	48.70
Return on total assets (%)	−3.80	−8.31	−4.70	0.88	25.67
Interest cover	−4.72	−14.00	−5.57	2.53	9.00
Stock turnover	83.22	44.53	47.48	41.44	75.17
Collection period (days)	34	54	45	45	41
Credit period (days)	30	53	46	32	23
Net assets turnover	0.20	0.15	0.09	0.05	1.59
Costs of employees/ oper. rev. (%)	7.46	8.70	10.26	11.10	10.39
Operat. rev. per employee (Ths.)	456	340	281	267	266
Aver. cost of empl./ year (Ths.)	34	30	29	30	28
Profit per employee (Ths.)	n.a.	n.a.	n.a.	46	74
Cash-Flow/ Turnover (%)	22.02	−8.04	11.95	26.47	28.73
Gross margin (%)	41.08	n.a.	42.00	44.63	46.15
EBIT margin (%)	−17.43	−51.80	−42.92	12.46	25.20
EBITDA margin (%)	34.76	8.79	31.58	30.50	33.60
Export turnover/ Total turnover (%)	n.a.	n.a.	77.05	63.15	37.87

Source: Bureau Van Dijk, AMADEUS 2004.

The subsequent three screencaps extract the Vodafone data and generate it against a predefined peer group comparison table automatically.

- The first screencap depicts the data on the BvD web site in tabular form, enabling comparisons to be made over time and within the peer group.

AMADEUS: Vodafone Key Financial Ratios Overtime



Source: Bureau Van Dijk, AMADEUS 2004.

Therefore, one can compare trends to see for example if the decrease in Vodafone's current ratio from 1.43 to 0.70 and 0.60 over the last 3 years is a trend specific to Vodafone or an industry wide development.
Such analysis is invaluable in establishing whether a company's difficulties are innate to its own financials, or whether it is an industry wide phenomenon and if so, how well or poorly the company is faring vis-à-vis its competitors.

The second and third screencaps generate graphical representations of the company's performance:

- The second – bar chart – depicts Vodafone's operating revenue turnover vis-à-vis its telecoms competitors (ranking it third behind Deutsche Telecom and France Telecom) and
- The third – pie chart – shows the portion of market share occupied by Vodafone vis-à-vis its telecom competitors (again third behind Deutsche Telecom and France Telecom).

Such comparisons are useful to see for example if a company has a smaller market share but larger (or smaller) profitability, meaning that it is smaller but more (or less) profitable than its competitors.

It is easy to understand how difficult and time consuming calculating such information was say 10 years ago, since such databases did not exist and the information needed to be spread and compiled manually and compared to industry average figures in books which may not necessarily have been calculated in the same manner.

The use of such databases has revolutionized the job of financial analysis from number crunching to data interpretation.

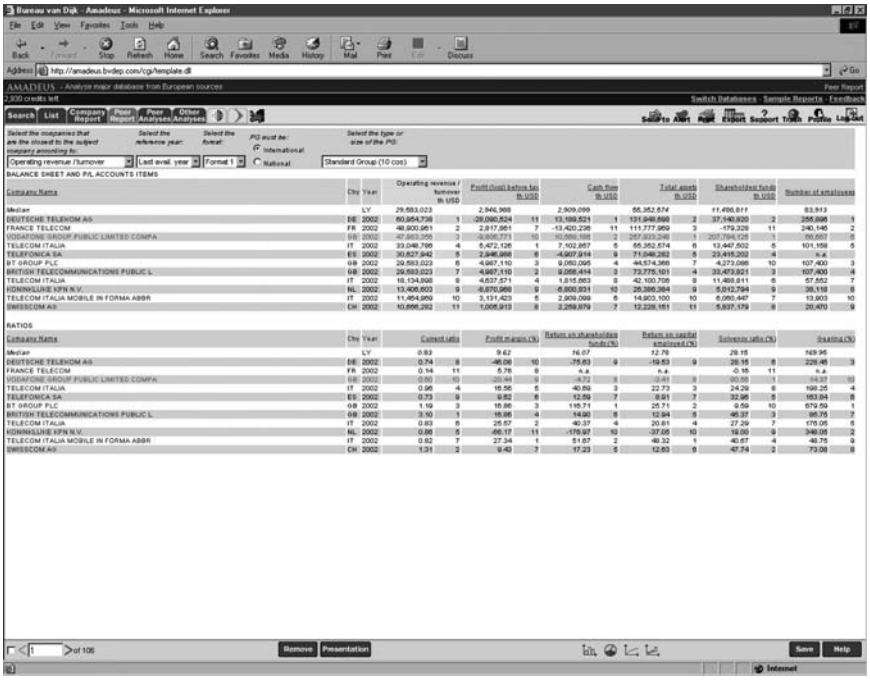
For peer group analyses, it is often difficult to find similar companies with which to make a comparison. Smaller companies, for example, may have adopted different accounting policies or have different product ranges. Hence the great advantage in databases such as AMADEUS.

Here, the ratios are extracted from a database – they may be consistent but the downside is that one does not really know how the financial information has been processed, or it may be processed in a manner different to the bank's methods or requirements.

Analysts should therefore understand how this information is compiled, classified, and how the ratios are calculated (since many ratios are bespoke, there is no 'proper' ratio or 'proper way' to calculate a ratio), not only for the sake of due diligence in their profession but also because the number of financial scandals and corrupted financial statements signed off by unscrupulous or unprofessional auditors means that these databases, precise as they may be, ultimately depend on (and may suffer from) the integrity of the audited statements from which the database is compiled.

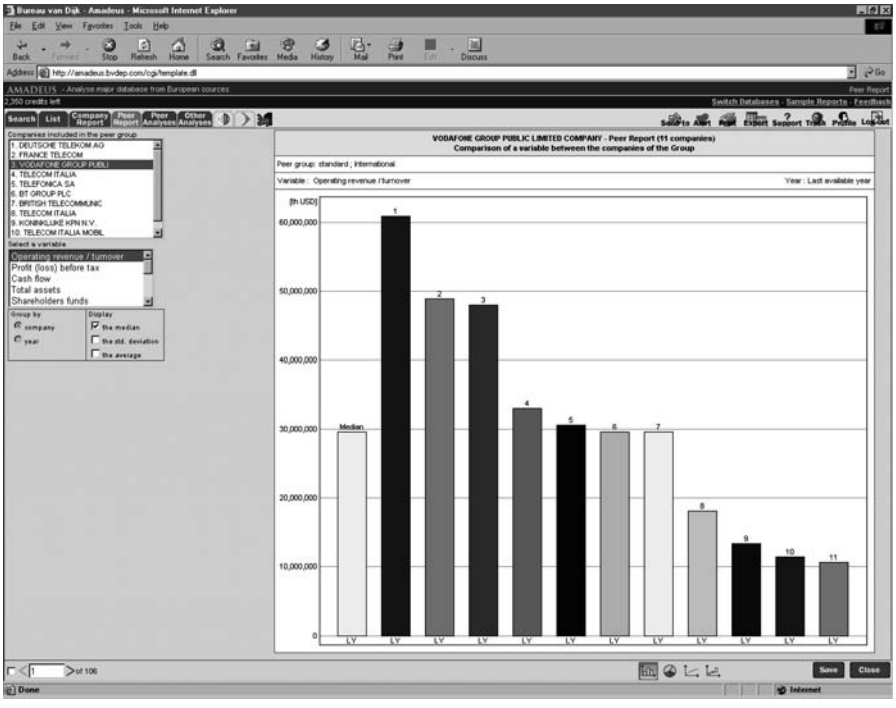
Finally, a clear understanding of how the ratios are calculated is essential not only for financial analysis but for the later stages of proactive credit risk management (e.g. establishing and defining the financial ratio covenants incorporated in the loan agreement to enhance the bank's security mechanisms and protection). Each source of information has its pros and cons. It is therefore important to understand the nature of the information being used.

AMADEUS: Vodafone Peer Group Data Comparison Table

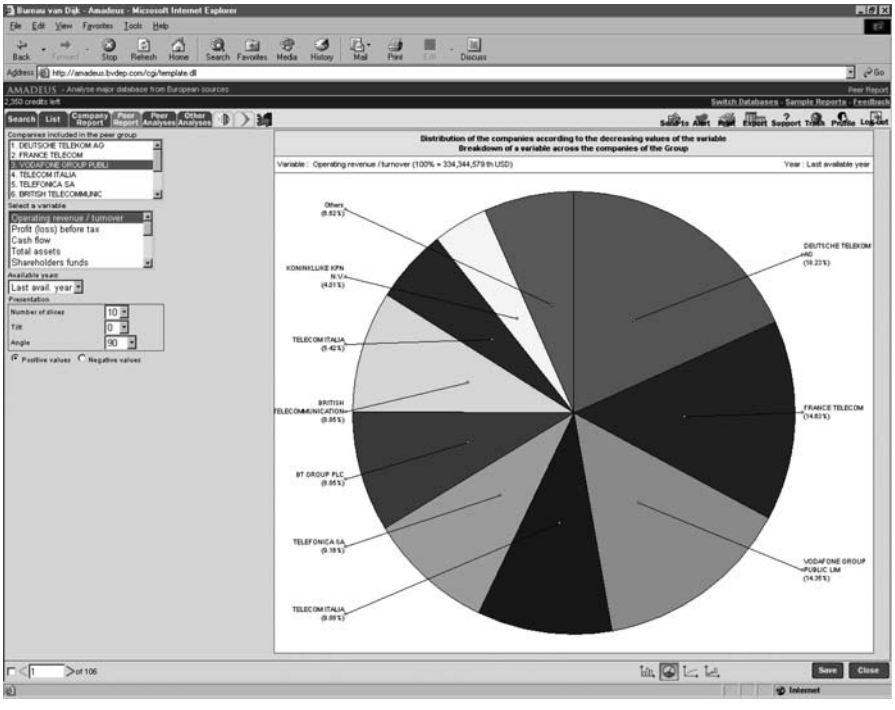


Source: Bureau Van Dijk, AMADEUS 2004.

AMADEUS: Vodafone Peer Group Data Comparison Graphic



AMADEUS: Vodafone & Competitors Market Share Graphic



Source: Bureau Van Dijk, AMADEUS 2004.

The No. 1 law of computer database programming is after all GIGO – for garbage in, garbage out.

The professional analyst will always bear these facts in mind when analysing information compiled by third parties.

Composite industry ratios

Experian also produce a series of industry standard ratios. Every year, Experian compile the UK Corporate Healthcheck, which can be downloaded from the Experian web site[11]. Unlike BvD's AMADEUS, these ratios are focused particularly on UK companies and compare them not only to industry peer groups but also as a backdrop to UK regional and national economies. These statistics can supplement those of the BvD

[11] http://press.experian.com

Return on Capital Employed for all Industries Q2 2000 – Q2 2003

	Q2 2000	Q2 2001	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003
Return on Capital (%)	12.48	10.39	*7.57*	6.98	6.35	5.76	5.23
Inflation rate*	2.10	2.30	1.50	2.10	2.70	2.90	2.90
Real ROCE (%)	10.38	8.09	6.07	4.88	3.65	2.86	2.33

*RPLX – average of annual change over the past three months.
Source: Experian, 2004.

The performance of British industry Q2 1999–Q2 2003

Key Ratio	Q2 99	Q2 00	Q2 01	Q2 02	Q3 02	Q4 02	Q1 03	Q2 03
Borrowing ratio (%)	82.19	91.57	83.21	112.43	122.04	119.35	122.20	124.31
Equity gearing (%)	35.28	36.34	38.12	42.04	40.84	40.42	40.15	40.17
Debt gearing (%)	47.88	53.46	49.78	64.58	70.08	70.19	72.20	73.32
Interest cover (times)	4.23	3.62	3.28	2.22	2.04	1.85	1.67	1.51
Return on capital (%)	14.03	12.48	10.84	7.57	6.98	6.35	5.76	5.32
Return on assets (%)	8.77	7.74	6.52	4.65	4.29	3.90	3.54	3.22
Pre-Tax profit margin	7.97	7.58	7.14	5.57	5.14	4.67	4.24	3.85
Return on S/hold funds (%)	24.87	20.76	17.85	12.39	11.43	10.39	9.43	8.56
Current Ratio (times)	1.17	1.16	1.14	1.06	1.08	1.11	1.13	1.15
Asset utilisation (times)	2.19	2.34	2.40	2.57	2.61	2.66	2.71	2.78

Source: Experian, 2004.

peer group analyses by situating particular companies in a national economic context.

In other words, which industry sectors are performing above average, average, and below average in the national economy.

We provide some sample tables to illustrate the nature of the data available.

Limitations of ratio analysis

This chapter has outlined the most frequently used ratios in the analysis of financial statements. However, depending on the objective of the analyst, many more ratios can be calculated and used. Of course, not all ratios are relevant to each company being analysed. This depends on the individual circumstances of the company.

