About the Book

Lending is one of the most important functions of any lending institution such as a bank. If not managed properly, it can lead to credit quality problems, potentially threatening the very existence of the financial institution. To manage the lending function properly and mitigate credit quality problems, bank loan officers should be adequately trained in risk assessment techniques at the borrower level and also how credit risk is managed at the lending institutions level as well as the regulatory authority level.

*Credit Analysis and Lending Management, Fourth Edition*, is a comprehensive and complete textbook on credit risk analysis and lending management.

The book is divided into seven parts, including 16 chapters and six case studies. Parts I & II present a framework for assessing and managing credit risk. Parts III & IV include chapters that deal with special types of lending: consumer lending, corporate lending, small business lending and international lending. Part V details credit risk management and measurement techniques, and problem loan management. Part VI then looks at other forms of finance (such as the chapters on micro-finance, agricultural, and quantitative finance), while Part VII contains the case studies.

Throughout this text, learning objectives are clearly indicated at the beginning of each chapter, and the chapter content then directly addresses these objectives. Additionally, new concepts are developed in a brick-by-brick manner, and are then supplemented by clear and useful examples.

This Fourth edition has been fully revised and updated to address issues from the global financial crisis (GFC) including the changes in the prudential standards.

Key Features

- ‘Industry insight’ boxes profile current professional issues and identify industry developments
- ‘A day in the life of … ’ boxes highlight the diversity of professional roles in the banking industry
- Step-by-step assessment of loan proposals that use actual loan application forms from a major Australian bank
- Detailed case studies that present a diverse set of scenarios for assignments, assessment and group work
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The National Credit Code. In the context of consumer loans, compliance with provisions of the code has become important. Lending officers have to ensure compliance (explained in Chapter 7) because failure to comply could attract heavy penalties. The Code is included in the National Consumer Credit Protection Act 2009 (Cth).

- The Australian Securities and Investments Commission Act 2001. In the context of loans to corporations, compliance with the provisions of this Act is required.
- The Australian Competition and Consumer Commission. The commission may issue certain directives, with which lending institutions have to ensure compliance.

As and when loan proposals are received, they are scrutinised to ensure various regulatory and legislative requirements are met.

The middle window in Figure 1.1 is about decision-making factors that are internal to the lending institution—that is, institution-specific factors.
Lenders invariably obtain financial statements from prospective borrowers and analyse them. They may not, however, conduct a detailed analysis (as discussed in this chapter) for every borrower. The financial statements analysis for a sole proprietor may be fairly basic compared with that for a public limited company. The analysis is a time-consuming process that requires considerable skill, yet a financial institution will do some basic financial statement analysis for all business loans, big or small. Why do lenders place so much importance on this analysis?

**WHY LENDERS ANALYSE FINANCIAL STATEMENTS**

Lenders analyse financial statements because they help answer the following three important questions, which are the subject of any credit analysis:

1. Should the bank give the requested loan?
2. If the loan is given, will it be repaid together with interest?
3. What is the financial institution’s remedy if the assumptions about the loan turn out to be wrong?

It is less risky for a lender to give a loan to a business that is financially sound. But how can a lender know whether a particular business is financially sound? A sound business possesses the following characteristics:

- The business has adequate liquidity so it can honour short-term obligations easily.
- The business is run efficiently.
- The business is run profitably.
- The proprietor’s stake in the business is high; alternatively, the business is not burdened with too much debt.

By appropriately analysing financial statements (for example, ratio analysis), the lender can know whether the above characteristics are present. If they are present, then the business will be considered to be financially sound and loan approval will not be a problem.

The second question of whether the loan will be repaid together with interest is a bit tricky. Financial statements analysis is essentially a post mortem and cannot provide an answer to this question. The financial statements belong to a period that has already elapsed, but the loan is to be repaid in the future and no-one knows what the future holds. How can a lender find an answer to the second question? How can the lender predict what will happen?

While a lender cannot predict the future with absolute certainty, a reasonable guess can be made by analysing the following factors:

1. **Trend (time series) analysis.** If the business was run profitably for some years, then it may not be unreasonable to assume the trend will continue. The past trend and the projected surplus, the past trend and the projected cash surplus, the trend of various ratios and the likelihood of continuing of that trend are some factors that need to be examined.
Isaac for Wells Fargo. In 1975, that Wells Fargo system was refined by Fair Isaac into a behavioural scoring system based on a Markov chain approach.

In the age of expansion 1980s, Anderson (2007) identifies that credit scoring moved beyond the borders of the United States to have an impact in the United Kingdom in the 1980s and then Greece, Italy, France, South Africa, Canada and Spain in the 1990s. It also moved beyond credit card lending into mortgage lending, which then facilitated the securitisation of these mortgage loans. Next was small business lending, with Fair Isaac offering its Small Business Scoring Service in 1993. More recently, Anderson (2007) has posed the rhetorical question of how big a company has to become before credit scoring is no longer appropriate. This was in part prompted by the recent trend to expand credit scoring of small businesses to include medium-sized businesses. Increasing data availability for these larger businesses has made credit scoring more viable.

**The growth in consumer credit**

When ‘Consumer Credit Models’, the significant book by eminent credit scoring author Lyn Thomas (Thomas 2009), was published, the height of the Global Financial Crisis (GFC) had occurred only relatively recently. So when Thomas wrote in that book about the rapid growth of consumer credit worldwide, he did so in glowing terms. He described how ‘at the start of the twenty-first century, consumer credit is the driving force behind the economies of most of the leading industrialised countries’ (Thomas 2009, p. 2). He also went on to make the link between this growth in consumer credit and the use of credit scoring.

