RISK CONSIDERATIONS WITH REGARD TO MERGERS AND ACQUISITIONS IN BANKING

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Abstract

Only a few of all the bank mergers and acquisitions that have been attempted recently, have realised. The reason for this is that general merger and acquisition principles are used, while restructuring in the banking sector must be treated as a special case. This is because of the regulatory framework that prevails in banks, but more importantly, because of the particular way in which strategic risk management is practised in banks. The general merger and acquisition principles, applicable to corporates, must thus be integrated into this regulatory and strategic risk management framework, to make it possible to consider a bank merger or acquisition decision from a strategic risk management viewpoint. The Asset and Liability Committee (ALCO) process can be seen as the strategic risk management process in banks. It is thus important to determine whether the strategic management process, as conducted through the ALCO processes of the relevant banks, is reconcilable and whether it can be combined into a new strategic management and strategic risk management process, in order for an acquisition to be planned and executed successfully. It is also important to consider cultural issues, because this helps in giving the bank a sense of direction.

Opsomming

Slegs 'n paar van die samesmeltings en oornames tussen banke, wat onlangs onderneem is het gerealiseer. Die rede hiervoor is dat algemene beginsels vir samesmeltings en oornames gebruik word, terwyl herstrukturering in die banksektor as 'n spesiale geval hanteer moet. Dit is as gevolg van die regulatoriese raamwerk wat geld in banke, maar meer belangrik, as gevolg van die manier waarop strategiese risikobestuurs in banke toegepas word. Die algemene beginsels vir samesmeltings en oornames, soos van toepassing op maatskappye, moet dus geintegreer word met die regulatoriese en strategiese risikobestuurs raamwerk, om dit moontlik te maak om samesmelting en oornames tussen banke vanuit 'n strategiese risikobestuurs oogpunt te oorweeg. Die bate en laste bestuurskomite (BELKOM) kan as die strategiese risikobestuurs prose in banke gesien word. Dit is dus belangrik om te bepaal of die strategiese bestuursproses, soos uitgevoer deur die BELKOM prosesse van die relevante banke, versoenbaar is en of dit gekombineer kan word na 'n nuwe strategiese bestuur en strategiese risikobestuursproses, sodat samesmeltings en oornames suksesvol beplan en uitgevoer kan word. Dit is ook belangrik om kulturele sake te oorweeg, omdat dit help om die bank in 'n sekere rigting in te stuur.

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CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Financial services, including banks, are a vibrant sector of the South African economy. This sector contributes approximately 16% to the GDP and employs approximately 221 000 people. The market capitalisation of financial services companies listed on the Johannesburg Stock Exchange is more than 30% of the total market capitalisation, making it one of the dominant sectors on the Exchange (Butler, 1999:2).

Over the past decade, the banking industry has experienced an unprecedented level of consolidation as mergers and acquisitions among large banks have taken place at record levels (Piloff & Santomero, 1996:4). The consolidation trend currently occurs world-wide. It has started in the United States where a series of mega-mergers have taken place, but the focus shifted to Europe because banks moved to position themselves for the single-currency market created by the introduction of the Euro. There has also been action in Japan in response to the deregulation of the financial services market (Joffe, 2000:51). In South Africa, the number and value of mergers, acquisitions and corporate restructuring has grown significantly in the last decade due to factors such as globalisation, deregulation, increasing competition and black economic empowerment (Correia et al., 2000:638). Despite the continued pace of merger and acquisition activity, new deals are met with increasing scepticism among investors. The reason for this is that many mergers and acquisitions have simply not delivered the benefits that were promised (Marcus, 2000:11). This makes bank managers and directors afraid of attempting or concluding mergers or acquisitions before careful consideration.

It is important to identify the causes (see 2.6) and consequences of mergers and acquisitions over time because companies intend to increase shareholder value through the outcomes of mergers and acquisitions. The following merger and acquisition waves together with their causes and consequences can be identified (Katz & Simanek, 1997:3-6):

1.1.1 THE 1960s AND 1970s: PORTFOLIO MANAGEMENT

A typical acquisition in the 1960s was that of a larger company acquiring a smaller one outside its main line of business. The terms were friendly and the deal was usually based on equity (shares). The results of these deals were generally disastrous because of illusions of financial and managerial synergy, and because the achievement of true competitive advantage through portfolio management proved much more difficult in practice than in theory.

Conglomerates did not perform poorly until the 1970s, when the economic boom ended and a profitless recession began. Towards the end of the decade, many conglomerates could be acquired at a discount and owners and managers realised that a whole company was worth less than the sum of its parts. Financial synergies and general management skills proved to be insufficient foundations for creating value when efficient capital markets and a developed pool of management talent existed. Industry structure also received too little attention as a criterion for choosing target companies and conglomerate diversification resulted in several kinds of wasteful behaviour on the part of managers. Companies were also so diversely owned that managers, rather than owners, controlled the resources.

1.1.2 THE 1980s: RESTRUCTURING

Compared to the 1960s and 1970s, the size of the average merger or acquisition target increased during the 1980s. Cash, derived through bond sales rather than equity issues, became the medium of exchange. Transactions were more often within related industries or lines of business and mergers and acquisitions within the same industry caused widespread restructuring, which generally resulted in poor portfolio management. One explanation for this restructuring is the Inefficient Management Theory, which proposes that if a company's management is inefficient and is not replaced quickly, the acquiring company's management will bring new efficiency and profitability.

The most successful transactions during the 1980s where those in which a conglomerate were acquired and sold piece by piece to the highest bidder. Opinions regarding the overall economic benefit of these corporate raiders are mixed. It can be argued that if divestiture is the eventual goal, there is a strong argument for staying apart. On the other hand, some companies had untapped value that could be served through divestiture.

"Debtism" was another consequence of restructuring. This resulted in highly leveraged companies having to cut back real investment to service their debt. This became a big problem for companies facing growth prospects in uncertain economies. In stable economic conditions, debt might be a better way of financing mergers and acquisitions because it tends to discourage financial waste in companies with large cash flows but low or negative growth prospects. Debt, therefore, tends to mitigate the ineffective merger or acquisition because when the discretionary cash available to managers for spending lavishly is smaller, managers are more motivated to be efficient.

1.1.3 THE 1990s: TRANSFER OF SKILLS AND SHARING ACTIVITIES

In the 1990s companies realised that they had to manage not only businesses but a portfolio of resources and skills as well. The main reason for mergers and acquisitions in this wave was the achievement of operational synergy, by means of, for example, economies of scale[2], economies of scope[3], and intra-industry mergers and acquisitions[4].

Merger and acquisition activity that results in skills transfer and shared activities should add value to the company. Such activity should contribute to the company's competitive advantage through economies of scale and scope in tangible and intangible areas.

The two features that stand out in the *current wave* of merger and acquisition activity are that it is a global phenomenon and it is occurring across many industries, with the major motives to raise efficiency and cut costs (Falkena & Llewellyn, 1999:98).

2.Economies of scale is the competitive advantage that results from operational efficiency achieved primarily through resource attainment. According to this notion, common activities enable companies to achieve the effects of scale, which lowers cost of production, advertising, distribution and research and development. The greater the activity, the less the cost per unit (Katz & Simanek, 1997:4).

3. Economies of scope are the competitive advantage that results from the transfer of a particular skill, such as technology or knowledge of markets. According to Strategic Management Theory, companies are able to transfer certain skills and capabilities among themselves at a lower cost than if they had to build them on their own (Katz & Simanek, 1997:4).

4. Intra-industry mergers and acquisitions pertain to the interest in absorbing competitors within industries. The resulting increase in market power has given companies greater influence on prices, quantity and quality of products, and increasing concentration can be interpreted as a quest for monopoly power (Katz & Simanek, 1997:5).

1.2 MOTIVATION

Although the merger and acquisition trend is set to continue, bank mergers are complicated and it can be evidenced that they fail as often as they succeed. Research found that, internationally, of the 41 bank mergers that took place between 1990 and 1995, only 44% have resulted in improved shareholder performance relative to their peer group. Bankers Magazine also estimated that as many as 85% of all mergers fail to fulfil their long-term promises of financial improvement (Joffe, 2000:53).

South Africa's banking scene has been relatively unaffected by global trends until after the transition to democracy in 1994, when foreign players started entering. South Africa, however, has a bad record of bank mergers and acquisitions. The ABSA merger process was disastrous for staff morale, resulting in significant losses of skilled people and customers. The merging of the computer systems of the four banks involved (Allied, United, Volkskas and Trust Bank) took five years longer than planned and cost an estimated R1,5 billion more than expected. It also took quite some time before the merged group settled and began to catch up with its competitors in terms of costs, capital and profitability (Joffe, 2000:45).

The bancassurance merger which created FirstRand (two life assurers, Momentum and Southern, and two banks, First National Bank and Rand Merchant Bank) has apparently gone more smoothly, though insiders concede that it has been tougher and more costly, and has lasted longer, than expected (Joffe, 2000:54).