Return on capital employed (%)					
	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003
Oil	17.21	16.61	17.43	17.81	17.69
Building and construction	14.71	13.76	14.84	16.14	16.79
Building materials	8.02	7.43	7.07	7.00	7.13
Chemicals	6.49	7.01	7.05	6.42	5.91
Pharmaceuticals	29.43	26.72	24.15	23.54	24.73
Diversified industrials	11.87	11.31	11.19	11.55	10.29
Electricals	6.99	7.87	8.32	8.10	7.53
Engineering	3.72	3.38	2.70	2.03	1.23
Print, paper and packaging	8.42	7.67	7.03	6.42	5.59
Textiles and clothing	4.08	4.39	4.67	5.00	5.24
Alcoholic beverages	10.57	11.07	12.05	12.77	13.28
Food manufacturing	10.44	10.96	11.85	12.92	13.55
Health and household products	18.44	16.75	15.74	15.25	14.64
Media	3.51	4.23	3.38	2.53	1.31
Leisure and hotels	11.07	10.01	9.01	8.29	7.27
Distribution	8.29	7.69	7.13	6.67	6.34
Food retailing	10.56	11.29	11.53	11.71	11.88
Non-food retailing	11.37	10.84	10.08	10.31	10.93
Support services	18.77	17.21	15.83	15.26	13.88
IT	10.98	8.48	6.80	4.76	2.69
Telecoms	8.32	6.08	4.54	3.17	1.81
Transport	4.48	4.25	3.89	3.73	3.38
Utilities	5.53	5.09	4.62	4.30	3.89
Motor traders	7.30	7.92	8.65	9.37	10.22
UK	**7.57**	**6.98**	**6.35**	**5.76**	**5.23**

Source: Experian, 2004.

Ratio analysis mainly enables the analyst to structure his investigation. It is also useful in highlighting trends, but the limitations of the technique should always be borne in mind when interpreting the figures.

- Publicly available information is often not sufficiently detailed and frequently out of date.
- Each company may have adopted different accounting policies and adjustments must be made to make the figures comparable.
- The introduction of earnings before interest, taxation, depreciation, and amortization (EBITDA) is used by some analysts in an attempt to provide comparative data, which excludes some of the accounting policy differences. (Amortization is the writing off of intangibles, as depreciation is the writing off of tangible assets.)

Return on shareholders' funds (%)					
	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003
Oil	29.09	28.88	28.38	28.96	28.77
Building and construction	19.09	17.91	19.31	21.01	21.85
Building materials	13.14	12.11	12.07	11.99	12.22
Chemicals	12.25	13.34	13.42	12.22	11.24
Pharmaceuticals	43.76	39.46	35.53	34.51	36.21
Diversified industrials	19.69	18.72	18.53	19.09	17.29
Electricals	10.02	11.36	12.01	11.59	10.75
Engineering	6.43	5.85	4.67	3.50	2.12
Print, paper and packaging	13.16	12.01	10.95	10.01	8.68
Textiles and clothing	5.36	5.77	6.12	6.55	6.85
Alcoholic beverages	21.73	22.81	24.85	26.38	27.41
Food manufacturing	17.81	18.76	20.34	22.17	23.26
Health and household products	33.31	30.25	28.39	27.68	26.59
Media	9.00	10.71	8.47	6.35	3.24
Leisure and hotels	18.57	16.77	15.11	13.88	12.13
Distribution	12.42	11.42	10.98	10.32	9.81
Food retailing	14.04	15.01	15.31	15.55	15.79
Non-food retailing	14.43	13.75	12.97	13.27	14.09
Support services	37.84	34.65	32.55	31.47	28.62
IT	10.67	12.43	9.94	6.91	3.87
Telecoms	7.51	10.23	7.64	5.35	3.01
Transport	7.76	7.36	7.03	6.79	6.15
Utilities	14.59	14.00	12.68	11.75	10.62
Motor traders	11.12	12.14	13.31	14.41	15.7
UK	**12.39**	**11.43**	**10.39**	**9.43**	**8.56**

Source: Experian, 2004.

- When dealing with groups of companies, consolidated accounts will be provided and it is often difficult to establish performance of any one company within the group. Accounts can be distorted by intra-group trading.
- The figures stated in the accounts may be untypical for the rest of the year, e.g. year end stock may be particularly high or low for a number of reasons.
- 'Window dressing' the balance sheet at year end is not uncommon. Management manipulates the balance sheet for that day to show the company in a stronger position. This can be done by, for example, running down stocks and drawing down long-term loans to demonstrate a more liquid working capital position.
- There should always be a logical relationship between the numerator and the denominator, which should both be measured consistently and on the same basis as any comparative ratio.

Profit margin (%)					
	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2003
Oil	13.27	13.36	13.14	13.19	13.10
Building and construction	5.75	5.45	5.89	6.40	6.66
Building materials	6.15	5.70	5.43	5.38	5.48
Chemicals	4.71	5.08	5.08	4.63	4.26
Pharmaceuticals	19.66	17.89	16.15	15.83	16.62
Diversified industrials	8.12	7.75	7.69	7.95	7.23
Electricals	2.98	3.42	3.62	3.53	3.28
Engineering	1.68	1.53	1.22	0.92	0.56
Print, paper and packaging	4.98	4.55	4.17	3.82	3.32
Textiles and clothing	1.93	2.07	2.19	2.35	2.46
Alcoholic beverages	11.21	11.75	12.75	13.52	14.04
Food manufacturing	4.91	5.15	5.58	6.08	6.38
Health and household products	7.31	6.65	6.34	6.18	5.94
Media	2.22	2.70	2.13	1.59	0.82
Leisure and hotels	7.82	7.06	6.39	5.88	5.15
Distribution	1.80	1.66	1.61	1.51	1.44
Food retailing	3.52	3.76	3.82	3.87	3.93
Non-food retailing	4.86	4.64	4.38	4.48	4.75
Support services	6.68	6.14	5.63	5.43	4.94
IT	1.81	2.12	1.68	1.17	0.65
Telecoms	4.39	5.98	4.45	3.13	1.77
Transport	5.18	4.92	4.50	4.31	3.91
Utilities	10.83	8.94	9.01	8.38	7.58
Motor traders	1.14	1.24	1.36	1.47	1.61
UK	**5.57**	**5.14**	**4.67**	**4.24**	**3.85**

Source: Experian, 2004.

- When comparing ratios over time, it is important to remember the possible effects of inflation and general economic conditions which tend to be cyclical.
- When comparing one company's ratio to another's, the second company should be similar both in terms of industry sector, size, and technology.
- A ratio should always be interpreted in the full context of the company's affairs, for example, a fall in sales by 1% would be a disaster if the market grew by 20%, but would be a real success if the market fell by 20%.

If the analyst takes these factors into account, although ratios will not always provide direct answers to every question about a company, they will, nevertheless, provide a useful insight into the company's affairs. Ratios tend not to provide answers, but raise further questions!

Asset utilisation (times)					
	Q2 2002	Q3 2002	Q4 2002	Q1 2003	Q2 2002
Oil	1.85	1.93	1.97	1.98	2.00
Building and construction	13.58	13.63	13.75	14.21	14.55
Building materials	13.58	1.94	1.96	1.98	2.01
Chemicals	2.32	2.27	2.22	2.18	2.15
Pharmaceuticals	2.63	2.69	2.78	2.84	2.89
Diversified industrials	2.05	2.01	1.98	1.97	2.01
Electricals	5.77	5.86	5.92	5.97	6.01
Engineering	3.93	3.97	4.00	4.03	4.06
Print, paper and packaging	3.19	3.24	3.29	3.32	3.39
Textiles and clothing	4.45	4.50	4.45	4.34	4.30
Alcoholic beverages	1.31	1.37	1.41	1.46	1.48
Food manufacturing	3.79	3.68	3.64	3.58	3.51
Health and household products	5.07	5.19	5.23	5.32	5.37
Media	3.59	3.63	3.69	3.78	3.89
Leisure and hotels	1.71	1.62	1.58	1.53	1.49
Distribution	8.66	8.81	8.85	8.73	8.61
Food retailing	2.61	2.55	2.55	2.55	2.54
Non-food retailing	3.27	3.31	3.35	3.61	3.64
Support services	4.65	4.69	4.73	4.79	4.86
IT	10.72	10.78	10.87	10.92	11.04
Telecoms	1.23	1.27	1.29	1.32	1.34
Transport	1.09	1.11	1.13	1.14	1.16
Utilities	0.57	0.59	0.61	0.63	0.65
Motor traders	9.97	9.86	9.78	9.75	9.62
UK	**2.57**	**2.61**	**2.66**	**2.71**	**2.78**

Source: Experian, 2004.

Exercises

Questions

1 Which of the following definitions of a financial ratio is correct?
   (A) A mathematical equation
   (B) A method of summarizing a company's annual profits
   (C) A ratio is a means of highlighting in arithmetic terms the relationship between two figures taken from financial statements.

2 Match the following ratios with their correct percentage equivalent:

(A) 0.45 of 1	1 83.33%
(B) 5/6	2 123%
(C) 1.23 times	3 45%

   (A) =
   (B) =
   (C) =

3 A company in its latest year produces sales of GBP 250 million and has debtors of GBP 20 million at year end. Express the ratio of sales to debtors:

4 Which of the following are true?
   (A) Ratios are the only measures of a company's performance
   (B) Ratios can be expressed as percentages
   (C) Trade unions can use ratios to compare wage levels in various industries and countries
   (D) The Department of Trade and Industry is the only source of detailed background information on companies.

5 Exercise 5
   Zoltak Ltd is an engineering company. The following information has been summarized from its audited annual accounts for year ending 31 December 1999.

Zoltak balance sheet

	1999 GBP 000	1998 GBP 000
Fixed assets		
Land and buildings	495	500
Plant and machinery	505	350
	1000	850
Current Assets		
Stock (see note 1)	365	360
Debtors	700	630
Cash	5	10
	1070	1000
Creditors (amounts falling under 1 year)		
Bank overdraft (see note 2)	−220	−300
Creditors	−600	−500
	−820	−800
Net current assets	250	200
Total assets less current liabilities	1250	1050
Creditors (amounts falling over 1 year)		
Bank loan	−250	−300
	1000	750
Share capital		
Called up share capital	20	20
Share premium	20	20
P/L account	960	710
	1000	750

Note 1: Stock comprises:

1999	1998
Raw material	50	40
Work in progress	100	80
Finished stock	215	240

Note: Bank overdraft has been used for a major capital expenditure programme and should therefore be treated as long-term debt when calculating capital employed or net assets.

Zoltak P/L statement
year ending 31 December 1999

	GBP 000 1999	GBP 000 1998
Turnover	3500	2800
Cost of sales	−2450	−2000
Gross profit	1050	800
Distribution costs	−310	−230
Admin expenses	−290	−260
Interest payable	−100	−90
Net profit before tax	350	220
Tax	−100	−65
Net profit after tax	250	155

Calculate the following ratios for both years and comment on each:

(5a) ROCE =
(5b) Return on shareholders' funds (or equity) =
(5c) Gross and Net Profit Margin
(5d) Operating expense ratios comprise:

- Distribution expense ratio =
- Administration expense ratio =
- Interest expense ratio =
- Net asset turnover =
- Working capital ratio =

6 Days' stock, debtors and creditors have been calculated as follows:

(Days)	*1999*	*1998*
Stock	54	66
Debtors	73	82
Creditors	89	91

Which of the following conclusions are true or false.
(a) Stock control appears to have improved appreciably. True/False

(b) No real change in credit days with sales growth during the year means that creditors are actually selling on worse terms to the company. True/False

(c) Longer credit terms have been given to debtors of the company. True/False

7 Exercise 3

Cold Steel public limited company is a listed company with good growth prospects which has today published its financial results for the year end 31 December. These showed net profit before tax, of GBP 1 million with a tax charge of 35%. The previous year net profit was GBP 7,00,000 with a tax charge of 35.71%.

A final dividend, net of tax, of 4p has been declared which compares with a net interim dividend of 2p paid in October. The corresponding figures for the previous year were 3p and 2p, respectively. The current share price is 200p per share.

Albion has issued share capital comprising 1 million 5% cumulative preference shares of GBP 1 each and 4 million ordinary shares of 10p each.

(Ordinary shares give rights of ownership in the company, such as the right to share in the profits by way of dividends, to vote in general meetings and elect and dismiss directors. They carry most of the risk, but receive a higher profit when things go well.)

Assume the rates for both basic tax and advanced corporation tax are 25%.

(A) What is Cold Steel's gross dividend yield?

(B) What is the dividend cover this year and what was it last year? What does the difference imply?

(C) What is Cold Steel's market capitalization?

(D) What is Cold Steel's EPS this year?

(E) At what P/E ratio is Cold Steel currently standing? How does this relate to the rate of profit growth?

Answers

1 C A ratio is a means of highlighting in arithmetic terms the relationship between two figures taken from financial statements. The ratio can be expressed as a number, a percentage or in the mathematical notation for a ratio.