A recent publication by the IMF (International Monetary Fund 2012) provides a more sobering assessment of this period of rapid growth in consumer credit. The publication makes the following points:

- From 2002 to 2007, advanced economies experienced a 39 percent rise in the ratio of household debt to income to 138 percent.
- In particular countries, such as Denmark, Norway, Iceland, The Netherlands, and Ireland this debt ratio peaked at over 200 percent.
- Emerging countries, such as Lithuania, Latvia, Estonia and Hungary experienced a similar growth.
- Because at the time of this growth in household debt there was a boom in the share market and housing prices, the ratio of household debt relative to assets did not change much.
- However, in the wake of the GFC, there have been falls in housing prices to the end of 2011 of 21 percent in Denmark, 23 percent in the United States and Spain, 29 percent in Iceland, and 41 percent in Ireland.
- The level of household debt is now being reduced in these countries as a result of paying off debts or defaulting.
- In the United States, it appears that around two-thirds of debt reductions reflect defaults.

IMF (2012) concludes that ‘housing busts preceded by larger run-ups in gross household debt are associated with deeper slumps, weaker recoveries, and more pronounced household
deleveraging’ (p.115). Obviously, consumer credit can have a potent positive effect on the growth of an economy. It can be an engine for growth. But if excessive, it can also be a cause of lingering problems. Facilitating this growth in consumer credit has been the technique of credit scoring. There seems to be little argument about this in the literature. In fact, one issue for credit scoring coming out of the GFC is the push to develop credit scores which include economic variables into the score so that they can perform better in a pre-GFC environment (Thomas 2011).

While Australia avoided much of the economic impact of the GFC, it did experience a rapid rise in consumer credit facilitated by the use of credit scoring. In fact, Australia’s level of consumer debt to household income is at a world high of 150 percent (Figure 3.1). This 150 percent mark was first reached in December 2005, and has largely remained stuck there since. Prior to December 2005, it was approximately 50 percent in 1990, 70 percent in 1995 and 95 percent in 2000. Some commentators, e.g. Kohler (2012), have linked this high level of consumer debt to household income with a general negative outlook about the economy and politics.

**Figure 3.1** Household debt serviceability and savings ratios (percent)

As at August 2012, consumer credit in Australia accounted for 58 percent of bank lending, with the remainder being commercial lending (37 percent) and lending to government (5 percent). A distinctive feature of consumer credit in Australia is the importance of housing finance, which accounts for 53 percent of all bank lending. This can be split into owner-occupier housing
finance (35 percent) and investor finance (18 percent). Credit card borrowing is pervasive amongst Australians, but the percentage of credit card lending by banks is relatively small at 2.4 percent.

This chapter is about credit scoring in retail lending, so the obvious question to pose is how important is credit scoring in Australian consumer lending. A reasonable assumption seems to be that all credit card applications are credit scored. This is in line with best practice internationally. As far as housing loans are concerned, Home Loan Experts (2012) claims that all the four major banks use credit scoring to assess these loans. The discussion that follows will provide information on these two main types of lending in Australia: housing lending and credit card lending.

**Figure 3.2** Credit card limits and total balances, 1999 - 2012 ($ millions)

![Credit card limits and total balances, 1999 - 2012 ($ millions)](image)

*Source: Reserve Bank of Australia, Table C1.*

Figures 3.2 and 3.3 present information about the level of credit card debt in Australia over the past 12 years. What these figures show is a very rapid growth in consumer credit over a sustained period of time. For instance, credit limits have grown by 12 percent per annum over a 13 year period. Total balances have grown slightly faster at 12.5 percent. During this period, the number of credit cards has grown by 4.4 percent per annum, so clearly Australians are making much greater use of their credit cards. By value, the credit cards in Australia are either MasterCard and Visa (80 percent) or American Express and Diners Club (20 percent).
• define the payment dates for interest and principal
• indicate the maturity day.

There is a body of literature, beyond the scope of this text, that defines the characteristics of a ‘good’ lending contract. In summary, the contract should protect the interests of the lender without discouraging the performance of the borrower. Our main interest is in whether the borrower makes payments in accordance with the contract. There are three stages to this:

1. the credit risk analysis applied to the borrower’s application for a loan (topic of this chapter)
2. the assessment of the credit risk profile during the term of the loan (a topic started in this chapter but expanded in Chapter 11)
3. the credit risk profile when a loan becomes a problem (a topic discussed in Chapter 13).

Point 2 reminds us of a very important issue. It has long been assumed that credit risk is static, but both academic and practical experience has shown that credit risk can vary during the life of a loan. This phenomenon is known as credit migration and can be best explained by a simple illustration.

If a bank extends a ten-year loan to a company, then it is unreasonable to expect the company to remain the same over the term of the loan. If it is a good company, then its credit risk profile will improve; if the company performs badly, then its credit risk profile will deteriorate. It is important that these changes are encapsulated over the term of the loan. Generally, lenders will develop contracts that seek to minimise changes to credit risk of a borrower. The most important of these techniques is the use of covenants. The two most important covenants lenders use today are:

1. The company will not buy or sell assets/subsidiaries without permission of the lender.
2. Borrowers will not increase borrowings without permission of the lender.