It is clear that mergers and acquisitions in the banking sector do not always create the value expected from them. According to Barfield (1998:24) this value destruction may be due to, amongst others, unrealistic assessment of opportunities, illusory synergy, sluggish integration and cultural differences. Koch (1995: 871-872) makes the statement that before a deal takes place, it is

necessary that buyers and sellers examine a variety of financial considerations to assist them in the decision on whether or not to negotiate a deal and if so, at what price. Non-financial issues, for example culture, must also be considered when negotiating a merger or acquisition as mergers generally have both beneficial and detrimental aspects, depending on how stockbrokers, bank employees or bank customers view transactions.

The proposed Nedcor-Stanbic merger has not realised at all. After nine months of government dithering the merger was blocked on 26 June 2000 by the Minister of Finances, on the grounds that it would reduce competition in banking and cost too many jobs (Deloitte and Touche, 2000).

1.3 PROBLEM STATEMENT

Only a few of all the bank mergers and acquisitions that have been attempted, have become a reality. The reason for this is that general merger and acquisition principles are used, while restructuring in the banking sector must be treated as a special case, because of a regulatory framework that prevails in banks, but more importantly, because of the particular way in which strategic risk management is practised in banks.

1.4 OBJECTIVES OF THE STUDY

The general merger and acquisition principles applicable to corporates will be integrated into the regulatory and strategic risk management framework of banks, to make it possible to consider a bank merger or acquisition decision from a strategic risk management viewpoint. It is thus important to determine whether the strategic risk management process, as conducted through the asset- and liability committee (ALCO) processes of the relevant banks, is reconcilable and whether it can be combined into a new strategic management and strategic risk

management process, in order for a merger or acquisition to be planned and executed successfully.

1.5 RESEARCH METHODOLOGY

This research will rely on literature from books, journals and other research material and will be done from a strategic risk management viewpoint. Literature databases will be used to obtain some of the journal articles. Because of this, the page numbers cited for the "full text" journal articles will differ from the exact page numbers in the relevant journal or of the article in PDF format.

1.6 EXPOSITION OF CHAPTERS

Although many research papers have already been written on mergers and acquisitions, very few of them refer to banking-related aspects. The research conducted will be discussed in the following chapters:

Chapter 2 deals with the general merger and acquisition principles as well as the role of culture in mergers and acquisitions.
Chapter 3 looks at strategic risk management in banks by means of the ALCO process and also analyses important regulatory aspects in banks.
Chapter 4 analyses the risk management framework that prevails in banks, with specific reference to the definitions, measurement and management of bank risks.
Chapter 5 is an application of the theory as described in chapters 2, 3 and 4 for mergers and acquisitions in banking.
The last chapter will reflect the conclusions drawn during the study and recommendations for further studies will be made.

CHAPTER 2: THE THEORY OF MERGERS AND ACQUISITIONS

2.1 INTRODUCTION

The scale and pace of corporate restructuring in South Africa has grown significantly in the last decade. According to Kaen (1995:860) an investment decision about buying another company or attempting to acquire another company is very important because such a decision affects the lives of many individuals and communities and it represents substantial changes in the organisational structure of the companies involved, which affect economic efficiency and industry competition.

The main aim of this chapter is to give a general theoretical description of mergers and acquisitions as described in literature. Descriptions of the different types of mergers and acquisitions as well as the legal forms of acquisitions and the differences between hostile and friendly acquisitions are explained first. The most important part of this chapter provides an overview of the reasons and side-effects of mergers and acquisitions, as well as of valuation techniques that may be used to determine the success of a merger or acquisition.

At the end of this chapter the most likely results from mergers and acquisitions are analysed to show which parties are most likely to benefit from corporate restructuring, and the role of corporate culture in mergers and acquisitions is explained. As outlined in chapter one, this chapter describes mergers and acquisitions in general terms. In chapter 5 the application in the case of banks will be discussed as a special case of the general theory.

2.2 TYPES OF MERGERS AND ACQUISITIONS

Depending on the relationship between the industries that the acquiring company and the target (acquired) company operate in respectively, mergers and acquisitions can be divided into three broad categories:

2.2.1 HORIZONTAL MERGERS OR ACQUISITIONS

These mergers result when two companies in the same industry merge (Correia et al., 2000:614), or it can be defined as the acquisition of a company in the same industry as the acquirer (Ross et al., 1993:756). Horizontal mergers or acquisitions can be targets of concern by governments because of the implications for competition (Jones, 1992:625) and they are used to adjust industry capacity to prospective sales levels, for example where industry shocks have been strongest, merger and acquisition activities have been highest (Weston & Jawien, 1999:29). The merger between Volkskas, Allied, United, and Trust Bank that formed ABSA constituted a horizontal merger.

2.2.2 VERTICAL MERGERS OR ACQUISITIONS

A vertical merger or acquisition involves companies that are engaged in the different stages of production of the same type of product (Schall & Haley, 1991:809). These mergers or acquisitions occur when a company either expands forward to the customer or expands backwards to the raw material supplier (Correia et al., 2000:614). A buyer-seller relationship will thus usually exist between the companies, because one company's output is the other one's input (Jones, 1992:625). A merger or acquisition between a computer manufacturer and a computer-retailing company is an example of a vertical merger or acquisition.

2.2.3 CONGLOMERATE MERGERS OR ACQUISITIONS

When the acquiring company and the target company are not in related business lines, the merger or acquisition is classified as a conglomerate merger or acquisition (Diacogiannis, 1994:658). The companies are thus not competitors with each other (Jones, 1992: 625). The combination of South African Breweries with Edgars can be classified as a conglomerate merger (Correia et al., 2000:614).

Once the relationship between the industries is determined, the acquiring company must decide whether it will be best to acquire the target company by means of a merger or consolidation, or whether shares or cash or a combination of shares and cash must be offered.

2.3 THE LEGAL FORMS OF ACQUISITIONS

According to Ross et al. (1993:754) there are three basic legal procedures that a company can use to obtain another company:

- Merger or consolidation;
- Acquisition of shares; and
- Acquisition of assets.

These procedures will be discussed subsequently.

2.3.1 MERGER OR CONSOLIDATION

A *merger* refers to the partial or complete absorption of one company by another, where the acquiring company retains its name and identity, and it acquires all or a part of the assets and liabilities of the target company. After the merger the target company ceases to exist as a separate business entity (Ross et al.,

1993:755) but shareholders and directors of both companies will continue to have an interest in the combined company (Samuels et al., 1999:505). A *consolidation*, on the other hand, means to combine two or more companies into an entirely new company with a different capital structure (Gilman & Chan, 1990:26). None of the consolidating companies legally survive and there is no designation of buyer and seller (Jones, 1992:624). A consolidation would usually be utilised when the companies are of equal size and market power (Block & Hirt, 1992:588).

There are some advantages and some disadvantages to using a merger or consolidation to acquire a company (Ross et al., 1993:755):

- A primary advantage is that a merger or consolidation is legally simple and does not cost as much as other forms of acquisition because the companies simply agree to combine their entire operations; and
- A primary disadvantage is that a merger or consolidation must be approved by a vote of the shareholders of each company. Approximately two thirds or even more of the share votes are required for approval and the obtaining of the necessary votes can be time-consuming and difficult. The co-operation of the target company's existing management is also a necessity for a merger and this may not be easily or cheaply obtained.

2.3.2 ACQUISITION OF SHARES

A second way to acquire another company is to purchase the company's voting shares in exchange for cash, shares of stock, other securities, or a combination of all or some of the aforementioned. This process often starts as a *private offer* from the management of one company to the other. At some point this offer is taken directly to the target company's (offeree's) shareholders by means of a *tender offer* (Ross et al., 1993:755).

If a shareholder chooses to accept the offer, then that shareholder tenders his/her shares by exchanging them for cash or securities (or both), depending on the offer. If enough shares are not tendered the offer might be withdrawn or reformulated (Ross et al., 1996: 576-577). The usual features of a tender offer are (Gilman & Chan, 1990:27):

- The tender offer is made in newspapers;
- The offering price sometimes substantially exceeds the current market price of the target company's common stock;
- The offer must be accepted by a certain specified date; and
- The acquiring company reserves the right to withdraw the offer if a specific number of shares are not tendered. If more than the specified number of shares are tendered, the acquiring company may reserve the right to reject such excess shares.

When an acquiring company purchases the shares of another company, the latter will be combined into the acquiring company and the company that is acquired ceases to exist, and the surviving company assumes all its assets and liabilities (Van Horne, 1995:650).