2 A3
B1
C2

3 (i) As a number; 3 (i) 250/20 = 12.5 × (times)
(ii) As a percentage; 3 (ii) 250/20 × 100 = 1250%
(iii) In the mathematical notation for a ratio 3 (iii) 250:20 = 12.5:1

4 B, C

5 5(a)
Net profit before interest and tax/Net assets or Capital employed
1999 ROCE (350 + 100)/(1000 + 250 + 220) × 100 = 30.6%
1998 ROCE (220 + 90)/(750 + 300 + 300) × 100 = 23.0%
During the year ROCE has risen strongly to a creditable 30.6%. Further ratio analysis will help explain how this has happened.

5(b)
Net profit after tax/Shareholders' funds
1999 ROE = 250/1000 × 100 = 25%
1998 ROE = 155/750 × 100 = 20.6%
Again a strong increase in the year. This 25% return compares favourably with the pre-tax returns on UK government bonds. The higher return compensates the investor for the higher risk in investing in a small company's shares where the shares are not traded.

5(c)
Gross profit = Gross profit/Sales

1999 = 1050/3500 × 100 = 30%
1998 = 800/2800 × 100 = 28.5%
Net profit margin = Net profit before tax/Sales
1999 = 350/3500 × 100 = 10%
1998 = 220/2800 × 100 = 7.8%
The gross margin has increased by 5.26% during the year from 28.5% to 30%. This may reflect greater production efficiency, increased selling prices or purchasing of raw materials more cheaply. More analysis is required to establish the reasons. Gross margins within each industry tend to be similar and reasonably constant over time.
The net margin has increased from 7.8% to 10% which is satisfactory but again further analysis is required to establish why this has arisen.
Looking back, you can see that one reason for the uplift in ROCE is an improved profit margin.

5(d)

- Distribution expense ratio = Distribution expense/Sales
  1999 = 310/3500 × 100 = 8.8%
  1998 = 230/1800 × 100 = 8.2%

This ratio has increased marginally which is slightly unexpected. It may reflect recruitment of additional warehouse staff or drivers, or a need to use outside contractors.

- Administration expense ratio = Administration expenses/Sales
  1999 = 290/3500 × 100 = 8.3%
  1998 = 260/2800 × 100 = 9.3%

A fall in administrative expenses relative to sales reflects the fact that the increase in sales has been handled more effectively during the year, without incurring substantial additional administration costs.

- Interest expense ratio = Interest payable/Sales
  1999 = 100/3500 × 100 = 2.8%
  1998 = 90/2800 × 100 = 3.2%

This is not a particularly useful ratio. Of more use is the ratio of interest payable to total borrowings which will give an estimate of the effective rate of interest paid during the year. Alternatively, the actual interest paid can be grossed up by the average borrowing costs (interest rate plus margin) to give the average of interest bearing debt outstanding during the year. This can be compared to the year end debt shown in the balance sheet. Has there been any 'window dressing'?

- Net asset turnover = Sales/Net assets
  1999 = 3500/1470 = 2.4 times
  1998 = 2800/1350 = 2.1 times

This has increased marginally during the year indicating the company is using its assets more efficiently, another reason for the increase in ROCE

- Working capital ratio = Sales/Working capital = Sales/(Current assets − Current liabilities)
  1999 = 3500/200 = 14.00
  1998 = 2800/200 = 14 times

At 14 × this ratio is both steady and healthy.

6 (a) True
(b) False. With almost exactly the same period of credit taken in both years from suppliers this implies no stretching of credit terms. Three months, however, is a long period of credit.
(c) False. The reduction in day's debtors indicates that shorter credit terms have been imposed or that collection of outstanding debts has become more efficient.

7 7(a)
Gross dividend yield = Gross dividend per share × 100/Market price per share.
Remember that the dividend per share is quoted net of 10% tax thus 6p must be grossed up and becomes:
6p/(1 − 0.10) = 6.67p =
6p × 100/(1 − 0.10) × 200p = 3.33%

7(b)

	This year GBP 000		*Last year GBP 000*
PBT	1000		700
Less tax 35%	350	Less tax 35.71%	250
Post-tax profits	650		450
Less preference dividends (5% of GBP 1 million)	50		50
	600		400
Less Dividends (6p × 4 million)	240	(5p × 4m)	200
Retained profit	360		200

Dividend cover = Profit attributable to ordinary shareholders/ Dividends paid to ordinary shareholders

This year	Last year
600,000/240,000	400,000/200,000
= 2.5	= 2.0

Although cover this year has improved, as a result of improved profit performance, the dividend cover is not that high. This raises doubts about whether the level of dividends can be maintained in the future, or even if Cold Steel can finance its own growth without having to borrow further, unless there are continuing improvements to profitability.

7(c)

Market capitalization = Market price per share × Number of shares in issue
= 200p × 4 million
= GBP 8 million

7(d)

EPS = Profit after tax attributable to ordinary shareholders/ Number of ordinary shares in issue
= 600,000/4 million
= 15p/share

NB dividend cover =
EPS/Dividends per share
= 15p/6p
= 2.5

7(e)

Current P/E ratio = Market price per share/EPS
= 200p/15p
= 13.3

The ratio can also be expressed as:
Market capitalization/Profit attributable to ordinary shareholders
= GBP 8,000,000/GBP 600,000
= 13.3

The current P/E of 13.3 reflects investors' expectations of future growth. Post-tax profits have increased by 50% from GBP 400,000 to GBP 600,000 by year end. If profits grow at this rate next year, the prospective P/E is only 8.9 (GBP 8,000,000/GBP 900,000).

Cash flow forecasting

Introduction

Cash Flow Forecasting is a subject which encompasses a broad range of financial and technical techniques which lead ultimately to assessing a future scenario of a company's financial condition.

The subject of Cash Flow Forecasting is fully treated in a different book in this series.

Here, we briefly raise the subject within the contest of Credit Risk Management in order to note the underlying assumptions and techniques used to project financial statements in the future, and place it in the overall banking context:

- the different underlying rationales and uses of forecasts,
- underlying assumptions of forecasts,
- how to use these financial projections and run sensitivity analyses.

Why make such projections 4, 5, or more years into the future? The simple answer is that banks need to look as far ahead as they have committed themselves, especially in a term lending situation.

Whilst the trend in the late 1990s to 2000 has been for shorter maturity schedules, indeed many being under a year, cash-flow forecasting nevertheless remains an important tool in assessing the viability of projects as in project financing, or in running sensitivity analyses on the effects of major mergers, or asset disposals.

Financial statement forecasting framework

Financial forecasting requires skills which build on the financial analysis chapters described earlier. Essentially, these factors include:

- Understanding the underlying assumptions used to build a set of financial statements for a special purpose vehicle or generating underlying assumptions for building forecasted financial statements.
- Projecting the P/L statement using key assumptions.
- Projecting the balance sheet using elements derived from the P/L statement.
- Estimating new money needs and interest coverage ratios from the projected statements.

The nature of term lending

Typically a term loan is for 5–7 years and is raised to purchase assets such as plant or equipment. These assets are expected to produce other assets which, when converted to cash through completion of the manufacturing process and sale, will contribute to repayments. The fixed asset being financed is not itself expected to repay the loan.

Loans are also used for acquisition financing. Here the question is whether the merged entity is capable of generating cash flow sufficient to service the facility.

Hence, banks involved in term lending or acquisition financing will be concerned about the company's future operations because it is these that will provide the cash flow for debt servicing and repayment.

Projections aim to look ahead and identify potential problems. You may then decide that the lending opportunity is inappropriate or needs to be reconfigured before committing to participation. Projections can also identify potential future difficulties as well as the way to possible solutions, such as drafting of loan covenants or reconfiguring loan repayment schedules.

Finally, sensitivity analysis in which key variables are modified in order to gauge the company's 'sensitivity' to change may provide clues as to the potential difficulties facing a company's debt repayment commitments.

Financial projections

Traditional credit analysis typically depends on a ratio analysis based on the borrower's balance sheet and P/L statement. Such statements, however, are prepared on an accrual basis (i.e. amounts owed by and to the company are booked to accounts before money is actually paid or received), and not on a cash basis. In any event, the policies implemented by the directors (e.g. depreciation) also impact on the P/L figures. Always remember that profit is an opinion, but cash is fact.

This type of analysis is useful only in assessing the 'cushion' available to bank creditors in an insolvency scenario. No responsible banker, however, is going to justify a credit proposal with the rationale that there is an adequate cushion of assets available in liquidation.

There are so many legal and other variables that repayment in such a situation is always uncertain. This makes even short-term lending on the basis of assets a risky business. The dangers are all the greater when long-term lending is being considered.

Hence the focus on financial statement projections. Basically, the source of repayment for a term loan, like any other loan, is cash, and a proper analysis should assess the borrower's ability to service existing and future debt commitments by generating cash from future business operations.

Some of the questions that can be answered using projected financial statements are:

- Will the firm be able to pay back its current debt obligations out of future earnings?

- How much can sales revenues, profit margins, and cash flow shrink before payback is in jeopardy?
- How much new debt will the firm need to support its future growth?
- How much new debt can the company take on and service from earnings after having satisfied other needs such as working capital, plant expenditures, etc.?
- Does the company's new debt need mean that the company's future financial structure will be satisfactory or too highly geared or leveraged?
- Does the loan have an appropriate and specific reason (project finance, expansion, acquisition, and debt refinancing) or is it non-specific (a danger signal)?
- What kind of repayment schedule should be set up for the new debt?
- What forms of protection and control need to be included in the loan agreement to afford maximum safety for the bank's money?

Projections are not intended to predict the future but rather are a tool to enhance understanding of a company. However, as with any analytical technique, projections should not be used on their own but also in conjunction with the other techniques outlined in this book.

Sources and uses of cash

There are three basic sources of cash in a business:

- cash generated by operations (internal cash flow)
- sale of assets
- new money (via increases in debt, liability or equity)

The amount of cash generated from a company's sales after COGS and other operating costs are deducted and after movements in working capital (debtors, stocks, and creditors) are taken into account.

Uses of cash flow forecasts

Cash flow forecasts have numerous applications which are referred to elsewhere in this series. Here we note that cash flow forecasts can be used to

- Assess the long-term risks in a lending situation.
- Test the assumptions of a given project.
- Understand the parameters in a project in order to devise appropriate security structures and financial ratio covenants in the loan agreement.

It is this final point which we will concern ourselves with in the following chapter.

Chapter 4

Transaction risks

Term loan agreements

Purpose of loan agreements

The loan agreement is the legal document that defines the relationship between the borrower and the lending bank or banks.

Understanding this document is critical to understanding the legal relationship between the various parties.

From a commercial point of view, there are some key provisions that a bank is concerned about:

- establishing financial ratios and the financial statements to be provided to the bank;
- ensuring that the management or the nature of the business will not be 'changed radically';
- ensuring that certificates will be supplied confirming that all aspects of the loan agreement are in compliance: amounts borrowed, interest rates, and repayment schedules.

The loan agreement should give the bank the right to terminate the loan agreement if any of the following events occur:

- non-payment of principal,
- non-payment of interest,
- acceleration of other indebtedness (cross-default),
- voluntary or involuntary bankruptcy.

These events are known as 'events of default' and the mechanisms in the loan agreement used to control them are known as loan agreement covenants.

Covenants, events of default, and protection

The issues of protection and control deserve mention. In term lending, the bank expects its primary source of repayment to be operating cash flow.

Industry analysis on problem credits has revealed that there are several warning signals pointing to a company's ability or inability to generate sufficient cash flow (either internally or externally) to meet its needs and ensure its solvency. They include:

- inadequate working capital;
- a sharp fall in the company's share price, reflecting the market's perception of the company's future cash flow;
- low or negative retained earnings in relation to assets;
- an unexpected change in 'corporate objectives' or 'business profile', such as the introduction of new products or divisions;
- vulnerability to economic cycles from debt-heavy balance sheets or high fixed-cost operations;
- debt repayment schedules inappropriate in relation to cash flow.

In order to protect against loss and to control the source of repayment, loan agreements are drawn up to define the terms and conditions governing the loan. While loan documentation is a specialized subject, we shall however touch briefly on aspects which relate specifically to the company's financial condition and ability to generate cash flow sufficient to cover debt commitments:

- The first requirement is to ensure that the debt amortization schedules which have been set up in the loan agreement are appropriate in terms of the firm's projected operating profits and cash flow.
- The second is to verify that the financial covenants included in the loan agreement, which are designed to preserve and control the firm's cash flow and its financial strength, are realistic in terms of the company's anticipated cash flow and effective.

Financial covenants are guidelines which frame the financial plan agreed upon by the company and the bank. Defining this framework is the fruit of negotiations between the bank and borrower and is hence a real life process subject to imperfections. Indeed, some companies may resist the inclusion of financial covenants. From the bank's point of view, covenants should be designed to preserve upside potential and protect against downside risk. We shall briefly cover the main types below.

Primary covenants

Primary covenants relate directly to the company's financial structure. Financial covenants can include:

- limitation of future debt (including contingent liabilities);
- prohibition of new secured debt or obligations which will rank ahead of the proposed term loan ('negative pledge');
- provision for a minimum level of working capital;
- provision for a minimum level of net worth.

Such limits can either be defined in absolute or ratio terms.