As mentioned at the beginning of this section, there have been significant developments in the area of credit (and default) risk. In particular, credit risk is no longer considered a homogenous or single risk but a risk that ‘may’ incorporate market, spread, migration, liquidity and concentration risk. Some of these risks will be addressed in later chapters while others are beyond the scope of the text. Regardless, regulators will insist that all these risks should be identified and managed.

**HOW DO WE ANALYSE CREDIT RISK?**

This chapter will survey credit risk analysis over the recent period. Keep in mind that some of the tools discussed in this chapter are complex while some financial institutions still use the most basic of tools. In other words, every one of these tools are still used in one form or another. The tools can be grouped under the following four broad categories:

1. Expert systems are defined as essentially labour-based systems that depend on human judgement. The main technique used is five Cs analysis (see Chapter 1) or a variant of this method (as in this chapter).
2. Some methods, called risk premium analysis, infer credit risk from financial market-based premiums.

3. Econometric methods are systems that use more and more extensive and complex statistical methods. These methods include regression analysis and multi-discriminant analysis. In particular, we will examine risk premium-based and multi-discriminant models.

4. Hybrid systems build on financial theory and use these understandings to predict credit risk. The best example is the method that is used by KMV Corporation (see Chapter 11)

**Expert systems**

Expert systems are a misnomer, given that we should not infer that the methods used under this heading are superior to other categories. In the overall context of lending, they are probably the worst performers. These systems are characterised by the lending officer using predetermined credit criteria to make a decision on a loan application.

The problem with this method, other than the obvious issues of time, is that the performance of such systems is very uneven. The performance problem reflects the experience of the lending officer and the application of the credit criteria.

The success and failure of expert systems relies on the experience and performance of the lending officer. Many lending officers have the ‘instincts’ to make good lending decisions and effectively analyse lending applications; many, however, unfortunately do not have those instincts. In many instances, decision-making processes are clouded by the lender’s relationship with the borrower. This is a reason for the rise of unambiguous statistical tools.

The issue of the lending criteria is somewhat bound up with the previous point. Unless carefully written, credit criteria can be ambiguously interpreted as the lending officer desires. Again, the lender’s relationship with the client can pollute the interpretation of the criteria.

It is also worth mentioning that these methods were developed before the development of sophisticated computers and statistical tools. Many simple lending organisations, such as small credit unions, nevertheless would still base their decisions on such models, with limited support from other methods.

In summary, these systems tend to be manually based, with some computer assistance for the calculation of simple financial ratios. In essence, the whole procedure is based on paper, from credit application to approval and funding. The following stages are an example of this process:

- On receiving application from the prospective borrower, the lending institution attaches a checklist to a file and follows the steps.
- The lender analyses and assesses each element of the checklist.
- The loan is granted or declined.
- In the event of loan approval, documentation is completed and the loan is funded.
- The loan is monitored.
against a set cut-off as to whether the application can be accepted or rejected.

- **Step 4:** Where the application is approved, request that a credit card be made ready, indicating the name of the card holder and the date to which the card is valid. An approval letter and a detailed book of instructions about using the credit card will be sent to the applicant. The card need not be sent directly to the applicant, who instead may be advised that the credit card is ready for collection at a local branch. The branch will hand over the credit card when the applicant produces this letter and signs the card issue register. Where the application is not approved, the applicant may be suitably advised.

**EXAMPLE OF A CONSUMER LOAN APPLICATION**

Referring to the bank’s personal loan application form and credit card loan application form as examples, we will explain how the information sought on the forms ultimately helps the lending banker to assess the quality of the loan proposal. We have tried to relate the questions on the application forms to the three Cs of lending explained earlier.

**Personal loans**

An application form for a personal loan is downloadable from the Westpac Bank’s website (https://www.westpac.com.au/docs/pdf/pb/Personal_loan_application.pdf). It will help to have the form handy while reading the following discussion.

**Character**

- On the loan application, the bank obtains the authority of the prospective borrower to collect information from a credit reporting agency and to exchange that information with other credit providers. Such an authority helps the bank to carry out credit checks. The information that the bank will receive will throw light on the character of the borrower. The bank may ask whether the applicant has any other debts. Some applicants may not disclose this information, which may not serve them well because the bank will come to know from other sources whether there are prior debts. If an applicant hides information, the banker does not form a good opinion about the applicant. In short, the applicant becomes an ‘at risk’ party and the bank may not view him/her favourably.

- Some questions on the application form relate to the particulars and contact details of the applicant. The bank will verify these details. Evidence that will be used by the bank includes a driver’s licence, proof of age card, a citizenship certificate and an overseas or Australian passport. The bank can verify the applicant’s residential address by telephoning or visiting the residence. The bank will also send letters to the residential address and request the client to come to the bank with those letters. This confirms that the applicant is actually residing at the address indicated. The bank also seeks the applicant’s length of residence at the address provided. Changing residence frequently may not be viewed favourably by the bank. It shows that the applicant is not stable at one place. As indicated in the discussion of credit scoring models, a longer period of stay at a residence earns more points.
It is important to ensure the vendor has clear title to the property. The applicant’s solicitor usually takes care of this matter, but it is also important for the lending officer to take adequate care.

When finance is being given to build a new house on a piece of land, permissions from local authorities must be obtained. These may include permissions for items such as the water connection, electricity and telephone, and approval of the suitability of the site (foundation) to build a house. There have been cases where a council declared land suitable for house construction and houses were subsequently built with bank loans. The soil later gave way and created huge cracks in the houses, making them unsuitable for habitation. A bank can do little in such cases and has to rely on the expertise of the local council.