The following factors are involved in choosing between an acquisition by shares and a merger (Ross et al., 1993:755-756):

- In an acquisition by shares, no shareholder meetings have to be held and no vote is required. If the shareholders of the target company do not like the offer, they are not required to accept it and need not tender their shares;
- In an acquisition by shares, the acquiring (bidding) company can deal directly with the shareholders of the target company by using a tender offer. The target company's management and board of directors can thus be bypassed;

- Acquisition by shares is occasionally unfriendly. Resistance by the target company's management often makes the cost of acquisition by shares higher than the cost of a merger;
- Complete absorption of one company by another requires a merger. Many acquisitions by shares end up with a formal merger later; and
- It is possible that a significant minority of shareholders will hold out in a tender offer. The target company cannot be completely absorbed when this happens and this may delay the realisation of merger benefits or otherwise be costly.

2.3.3 ACQUISITION OF ASSETS

In an asset acquisition the acquiring company may purchase all or a portion of the assets of another company and pay for them in cash or with its own shares. Frequently the buyer acquires only the assets of the other company and does not assume its liabilities. If all the assets are purchased, the acquired company can be referred to as a corporate shell, because after the sale its assets are composed entirely of cash or the shares of the acquiring company (Van Horne, 1995:650).

A purchase of assets is easier to effect than a purchase of shares (Van Horne, 1995:650). From the acquiring company's perspective, there are several advantages to this purchase arrangement (Rao, 1989:694):

- The acquiring company can buy certain assets but not others. Only a proportion of the target company is thus bought;
- The acquiring company can avoid hidden or contingent liabilities of the target that would become its liabilities if the target were acquired outright; and
- It is easier to negotiate such a purchase since only the board of directors need to agree the deal. There are thus no minority shareholders holding out.

From the perspective of the target company, there is an element of flexibility, because the consideration paid to the target in exchange for assets, whether cash or securities, may be used for reinvestment purposes or distributed to the target's shareholders as a dividend (Rao, 1989:695). However, the target company needs the approval of its shareholders before such restructuring can take place (Van Horne, 1995:650).

While a friendly merger or acquisition may be accomplished by the purchase (acquisition) of the target company's assets or shares, an unfriendly (hostile) merger or acquisition can be effected via a tender offer or a proxy fight (Rao, 1989:701). The difference between friendly and hostile mergers and acquisitions will be discussed in the next section.

2.4 FRIENDLY AND HOSTILE MERGERS AND ACQUISITIONS

2.4.1 FRIENDLY MERGERS AND ACQUISITIONS

In a friendly merger or acquisition, the company that decided to buy another company will usually initiate negotiations and will offer cash, shares or other securities to the targeted company's shareholders. After a merger agreement (price) has been worked out by the companies' management, the agreement must be approved by the companies' board of directors. For the combination to proceed, approval must be secured from the shareholders of both companies. Following this and the filing of any papers with the governments of the states in which the companies are domiciled, the exchange for cash, shares or other securities will be made and the acquisition or merger will be consummated (Schall & Haley, 1991:810).

2.4.2 HOSTILE MERGERS AND ACQUISITIONS

The target company's management can reject the merger or acquisition bid. The following can be seen as grounds for this rejection (Gilman & Chan, 1990:32):

- The price is inadequate;
- The offer is poorly timed, because financial factors and share prices are expected to improve in the future;
- The merger may be illegal;
- There will be adverse affects on employees, the environment or other constituencies;
- There is reason to believe that the merger is not possible to consummate;
- All shareholders will not be provided for equally; and
- In an exchange for securities, the quality of such securities may be in question.

Because of this rejection the merger or acquisition bid is said to be hostile and the acquiring company will present its offer directly to the shareholders of the target company. This is called a *tender offer* (see 2.3.2).

In a *proxy fight*, the acquiring company's management approaches the target company's shareholders and request the right to vote their shares at the next shareholders meeting and if the purchaser garners this right, it can oust the target's hostile directors and elect directors more receptive to a negotiated merger (Rao, 1989:695-696).

Merger and acquisition activity, especially hostile acquisitions, have created a new and unique language and potential target companies can employ many defences to prevent a hostile acquisition.

2.5 ACQUISITION DEFENCES

Regardless of potential synergies represented by an acquisition, not all directors and shareholders want their companies to be acquired. Reasons for this may be inter alia that a director's job may be threatened if the acquisition is successful and that the majority shareholders may lose control after an acquisition (Cooley,

1994:812). Acquisitions can also consume large amounts of time, cash and corporate resources (Levy & Sarnat, 1994:694).

According to Miller (1995:2-3) a company can prevent a hostile acquisition bid from being made to them by giving attention to the following precautions:

2.5.1.1 Understanding the environment

Threat assessments are the key to being prepared. Companies must have a thorough knowledge of who might possibly be girding for an attack on them, and when. Companies that report their results in foreign currencies can be seen as a possible source of danger as, for example, a South African company may look fairly priced, compared with domestic competitors, but it may be looking cheaper and cheaper in terms of deutsche marks, francs, or sterling.

2.5.1.2 Benchmarking

In making a company acquisition proof, managers must start by looking at the company the way that a buyer would. This involves benchmarking the company against certain important financial measures, such as stock market valuation, margins and returns on capital relative to competitors.

2.5.1.3 Leader confidentiality

When it comes to corporate control, a leader's image in the press is an important reality. If a CEO is for example perceived as weak or vulnerable, rumours may start and before long, without anything new happening, people may start saying that the company is in play. If a company is mentioned to be an acquisition target, the company must not let the rumour go unanswered. The reply need not be direct and could only be a news article conveying a sense of corporate purpose.

2.5.1.4 Be ready at any time

Executive teams must consider how their corporate governance mechanisms will work in the heat of a hostile acquisition. A legal review of the company's articles of incorporation and bylaws must be undertaken. They can be strengthened by making it difficult for a raider to seize control of the board of directors. In addition, a poison pill (see 2.5.2.3) can also be put in to assure that the board retains some control should a raid materialise.

If a hostile acquisition bid is made to a company despite its taking the above-mentioned precautions, acquisition defences must be formulated. Chadwick and Kirby (1995:155) state that the board of directors must protect the interests of the shareholders at all times during the formulation of acquisition defences. It is thus important for the board to maintain good relations with its shareholders and to protect the company's public image. The board should also ensure that adverse trends do not develop and that the share price is a fair reflection of its true value. According to Duggal and Millar (1994:393-394) acquisition defences differ in terms of their impact on acquisition probability and shareholder wealth. Milder defences are likely to be employed by managers to generate more lucrative bids, may mimic the outcome sought by the bidder and may be in the shareholders' interest. On the other hand, some defences may serve only to entrench management at the shareholders' expense. The defences are subsequently discussed.

2.5.2.1 Referral to the Monopolies Commission

It is generally believed that if the target company can have the acquisition bid referred to the Monopolies Commission it either means that the bid immediately dies, as the predator will withdraw it, or there will be a delay while the Commission listens to all arguments (Samuels et al., 1999:518).

2.5.2.2 White knights

According to Levy and Sarnat (1994:695) a white knight can be defined as a merger partner solicited by the management of the target company, who offers an alternative merger plan to that offered by the raider (company attempting the acquisition). This tactic is to be adopted only as a last resort, for it means that the company is being taken over, but that the directors have decided that they would rather be working within one group than another (Samuels et al., 1999:518). This is thus a match that has been planned as a contingency, but is deemed to be preferable to a hostile acquisition (Tascsarella, 1998). However, this tactic also involves risk, because some white knights have turned out to be less chivalrous after the merger than the target anticipated (Pinches, 1992:729).

Tobin's q, that is, the ratio of the market value of a company's assets to the replacement cost of those assets, can be used as a method for measuring managerial efficiency in examining returns to bidders and targets, and it is computed for the year before the acquisition (Carroll et al., 1998:47). If $q>1$, the value of the company exceeds the current cost of the assets necessary to generate the cash flow, and the net present value (NPV) will be positive. If $q<1$, the company has current projects and future growth opportunities, and the NPV will be negative. The capital-at-risk (CAR) for the company indicates the efficiency of the decision to bid on the target. Thus, companies with q's greater than one are more likely to have positive abnormal returns, than those with q's less than one. White knights have negative CARs regardless of q, but those with q greater than one have CARs that are less negative (Carroll et al., 1998:47-49).

White knight management can be inefficient, in the sense that it might not consistently make decisions that are in the shareholder's interest. The reason for this may be that the white knight's compensation packages have a lower percentage of options and stock appreciation rights than do those of hostile bidders. If Tobin's q indicates that white knight management has made

investment decisions that enhance shareholder value, then the bid for the target is an aberration in an otherwise consistent record of making positive NPV decisions. On the other hand, if Tobin's q indicates that white knight management is inefficient, in the sense that it has historically operated inefficiently, then the bid for the target is part of a pattern of bad investment decisions. This defines inefficient management as management that has made negative NPV decisions (over invested) and is indicated by a q ratio of less than one (Carroll et al., 1998:47).

2.5.2.3 Poison pills

The poison pill is one of the most innovative and effective defensive weapons against a hostile acquisition (Fuchs, 1990:1). The term poison pill refers to an acquirer finding itself having to pay the costs of a rival bidder. With this approach a company takes steps before an acquisition has been made to make itself less attractive to a potential bidder (Samuels et al., 1999:518).