Secondary covenants

Secondary covenants relate to the company's management and ongoing operations. These can include:

- prohibitions on the sale of subsidiaries or assets;
- limitations on the prepayment of other debt;
- prohibitions on mergers or consolidations without consent of the lenders;
- limitations on investments or capital expenditures;
- limitations on dividends or 'ratcheting' clauses requiring minimal annual increases in net worth.

When undertaking financial projections, you will want to test the covenants in the loan agreement to see how they hold up against your projections. You should use your projections to see whether the covenants will enable the banks to adopt corrective or protective action before it becomes too late to stop the company's financial deterioration.

Events of default

Events of default are conditions under which the lending bank can call in the loan for prepayment. This right to accelerate is rarely used. Rather, this covenant strengthens the hand of the bank during negotiations to restructure the loan or take steps to protect its position.

Events of default can either be temporary breaches (technical defaults) such as failure to meet a ratio requirement or financial default (failure to meet an interest payment). In such cases, waivers are typically requested from (and granted by) the banks. The important thing to remember is that you, as the banker, must always inform the borrower, in writing, that you are aware of the breach and agree to its waiver (if in fact you choose to do so). If the breach is not acknowledged and formally addressed, you may have difficulty later in enforcing your legal right of acceleration when the event of default occurs again.

While loan covenant issues are not directly related to mechanics of financial forecasting, you will want to hold up your projections against to see how effective they are.

Conclusion

What confidence can you have in forecasts? It is easy for critics to look at a given forecast and shoot holes in it on the basis that there are bound to be certain assumptions that will not hold true. Moreover, certainty diminishes over time, and there is a tendency for bankers to attach too much importance to the detail of such forecasts.

Projections, however, are not meant to predict the future, but to assist in reaching an informed decision.

Creating projections for most likely, best and worst cases can be useful:

- in the credit approval process,
- to draft loan covenants,
- to provide guidelines in a loan restructuring.

While the projections process can be programmed into computers and save analysts' time, familiarity with the concepts detailed in this chapter

will help you understand what is actually happening, and to formulate cogent and convincing arguments for your credit proposal.

Appendix A ratio calculations

Return on equity	net income before dividends/total net worth
Profitability	net income before dividends/net sales
Efficiency	net sales/total assets
Capital structure	total assets/total net worth
Efficiency ratios	
Debtors days	trade debtors/net sales × 365
Total stocks days	raw materials + work in progress + finished goods/cost of goods sold × 365
Raw materials days	raw materials/cost of goods sold × 365
Work in progress days	work in progress/cost of goods sold × 365
Finished goods days	finished goods/cost of goods sold × 365
Creditors days	trade creditors/cost of goods sold × 365
Accruals days	accruals/cost of goods sold × 365
Net plant turnover	net sales/net fixed assets
Working investment/sales	((trade debtors + stocks) − (trade creditors + accruals))/net sales
Financial ratios	
Interest cover	operating profit/interest expense
Tangible net worth	total net worth − intangibles
Working capital	total current assets − total current liabilities
Current ratio	total current assets/total current liabilities
Liquid assets	cash + st investments + trade debtor + other debtors
Quick ratio	(liquid assets + prepayments)/total current liabilities
Gearing	(total loans + st debt + cpltd)/total net worth
Leverage	total liabilities/total net worth
Interest cost	interest expense/(total loans + st debt + cpltd)
Cash flow ratios	
Cash flow interest cover	operating profit/interest expense
Financing payments cover	operating profit/(interest expense + cpltd + dividends)
Debt service ratio	operating profit/(st debt + cpltd + interest expense)
Total debt payout	total interest-bearing debt/operating profit
Long-term debt payout	total interest-bearing ltd/operating profit

st: short-term debt; cpltd: current portion of long-term debt; ltd: long-term debt.

Security enhancement and management

This section aims to explain the underlying assumptions and techniques used in drafting loan covenants and illustrate how credit risk can be optimized through the use of effective loan structuring by elaborating on:

- the inter-relationship between loan structuring and repayment capacity analysis;
- the importance of working capital in loan structuring;
- how loan covenants can be used effectively to achieve and maintain proper structure;
- the different underlying rationales and uses of covenants and security structures;
- testing the underlying security assumptions;
- using projected balance sheets, and profit and loss statements to draft loan covenants.

Security enhancement and management is a subject which encompasses a broad range of financial, non-financial, and legal techniques which will ultimately enable you to consider the results of a financial analysis and use that information to make recommendations in the drafting of a loan agreement structure. This loan agreement provides a structure to the facility which is governed by loan agreement covenants, enabling the banks to exercise control and protect their loan as well as the assets the borrower has pledged to the bank as loan collateral.

This information is the fruit of the financial analysts' work (analysing historical and projected financial statements) and forms an indispensable tool in enabling the bank (as well as borrower) to structure effective loan agreements and maintain consistent asset quality throughout the bank's loan portfolio.

Follow-up on loan agreement compliance

Following up on compliance with loan agreements is important but is nevertheless neglected by some banks. This is extremely dangerous

because events of default can go by with the banks failing to notify the borrower. When the banks decide later to call in the loan, the borrower can oppose this claiming that non-notification of the event of default constituted a 'tacit approval'. So it is important to understand loan covenants and monitor the loan agreement!

A checklist of items to review compliance is valuable. Such a checklist eliminates the need for the loan agreement to be read again every time a statement is received from the borrower. The checklist, for example, can include the lists of documents to be received and at what intervals, or the key financial ratios that must be calculated in order to verify compliance.

In such cases, an effective device is to include a provision in the loan agreement which requires the company's auditors to certify that the company is in compliance with the terms of the loan agreement. To be able to give this certification, the company's auditors will most likely encourage management to take any necessary action to ensure compliance, if required, so that the loan is not in default.

Background to loan agreement covenants

Disputes between parties in the commercial finance setting often involve lending and rate formulas, interpretation of loan agreement covenants, bankruptcy law, asset valuation issues, balance sheet, and other financial analysis.

Rarely, while the ongoing lending relationship exists, will these disputes ripen into discrete litigation. These disputes may be resolved quickly by agreement because of the exigencies of the situation, or simply by the passage of time because of the inability of one party under applicable law to force the other party to perform.

For example, if the borrower wants to draw down on a line of credit, and the lender refuses because the lending formula and financial ratios under

the loan agreement allow it to decline to lend, the parties may agree on what to do. If they do not agree, the lender simply will not lend at that time. It will all happen quickly because of pressing business issues; neither party will look to a court to resolve the immediate problem.

However, litigation may arise out of the dispute. The lender may decide to call a default and demand repayment of the loan because of the borrower's failure to maintain the collateral and financial ratios, or other breaches of the loan documents. The borrower may respond with a claim for damages due to the lender's failure to lend, and assert defences to the lender's claims. When this happens, the lending relationship is over and litigation becomes the focal point of their relationship.

Lenders rely on specific legal remedies designed to recover the loan, and preserve, foreclose and liquidate collateral. The law allows a lender to take speedy action to protect, preserve or liquidate its collateral position.

Similarly, borrowers rely on the specific protections available under applicable debtor/creditor laws to protect their rights. Thus, a borrower can take speedy action, to the extent allowed by law, to try to prevent the lender from exercising remedies that could impair the borrower's continued operation.

Neither party, however, can obtain an order of specific performance directing a lender to lend or a borrower to perform its covenants under a loan agreement (other than those relating specifically to collateral preservation and maintenance).

Depending on the specific situation, the lender will decide whether to call a default and exercise its remedies, and the borrower will decide whether to defend against the exercise of remedies by the lender and/or assert a claim for damages against it.

Covenants and undertakings

The primary objective of covenants and undertakings is to ensure the continued soundness of the credit facility being advanced, and to give

the bank certain inside information on and limited control over the borrower's business.

Primary non-financial covenants

Negative pledge

This is the most important covenant. It is vital to unsecured lenders that on liquidation they do not find that assets and cash flow are pledged to other lenders that rank ahead of them. The mechanism a banker employs to limit the amount of security that may be given is the 'negative pledge'. The negative pledge may forbid the borrower giving any security, or giving any further security other than that already known to the bank, or giving security without simultaneously offering the bank equal security. If the borrower acquires another company where assets are already specifically charged, it may be possible to make an exception for this 'after acquired security'. Market practice in other countries may well require security to be given in order to obtain a domestic loan. In such cases, the banker must be prepared to consider making an exception to the negative pledge rather than seriously hamper the commercial activity of a customer. Care must be taken, however, that a borrower does not use subsidiary companies to circumvent negative pledges.

Cross-default pledge

Banks will often seek to reinforce their position by requiring that if the borrower is in default on any one of its existing loans or credit facilities, this will automatically create a default on the facility being provided. This covenant is known as a 'cross-default clause'.

The Pari Passu covenant

The Pari Passu covenant is a companion of the negative pledge but only covers unsecured indebtedness. This covenant is normally worded so that the borrower warrants that its obligations under the loan will not be subordinated to any unsecured creditor.

Material adverse change clause

Banks will often seek to include a clause which makes it an event of default if there is a 'materially adverse change' in the borrower's financial position or trading position (e.g. nationalizations, lawsuits, changes in business). The clause is particularly important where a bank has been unable to negotiate financial covenants or where they are so weak as to be meaningless. The warranty gives the bank the right to call an event of default if 'in its sole opinion' a materially adverse change in the financial condition of the borrower has taken place.

Anti-merger

This is relatively common where the borrower is a corporate entity. The purpose of such a covenant is to maintain the borrower's identity, and for the bank to avoid assuming credit risks in a sector of the economy different from that initially covered under the loan agreement.

Anti-disposal

The bank will want to maintain the borrower's assets for future distribution. The clause may be reinforced by a covenant requiring the borrower to maintain a certain level of insurance cover over specified assets.

Financial covenants

These are designed to protect the bank's position should the borrower's creditworthiness begin to deteriorate. They require a flow of financial information from the borrower to the lender. Ratio covenants are commonly employed in the monitoring process, and the most common examples of ratio tests are given below.

Net worth test

The net worth test, also called the debt test, is a covenant that restricts the total amount of debt a borrower can incur, expressed as a percentage of its net worth.

Restrictions on secured borrowing

The most common form of restrictive covenant is a borrowing limitation. This is a limitation on the borrower's level of secured loans. The restriction will normally be expressed as a maximum permitted percentage of shareholders' funds, tailored to the nature of the borrower's activities. An absolute borrowing limit is likely to be unacceptable to most borrowers and so a relative limit is usually set, generally constructed around the gearing or leverage ratio.

Interest cover test

This is an undertaking by the borrower that its profit before interest and taxes (PBIT) will be a specific multiple of its total interest payable over a given period, usually a year. Interest cover is generally calculated as PBIT/interest payable, and can be defined in the loan agreement as say, 2.5× or 3.75×. This is a sensitive ratio because it exposes the borrower to default through an event outside its control (i.e. large unforeseen rises in interest rates). The bank may agree to the ratio triggering a default only if the level has been breached in, say, two consecutive years.

Dividend restraints

The aim of dividend restraint is to ensure that the borrower is not milked of cash. This may be achieved by a minimum tangible net worth covenant which ensures that the borrower's net worth is maintained at a satisfactory level. Alternatively, there may be a limit on dividends as a percentage of a year's earnings. As smaller companies are more vulnerable to asset stripping than large multinationals, this should be an important covenant in all loans to small/medium-sized companies. Most significantly, if a bank is continuing support for a borrower that has already breached a covenant or committed an event of default, then it should insist on having a dividend restraint undertaking in its new loan agreement.

Minimum net worth requirement

The borrower can be required to maintain the value of its shareholders' funds in absolute terms (a fixed-financial amount). For example, a

borrower can be required to maintain a minimum net worth of GBP 250 million. Dropping below this amount, for example due to accumulated losses, could trigger an event of default. Typically, minimum net worth is defined as an amount somewhat less that the borrower's current net worth at the beginning of the loan period.

The most common cause of borrower collapse is insufficient cash flow, and it is therefore against this risk that the bank should protect itself when it demands a liquidity ratio. This ratio is usually the current ratio (current assets over current liabilities), with the level being set by reference to the borrower's historical and projected performance, and industrial sector norms. For example, a minimum current ratio requirement could be set between 1.0× and 1.5×, providing early indication of a liquidity problem.

Ratio covenants are an important feature of most loan agreements and are the easiest to monitor. The banker must remember, however, that these ratios will be based on financial figures produced annually or semi-annually, and covenants could be breached between these periods without the bank becoming aware of it. If this is a concern, then the borrower should give a continuing warranty that the covenants were not breached during the entire preceding period.

Breach of covenant

The breaching of any conditions or covenants in the loan agreement, such as those discussed above, usually permits the bank to suspend and/or cancel the facility and accelerate the borrower's obligation to repay. In reality, this is often unfeasible and undesirable. Usually, these breaches place the bank in a position to be able to impose certain conditions on the borrower in 'loan restructuring negotiations'. It is quite rare for the matter to crystallize into litigation. Often, the bank will call an event of default for strategic reasons, such as strengthening its hand in negotiations with the borrower or protecting assets which the borrower may have pledged as collateral to the bank.