Individuals may withhold information that is crucial to the bank’s decision-making. This may relate to health or employment issues. There may also be inconsistencies in information provided by the applicant, which may be intentional or due to lack of knowledge of bank procedures.

As stated in Chapter 5, it may be difficult to verify some of the information provided by the applicant. Employers may not be willing to disclose details about their employees to the bank. The bank should be very cautious in disclosing information about a prospective or existing borrower.

Individuals can be susceptible to sickness, injury, loss of employment and other causes that may affect their ability to repay. Even family disputes can affect the repayment performance of a borrower.

The lending officer should carefully read the bank’s loan policy manual and observe the documentation required and such other procedures.

Head office usually advise the branches and offices of changes to the loan policy from time to time. It is necessary to ensure loan officers are up to date with all the changes.

**TRENDS IN REAL ESTATE CREDIT**

Here, we will review some of the recent trends in real estate credit in Australia. Figure 6.1 shows the household debt as a proportion of disposable income. As can be seen, housing debt forms over 175 percent of the disposable income of households.

The Reserve Bank of Australia noted that the home loans market in Australia has shown growth due to innovation in bank products and low home lending rates.
As Table 7.1 shows, most complaints are received on the grounds of race and disability discrimination. In the context of sexual orientation discrimination, the following ‘Industry insight’ may be of interest.

**The Bankruptcy Act**

The modern law of bankruptcy works on two principles. The law provides a method for the equitable distribution of the estate of a person who is hopelessly insolvent. It also provides for a release of the debtor from their debts and obligations, and allows the bankrupt to make a clean start. Simply stated, an insolvent is a person who is unable to pay his/her debts as they fall due. There are two ways in which an individual can become bankrupt: (1) a debtor may present his/her own petition to the Bankruptcy Registrar and, upon approval thereof, he/she will be declared bankrupt; or (2) creditors may present a petition. Lending officers should be careful in expressing a view about the likelihood of the customer becoming bankrupt. The customer can bring a civil action against the bank for defamation.

**Environmental issues and lending institutions**

Environmental law matters may arise before or after a financing decision has been made. Blay and Clark (1993) identify four areas of risk for financial institutions in the context of environmental law: regulatory compliance risk; the risk of clean-up liability; the risk of liability for compensatory damages to injured parties; and the risk of criminal liability. Given an increasing trend towards allowing environmental considerations to override commercial and business considerations, the implications of violating environmental law could be both complicated and onerous for lending institutions.

**Code of Banking Practice**

The Australian Bankers Association published the Code of Banking Practice in November 1993. The adoption of this code is voluntary, but most banks in Australia have adopted it. The objectives of the code are to foster good relations between banks and their customers, and to promote good banking practice. The code, which is monitored by the Australian Securities and Investments Commission, requires that the bank make certain disclosures to customers as set out in its various sections. The self-regulatory code sets out standards of disclosure and conduct which subscribing banks agree to observe when dealing with their customers. The standards cover matters such as the terms and conditions of bank accounts, the disclosure of fees and charges, privacy, confidentiality and how to resolve disputes.

The Australian Bankers Association (ABA) released an independent review of the code in 2002. This is the first review of the code since its publication in November 1993.
**The loan portfolio**

The creation of the loan portfolio is a key success factor for a successful financial institution. Lenders need to ensure the structure of their loan portfolio demonstrates assets with varying interest rates, cashflows and maturities—that is, a mixture of fixed, floating, interest only and at-call. The major considerations in the construction of the loan portfolio are:

- **asset mix** and loan types;
- **diversification** to ensure the management of loan runoffs and therefore protect the institution’s internal cashflows (diversification also includes industry diversification to reduce concentration risk);
- **geographic limits**, which must be within the capability of the institution and sufficiently diverse to allow a good balance of business;
- **expertise** to enter a defined market segment (a financial institution must have staff that understands the market segment, and failure to address this issue may result in an inability to generate positive income from the business);
- **policy formulation**, involving a correctly documented and articulated loan policy to ensure direction is maintained;
- **environmental issues**, focusing on economic activity, demographic information, income and spending/expense profiles;
- **a competitive environment**, which the lender recognises by giving its loan officers information about competitors and their structures, pricing policies and management (this information will allow loan officers to predict competitor reactions to initiatives);
- **delegation**, which must be clearly articulated so lending officers know the limits of sustainable activity and the likely reaction time; and
- **audit and review**, which are key success factors in providing the hindsight necessary to grow and develop corporate memory and culture.

Finally, in assessing the worth and sustainability of the loan portfolio, it must be remembered that risk is the basis of return and must be considered in the construction of the portfolio. Risk is a function of the cashflow relationship between a portfolio's assets and its liabilities; that relationship is the key to the profitability in relation to exposure of the loan book.

**THE PRINCIPLES OF CORPORATE LENDING**

There is an element of risk with every corporate loan application. Some risks are apparent at the start of the transaction, while some underlying risks may occur later and are not immediately obvious. Business development can become a key driver as long as there is a conscious acceptance of increased risk. Unfortunately, there are no rules for risk-free or trouble-free corporate lending, although adherence to well-researched principles and practice will lessen the potential for disaster and ensure, as a minimum, a disciplined approach to corporate lending growth. A successful lender is able to identify the risks involved in a lending transaction and assess those risks to decide whether they are acceptable and they contribute to statement of
financial position quality and growth. A lending officer must ensure the safety and security of the financial institutions; at the same time, he/she must manage uncertainty. The future is unknown and the risk of the portfolio needs to be managed. A safe loan book is potentially an unprofitable loan book in a corporate sense. The one unalterable rule of lending to the corporate sector is known as hurt money. This rule states that the resources of the borrower are the first tranche of funding; the lender advances funds only after the first tranche is fully committed or spent. This funding sequence ensures the borrower has an investment in the business or project and thus is committed to the success of the venture. An examination of project failures will demonstrate to the loan officer the peril incurred in ignoring this rule. There is an exception to this rule in project finance. Given such loans are large and often 100 percent debt funded, there are trade-offs. The major trade-off is that those supporting the project are well established and known companies such as BHP Billiton and Rio Tinto.