Tactics can include borrowing on terms that require immediate repayment of all loans if the company is acquired, selling off at bargain prices the assets that originally made the company a desirable target, and granting golden parachutes (see 2.5.2.5) to the executives, so that the cash drain from these payments would render the merger unfeasible (Brigham & Gapenski, 1990:865). One of the most popular tactics known allows the management of an acquisition target to dilute a company's stock by issuing new shares. This buys the target time, perhaps to come up with alternative plans or to find a white knight (Tascarella, 1998:2) as described in 2.5.2.2.

Poison pills typically contain both "flip-in" and "flip-over" provisions. A "flip-in" provision provides that when a person or group obtains a certain threshold percentage ownership of the target, shareholders receive the right to buy ordinary shares in the target. The acquirer can then not exercise the option because its rights become void. A "flip-over" provision provides for the acquirer to

get a controlling block and then to attempt a second step merger. In this case the target shareholders will receive the right to purchase shares of the acquirer (Garms, 1999:3).

A new poison pill reform proposal has been developed as poison pills can eviscerate the property rights of shareholders. This proposal will be submitted via binding resolutions to shareholders at the annual meeting of selected companies whose poison pills expire during the relevant year. This proposal would prohibit the board from renewing the company's poison pill without shareholder approval. The new pill would also include a provision that would require companies to put an acquisition offer to a shareholder vote and not simply reject it (Feinberg, 1998:1).

Supporters of poison pill plans believe that these plans may give directors the additional bargaining power needed to force the acquirer to pay a higher premium for the stock (Fuchs, 1990:5) so that shareholder wealth can be maximised (Aboumeri & Hayden, 1998:2). That premium would not otherwise be negotiable, because shareholders are, customarily, widely dispersed and therefore unable to bargain collectively. Poison pill critics, on the other side, argue that this technique entrenches management and is adopted by a captive board of directors (Fuchs, 19905-6). Poison pills usually also raise the potential cost of an acquisition to two or three times what it would have been otherwise (Pinches, 1992:728).

2.5.2.4 Crown jewels

This can be defined as the most valued assets held by an acquisition target (Levy & Sarnat, 1994:695). Certain highly valued assets of a company can be sold off subject to an acquisition bid. The intention with this is that the target company without the crown jewels will be less attractive to the acquiring company. A variation on this approach is that, once it knows that it is being bid

for, a company purchases assets that it knows the bidder will not want (Samuels et al., 1999:518).

2.5.2.5 Golden parachutes

These are management contracts whereby top executives are to receive substantial cash and/or other benefits in the event of an unfriendly acquisition or their dismissal after an acquisition (Gilman & Chan, 1990:29). The golden parachute rules apply to payments in the nature of compensation to a disqualified individual[1], if such payments are contingent (O'Connell & Frank, 1999:2):

- On a change in ownership or effective control of a company; or
- In the ownership of a substantial portion of a company's assets.

Payments are in the nature of compensation if they arise out of an employment relationship or are associated with the performance of services. These payments generally include wages, bonuses, severance pay, fringe benefits, pension benefits and other deferred compensation. Certain payments are exempt from the golden parachute rules, even if they would otherwise be considered in the nature of compensation. These include payments from qualified plans and certain payments of reasonable compensation (O'Connell & Frank, 1999:2).

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1. According to O'Connell and Frank (1999:2) a disqualified individual is any employee or independent contractor of a company who, during the 12-month period immediately preceding the date of change in control of the company, was a shareholder, an officer (administrative executive who is in regular and continued service) or a highly compensated individual (an individual who is a member of the group consisting of the highest paid one percent of the employees of a company).

A board of directors without the approval of the shareholders can establish golden parachutes. The principal argument in favour of golden parachutes is that executives will not be at the financial mercy of the would-be-acquirer. Instead they will be able to weigh an offer strictly on its merits to the shareholders (see 5.3). Shareholders may benefit because golden parachutes enable companies to hire and retain good managers by providing a safety net for a manager that could be fired subsequent to an acquisition (Davidson et al., 1998:2). The drawbacks of golden parachutes is that severance contracts can be awarded to a substantial number of managers beyond the necessary key executives that are needed to make the decision to accept the acquisition bid, and overcompensation can also occur (Davidson et al., 1998:9). Golden parachutes make the defeat in the acquisition less painful for the victim company's executives, but it also makes it more expensive for the bidding company to make the acquisition (Samuels et al., 1999:519).

2.5.2.6 Greenmail and arbitrageurs

Greenmail can be defined as the activity where an unfriendly bidder has purchased a significant stake in a target company. To get rid of the unwanted suitor, the target company buys back the common shares at a premium over its current market value. As part of the deal the suitor agrees not to purchase any new shares in the target for some specific period of time (Pinches, 1992:728).

Arbitrageurs are investors who speculate on acquisitions and mergers. They will purchase shares in companies that they expect to be the subject of an acquisition bid, as they know that the share price of such companies will increase. When the bid materialises the shares will rise in value and they can sell at a profit. Arbitrageurs can have an important influence on the outcome of a bid as the block of shares that they hold in a company that is the subject of a bid can take on a crucial importance. If they sell to the predator the bid can succeed, but

if they hold and sell to someone other than the predator the bid can fail (Samuels et al., 1999:519).

2.5.2.7 Pac-Man defence

In this strategy a company that is involved in a hostile acquisition attempt by another company may counter the tender offer by making a bid on the acquiring company (Gilman & Chan, 1990:32).

2.5.2.8 Producing a revised profit forecast

This defensive technique can be used to produce profit forecasts that indicate that the future will be better than investors in the market place have expected. If the market accepts these forecasts as realistic, this will naturally force up the price of the target company's shares and make the offer price relatively less attractive. These higher profit figures can for example be achieved by improved efficiency or changed methods of accounting (Samuels et al., 1999:519).

2.5.2.9 Leveraged buyouts (LBO)

A leveraged[2] buyout is an acquisition tool by which a group of investors use the assets and cash flow of a target company to obtain financing to buy a controlling stake (at least 51%) in the company's shares (Anon, 1997:1).

The debt will usually be serviced with funds generated by the target company's operations or by the sale of some of its assets. The acquiring group plans to run the target company for a number of years, boost its sales and profits, and then take it public again as a stronger company (Brigham & Gapenski, 1990:874).

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2. The term leverage refers to the ratio of debt to equity. Thus, a highly leveraged acquisition is financed with considerably more debt than equity, offering the prospect of a high return for little investment (Anon, 1997:1).

The acquiring group expects to make a substantial profit form the LBO, but there are inherent risks in the use of financial leverage (Brigham & Gapenski, 1990:874).

The LBO financing decision involves a trade-off between leverage-related costs and leverage-related benefits, from the perspective of the buyout group. The costs include the agency costs of high levels of debt financing and the direct and indirect costs of possible bankruptcy. The benefits encompass the motivating and disciplining effect of debt on management and the value of the tax shields provided by the debt (Roden & Lewellen, 1995:2).

According to Anon (1997:2) the advantages of leverage buyouts are as follows:

- Shareholders are often the winners in leveraged buyouts as shares usually increase in value during a hostile acquisition. To entice shareholders to sell their shares, both parties offer to buy them at a premium above market value. These bidding wars hinder unwelcome acquisitions by raising the costs of the acquisition;
- Leveraged buyouts can bring big returns on an investment for a highly leveraged deal; and
- The management of a company often gains an ownership stake in the company once a leveraged buyout is completed.

According to Anon (1997:2) the weaknesses of leveraged buyouts are as follows:

- A company might have to sell off essential assets to meet loan-repayment obligations made during a leveraged buyout;
- A leveraged buyout may restrict the future borrowing ability of a company; and

- Following a leveraged buyout, the debt to equity ratio on the balance sheet leaves little room for an extended hiccup in earnings or other financial shortcomings.

2.5.2.10 Employee stock ownership plans (ESOPs)

This tactic can be used as a means of placing shares in friendly hands. The concerned company will for example borrow funds from a bank, insurance company or other financial company. The proceeds of the loan are then used to buy the company's own shares, which are put in a trust for eventual purchase by the employees. The shares purchased are in fact used as a security for the loan, as the money collected from the employees can be used to repay the loan (Samuels et al., 1999:519-520).