Further considerations relating to covenants

The issues of protection and control deserve further explanation. In term lending, the bank expects to be repaid from cash flow, primarily out of future profits. From an analysis of financial projections, we can see that the bank's protection against loss in term lending has two aspects:

- The future prospects of the borrower – that is, its ability to generate a high and stable level of profits in the future (i.e. future sources of cash).
- The future financial strength of the borrower – as measured by its liquidity (working capital position) and leverage (i.e. future uses of cash, primarily debt obligations).

Analysis of problem credits in the past has shown the key financial and other indicators that accompany trouble in a borrower's ability to generate sufficient cash flow include the following:

- inadequate working capital;
- a sharp fall in the market value of a borrower's stock, reflecting the market's perception of the borrower's future cash flow;
- low or negative retained earnings in relation to assets;
- an unexpected change in corporate objectives or business profile, such as the introduction of new products or divisions;
- vulnerability to economic cycles from debt-heavy balance sheets or high fixed-cost operations;
- debt repayment schedules inappropriate in relation to cash flow.

Hence, it is important when drafting loan agreements, and more specifically covenants, to have undertaken a financial analysis of the borrower beforehand so that the ratios and clauses incorporated have some relevance and effectiveness with respect to the borrower's particular circumstances (e.g. industry peer ratios). It will be necessary to test the covenants which have been included in the loan agreement and see how they hold up against various financial projections (e.g. baseline, upside, downside). This is important because, in the event of declining financial strength, the proposed covenants will enable the bank to take action to

protect its loan before it becomes too late to arrest the borrower's financial deterioration. Drafting this framework is typically a process of negotiation, and the degree of protection which is obtained through such negotiations can vary and is often imperfect. Indeed, some borrowers may vigorously resist the inclusion of such covenants.

Default

Events of default

An event of default is the trigger that enables the bank to enforce its right to realize security or claim under a guarantee or demand immediate repayment. In practice, the bank may use the event as a lever to renegotiate terms. This right to accelerate repayment is rarely taken up but typically gives the bank the control needed to renegotiate lending terms or take other steps in order to protect the loan before it is too late. The events of default with which we are concerned refer specifically to breaching financial covenants. These may often be breached temporarily and when this occurs a waiver is typically requested from (and granted by) the bank.

Various levels of default

It is useful to distinguish various levels of default. There are technical, warning signals, and terminal (financial) events of default, as explained below:

- *Technical*: an administrative or procedural weakness which does not seriously threaten the borrower's ability to repay the loan. For example, the borrower may have disposed of a material subsidiary without having sought the bank's consent, or have given security for a loan to a subsidiary in breach of the negative pledge. This may be a matter of poor courtesy or bad management control rather than a fundamental weakening of the credit.
- *Warning signals*: These alert the bank to a potentially serious problem – e.g. a significant breach of a financial ratio covenant.
- *Terminal*: The bank should take immediate action to protect its position – e.g. the borrower defaults on interest or principal repayments.

Whenever a default occurs, whether it is only technical or more serious, the bank should advise the borrower that the default has occurred, but (if appropriate and subject to a reservation of the bank's rights in respect of future defaults) is prepared to grant a waiver. This protects the bank's position by not allowing a precedent to be set that might affect the bank's rights over future events of default.

Common events of default

The most common events of default are:

- default in any payment of principal or interest;
- breach of any representation or warranty;
- winding-up or reconstruction;
- receivership;
- any security created or charge given by the borrower being enforced;
- any indebtedness or obligation being called up (cross-default);
- breach of a covenant.

Chapter 5

Failure and risk classification systems

Identifying causes of failure

Various industry surveys analysing the causes of business failure have identified five top causes. In every case it is clear that it is not one but rather a combination of factors which leads to the decline of the company. The top five causes in order of importance are:

- cyclical decline in demand,
- poor top management,
- lack of centralized financial control,
- bad acquisition or inadequate integration strategy,
- inappropriate product/market strategy.

Four of these causes are management related. Cyclicality however is economic and can therefore affect all companies at one time or another.

This is why it is important to anticipate economic downturns and be able to take appropriate measures to protect loans well in advance of these problems. Loan covenants are one method of enabling the banks to strengthen their negotiating positions with corporate customers.

Loan covenants can include financial ratios and conditions but the loan agreement can also oblige the borrower to provide reports enabling the banks to monitor the order books, and bank account activity to determine if a company is suffering a reduction in demand for its products.

Cyclical decline in demand

It is important to know whether a company's activities place it in the leading or lagging category of economic indicators, that is to say, whether the company will suffer early in a recession or towards the end.

Consumer goods typically are a leading indicator while engineering and capital goods sectors will be lagging indicators (due to the longer term of the asset conversion cycle).

In theory, it should be easier for firms that are exposed to laggard economic indicators to take preventative action because there is more time to identify the warning signals of recession.

It is important however to look further into these generalizations. Demand can be impacted by other factors such as what is the breakdown in sales between the domestic and export markets, or public and private sector, whether the supply contracts are case by case or over a time frame, whether the company manufactures one category of products or has several (e.g. a ski manufacturer diversifying into making surfboards or tennis rackets to avoid seasonality) as well as the company's liquidity and cash flow position (can it sustain a one or two year decline and if so, how much?).

Recession is not a purely negative factor since it can weed out unwelcome or inefficient players. It does however tend to expose a company's weakness. Thus, poor competitive position, poor production facilities, quality control problem, poor financial controls, or weak capital and liquidity ratios can render the company vulnerable to a downturn.

Mature phases of the production cycle are also another issue: the strong growth in the Personal Computer (PC) markets over recent years has reached a plateau since technology increases now tend to be incremental rather than generational (in other words, rather than buying a new computer, now, optional accessories can meet the need).

The airline industry is highly vulnerable to cyclical demand since in a recession, the first thing that households cut costs on are non-essentials, such as summer holidays.

Supermarkets on the other hand deal in day-to-day essentials but as seen in the Experian table of ratios, profit margins are extremely thin at around 3% of turnover and competition is fierce.

This is why it is crucial for the analyst to understand the nature of the business and the nature of the business cycles in a given company, and be able to identify the areas of strength and weakness related to the industry sector in which it is active.

Poor top management

Poor management is a main cause of corporate failure and understanding this requires a dollop of cynicism and street cred. Most distressed companies are in their predictament because of poor management. How does one go about understanding the mentality and competence of management? Most textbooks refer to 'autocratic' management but what does this mean? How does one gain an understanding?

Several ostensibly amusing checklists have been compiled regarding warning signals of poor management including elements such as company flagpoles or fountains in interior atria. The *New York Times* suggests a more up-to-date list of perks.[12]

Other basic checklists list the warning signals of poor top management into five categories:

1 Autocratic chief executive
2 Weak board of directors

[12] *New York Times*: 'From Coffee to Jets, Perks for Executives Come Out in Court' By Alex Berenson, 22 February 2004. 'Haircuts. Shower curtains. Parking reimbursements. Country club memberships. Use of corporate jets … James Follo, the chief financial officer of Martha Stewart Living Omnimedia, testified that Ms. Stewart had asked the company to reimburse her USD 17,000 annually for her weekend driver as well as for trips to her hairdresser, coffee and other items. The trial of L. Dennis Kozlowski and Mark H. Swartz, two former top executives at Tyco International, a manufacturing conglomerate, has revealed that Tyco paid an array of their expenses including tuition to private schools for Mr. Swartz's three children and USD 1 million for a birthday party in Sardinia for Mr. Kozlowski's wife. And then there was the infamous USD 6000 shower curtain and a USD 15,000 umbrella stand. In 2002, a filing in the divorce of John F. Welch Jr., the former chairman of General Electric, disclosed that General Electric was paying for a Manhattan apartment, New York Knicks tickets and other benefits for him even after he retired. He later agreed to give up many of the perks'.

3 Combined role of chairman and chief executive
4 Lack of senior management experience in the company's industry
5 Management neglect of the core business activity.

Most company problems allegedly arise due to the combination of the above. For example, Maxwell exhibited 1 and 2, similarly, RUMASA 1, 2, and 5[13], Crédit Lyonnais 1 and 5, etc. It is unfortunate that this hierarchization of causes in classic business literature omits to mention the most recent cause of corporate failure – criminal fraud, as witnessed with the managements of BCCI, Enron, Worldcom, Parmalat (or Barings), or the defunct auditor Andersen who signed off on Enron's accounts (and shredded evidence to the same), to name a few.

None of these collapses are due to classic analytical explanations such as 'mature product cycle', 'poor working capital', 'entry of new competitors' or 'business cycle'. These collapses are due to greed and fraud perpetrated by two actors – management and auditors. Note that these are only the companies that have collapsed … One wonders what other surprises do top management and the auditors have waiting for us? When significant numbers of corporations are restating their profits downwards[1], this is suggestive of general rather than episodic breakdowns.

The exhibit in Annex 6.1 provides a useful glimpse into management attitudes in that the typical turgid prose of annual reports and sycophantic trade press coverage[14] seems to have been replaced by plain English. The exhibit refers to an investment bank president being chastised by the Securities and Exchange Commission of the USA for his attitude vis-à-vis retail investors.

It should be noted that different qualities are required in different situations. For example, in a company turnaround, the need is often for

[13] A summary of the RUMASA and Crédit Lyonnais collapses features in 'Understanding International Bank Risk' by Andrew Fight and Published by Wiley and Sons.
[14] eg: 'Fortune magazine tipped the firm (Enron) as one of the 10 growth stocks to last the decade as recently as 14 August 2001'. The company (Enron) has won a string of awards, including Fortune's 'America's Most Innovative Company' award for an unprecedented 6 years between 1996 and 2001. Last year, it won the Financial Times' 'Energy Company of the Year' award and 'Boldest Successful Investment Decision'. From BBC, 1 November 2001, Troubles multiply at Enron, By BBC News Online's Briony Hale http://news.bbc.co.uk/1/low/business/1632790.stm

an autocratic chief executive who can act quickly and decisively. Such qualities however may be inappropriate in a company with a diversified product line needing a new product development strategy. It is the analyst's job to appreciate and understand these differences.

Effective management information systems and financial controls

The development of computer systems enabling the compiling and processing of data to generate reports for management to reach informed decisions is known as management information systems (MIS). Such reports include for example, product and market sector analysis, costing systems, cash flow forecasting systems, and budgetary control systems, all mapping actual performance against established targets with means, modes, variances, and standard deviations, pie charts, bar charts, and 3D bar charts, providing further gradations for analytical consideration.

The systems need to be designed as a decision aid to management and should therefore operate on a real time basis (e.g. the reports can be extracted based on current data in the system immediately), and be summarized and presented into user friendly summary reports rather than reams of incomprehensible computer printouts.[15]

It is essential that performance figures can be 'sliced and diced' to look at overall performance, and then break down that performance by geographic zone, foreign currency, operating division, product line, sales team, or other requisite criteria. Again, achieved results can then be compared to company targets, and corrective action can be applied to any identifiable sectors exhibiting the unwelcome variation.

It is therefore important for the company investing in IT and MIS software to understand the nature of the business and map the requisite information flows beforehand in such a manner as to be able to clearly state what the required elements are when drafting the terms of reference (TOR) for the acquisition of the data processing software, since many software

[15] For a discussion of these factors, refer to E-Finances and E-Processes, by Andrew Fight and published by Wiley/Capstone Publishing.

companies' goals are to sell software and they will therefore endeavour to sell their product with the argument that it can solve problems (that it was not designed to solve), or that their product is better (or cheaper) than competitor products, without necessarily tying in those claims to the company's specific reporting requirements. For example, one software company providing banking software for private banking attempted to convince a retail bank with some 45 branches in an Eastern European country that its product was the 'right product' for the bank despite the fact that the user base confirmed the exact opposite …

It is therefore essential that the company invest time in defining the data flows and reporting criteria, in order to define optimally the requisite criteria for purchasing and installing such systems, and ensure that they are compatible with the company's legacy IT architecture.

Bankers will also need to evaluate that a company's control systems are in place and operational. One way of doing this is to ask the company to provide reports summarizing the last quarter's performance and to provide financial forecasts.

It is important to establish not only whether such systems are in place but what the company management attitude to such systems is. The bank can therefore ask the company what its IT investment policy is and other pointed questions as to whether they are using open or proprietary systems, selection of software, do they have plans to upgrade, and what problem areas (there are always problems) they are seeking to invest in. Other indirect questions can also be useful in understanding management attitudes to IT systems, e.g. one can ask whether the company has exhibited any rise or fall in profitability since the publishing of the last interim reports. Companies with appropriate IT systems can produce these reports automatically. If the company stalls, or cannot provide data promptly, this is an indication that the company's MIS and financial reporting systems are in need of improvement.

Annex 6.2 illustrates the pitfalls in not looking sufficiently into detail regarding financial information of a company – it is a fraudulent deposit report confirming that Parmalat has EUR 4.2 billion on deposit via a special purpose vehicle (SPV) in an offshore tax haven. The deposit of course

does not exist and the deposit slip is a forgery. This financial 'hole' had been building up for the better part of a decade; it is most unfortunate that the company auditors did not perform the requisite tests, especially given the size of the alleged deposits.