The following are the three overarching principles of corporate lending:

1. **Safety.** This principle looks at the ability to repay the loan—that is, whether acceptable security, a satisfactory financial position and essential personal elements exist.
2. **Suitability.** This principle looks at the lending policy of the institution, the purpose of the loan, the amount of the loan, the amount of hurt money (or the contribution by the borrower), and the repayment schedule.
3. **Profitability.** This principle looks at the collateral advantage to the institution and the return on investment.

By adhering to the above principles, the financial institution ensures, as far as possible, the loan is in accordance with the doctrine, can be repaid and contributes to the overall growth in line with expectations.

A corporate loan is given on the expectation of repayment in full over the agreed period of time. A wise lender, however, will ensure there are at least three ways out of a loan.

1. The only true repayment of a loan is where the borrower fully complies with the loan agreement and fully repays the loan.
2. If the loan is not repaid and is in breach of the covenants, then the lender can activate liens over physical security and initiate the recovery process.
3. If the loan defaults and the physical security is either exhausted or does not exist, then the lender targets the intangible assets of the business to realise their value.

It is important to note here that only the first way guarantees that the financial institution will recover its investment along with its return. The second and third ways may result in substantial losses if the security valuations are problematic or out of date.

**Methods of lending assessment**

There are many differing methods of assessing the extension of corporate facilities. Different lending institutions use different methods and require adherence to set criteria that reflect the corporate culture of the institution. Chief amongst these criteria are the five Cs—a method of
remembering the five key factors of loan approval—and PARSER (a made-up word that reflects a slightly different method for analysis and approval of corporate loans). It is important to realise, whatever the method chosen, that the aim is to confirm the safety, suitability and profitability of the applicant and whether the proposal fits the risk profile of the institution.

The five Cs approach seeks to direct the enquirer to the key aspects of the loan proposal. (It has several variants, including the three Cs.) The major weakness of this method is that it does not formally point the analyst to the reason for the loan.

- **Character.** The importance of assessing the character of a corporate cannot be overstated. Specific attention should be paid to the history of the company, how was it set up and by whom, the stakeholders, the organisation’s structure and accountability through the organisation. What are the products that the company manufactures or accesses? Have they changed over time? If so, what effect have the changes had on the organisation? What is the reputation of the entity? (Reputation is a significant goodwill factor in the valuation of companies. It is seen as the greatest risk faced by a modern corporate.) How does the company manage the value of its reputation and is it growing over time? What is the record of management? What is their combined expertise? Does management foster a good relationship with the financial institution? All these factors allow for detailed analysis of a potential borrower and its character. A company builds a personality over time. The question is whether the identified personality is one that the financial institution would deal with as a lender.

- **Capacity.** A lender should be interested in not just the ability of the corporation to repay a loan but also the ability of the corporation to borrow. Company records or incorporation deeds are essential to ensure the corporate entity has the ability to commit to any future transactions.

- **Collateral.** This refers to anything that is promised or deposited in support of a loan and that the lender has taken a charge over—that is, security. Security fulfils two basic needs for a lender: first, to ensure the borrower’s full commitment to the project and, second, to provide a second or third way out for the lender in time of need.

- **Conditions.** These indicate the future potential problems that may have an impact on the business. Conditions can be external (those over which the corporate has little or no control) or internal (those over which the business has full control).

- **Capital.** An indicator of financial strength, capital can be demonstrated by careful analysis of the company’s financials. The capital contribution from the corporate comes from its shareholder equity (the hurt money). In lending terms, hurt money represents the borrower’s contribution before the lender makes a contribution. Care should be taken if the tax component of the loan is necessary for approval of the facility.

The PARSER method allows a staged approach to the analysis of six areas of interest. Importantly, it identifies the purpose of the loan.

- **Personal element.** The characteristics of the corporate are analysed from a cultural and ethical viewpoint. Prime areas for consideration are the determination of the company to repay the debt, as shown by the integrity of the board/senior management and its reflection in the corporate culture. The asset position of the company and its track record in managing events for positive outcomes will demonstrate the company’s business ability in line with
### KEY TERMS

<table>
<thead>
<tr>
<th>adverse selection</th>
<th>asymmetric information</th>
<th>bill finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>business performance</td>
<td>capital</td>
<td>cash rate</td>
</tr>
<tr>
<td>cashflow budget</td>
<td>cashflow projections</td>
<td>cashflow statements</td>
</tr>
<tr>
<td>central management</td>
<td>credit assessment</td>
<td>credit rationing</td>
</tr>
<tr>
<td>credit scoring</td>
<td>credit scoring model</td>
<td>first way out</td>
</tr>
<tr>
<td>fixed rate finance</td>
<td>floating rate finance</td>
<td>fully drawn advance</td>
</tr>
<tr>
<td>garbage in, garbage out (GIGO)</td>
<td>hard information</td>
<td>indicator lending rate</td>
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<td>informationally opaque</td>
<td>key person risk</td>
<td>larger national banks</td>
</tr>
<tr>
<td>longer term solvency</td>
<td>moral hazard</td>
<td>overdraft</td>
</tr>
<tr>
<td>prime lending rate</td>
<td>residentially secured loans</td>
<td>second way out</td>
</tr>
<tr>
<td>security</td>
<td>short-term liquidity</td>
<td>small business</td>
</tr>
<tr>
<td>small proprietary company</td>
<td>smaller community banks</td>
<td>soft information</td>
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<td>soft spots</td>
<td>yield curve</td>
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</table>