When a company decides to introduce an ESOP, the following plan design issues must be addressed (Nirtaut, 1990:2-3):

- Eligibility: Generally, the maximum waiting period allowed by law for employees to become eligible to participate in the plan is one year of service. The eligibility dates of the company's other qualified plans (for example, pension and savings plans) and other factors, such as level of turnover and expense control, should be taken into consideration when this decision is made;
- Vesting: Vesting alternatives range from immediate vesting to some form of step vesting, such as 20% for each year of service or plan participation. If vesting is not immediate, automatic vesting is usually granted in the case of an employee's retirement, death or disability;
- Forfeitures: If the plan does not provide for immediate vesting, provision must be made for the way that participant forfeitures will be handled. A company can either use the forfeitures to offset expenses of the plan (for example, to

pay interest on the loan) or reallocate the forfeited amounts to plan participants;

- Dividends: The company may use dividends on the shares allocated to employee accounts to reduce the plan's cost. Another option is to give the dividends to participants, which can be done in one of two ways. They may be: allocated to the employee accounts or
  distributed to employees in cash.
  Allocating dividends to employee accounts provides the advantage of tax deferral of income for participants and the additional opportunity for their accounts to grow. On the other hand, while distributing the dividends in cash does not result in deferral of taxes, it does provide employees with a regular reminder of the plan and the company with a current tax deduction; and
- Allocation of company contributions: The most common approach to allocating company contributions to employee accounts is to base the allocation on the ratio of each employee's compensation to the compensation of all eligible employees. The key element here is how compensation is defined. In making this decision, administrators must consider that there is a legal limit on the amount of the employees' compensation that may be taken into account in computing deductions for qualified plan contributions. Also, ESOPs may be subject to a discrimination test that dictates that no more than one-third of an allocation may go to highly compensated employees. The ability to pass this discrimination test depends on salary distribution within the company.

Many more issues must also be resolved in designing an ESOP. Making design decisions will be made easier if the factors listed below are taken into consideration (Nirtaut, 1990:3):

- Objective of the ESOP: The reason or purpose for implementing the ESOP should influence design decisions. Typical objectives include enhancement of employee benefit plans or a defence against acquisitions; and

- Consistency of plan design: When making plan design decisions, the company's other qualified benefit plans should be taken into consideration. In most cases, it is preferable to keep the provisions of the various benefit plans consistent.

ESOPs are designed to give lower-level employees an ownership stake in the company (Brigham & Gapenski, 1990:866). Another advantage of ESOPs is that funds can be borrowed at a rate lower than the market rate. However, ESOPs can also provide disproportionate control over the approval of acquisitions (Cooley, 1994:812).

2.5.2.11 Summary

Many of the preceding defences, if used, can substantially weaken the financial condition of the targeted company (Gilman & Chan, 1990:30). According to Pinches (1992:736) the goal of the above defences is to keep the company independent, or, if the company is acquired, to make sure that the target shareholders' value is maximised. The legal system can also be used as a defence, but this does not usually stop the raider. However, precious time can be bought (Gilman & Chan, 1990:30).

It is important for all the parties involved to understand the reasons for the merger or acquisition clearly in order for informed decision to be made on the acceptance or the rejection of the bid.

2.6 REASONS FOR MERGERS/ACQUISITIONS

Mergers and acquisitions are considered to be rational financial and strategic alliances made in the best interest of the company and its shareholders. Although there is a distinction between 'financial or value maximising motives'

and 'managerial or non-value maximising motives', the two are often related in practice (Cartwright & Cooper, 1992:18).

According to Cartwright and Cooper (1992:18) mergers are considered to be initiated by 'financial or value maximising motives' when the main objective is to increase shareholder wealth and financial synergy, for example through economies of scale (see 2.6.1.2). 'Managerial or non-value-maximising motives relate to mergers which occur primarily for other strategic reasons, for example, to increase market share (see 2.6.1.12) or management prestige (compare 2.6.1.8), or perhaps even as an acquisition defence (see chapter 2.5).

To determine the gains from a merger or acquisition, the source of value need to be identified (Ross et al. 1996:587):

2.6.1 SYNERGY

If a company wishes to merge with or acquire another company, it can be that the former believes that the value of the combined companies will be greater than the sum of the values of the individual companies. This concept is called synergy (Seth et al., 2000:388). Gardner and Mills (1997:620) argue that if the acquiring company expects synergy from a merger, its management believes that the present value of the combined operations of the two companies will exceed the cost of executing the merger, including the cost of acquiring the other company's shares. The acquiring company thus believes that it can increase total cash inflows from the two (or more) companies by managing them as one.

This relationship can be expressed by the equation, 2+2=5. It is preferable that the combined company increases the potential for growth and profit and that it makes greater utilisation of each company's relative advantage possible (Samuels et al., 1999:508). For synergy to be created it is also necessary for the participants in the deal to capture value at each stage of the acquisition by, for

example, developing the overall strategic plan, negotiating and structuring the deal and executing the business integration plan (Anon, 2000:14). The financial theory of mergers and acquisitions indicates that restructuring will be justified if:

$$X_{AB} = \text{gain} + X_A + X_B \qquad (1)$$

Where X_{AB} = value of the combined company

X_A = value of company A

X_B = value of company B

(Samuels et al., 1999:508)

The next section sets out the situations in which gains from mergers and acquisitions can occur through different forms of synergy. According to Eccles et al. (1999:141) the value of each type of synergy will depend on the particular skills and circumstances of the acquiring company.

2.6.1.1 Revenue enhancement

It is sometimes possible for an acquiring company (acquirer) and its target to achieve a higher level of sales growth (or revenue) together than either company could on its own. However, revenue enhancements are hard to estimate, because they involve external variables beyond management's control (Eccles et al., 1999:141). Increases in revenue may occur from marketing gains, strategic benefits and increases in market power (Ross et al., 1996:588):

- Marketing gains: Mergers and acquisitions can produce greater operating revenues from improved marketing. Improvements can for example be made with regard to an unbalanced product mix or a weak existing distribution network (Ross et al., 1996:588);

- Strategic benefits: Some acquisitions promise a strategic advantage. This is an opportunity to take advantage of the competitive environment or to enhance management flexibility with regard to the company's future operations (Ross et al., 1996:588); and
- Market power: Merger gains may be traced to increased market power of the post-merger company as mergers reduce the number of competitors and therefore lead to a reduction in competition. This reduction in competition can lead to higher prices for consumers and higher profits for the post-merger company (Kaen, 1995:868).

2.6.1.2 Cost reduction

One of the most basic reasons to merge with or acquire another company is that a combined company may operate more efficiently than two separate companies. A company can obtain greater operating efficiency in several different ways through a merger or an acquisition (Ross et al., 1996:588):

- Economies of scale: Some companies acquire others because they believe that they can reap the benefits of economies of scale. Economies of scale occur when the unit cost declines with increases in the volume. The net cash saved can increase the total cash benefits available to the owners (Gardner & Mills, 1994:621).

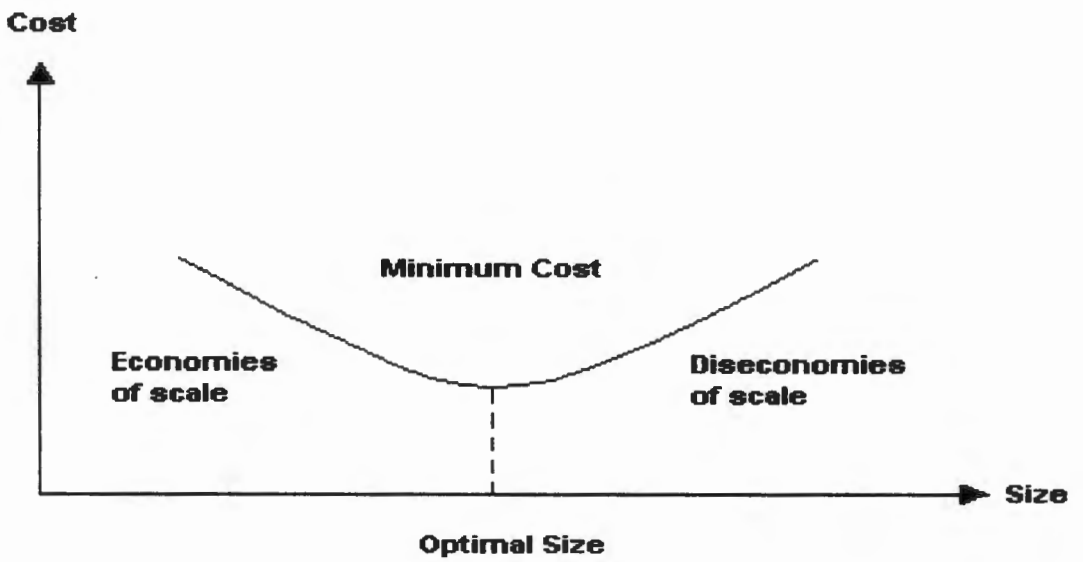
  Economies of scale can arise not only in production, but also in other areas, for example marketing, purchasing, distribution, accounting and finance (Van Horne, 1995:659). Economies of scale can also result from diversification of assets and liabilities, which reduces the cost of risk management (Hughes et al., 1999: 295).