Effective M&A and integration

Many companies embark on an acquisition which later becomes the cause of financial distress. Various industry surveys confirm that around one-half of acquisitions become a problem. Michael Porter (Five Forces Model) has produced research suggesting that most problems arise when companies effect acquisitions into new and unrelated areas of the core activity (the rationale typically being to mitigate the effects of industry specific cyclicality).

Holding companies such as Hanson plc or the Carlyle Group (the defence acquisition conglomerate whose directors include the global defence industry illuminati)[16] seem to have a better acquisition track record. Evidence suggests that this is because they are aware that they are not specialists in the industry and therefore devote more time and analysis to the task of acquiring and integrating the company.

One key factor for success would seem to be the amount of planning to integrate the company following the acquisition. Some acquisitions are made to 'cherry pick' certain parts and sell the others. Other acquisitions aim to wholly integrate the company. An essential element in integrating the new company successfully, at least in terms of being able to control it effectively, is to implement the requisite MIS systems in the acquired company. This can be difficult and very expensive in companies with differing IT systems, architecture, and software.

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[16] 'The Carlyle Group has for more than a decade, been the leading private equity investor in the aerospace and defence industries completing 27 transactions representing a combined purchase price of more than USD 5.8 billion. The Advisory Boards of Carlyle Europe include ex US Secretaries of Defence, Secretaries of State, British Prime Ministers, including Rt. Honourable John Major, James A. Baker III, Frank C. Carlucci, Allen Andreas, Etienne Davignon, Reto Domeniconi, Oscar Fanjul, Dr. Fritz Gerber, Sir Denys Henderson, Dr. Ing E.h. Eberhard von Kuenheim, Cees van Lede, Donald B. Marron, Karl Otto Pöhl, Michael Rogowski, Peter Sjöstrand, Enrico Chicco Testa (from company web site at: http://www.thecarlylegroup.com/eng/company/l3-company738.html)

Integrating the acquired management, at least in the transition phase when the acquiring company is still in the early phases of the learning curve is also a precursor to successful integration. Once the diagnosis has been made by the acquiring company, appropriate policies can then be set in place: to incentivize staff earmarked for retention and transfer them into 'new' areas of the company, and leave undesirable staff to stew in quarantined areas cut off from the work flow and budgets as an inducement to leave the company or as preparation to lay them off with the rationalization that there is no further work for them to do.

Bankers are well placed to evaluate borrowers' acquisition and integration strategies when the acquisition finance is in the form of loans since they can ask for confidential information that is not normally provided in the case of a public share or bond issue.

Poor product development and marketing

Many companies fail because they become uncompetitive. Some are able to evolve with changing market conditions by developing a new strategy, while others fail.

One cause of competitive failure is an inability to invest appropriate levels in Research and Development (R&D). R&D in itself however does not suffice to ensure the production of competitive goods, as the VCR-Betamax wars or legendary Edsel confirmed.

Other difficulties are the country's manufacturing base and labour costs. This explains in part why many companies are becoming little more than logo shops, where they purchase goods manufactured to certain norms from countries in the Far East and use their distribution networks to sell the goods at a markup.[17]

The textile industry is another example where local manufacture has become unfeasible in light of the competitive prices offered by the

[17] For a full treatment of the realities underlying the origin of western multinational products such as Dell, Compaq, Nike, and purveyors of fashionable logoized clothing, refer to Naomi Klein's book 'No Logo'. A polemical left wing treatise nevertheless filled with fascinating information about the reality of 'Western' brands and Asian sweatshops.

sweatshops of Indonesia or the People's Republic of China. This symbiotic coexistence of capitalism and communism is indeed fascinating.

Some companies may diligently try to resist the delocalization of labour to foreign markets (e.g. Dyson tried to maintain the manufacture of its quality vacuum cleaners in the UK but eventually succumbed to outsourcing the manufacture to Asia), but the economic arguments win with their inescapable logic. Some companies try to continue as they have to date without realizing that these changing industry dynamics make the transformation inevitable.

In the UK or France, for example, the textile industry illustrates how low-cost producers in Asia undercut them on price delivering products of lesser, albeit acceptable quality to the track suit cognoscenti. Marks & Spencer, or Pierre Cardin shirts for example, come from that centre of haute couture, the People's Republic of China. The way for local manufacturers to survive in this case is for them to allocate the bulk of production to overseas sources to keep costs down (effectively becoming a retail outlet for the PRC manufacturers), downsize operations, and lay off people in the home markets. Finally, in order to maintain the fiction that they are still a local producer, they can focus on the manufacture of certain products in prestige market segments where the superior quality of local manufacture is evident and the non-track suit cognoscenti are willing and able to invest in this higher quality clothing, such as quality woollen garments, menswear, womenswear that have not lost their certificate of origin labels.

The case for consumer electronics is less emotional since these objects typically are disposable and not worn by the user. High-street purveyors of consumer electronics or PCs therefore are merely sales outlets distributing the acquired electronic goods, like a subcontractor. Since the products are all basically the same, competition relies upon the efficiency of the distribution channels. The source or indeed quality of the consumer electronic goods, by comparison, is virtually irrelevant.

The end result of all this, of course, is that the local manufacturer merely becomes the repository of a logo but has for all practical purposes become a distribution outlet for the goods manufactured afar.

So where does the home market add value? One can argue that the true advantage lies not in the manufacturing process (since manufacturing and labour occupies valuable management time) but in the investment in R&D to develop new products and technologies which are then licensed under royalty to overseas manufacturers.

In such a scenario, the product developer recoups his investment in revenue streams from product licensing agreements and does not have to deal with the issues of manufacturing and labour relations, which remain the preserve of the overseas manufacturers and their regulatory authorities and labour legislation of Indonesia or the People's Republic of China.

This strategy has an inexorable logic: unless local manufacturers have a certain intangible appeal (whether nostalgic, stylistic, or quality such as mission critical reliability), it is doomed to failure against the financial realities of these foreign sourced goods.

Finally, in order to maintain control over the offshored manufacturing process to prevent these overseas players of driving the agenda, it is essential that the purchasing countries define the norms and standards of the products to be manufactured. By constantly modifying and changing technical standards, this can be used as a technique to influence the terms of negotiation and purchase of the goods from the offshore manufacturers, thereby ensuring that the pace and rate of product development and take-up of R&D remains in Western hands (indeed, even dictating the necessity of the overseas manufacturers to invest in new equipment to meet the new standards). Thus, profits and margins and purchase of advanced manufacturing equipment are framed and driven by the controlling of standards and norms. Companies in the home markets are thus dispensed from the inconvenience of managing the production process and labour relations.

To illustrate the example of technical norms thwarting unwelcome initiatives in product development and marketing, consider two following examples: the Airbus twin engine passenger airliner and the securitized 'chip card'.

- The Airbus A300 (and later A310-320-330 twin engine aircraft was the first successful twin engine aircraft and for many years was not able to

obtain Federal Aviation Authority (FAA) certification for transatlantic flights to the USA because FAA ETOPS (Extended Twin-engine Operations) regulations required that in the case of engine failure that the aircraft needed to be proximate to an airport, thus effectively barring transatlantic flights. It is interesting that when Boeing adopted the aerodynamic advantages of twin engine aircraft and began the design of their B757-767-777 aircraft that the FAA changed the ETOPS requirements in March 1989 thus enabling transatlantic flights by B767 twin engine aircraft to occur.

- The Bull CP8 'chip card' was invented by Roland Moreno of Bull Computers. One undeniable advantage of the chip card is that it lowered rates of fraudulent use of credit cards to less than 0.01% (compared to 2–3% with classic magnetic cards). Efforts to sell this French technology to the US banks ostensibly failed because the US technical specifications regarding the card readers were drafted in such a manner as to render the Bull CP8 chip card incompatible. This gave time for US manufacturers to study CP8 technology and come up with a card with the chip slightly offset. This meant two sets of readers (and ATMs, etc.) became necessary, one for CP8 cards and one for the US cards. Hence, the competition resides not on the product, but on the technical standards and norms – while technology unites, norms divide trading blocs. Despite the fact the CP8 card failed to meet US standards, this did not deter Texas Pacific Group to become the largest shareholder of GEMPLUS in order to avail themselves of its technical documentation and expertise in manufacturing the 'chip card' and advanced encryption technology. Indeed, Technology transfer as opposed to commercial criteria seems to be the main consideration of the acquisition since the Chief Executive Officer (CEO) of Texas Pacific Group is Alex Mandl, also Director of In-Q-It, a company set up by the Central Intelligence Agency (CIA) to work on technology projects 'of interest to the CIA'.[18] This takeover spurred the French government to consider enacting new laws regarding the acquisition of companies by agendas driven by technology transfer considerations, as opposed to commercial criteria.[19]

[18] http://www.cia.gov/cia/public_affairs/press_release/1999/pr093099.html
[19] http://www.zdnet.fr/actualites/business/0,39020715,39130526,00.htm

We cite these two examples simply to illustrate what is actually meant by Norms and Standards, R&D, product development, and marketing strategy. In all cases, the sacrosanct principle of the consumer enforcing discipline on manufacturers by choosing the best quality product has all the hallmarks of fairy tales. Consumers buy what cartels force them to buy.

Bankers need to understand whether their companies are aware of these business pressures and are developing strategies to address these issues with sufficient urgency or not – companies that react too slowly to a change in external environment, are candidates for financial distress. The creditor needs to understand the strategy that a customer is pursuing and evaluate it against his own understanding of the dynamics of industry and competitive forces.

Failure prediction models

There are two basic types of failure prediction models:

- One is the 'Altman Bankruptcy Predictor' which is an analysis technique based on the sum of five financial ratios (expressed in decimal form) which are calculated from financial information contained in a company's annual accounts and known as a Z score. The Altman Bankruptcy Predictor Model obviously takes its name from work by Edward Altman.
- The other method is the 'A Score Model' based largely upon non-financial variables and has been advocated by John Argenti.

Both techniques have their pros and cons. Altman for example relies on the integrity of financial statements, a topic whose problems we have previously considered. Argenti's model is purely subjective, which renders it vulnerable to being labelled as 'unquantitative' or 'unscientific'.

The advocates of these methods claim the ability to predict failure up to 5 years before bankruptcy. However, it is not certain whether there is a clear-cut cause and effect relationship operating or whether the relationships between scores and performance are more approximate in nature.

Various players use these models; however, it is therefore a good idea for the analyst to be familiar with these techniques as they can be useful in providing advance warning.

Financial failure prediction models

Credit-scoring techniques such as the Altman Bankruptcy Predictor (also called solvency analysis), uses an offshoot of classic ratio analysis known as multiple discriminant analysis (MDA).

MDA simply takes two populations, failed and non-failed corporations and compares (discriminates) between the two population groups.

Altman takes five well-known ratios expressed as decimals, multiplies each one by a weighted coefficient, and then totals them up into a 'Z score'. Z scores are then assembled for industries and compiled into a database classified according to standard industrial classification (SIC) industry codes schemes.

The five ratios look at liquidity, profitability, leverage, solvency, and activity:

- X1, working capital/total assets;
- X2, retained earnings/total assets;
- X3, earnings before interest and taxes/total assets;
- X4, market value equity/book value of total liabilities;
- X5, sales/total assets.

A company Z score is than referred to a bell curve (calculated from the totality of the sample universe depicting the overall parameters of corporate failure) to situate that particular company's probability of failure within the bell curve.

We mention this technique in passing since analysts should be familiar with it; however, it is an idea whose time may have passed since the mergers, realignments, and volatility of companies operating in an increasingly globalized market with cross-border electronic funds flows

and different ratios across industries and borders renders such classic analytical techniques pedestrian. The corruption of financial data moreover does not help the accuracy of such statistically driven models.

The company Z score therefore gives an assessment of the element of risk inherent in a given company.

As noted, each ratio is multiplied by a weighted coefficient as follows:

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + X5$$

where an example of the Altman solvency analysis model appears below:

Solvency analysis

XYZ Corporation industry SIC code XXXX	*2000*	*2001*	*2002*	*2003*
Working capital/ total assets × 1.2	0.3343	0.2715	0.2397	0.3007
Retained earnings/ total assets × 1.4	0.3177	0.2662	0.2472	0.1231
EBITDA/total assets × 3.3	0.0382	0.0044	(0.1055)	(0.2337)
Net worth/total debt × 0.6	0.4946	0.3836	0.3545	0.1622
Sales/total assets	1.6599	1.5213	1.6768	1.7574
Total Z score	2.8447	2.4471	2.4126	1.9096

Range
−4.000 to +2.675 = 94% chance of bankruptcy in 1 year (average = 0.290)
+1.999 to +2.999 = overlap area (grey area)
+3.000 to +8.000 = Solvent (average = 5.020)

Edward I Altman, ZETA Analysis, *Journal of Finance* 1977.

When used to assess manufacturing firms in the US, this analysis technique was 95% accurate in predicting bankruptcy within 1 year and 72% accurate within 2 years. Such an analysis technique can easily be incorporated into a computerized spreadsheet so that the model can be quickly calculated and printed, following input of the financial data.