### INTRODUCTION

As at the end of June 2016, there were more than two million small businesses in Australia and one is born every two minutes! More than seven million people work in small businesses and these businesses account for more than half of total non-financial business income (Simon 2015).

Despite this there is no consistent definition of what constitutes a small business in Australia. The regulators define a ‘small business’ differently depending on the laws they administer. The Australian Taxation Office (2017, p.1), for example, notes at its website that ‘from 1 July 2016, you are a small business entity if you are a sole trader, partnership, company or trust that: operates a business for all or part of the income year, and has an aggregated turnover less than $10 million (the turnover threshold)’. As per the glossary of the Fair Work Commission (2017, p.1) ‘an employer who employs fewer than 15 employees, including full-time, part-time, and regular and systematic casual employees’ is a small business employer. According to Connolly et al. (2012, p.1) the Reserve Bank of Australia ‘categorises loans as being ‘small business’ loans if the loan principal is under $2 million, or if the borrowing business is unincorporated’. According to the Australian Bureau of Statistics (ABS 2017) ‘a small business is defined as a business employing less than 20 people. Categories of small businesses include: non-employing businesses - sole proprietorships and partnerships without employees; micro businesses - businesses employing less than 5 people, including non-employing businesses; other small businesses - businesses employing 5 or more people, but less than 20 people’. 
Industry risk

The assessment of industry risk encompasses institutional framework, competitive dynamics, and governance and transparency. The institutional framework in turn is comprised of banking regulation and supervision, regulatory track record, and governance and transparency.

Competitive dynamics refers to risk appetite, industry stability, and market distortions. Risk appetite refers to the appetite for risky and complex products, such as those that banks in the US traded in prior to the GFC. Whether the competitive landscape is likely to be affected and whether there are market distortions are some of the other issues considered under the heading of industry risk.

System-wide funding risks include considerations such as: what percentage of domestic consumer loans are funded by core deposits, the degree of dependence on external borrowing, the domestic debt capital, and the role government is playing in supporting the sector.

How does the assessment of country risk help?

Banks use country risk rating for a number of purposes. In the case of capital investment projects, the discount rate is usually adjusted to capture the country risk. The higher the perceived risk, the higher the discount rate. Another use of country risk analysis is for adjusting the cashflow projections from a project accordingly, accounting for the uncertainties involved. Country risk also needs to be reviewed periodically, as it can affect existing projects, too.

After having considered the special types of risk that arise in international lending, we now turn to the lending products used by international banks.

PRODUCTS USED IN INTERNATIONAL LENDING

When providing financial services to importers or exporters, banks are involved at every stage of the transaction. There are many products that banks can offer at various stages. These can be grouped into three categories: transactions/payment-related products; short-term financing; and long-term financing. We consider each of these in turn.

Payment-related products

Five methods are generally used to settle international trade payments. These, according to Madura (2012), include the following:

Prepayment

When the importer in the foreign country is unknown to the exporter or the exporter has not dealt with the firm in the past, the exporter would usually insist on advance payment before goods are shipped to the importer. The payment is usually effected in the form of wire transfer.
assumptions. In this example, we have assumed (given lack of information, which also is not unusual) that:

- the equity on the statement of financial position is all retained earnings, and
- the equity on the statement of financial position is also the market value of equity.

We can now complete the exercise. Using the formula for Altman’s Z score, we have:

\[
Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5 \\
= 1.2(0.037) + 1.4(0.2) + 3.3(0.067) + 0.6(0.25) + 0.999(1.67) \\
= 2.36
\]

The score falls into the zone of ignorance (between 1.81 and 2.99). Depending on XYZ Bank’s tolerance in the zone of ignorance, there is a strong likelihood that you would lend to this company. If, however, you made different assumptions regarding equity (retained earnings and the market value of equity), then the Z score would most likely fall below the lower bound of 1.81.

Since the Z score was developed in 1968, there have been developments in its form:

- A private firm Z score has been developed, which takes into account that the market value of equity is not available. The major change is in \( X_5 \), where the book value of equity is directly substituted for the market value of equity.
- It has been recognised that non-manufacturing firms, without assets, are prejudiced against because assets are used in many of the ratios. Two major changes are thus made: \( X_5 \) is dropped and the book value of equity is used for \( X_4 \).
- Finally, a second generation model, known as ZETA, was developed in 1977 to account for changes in business failure. The most significant change in this model is the recognition that the size of the firm makes a difference. The general result has been that the larger the firm, the less likely it is to fail. This results occurs because smaller firms are often newer and more likely to enter bankruptcy.

While these newer models have different functional forms given their different variables, they follow the same principles. Finally, it should be noted that many other models follow the same techniques, particularly credit scoring, in assessing credit risk.