  For horizontal mergers, economies of scale involve "indivisibilities", such as people, overheads and equipment, for which returns are increased if they are

spread over a large number of units of output. Additional economies can arise from combining the research, marketing and finance functions of a company with those of another company. Moreover, an acquisition of a company just approaching the size where it needs to add corporate staff would increase the utilisation of the acquiring company's staff by making it possible for the target company to avoid adding more corporate personnel (Lee & Finnerty, 1990:663).

A converse but related proposition is that companies experiencing increasing diseconomies of scale will undertake a merger to externally induce growth back into their earnings. For instance, once a company has matured and increased in size to a point where its economies of scale have been exhausted, any further increase in size will result in diseconomies (Lee & Finnerty, 1990:653).

Figure 2.1: Economies of scale



- Economies of vertical integration: Operating economies can often be achieved through a combination of companies (Van Horne, 1995:658).

Vertical mergers or acquisitions (see 2.2.2) seek economies in vertical integration. Industrial companies, for example, like to gain as much control as possible over the production process by expanding back toward the output of the raw material and forward to the ultimate consumer. This can be achieved by acquiring or merging with a supplier or customer (Brealey & Myers, 1991:822).

The importance of a vertical merger or acquisition is that it eliminates transaction costs when companies have to deal with each other at arm's length. It also reduces the uncertainty of supply and having to deal with a company that may have considerable bargaining power in the short run. It may result in cost savings because dealings between divisions or companies within a group may be more efficient than dealings conducted at arm's length between two independent companies. This has to be balanced with the possible extra costs resulting from the lack of competition between suppliers (Samuels et al., 1999:508-509).

- Complementary resources: Some companies acquire others to make better use of existing resources or to provide the missing ingredient for success (Ross et al., 1996:588). A company may for example have a unique product but lack the engineering and sales organisation necessary to produce and market it on a large scale. The company could develop engineering and sales talent from within the company and from the beginning, but it may be quicker and cheaper to merge with a company that already has ample talent (Brealey & Myers, 1991:882).

  If two companies have complementary resources, it will make sense for the two companies to merge because they are worth more together than apart as each acquires resources more cheaply than by acting on its own. This merger can also open up opportunities that neither company would pursue otherwise (Brealey & Myers, 1991:822).

- Lower financing cost: The drive to decrease cost has been spurred by international competition, because the achievement of lower cost can help companies compete (Diamond et al., 1999:4). Lower financing cost may be due to the fact that the merged companies effectively guarantee each other's debt, thereby reducing the risk to the lender and increasing the risk to the companies because both companies' assets may be called upon to meet the debt of either company (Correia et al., 2000:616).

Even though cost savings are the easiest synergy to calculate, overly optimistic projections can occur. In the evaluation of projections, the following three common problems must thus be kept in mind (Eccles, 1999:141):

- Analysts may overlook the fact that definitions of cost categories vary from company to company. It may thus appear that there are more easily eliminated costs in a category than turn out to be the case;
- Costs are incurred in different places, depending on the structure of each company. Acquirers may thus assume that they can eliminate more corporate or divisional administrative costs than they actually can because essential work is getting done in unexpected places; and
- It is easier to eliminate positions than the people who fill them. Often a job is eliminated on paper, but the person in the job is very talented and must be shifted elsewhere in the company.

Acquirers often underestimate how long it will take to realise cost savings. Sometimes that happens because the plans specifying how integration will proceed are insufficiently detailed, the people in both companies are resistant to change, and senior managers often delay making tough cost-cutting decisions. The longer it takes for cost savings to be realised, the less value they create (Eccles, 1999:141).

2.6.1.3 Tax gains

Tax considerations are often a barrier that must be overcome to justify a merger or acquisition deal. This makes tax-related synergies very difficult to achieve. It will thus be useful to distinguish between tax structuring, which makes a deal possible, and tax engineering (also called tax planning), which ensures that the overall tax rate of the combined company is equal to or lower than the aggregated tax rates of the two companies before the deal. The goal of tax structuring is to avoid as many one-time tax costs as possible. Such costs may include capital and transfer duties, as well as the change-of-ownership provisions that can trigger capital gains or prevent tax losses from being carried forward. If it is assumed that analysts have identified structuring techniques that make the deal feasible, it is possible to look for real tax-related synergies. There are a host of potential synergies, for example the placing of shared services and central purchasing in tax-advantaged locations or reorganisation within a country to pool taxes (Eccles, 1999:143). The possible tax gains from an acquisition include the following:

- Net operating losses: Companies that lose money at an operating level will not pay taxes. Such companies can end up with tax losses they cannot use. These tax losses are referred to as net operating losses. A company with net operating losses may be an attractive merger partner for a company with significant tax liabilities because the combined company can have a lower tax bill than the two (or more) companies considered separately. However, the Receiver of Revenue may disallow an acquisition if the principal purpose of the acquisition is to avoid income tax by acquiring a deduction or credit that would not otherwise be available (Ross et al., 1996:589);
- Unused debt capacity: Some companies do not use as much debt as they are able to. This makes them potential acquisition candidates because adding debt can provide important cash savings, and many acquisitions are financed

with debt. The acquiring company can deduct interest payments on the newly created debt and reduce taxes (Ross et al., 1996:589);

- Asset revaluation: In an acquisition of assets rather than shares, the assets of the target company can be revalued. If the value of the assets is increased, tax deductions for depreciation may be made (Ross et al., 1996:589);
- Surplus funds: If a company has cash flow available after all taxes have been paid and after all positive NPV products have been financed, the company has several ways to spend the free cash flow (Ross et al., 1993:766). Ideally a company should distribute the surplus funds to shareholders by increasing its dividend payment or by a share repurchase (Brealey & Myers, 1991:823). An extra dividend will increase the income tax paid by some investors while a share repurchase will reduce the taxes paid by shareholders when compared to paying a dividend. The last option is unfortunately not a legal option if the sole purpose is to avoid taxes that would otherwise have been paid by shareholders (Ross et al., 1993:766). To avoid this problem, the company may buy another company. By doing this, the tax problem associated with paying a dividend is avoided (Ross et al., 1993:766).

  Companies that have excess cash and do not pay it out to shareholders or redeploy it by acquisition, often find themselves targets of acquisitions by other companies who propose to redeploy the cash for themselves (Brealey & Myers, 1991:823). According to Correia et al. (2000:614) a company may also acquire another company in order to obtain the benefits of its strong liquidity position.

Some tax considerations can thus contribute to a transaction's announced goals and aid in delivering the promised financial benefits. Companies involved in restructuring activities should consult with professionals that could help them with the following issues (Anon, 2000:14):

- The understanding of the business dynamics and financial issues facing the combined entity;
- The co-ordination of the development of a tax integration plan with the business integration plan;
- The determination of a legal operating structure that will result in the most advantageous tax position by reviewing each group's organisation charts;
- The anticipation of the impact a regulatory body's review might have on asset disposition to see if they can be done in a more tax-efficient manner;
- The negotiation of tax incentives from state and local authorities as part of the consolidation of facilities, functions and personnel;
- The determination of the amount and the deductibility of acquisition-related cost;
- The consideration of the transaction's international aspects, including strategic cross-border debt placement opportunities, foreign currency exposure, additional exposure to indirect taxes and effective foreign tax credit planning by the new group;
- The reconciliation and revision of compensation and benefits programmes of the combined entity as needed;
- The interviewing of the target company's tax personnel and the documentation of the findings;
- The identification and addressing of conflicting tax positions that the combined entities might have taken on the same or a similar issue;
- The reviewing of the target company's tax returns and the provision for taxes for inconsistencies that may affect the combined entity's overall tax reserve;
- An investigation on whether the now combined group has inconsistencies that may affect the combined entities' overall tax reserves. The target company's reporting of prior transactions and the current acquisition's impact on these transactions must also be investigated;
- An investigation into whether the now combined group has inconsistent transfer-pricing practices or incompatible consolidated tax return elections as a result of the transaction. Any differences must be resolved; and

- The additional tax compliance burdens arising from the transaction that will remain after the businesses have been integrated must be addressed.

2.6.1.4 Changing capital requirements

Companies have to make investments in working capital and fixed assets to sustain an efficient level of operating activity. A merger may reduce the combined investments needed by the two companies. For example, company A may need to expand its manufacturing facilities while company B has significant excess capacity. It may be much cheaper for company A to buy company B than to build manufacturing facilities from scratch or to expand present facilities (Ross et al., 1996:589).

The acquisition of companies can be a way to manage existing assets more effectively. This can occur with a reduction in working capital by more efficient handling of cash, accounts receivable and inventory. The acquiring company may also sell off certain assets that are not needed in the combined company (Ross et al., 1996:590).

2.6.1.5 Technology

Companies must often also engage in significant changes with regard to information technology, because of restructuring. The computer hardware and software of the target company may be quite different from that of the acquiring company and it may be necessary to install new computer hardware or software and to change processes to handle the information needs of the new entity. Information technology transformation is one of the most important and difficult tasks in a merger or acquisition and it requires extensive planning and co-operation among in-house data processing personnel of the merging parties and software and hardware vendors, and continuous involvement by top

management is necessary to keep the integration plan on track (Jackson & Reburn, 2000:38).