The financial structure and ratios of various companies can obviously vary from one country or industry to another. The use of such techniques

must therefore take these factors into account when being interpreted. Although it is tempting to adjust the model in order to conform with conditions peculiar to a given country, this can affect the accuracy of the model's forecasting.

Generalized ratios for calculating 'Z scores' can be obtained from such information sources as Dun & Bradstreet's summary financial data for companies and industries, thereby providing a basis of comparison for the analyst. In addition to predicting corporate bankruptcy, such credit-scoring techniques can quickly provide effective information as to whether the company's overall financial condition is improving or deteriorating and, consequently, where to direct the enquiry.

The main added value in Altman's model are not the ratios but the weighted coefficients used. These obviously can vary from industry to industry and country to country, and can be purchased.

One elaboration of this approach has been adopted by a company called Rapid Ratings. This company has extrapolated the approach of ratio analyst and grafted it onto that of credit ratings in a purely mechanistic methodology,[20] generating a rating based purely on a statistical model of number crunching. While this avoids subjective dysfunctions, in an era of corrupted accounting data, it is fair to question the accuracy and relevancy of such models.

Non-financial failure prediction models

Many people argue that company problems are to do with management and the mistakes that are made. These mistakes occur for many reasons

[20] Rapid Ratings Pty Ltd, at http://www.rapidratings.com – From the web site: 'Rapid Ratings Pty Ltd is a new generation corporate credit rating agency and investment quality rating agency offering, on the Internet, fully automated, detailed real time reports (financial health assessment text, graphs, tables, and ratings' forecasts) on single companies or large volumes of companies. The company's only inputs for ratings are audited financials (income statement, balance sheet, and cash flows). Rapid Ratings' client markets include investment funds, banks, large creditors, non-bank finance companies, private equity funds, and venture capital companies. The service is also designed for banks that wish to undertake back-testing to improve internal credit rating models in preparation for the regulatory changes in 2006 to be required by central banks based on recommendations from the Basel Committee on Banking Supervision (Basel II)'.

before they show up in the numbers, perhaps because companies have failed to invest in new products or because they have entered the wrong markets or perhaps because they made the wrong acquisition.

Argenti emphasizes the need to know a customer intimately and that there are certain detectable symptoms of potential failure that need to be analysed. The following table gives the symptoms which he sees as detrimental to the firm's health, together with the relative weights. The ideal company would score 0. Argenti's research suggests that there is a probability of failure once the score passes 25. The grey area is between 18 and 25 and this is when company management should adopt appropriate corrective measures.

Some of the variables in this model are of a confidential nature, the type of information banks are able to obtain due to their client relationships. The model cannot therefore be used by share investors or companies to look at trade suppliers.

The model is quite subjective in that it relies on common sense rather than a purely quantitative driven model such as Altman's or Rapid Ratings'. The model instead relies on a set of common sense factors which are meant for identification and subsequent analysis.

The model has important practical focus in that many failed companies indeed did not actually submit their accounts in the 2–3 years prior to failure, and that directors tended to leave the failing companies.

Argenti's A score model

Defects		**In management**
	8	The chief executive is an autocrat
	4	He is also the chairman
	2	Passive board, an autocrat will see to that
	2	Unbalanced board too many engineers or too many finance types
	2	Weak finance director
	1	Poor management depth
		In accountancy
	3	No budgets or budgetary controls (to assess variances, etc.)
	3	No cash flow plans, or not updated
	3	No costing system. Cost and contribution of each product unknown
	15	Poor response to change, old fashioned product, obsolete factory, old directors, and out of date marketing
Total defects	**43**	**Pass 10**
Mistakes	**15**	High leverage, firm could get into trouble by stroke of bad luck
	15	Overtrading. Company expanding faster than its funding. Capital base too small or unbalanced for the size and type of business
	15	Big project gone wrong. Any obligation which the company cannot meet if something goes wrong
Total mistakes	**45**	**Pass 15**
Symptoms	**4**	Financial signs, such as Z score, appear near failure
	4	Creative accounting. Chief executive is the first to see signs of failure and, in an attempt to hide it from creditors and the banks, accounts are 'glossed over' by, for instance, overvaluing stocks, using lower depreciation, etc. Skilled observers can spot these things
	3	Non-financial signs, such as untidy offices, frozen salaries, chief executive 'ill', high staff turnover, low morale, and rumours
Total symptoms	**12**	
Total score		**Pass 25**

Source: J. Argenti. 'Company Failure Long Range Prediction is Not Enough: Accountancy', August 1977.

Problems with failure prediction models

There are several reasons why analysts need to be careful in using these models. Here are the major ones:

- *Fraudulent accounting*: We have already treated at length the problems witnessed with financial statements and auditing firms in the wake of the financial scandals of the last few years and will not dwell at length on this except to say that such a modus operandi increasingly seems to be the norm and that they certainly do not help to refine the already approximative nature of the predictive capability of these financial models.
- *Economic cycle*: These models tend to assume the evaluation of ratios remains constant, e.g. ceteris paribus, while business cycles can subject companies to financial pressure. The financial models may be derived in one period (during a boom period), and the weighted coefficients are unlikely to remain constantly valid in an economic downturn. The variables are constantly shifting over time, hence the theory needs to be constantly adapted, it is therefore not a theory.
- *Homogeneous samples and heterogeneous populations*: Reality may be more heterogeneous than the sample characteristics (time, industry, country). Moreover, companies in the same industry can exhibit different ratios (say a UK shipyard and a luxury private yacht shipyard or British Airways and Ryanair …). These differences only become more pronounced from country to country. This can only adversely impact the relevancy of the model.
- *No underpinning theory*: The last 25 years of research in the field of corporate distress, have failed to provide a convincing theory of why companies fail. The theory that companies and auditors are driven by fear, greed, profits, the will to indulge in fraudulent and criminal activity in pursuit of these aims, and 'après moi, le déluge' are an unacceptable reality that dares not speak its name because it says unacceptable things about the nature of our economic system and the lack of disciplinary measures. As long as such realities are ignored, no complete theory can be devised. The models are essentially just looking at numbers and there is no explanation or indeed view of what is actually happening.

Chapter 6

Annexes

Management attitude problem exhibit No. 1

SEC Letter to US Investment Bank

THE CHAIRMAN

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

April 30, 2003

Mr. Philip J. Purcell
Chairman and Chief Executive Officer
Morgan Stanley & Co. Incorporated
1585 Broadway
New York, NY 10036

Dear Mr. Purcell:

I am writing about today's *New York Times* report of your comments concerning the Commission's and other regulators' recent enforcement action against Morgan Stanley. I know you have already spoken to our Director of Enforcement about the report, but I wanted to give you my own thoughts.

I am deeply troubled that you would suggest that Morgan Stanley's conduct, as described in the Commission's complaint, was not a matter of concern to retail investors. My concerns are two-fold. First, your statements reflect a disturbing and misguided perspective on Morgan Stanley's alleged misconduct. The allegations in the Commission's complaint against Morgan Stanley are extremely serious. They include charges that Morgan Stanley paid other firms to provide research coverage, compensated its research analysts, in part, based on the degree to which they helped generate investment banking business, offered research coverage by its analysts as a marketing tool to gain investment banking business, and failed to establish adequate procedures to protect research analysts from conflicts of interests. In light of these charges, your reported comments evidence a troubling lack of contrition and lead me to wonder about Morgan Stanley's commitment to compliance with the letter and spirit of the law and the high standards of conduct all investors have a right to expect from their brokerage firms.

Second, I wish to remind you that among the terms of the settlement to which Morgan Stanley agreed is a requirement that the firm, and those speaking on its behalf, do not deny the Commission's allegations. Like every term of the settlement, this is a legal obligation assumed by the firm (and certainly applicable to you as CEO), that is enforceable by the court. I caution you that the Commission would regard a violation of that obligation as seriously as a failure to comply with any other term of the settlement.

Please let me or our Director of Enforcement know if you would like to discuss these matters further.

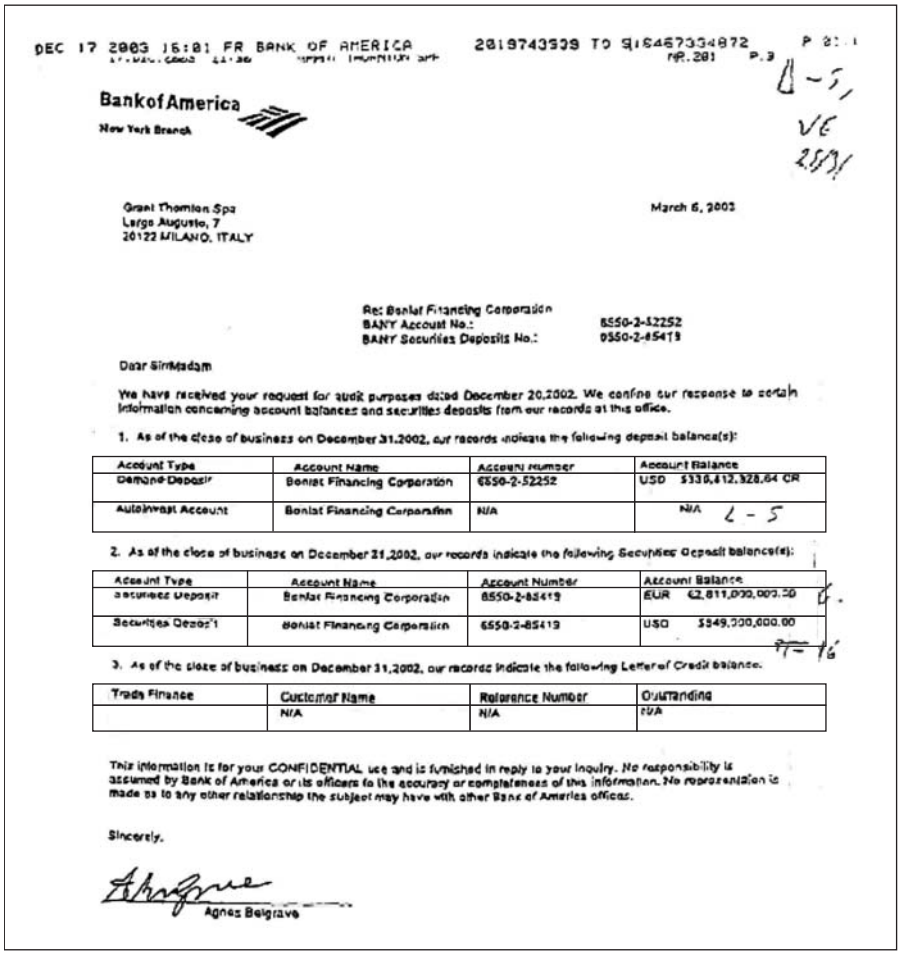
Yours truly,

William H. Donaldson
Chairman

Source: New York Times web site
http://www.nytimes.com/packages/pdf/business/20030501purcell_letter.pdf

Creative accounting exhibit No. 1

Fraudulent Parmalat EUR 4.2 billion Deposit Confirmation



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NR.281 P.3

Bank of America
New York Branch

Grant Thornton Spa
Largo Augusto, 7
20122 MILANO, ITALY

March 6, 2003

Re: Bonlat Financing Corporation
BANY Account No.: 6550-2-52252
BANY Securities Deposits No.: 0550-2-85419

Dear Sir/Madam

We have received your request for audit purposes dated December 20,2002. We confine our response to certain information concerning account balances and securities deposits from our records at this office.

1. As of the close of business on December 31,2002, our records indicate the following deposit balance(s):

Account Type	Account Name	Account Number	Account Balance
Demand Deposit	Bonlat Financing Corporation	6550-2-52252	USD $330,612,328.64 CR
Autolnvest Account	Bonlat Financing Corporation	N/A	N/A

2. As of the close of business on December 31,2002, our records indicate the following Securities Deposit balance(s):

Account Type	Account Name	Account Number	Account Balance
Securities Deposit	Bonlat Financing Corporation	6550-2-85419	EUR €2,811,000,000.00
Securities Deposit	Bonlat Financing Corporation	6550-2-85419	USD $349,000,000.00

3. As of the close of business on December 31,2002, our records indicate the following Letter of Credit balance.

Trade Finance	Customer Name	Reference Number	Outstanding
	N/A	N/A	N/A

This information is for your CONFIDENTIAL use and is furnished in reply to your inquiry. No responsibility is assumed by Bank of America or its officers for the accuracy or completeness of this information. No representation is made as to any other relationship the subject may have with other Bank of America offices.

Sincerely,

Agnes Belgrave

Source: The Corporate Library
http://www.thecorporatelibrary.com/spotlight/scandals/parmalat.html

FRS and SSAP accounting reporting standards

The role of the Accounting Standards Board (ASB) is to issue accounting standards. It is recognized for that purpose under the UK Companies Act 1985. It took over the task of setting accounting standards from the Accounting Standards Committee (ASC) in 1990.

Accounting standards developed by the ASB are contained in Financial Reporting Standards (FRS). Soon after it started its activities, the ASB adopted the standards issued by the ASC, so that they fall within the legal definition of accounting standards. These are designated Statements of Standard Accounting Practice (SSAP). Whilst some of the SSAP have been superseded by FRS, some remain in force.