**Using stock prices**

The criticism of Altman-style models, which use financial ratios, is that they use data from financial reports. The data are thus ‘old’ and backward looking, whereas default is about looking forward to potential defaults. If we consider, however, that the market price of assets and the market value of debt are forward looking, then using this information, we may be able to calculate the default probability. This is how KMV Corporation’s expected default frequency model works, using option modelling.

The lending proposition of a bank is to lend money to an organisation that uses the funds. If the firm uses the funds well, then the value of assets will rise and the borrower will repay the loan. If, however, the funds are used badly, then the asset value will fall, the value of the asset may be
unable to repay borrowings and a default will occur. If we graph this scenario, we find Figure 11.2. (Note that there is an upper bound on returns from lending.)

**Figure 11.2 A sold put option in bank lending**

![Diagram of a sold put option in bank lending]

Those who are familiar with option modelling will see that this is a sold put option on assets where the equity value will be a function of the market value of assets and its volatility, the liabilities of the firm, interest rates and the term to maturity, in terms of option pricing. The default decision becomes an issue of how close the market value of assets is to the default point. The aim then becomes to predict the probability that asset values will fall below the default point.

If we look at the lending decision from the equity holder’s point of view, then the pay-off diagram shown in Figure 11.3 would result.

**Figure 11.3 A call option representing the equity holder’s interest in bank lending**

![Diagram of a call option representing the equity holder’s interest in bank lending]
Interpreting this graph is simple. When borrowing money, the equity holders would repay their loan if the asset value were greater than the liabilities. Again, those with a familiarity with option pricing will see that this is a call option on the assets of the company.

The difficulty with the approach is that there are two unknowns in the formulation; the market value of assets and asset volatility. If we exploit the relationship between assets and equity in the option pricing formula, as well as the volatility, then we can solve the two unknowns. The functional forms would be:

\[
\text{Price of risky debt} = \text{Option function (asset value, asset volatility, capital structure, interest rate, term to maturity)}
\]

We are assuming that the asset value and its volatility can be inferred from the option pricing model. We can now solve the two equations and find the values attached to assets and volatility.

How do we use this number? The following principles apply.

The net worth of an organisation is simply the market value of assets less than the default point. Under the popular KMV Corporation method, the default point is all the current liabilities plus half the long-term liabilities. This recognises that not all debt is due at the same time; the presence of long-term debt does provide breathing space in times of financial stress. The net worth, however, should be considered in terms of business risk. In other words, some firms can afford greater leverage (that is, risk) than others can. The market of assets magnifies the effect of the volatility on the asset size. We can, however, now calculate how far we are from default:

\[
\text{Distance of default} = \frac{(\text{Market value of assets} - \text{Default point})}{(\text{Market value of assets})(\text{Asset volatility})}
\]

This provides the distant to default, or the number of standard deviations to default. Once we have this figure, we can estimate the default probability. It is important to understand that some of this technology is proprietary to KMV Corporation, which maintains a database of 100,000 companies and 2,000 incidents of default or bankruptcy.

If our distance to default turns out to be four standard deviations, for example, then the KMV Corporation database will indicate the proportion of firms with four standard deviations distance to default that actually defaulted. This proportion is known as the expected default probability:

\[
\text{Expected default probability} = \frac{\text{Number of default firms}}{\text{All firms of sample}}
\]
The following sample estimation of default is taken from a technical document made available by KMV Corporation. There are three steps:

1. estimate the current value and volatility of the firm’s assets
2. determine how far the firm is from default (its distance from default)
3. scale the distance to default to a probability.

Consider Philip Morris Companies Inc., which at the end of April 2001 had a one-year estimated default frequency of 25 basis points (0.25 percent). The calculation made is as shown in Table 11.5.

Table 11.5 Sample calculation of estimated default frequency - Philip Morris Companies Inc.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>How calculated/Information accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market value of equity</td>
<td>$110,688 million</td>
<td>Share price (accessed from the stock market) × shares outstanding (from the annual report)</td>
</tr>
<tr>
<td>Book liabilities</td>
<td>$64,062 million</td>
<td>Statement of financial position (from the annual report)</td>
</tr>
<tr>
<td>Market value of assets</td>
<td>$170,558 million</td>
<td>Derived from the option pricing model*, as described earlier in the chapter</td>
</tr>
<tr>
<td>Asset volatility</td>
<td>21%</td>
<td>Derived from the option pricing model, as described earlier in the chapter</td>
</tr>
<tr>
<td>Default point</td>
<td>$47,499 million</td>
<td>Calculated as all short-term liabilities plus half the long-term liabilities, as described earlier in the chapter</td>
</tr>
<tr>
<td>Distance to default</td>
<td>3.5</td>
<td>Calculated from the formula using the information derived above: Distance of default = (Market value of assets – (Default point)) / (Market value of assets) (Asset volatility)</td>
</tr>
<tr>
<td>Estimated default frequency</td>
<td>25 basis points</td>
<td>Empirical mapping between distance to default and default frequency</td>
</tr>
</tbody>
</table>

* KMV uses a standard Black-Scholes option pricing model. Students wishing to examine this model should refer to a text on pricing derivatives.

Again, we note that the default probability, as in the Altman case, is independent of the loan size.

**Actuarial Approaches**

Many methodologies arise due to the limitations of prevailing methodologies. CreditRisk+ is no different. Z scores have the issue of back looking accounting figures and an assumption of KMV is dependent on the capital structure. The underlying assumption of Credit Suisse’s CreditRisk+ is that there are no assumptions on why loans default except they do.