Mergers or acquisitions can also take place in order to acquire the technological knowledge that the target company possesses. For example, companies based on the ideas of an entrepreneur may require the financial and distribution resources of an established company. The established company can use the technological expertise of the target company to improve its own products. There would therefore be a strong incentive to merge (Correia et al., 2000: 616).

2.6.1.6 Geographic diversification and market penetration

Entry into new geographic markets may increase the company's organisation-wide risk if the newly entered markets carry returns that generate greater risk than returns from existing markets. Alternatively the returns generated from new markets may be highly positively correlated with net returns from the markets already served. Geographic diversification may also yield quite different outcomes than simple asset portfolio diversification. For example, portfolio diversification does not usually lead to structural variation inside an individual company that may, in turn, impact each company's risk/return performance along several different dimensions. If a company expands into new and distant markets via acquisition, it may gain not only in terms of serving a more geographically diversified chain of market areas, but may also offer an expanded menu of services due to differences in effective demand between the companies' established markets and the new markets it has just entered (Rose, 1999:67-68).
Many acquiring companies believe that purchasing an existing company in a target region is a better way to enter that region than starting as a new competing company. By merging, managers may believe that the resulting company will have a brighter future than the two companies would have separately and that, through geographic diversification, the benefits of growth (see 2.5.1.12) can be achieved. Geographic diversification may also reduce the earnings variability and

therefore reduce risk without increasing the risk substantially (Gardner & Mills, 1994:621).

2.6.1.7 Undervalued shares

It is difficult to decide which companies are inefficient and accounting profits are not necessarily good guides (Samuels, 1999:511). If the shares of the target company are undervalued, then from the viewpoint of the acquiring company a merger or acquisition may be considered cheap relative to an internal expansion (Diacogiannis, 1994:660). The ratio of the market value of a company to its book value is called the valuation rate (Diacogiannis, 1994:660):

$$VR = NS_B * PV_B \qquad (2)$$

Where VR = The valuation rate.
NS_B = The number of ordinary shares of the selling company.
PV_B = The target company's current market price per ordinary share.

The market value of a company falls below the book value of its assets only if the company operates at a very low profit or loss, and the lower the valuation rate, the greater the acquiring company's return from a merger (Diacogiannis, 1994:660).

The reason for an acquisition can be that the stock market is underestimating the real value of a company. Targets in acquisitions and mergers are thus not necessarily the companies failing to make the best use of their resources. The targets could be companies using their assets to their best advantage, but whose stock market price does not reflect the true value of the company, perhaps because of a lack of knowledge (Samuels et al., 1999:511).

It is possible to find a company's shares correctly priced or even overpriced, with the current expectations of future returns, and for it still to be a good purchase for an acquisition bidder. If the prospective purchaser (acquiring company) can use the assets of the company, including the management, more profitably, then it may be prepared to purchase shares that in terms of present market knowledge are classed as overpriced. In bidding this higher price than might be expected, the purchasing company (acquiring company) is showing a more optimistic view of the future, perhaps based on expectations of its own ability to manage the subsidiary (Samuels et al., 1999:510-511).

2.6.1.8 Managerial skills

Inefficient management can exist for a limited period of time, but over the longer term, if the market is efficient, they will be identified and the market mechanism should ensure that they are replaced. It might also not be that the company is badly managed, but rather that the interests of the managers are different from those of the shareholders. The *agency problem* thus occurs. Managers owning a percentage of shares may tend to pursue perquisites. This can be seen as a misdirection of resources because the cost of these is passed on directly to shareholders (Samuels et al., 1999:509).

Cash is not the only asset that can be wasted by poor management. There are always companies with unexploited opportunities, for example to cut cost and increase sales and earnings. Such companies are natural candidates for acquisition by other companies with better management (Brealey & Myers, 1991:823).

Some companies have been founded, owned and managed by a single family throughout their history. Managers and workers may have been hired more for their family relationships than for their managerial skills. The acquiring company may believe that under its management, the assets of the target company can be

more profitable. If so, the expected cash inflows of the combined company will exceed those of the companies operated separately, thus increasing value (Gardner & Mills, 1994:621).

According to Correia et al. (2000:615) a company with strong management resources may decide to acquire a company currently earning low returns in order to introduce improved management and reap the benefits of the expected increase in returns. A company may also acquire or merge with another company because it feels that it needs the other's managerial skills.

A change in management could thus increase a company's value. These are companies that are poorly run or otherwise do not efficiently use their assets to create shareholders' value. Acquisitions are a means of replacing management in such cases (Ross et al., 1996:590).

2.6.1.9 Replacement cost

A company that wishes to increase its production capacity (see 2.5.3) may find that it is cheaper to do so via the acquisition route if the value of the target company is substantially below that of the replacement cost of the target company's assets (Correia et al., 2000:616).

2.6.1.10 Wealth transfers

Although the target company's shareholders usually reap gains in acquisition and buy-out situations, these gains may come at the expense of other involved parties like bondholders and employees. The restructurings are thus zero-sum events because gains by one party are losses for someone else. It is also argued that shareholders gain from acquisitions and other restructurings at the expense of the jobs, wages and pension benefits of the target-company employees (Kaen, 1995:866).

2.6.1.11 Combination of strength or survival

Merging companies may believe that their assets 'fit' well together and that opportunities for geographic expansion as well as cross-selling may exist, and that this might lead to increases in the total cash benefits to the owners of the combined company (Gardner & Mills, 1994:621).

A management motive might also be survival and increased job security (see 2.5.1.8). Managers, unlike shareholders, cannot diversify to spread their risks. They are tied to one company. If that company is taken over, the managers face a high probability of losing their jobs. By acquiring other companies, the businesses that they operate become larger and so these businesses themselves become less likely to be targets of acquisitions (Samuels et al., 1999:513).

2.6.1.12 Growth or elimination

A company can grow internally by investing in projects it develops itself or externally via a merger or acquisition (Diacogiannis, 1994:660). The latter method is frequently a faster and cheaper way to expand into new or related products or to acquire production facilities to increase production of already existing products. When a company acquires another company, it can also do so at a more certain price, and provide a product in a more timely fashion (Rao, 1989:691). Another advantage is that the acquisition of another company may provide some key executive talent that can make contributions to the company as a whole (Weston & Jawien, 1999:31).

Although growth through a merger or acquisition can thus be advantageous, the problem is to identify growth that will provide the acquiring company with a net gain when all benefits and costs are included. Growth for growth's sake is not an intelligent strategy, and the ultimate concern is not growth in sales, assets or total

earnings, but growth in shareholders' wealth and earnings per share (Jones, 1992:630). Acquisitions also take place because companies want to eliminate or curtail competition as well duplicated facilities, such as training and research (Power, 1994:1).

2.6.13 Globalisation and black empowerment

A number of unique drivers of merger and acquisition deal creation that serves as a counterbalance to the negative effects of market downturns exist in South Africa and are likely to persist for some time to come (Thayser, 1999:5):

- Globalisation: Competing in world markets will continue to drive the activity of some of the major listed companies, for example, large information technology companies are involved in the pursuit of international competitiveness, even to the extent of moving their primary listings to other financial centres, with the approval of the government;
- Black empowerment: The need to eradicate past inequities will result in black empowerment continuing to be a driving force behind deal creation. The fall in the markets can assist in obtaining assets at reasonable prices, where cash and not shares (see 2.7.1 and 2.7.2) can be used as the means of payment.

2.6.14 Summary

The above-mentioned are quite different reasons for a merger or acquisition. All these reasons can however be reduced to one: *To create value for shareholders.* This creation of value can come as the result of synergy (see 2.5.1) between the merging companies, and synergy may come from combining or better using such things as production capacity (see 2.5.1.9), sales force or management talent (see 2.5.1.8). Synergy can also come from the willingness of one company's owners to take risk, combined with another's too-conservative approach (Harrington, 1994:165).

Before committing themselves to a major deal, the acquiring and target company will need to assess the effect on each company's shareholder value should the synergy expectations fail to materialise. A useful tool for assessing the relative magnitude of synergy risk for the acquiring company is a calculation called shareholder value at risk (SVAR). SVAR is the premium paid for the acquisition divided by the market value of the acquiring company before the announcement is made. An index, in which a premium percentage is multiplied by the market value of the target relative to the market value of the acquiring company, can also be calculated. This index is an indicator of how much of a company's value is at risk if no post-acquisition synergies are realised. The greater the premium percentage paid to sellers and the greater their market value relative to the acquiring company, the higher the SVAR will be (Rappaport & Sirower, 1999:147).

A variation of SVAR, premium-at-risk, can help the shareholders of the target company to assess their risks if the synergies do not materialise. The premium-at-risk calculation is a conservative measure of risk, as it assumes that the value of the independent businesses is safe and only the premium is at risk (Rappaport & Sirower, 1999:147).