The complete list of FRS and SSAP are detailed below. The full text of the various FRS and SSAP can be accessed on the ASB web site's Uniform Resource Locator (URL):

http://www.asb.org.uk/asb/technical/standards.cfm

- FRS 1 (Revised 1996) Cash Flow Statements
- FRS 2 Accounting for Subsidiary Undertakings
- FRS 3 Reporting Financial Performance
- FRS 4 Capital Instruments
- FRS 5 Reporting the Substance of Transactions
- FRS 6 Acquisitions and Mergers
- FRS 7 Fair Values in Acquisition Accounting
- FRS 8 Related Party Disclosures
- FRS 9 Associates and Joint Ventures
- FRS 10 Goodwill and Intangible Assets
- FRS 11 The Impairment of Fixed Assets and Goodwill
- FRS 12 Provisions, Contingent Liabilities and Contingent Assets
- FRS 13 Derivatives and other Financial Instruments: Disclosures
- FRS 14 Earnings per Share
- FRS 15 Tangible Fixed Assets
- FRS 16 Current Tax

- FRS 17 Retirement Benefits
- FRS 18 Accounting Policies
- FRS 19 Deferred Tax

- SSAP 2 Disclosure of Accounting Policies
- SSAP 4 Accounting for Government Grants
- SSAP 5 Accounting for Value Added Tax
- SSAP 9 Stocks and Long-term Contracts
- SSAP 12 Accounting for Depreciation
- SSAP 13 Accounting for Research and Development
- SSAP 15 Status of SSAP 15
- SSAP 17 Accounting for Post Balance Sheet Events
- SSAP 19 Accounting for Investment Properties
- SSAP 20 Foreign Currency Translation
- SSAP 21 Accounting for Leases and Hire Purchase Contracts
- SSAP 24 Accounting for Pension Costs
- SSAP 25 Segmental Reporting

Glossary

Accrual accounting An accounting system in which revenue is recognized during the period in which it is earned, and expenses are recognized during the period in which they are incurred, whether or not cash is received or disbursed.

Amortization The process of paying off an amount gradually by spreading the payments over several years.

Annual general meeting This is the annual meeting at which the directors are required to present the annual report and accounts to shareholders.

Annual report The company's annual accounts, audit statements and narrative account of the year at hand. Presentations vary considerably.

Assets Any item owned by a company or individual that can be given a monetary value and used if necessary to pay debts. There are many kinds of assets, described by terms like current assets and fixed assets.

Audit An official examination and checking of a company's accounts by an independent accountant called an auditor, to certify that the accounts (as presented by the directors) comply with the law, and in their opinion give a true and fair view of the company's affairs.

Auditors Accountants who certify that the company's accounts have been reviewed in accordance with FRS (Financial Reporting Standards for the UK – see below) and note the findings of their inquiry.

Authorized signatories Persons authorized to sign on behalf of the company borrowing the money. Specimen signatures are usually in a booklet provided by the company. It is the bank's (i.e. analyst's) responsibility to verify this: if the signatory is not authorized, the company does not have to pay the money back.

Borrower risk Risks pertaining to the company, including management, profitability, non-performance, and bankruptcy: all factors relating to the borrower.

Bullet repayment A loan whose interest is payable at intervals agreed in the loan agreement, and whose principal is repayable in a lump sum at final maturity. The source of repayment is usually a new facility that is put into place.

Capital intensive Thus is a balance sheet where a relatively large proportion of the assets is in plant and equipment. This means there are large depreciation charges with a high level of fixed costs, resulting in volatile earnings.

Capitalization (of an expenditure) This occurs when an expenditure is recorded as an asset, which is then written off over future periods. The justification for this is that the expenditure turned asset produces benefits beyond the calculated accounting period.

Certificates of registration These certify that the company has registered with the state authorities. Photocopies are usually available from the company on request.

Collateral See Security.

Comparability This is the concept that company accounts and their ratios are comparable, since companies are required to report them in a similar fashion.

Consolidated accounts In a case where a parent company has a controlling interest in other companies, that is, its subsidiaries, then the parent company must prepare consolidated or group accounts. Since the early 1900s US and UK companies have been required to publish group accounts. Seventh Directive on European harmonization focused on group accounts, and since 1990 they have been mandatory for all European companies. In the UK, companies which are required to provide a consolidated balance sheet, must also provide one for the parent company that is called the company balance sheet. In the US, however, companies, which report on a consolidated basis, are not required to provide a parent company balance sheet.

Contingent liabilities Items that do not represent a liability on the balance sheet at the time of statement date but which could do so in the future. Such items include guarantees issued in favour of third parties, and lawsuits currently in progress whose outcome is uncertain.

Covenants Conditions in the loan agreement signed by the bank and the borrower which the borrower must respect. Covenants can cover conditions on management performance, disposal of subsidiaries, negative

pledges, amounts of debt incurred, and adherence to financial ratios. Non-compliance is known as an event of default.

Credit scoring Technique used to evaluate a potential borrower according to a pre-defined matrix procedure. Usually used in retail banking and credit card processing, may be used in evaluating corporates.

Debenture A debenture is a loan secured on the company's assets, normally with an agreed rate of interest and fixed repayment date.

Documentation Anything (such as certificates of registration, loan agreements, guarantees, etc.) relating to the legal agreements and guarantees governing the facility extended to the borrower.

Documentation risk The risk of non-repayment due to a defect in the loan agreement or security arrangements. This can arise due to faulty drafting, mitigating circumstances, juridically non-enforceable and faulty collateral, or guarantees which have expired and not been renewed. The analyst is not expected to assess legal issues, but is expected to obtain legal opinions when necessary and note them in the credit analysis.

Double entry bookkeeping Luca Pacioli authored the first book on the double entry bookkeeping entitled *De Computis et Scripturis* in 1494. This included details of the mechanics of double entry bookkeeping (debits, or left hand entries in the books of account, and credits, or right hand entries). Thus, any amount is entered on the right hand side (credit) of one account and the same amount is entered on the left hand side (debit) of another account. This guarantees that at the end of the financial year it is possible to produce an income statement (in the UK called the profit and loss account), disclosing the profit or loss for the year and a balance sheet with assets (debit balances) equalling liabilities (credit balances).

DTI Department of Trade and Industry. It is a valuable source of information on companies and many business matters in the UK and abroad.

EBIT Earnings before deduction of interest expense and income taxes.

EBITDA Earnings before deduction of interest expense, income taxes, depreciation and amortization.

Equity In the context of credit analysis, this refers to the net value of all assets after deduction of all charges. Also known as share capital or shareholders' funds.

Events of default A pledge in the loan agreement which the borrower fails to meet, enabling the bank to call the loan in for prepayment. Such events can range from the Channel Tunnel boring failing to reach mile 12.75 on 25 October, to mailing an annual report 3 days late to the lending bank.

Evergreen facility A facility that automatically renews itself unless the borrower or lender gives notice to cancel.

Factoring Selling of invoices to raise cash. Debts of various kinds are put together and sold to banks or corporate treasurers. A term used in international trade.

FASB This is the Financial Accounting Standards Board, which is the rule making body for the accounting profession in the US. Its members are appointed by a foundation, the members of which are selected by the directors of the American Institute of Certified Public Accountants.

Financial year end The close of the year accounts, abbreviated as FYE.

Fiscal year end The end of the tax year as defined by the tax authorities.

Fourth Directive The Fourth Directive was adopted in 1978 and dealt with accounting principles, accounts and allied information with standard formats enforced for the income statement and balance sheet. It also contained the true and fair view requirement in the preparation of financial statements.

FRS/SSAP Financial Reporting Standard/Statement of Standard Accounting Practices. A set of standardized guidelines and procedures which have become mandatory for directors in the UK for all company accounts.

Futures These are formal agreements to purchase a given item in the future at a price agreed today. The purpose is to hedge against price changes. The practice began in Chicago in the 19th century and centred around the agricultural market, but records show that it was common in Holland and Japan in the 16th century.

GAAP Generally Accepted Account Principles are rules that govern the preparation of financial statements, based on pronouncements of authoritative accounting organizations such as the Financial Accounting Standards Board, industry standards and accounting literature.

Gearing This is a ratio that sums up the financial standing of a company. It is obtained by dividing the total interest bearing debt by the

shareholders' funds. The higher the number, the greater the risk. A company that has a large proportion of its permanent capital from debt is referred to as being highly geared.

Guarantees Usually an undertaking by a third party to assume the debts of the borrower in the event of default. A common situation with parent/affiliate lending arrangements. Guarantees can and do expire, and the analyst should ensure in the credit review that they are either still valid, or have been renewed.

Intangible assets Items which are valuable to a company but have no material form. These are trademarks, reputation, brand loyalty and copyrights, for example.

Investor/Creditor community Entities which provide funds to companies. Investors buy shares in the company (equity), while creditors lend money to companies (debt).

Lawsuits Items which do not appear on the balance sheet but can have a financial impact on the company. Also considered as 'contingent liabilities', these should be explained in the notes to the financial statements.

Lending risk The risks the bank is getting into by putting the loan into place. Often more narrowly defined as risk arising from inadequate or faulty loan documentation.

Leverage (1) This is the American term for gearing. (2) In the UK this is the same as gearing, with the addition of non-interest bearing external debt.

Liquidation Selling off the company's assets to satisfy creditors during a winding up. The main risk in a liquidation is asset shrinkage: whether the assets being liquidated can fetch a market value sufficient to satisfy all the creditors.

Loan agreement Every loan should have one. These define the rules and obligations binding on the lenders, borrowers guarantors and related parties.

Loan officers The persons who look after client relations and new business opportunities. The analyst's work is to evaluate objectively the companies and businesses loan officers are proposing to lend to, and submit their evaluations in the credit review process.

Loans, short-term Loans under one-year duration.

Loans, term Loans of between 2 and 7 years' duration.

Market capitalization This is the aggregate market value of all outstanding shares of a corporation.

Maturity schedules The repayment dates on the loan. A good set of company financial statements will break out all the various debt which it has, the interest rates, and periods of repayment. The analyst should pay particular attention to the impact of bullet repayments on future cash flow.

Minority interests If a company is not 100% owned by a parent company, then the minority interest (the proportion of the subsidiary owned by those other than the parent company) is stated separately in the accounting statements. In order to help alleviate confusion (that is, double counting of profits), all intro group trading is eliminated, so that only revenue from dealing with customers outside the group of companies is shown in the income statement. Note that the minority interests are required to be credited with their proportion of any profit coming from intro group trading.

Plc Public Limited Company. The term 'public' in plc refers to the size of the share capital of the company, so a plc does not necessarily have its shares quoted on the stock exchange. The public companies normally provide a preliminary outline statement on the year's financial performance within 3 months of the end of the company's financial year. The formal publication of the annual report follows thereafter.

Ratio analysis The technique of analysing company performance by calculating financial ratios for historical and comparative purposes.

Regulatory actions Legal requirements on a company. If the government passes a law forcing chemical companies to process carcinogenic waste instead of dumping it in our drinking water, this is known as a regulatory action. Regulatory issues can adversely impact a company's profitability and viability.

ROCE Return on capital employed.

Security The assets or guarantees you claim when the loan is in default. Forms of security can vary from high-grade government bonds to partially completed stock, and are defined in the loan agreement.

Seventh Directive The Seventh Directive was adopted in 1983 and was concerned with publicly quoted companies and the presentation of consolidated or group accounts, including the accounting treatment of goodwill.

Spreadsheet The analyst's main tool in unscrambling a typical set of company accounts.

Subsidiaries The annual report should provide details of all subsidiaries. This includes the name, business, geographic location and the proportion of voting and other shares owned by the parent company. Where the subsidiary has been sold (or otherwise disposed of), these details should be reported as part of the notes on discontinued operations. This means that revenue and profit are then shown separately, and the profit or loss on disposal treated as an exceptional item in the income statement.

TNW Total net worth.

UK financial reporting council This was set up in 1990 with funding from the government, the City and the accounting profession. It has two branches: the Accounting Standards Board (ASB) replaced the Accounting Standards Committee (ASC), which had overseen the introduction of 22 Statements of Standard Accounting Practice (SSAP). The Financial Reporting Review Panel (FRRP) is concerned with the policing of public companies' and large private companies' reporting and presentation of financial statements.

Working capital This is the current assets minus current liabilities and is used as an indicator of liquidity.

Yield Usually expressed as a percentage, this represents the return earned from an investment.

Suggested readings

Ideas for further reading

- Accounting for Growth – Terry Smith, published by Century Business.
- A Dictionary of Accounting – R.Hussey, an Oxford Reference book published by Oxford University Press.
- Bookkeeping and Accounting – Geoffrey Whitehead, a Natwest Business Book published by Pitman Publishing.
- How to Read the Financial Pages – Michael Brett, published by Century Business Books.
- Pocket Accounting – Christopher Nobes, an Economist book published by Penguin Group.
- Teach Yourself Basic Accounting – J. Randall Stott, published by Hodder and Stoughton.

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