So, CreditRisk+ model, in its simplicity predicts whether a loan defaults or not and builds a distribution around this framework. While the statistics involved in this approach are beyond
provision of microfinance (Corrie 2011, p. 1). Financial counselling involves the provision of free financial advisory services to low-income households facing financial hardship; financial education addresses the skill gap experienced by low-income households; and microfinance is meant to address the small financial needs of those who are financially excluded. In Australia, microfinance refers to a ‘set of tools, approaches and strategies addressing the needs of people who are financially excluded’ (Burkett & Sheehan 2009, p. v).

It is important to ensure that the approaches used for microfinance are appropriate to the needs of those who are underserved. As Corrie (2011, p. 2) rightly states: ‘For example, payday loans would not qualify as microfinance. Although they provide access to credit for people on limited incomes, their often higher costs can lead to hardship and further entrench a negative cycle of debt.’

Three major microfinance programs run by Good Shepherd are described below. The following material draws from the study by Corrie (2011).

**No interest loans scheme (NILS)**

This scheme was started in 1981. Under the scheme, loans of between $300 and $1,200 are available from 178 community organisation at 628 locations across Australia, with a repayment period of about 12-18 months. The loan is meant for the purchase of essential household items. No fee or interest or other charges are levied. Only people who have a health care card or a pension card are eligible under the scheme. As at the end of 2010, reportedly there were approximately 11,000 NILS loans with an outstanding total amount of $8.5 million and an average loan of $803. Twenty percent of the borrowers were Indigenous Australians, and 60 percent were women. The NILS provides a good alternative to payday loans or ‘rent to buy’ products which provide instant cash but eventually turn out to be a heavy financial burden. One needs to have a pension card or health care card and must be earning less than $45,000 per annum to be eligible for NILS. In addition the borrower needs to be at the current address for at least three months and have the capacity to repay loan. No credit check are carried out under NILS. The repayment rate is 95% to 97% and ensures circulation of funds to other needy persons. 67% of the clients are women and girls and 22% are Indigenous Australians. The Australian government provides financial support and has invested $33.3 million. The National Australia Bank is also a long standing partner in the NILS.

Good Shepherd doesn’t stop at offering NILS loans. The borrowers eventually graduate to StepUp loans.

**StepUp Loans**

StepUp loans are given in collaboration with the National Australia Bank (NAB) for purposes such as the purchase or repair of a car, the purchase of whitegoods such as refrigerators or washing machine, and for other necessities. The loan’s appraisal and creditworthiness is assessed
Be Your Own Boss
The Practical Self-Employment Handbook
Ian Birt

ABOUT THE BOOK
Whether you work for yourself or contract your skilled labour to others, Be Your Own Boss is a short, practical and valuable resource. It is ideal for tradies, contractors, repairers, freelancers, consultants, homecare providers and professionals as well as other service providers. Be Your Own Boss gives you the knowhow, techniques and tools to be successful, while keeping it simple. It covers self-employment at all stages of working life. It shows you how to:
• set yourself up in your very own business;
• keep it simple so you can focus on what is important;
• minimise the risks;
• get your product/service offering right for your customers;
• manage your finances, simply, while meeting all legal requirements; and
• prepare your retirement.
It is also an accessible and simply-written guide for students doing a trade, technical or professional course who intend to go out on their own. Be Your Own Boss: The Practical Self-Employment Handbook covers a range of skills - from time management and techniques to control stress, to goals setting and working smarter. It will also help you to keep motivated, committed and productive. This book is a realistic account of what actually happens when you want to be your own boss, and it will help you to keep it simple and be successful.

ABOUT THE AUTHOR
Ian Birt is an accountant and registered tax agent, with degrees in accounting and law. He has worked extensively in small business, and for an accounting firm specialising in small business clients. Ian has taught small business planning, financial management and taxation for many years in the vocational training system, and has written several successful books covering all aspects of small business management. Ian started out in his own small business over 35 years ago. He still operates it: doing it the right way, getting expert help when needed, and keeping it simple. He has also helped launch many successful micro-businesses.


Essential Competencies for HRM
Mike Fazey

About this book
Manage Finance and Develop Financial Plans, Fifth Edition, shows you how to control financial results effectively in a small business. To do this, you need to:
• Keep relevant records | report operating results | plan financial performance.
This book is divided into three parts. Part A, Manage Finances: Financial Records, investigates simple financial records, recordkeeping procedures and legal requirements for records. Part B, Manage Finances: Financial Reports, then examines preparing and analysing simple financial reports including income statements, cash flow statements and balance sheets. A business’s tax obligations are also addressed. Finally, Part C, Develop Financial Plans, examines profit planning, capital expenditure, budgeting, cash flow management and financing decisions. There is also a glossary at the end of the book of key recordkeeping and financial terms.
Each chapter has exercises within the text, a list of key terms, and a multiple-choice quiz. There are also assessment activities at the end of key chapters. The answers to the quizzes can be found at the end of the book.
After reading this book, you should be able to record, report on and plan financial performance to successfully run a small business.

Educational outcomes
This book covers the following national vocational training units of competency:
BSBSBM406 – Manage small business finances
BSBSBM402 – Plan small business finances
About the author
Ian Birt is an accountant and registered tax agent. He has degrees in accounting and law, as well as postgraduate diplomas in education and psychology. He has worked extensively in small business, at every level, and for an accounting firm specialising in small business clients. Ian has taught small business financial management and taxation over many years in the vocational training system, and has written several successful books covering all aspects of small business management.

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