Apart from the merger or acquisition gains that may be realised through synergy, it is thus also possible that the synergy effects will not be realised. In the next section side-effects of mergers and acquisitions will be discussed.

2.7 FINANCIAL SIDE-EFFECTS OF MERGERS AND ACQUISITIONS

Mergers and acquisitions may have some purely financial side effects, that is, things that occur regardless of whether or not the merger or acquisition makes economic sense. Two such effects are earnings per share (EPS) growth and diversification (Ross et al., 1996:591).

2.7.1 EARNINGS PER SHARE GROWTH

An acquisition can create the appearance of growth in EPS. This may fool investors into thinking that the company is doing better than it really is (Ross et al., 1996:591).

Ross et al. (1996:591-592) explain this as follows: Suppose company X acquires company Y and the acquisition creates no additional value, so that the combined company, XY, has a value that is equal to the sum of the values of the two companies before the deal. The financial position of both company X and of company Y is shown in the table.

Table 2.1: Financial positions of company X and company Y.

	company X before merger	company Y before merger	company X after the merger	
			Smart Market	Fooled market
Earnings per share	R1,00	R1,00	R1,43	R1,43
Price per share	R25,00	R10,00	R25,00	R35,71
Price / earnings ratio	25	10	17,5	25
Number of shares	100	100	140	140
Total earnings	R100	R100	R200	R200
Total value	R2500	R1000	R3500	R5000

Before the acquisition both company X and company Y have 100 shares in issue. Company X trades at R25 per share versus, R10 per share for company Y. Company X therefore acquires company Y by exchanging one of its shares for every 2,5 shares of company Y. Since there are 100 shares in company Y, it will take 100 x 2,5 = 40 shares in all.

After the acquisition, company X will have 140 shares in issue and the market value of the combined company will be R3500. This is equal to the sum of the values of the separate companies before the merger. If the market is smart it will realise that the combined company is worth the sum of the values of the separate entities.

The post-acquisition earnings per share of company X is calculated by dividing the combined earnings of R200 by the new total number of company X shares in issue after the acquisition, namely 140. The acquisition thus enables company X to increase its earnings per share from R1 to R1, 43, thus an increase of 43%.

The share price of company X after the acquisition is the same as it was before. The price/earnings (P/E) ratio must thus fall if the market is smart and recognises that the total market value has not been altered by the merger.

If the market is 'fooled', it might mistake the 43% increase in earnings per share for true growth. In this case the P/E ratio of company X may not fall after the merger. Suppose the P/E ratio of company X remains equal to 25. The total value of the combined company will increase to R5000 (25 × R200), since the combined company has earnings of R200. The per share value of Company X will increase to R35, 71(R5000/140).

A company may have a high P/E ratio because the investors anticipate rapid growth in future earnings. This growth is sometimes not achieved by capital investments, product improvement or increased operating efficiency, but by purchasing slow-growing companies with low P/E ratios. The long-term result will probably be slower growth and a bad P/E ratio, but in the short run earnings per share can increase sharply. If this fools investors it would be possible to achieve the higher earnings per share without suffering a decline in the P/E ratio. In order to keep fooling investors, the company must continue to expand by merger at the same compound rate. This cannot be done forever, because the expansion must

slow down or stop at some time, and the earnings growth will also stop (Brealey & Myers, 1991:826).

2.7.2 Diversification

Companies may want to reduce risk by pursuing a diversification (i.e. varied operations) strategy. This strategy can be one of three types: product extension (or the adding of a new line of products), geographic extension (or the offering of the same product in a different area) and "price" diversification (or expansion into business activities that show no relation at all to the existing activities (Diamond et al., 1999:3)).

If a portfolio comprising the target company and the acquiring company, where the two companies are in unrelated industries, is considered, the rate of earnings on this portfolio is dependent on the rate of earnings of the two companies (different earnings in different industries during various periods of an economy's booms and slumps) and the proportion of funds invested in each company. If the earnings of the acquiring company and the target company are not perfectly positively correlated, the merger or acquisition can reduce the variability of the combined earnings of the two companies and a reduction in risk will result in a lower required rate of return on equity, which will have a favourable impact on the company's share price (Diacogiannis, 1994:661).

An argument against the diversification motive for mergers and acquisitions, according to the Theory of Portfolio Management, is that if shareholders want diversification they can achieve this through diversifying the investments in their own portfolio (for example buying shares in different companies). They do not need companies do it for them by means of mergers or acquisitions (Samuels et al., 1999:512).

Diversification is commonly mentioned as a benefit to a merger or acquisition although it does not always create value (Ross et al., 1996: 592). The next section discusses the gains and losses that can result from a merger or acquisition, with specific reference to the estimation of cost when mergers and acquisitions are financed by cash and shares respectively.

2.8 THE EVALUATION OF MERGER AND ACQUISITION GAINS AND LOSSES

The gain from a merger is defined as the difference in the market value of the post-merger company relative to the pre-merger value of the two companies as separate entities (Kaen, 1995: 869). The gain is calculated by using the following equation because the market value of a company is equal to the present value of the cash flows expected by the security holders (Kaen, 1995:869):

$$MGAIN = PV_{AT} - (PV_A + PV_T) \qquad (3)$$

Where MGAIN = Gain from the merger

PV_{AT} = Market value of the post-merger company

PV_A = Pre-merger market value of the acquiring company

PV_T = Pre-merger market value of the target company

MGAIN is the total increase in the market value of the post-merger entity from the sources of merger gains (as described in paragraph 2.5). Not all of these gains accrue to the acquiring company. Some are retained by the target-company's shareholders and are referred to as the cost of the merger to the acquiring company. A merger will be undertaken if this investment has a positive NPV. The NPV of the merger from the acquiring company's perspective is the difference

between the merger gains, MGAINS, and the acquiring company's cost, ACOST. The relationship is (Kaen, 1995:869):

$$NPV = MGAIN - ACOST \quad (4)$$

2.8.1 ESTIMATION OF COST WHEN A MERGER OR ACQUISITION IS FINANCED WITH CASH

The cost of a merger or acquisition is the premium that the buyer (acquiring company) pays for the selling (acquired/target) company over its value as a separate entity (Brealey & Myers, 1991:828). According to Kaen (1995:869) the cost can be represented by:

$$ACOST = CASH - PV_T \quad (5)$$

Where ACOST = Merger cost to acquiring company

PV_T = Present market value of target as a separate entity

The NPV of this cash transaction then is:

$$NPV = MGAIN - ACOST \quad (6)$$

$$= [\ PV_{AT} - (\ PV_A - PV_T\ )\ ] - [\ CASH - PV_T\ ] \quad (7)$$

With a cash payment, any errors made in estimating the merger gains are borne entirely by the acquiring company's shareholders. Any unexpected gains would also accrue entirely to the acquiring company's shareholders (Kaen, 1995:870).

2.8.2 ESTIMATION OF COST WHEN A MERGER IS FINANCED WITH SHARES

Unlike cash transactions, unexpected merger gains or losses in a share transaction are shared by the shareholders of the target company (Kaen, 1995:871). In a share exchange, the cost to the acquiring company is (Kaen, 1995:871):

$$ACOST_{SHARE} = \chi\, PV_{AT} - PV_T \qquad (8)$$

Where $ACOST_{SHARE}$ = Acquisition cost to the acquiring company's shareholders.

χ = Percentage of the post-merger company owned by the shareholders of the target company.

PV_{AT} = Post-merger market value of the combined companies

PV_T = Pre-merger market value of the target company.

Using shares instead of cash to acquire a company is less risky if the acquiring company is uncertain of the true value of any merger gains or of the target company (Kaen, 1995:872).

2.8.3 CASH VERSUS COMMON SHARES

According to Diacogiannis (1994:670) the choice between the financing of an acquisition by cash or by shares depends on several factors:

- A cash payment made to the shareholders of the target company is taxable if they realise capital gains from the transaction. On the other hand, if the shareholders of the target company exchange their shares for shares in the acquiring company, then such a transaction is tax-free. However, offering new shares to the shareholders of the target company can dilute the earnings per share of the acquiring company;

- If the share price of the acquiring company is overvalued, then offering shares to the target company can be less costly than paying the merger by cash; and
- If the acquiring company offers cash and the merger is very profitable, then its shareholders will share all the future profits from the merger. This is not the case when shares are offered.

According to Ross et al., (1993:772) the distinction between cash and common share financing is important. If cash is used, the cost of an acquisition is not dependent on the acquisition gains. If common shares are used, the cost is higher, because the shareholders of the companies must share the acquisition gains. If the NPV is negative, the loss will however be shared between the two companies.

2.8.4 RIGHT AND WRONG WAYS TO ESTIMATE MERGER BENEFITS

Some companies begin their merger analysis with a forecast of the target company's future cash flows. Any revenue increases (see 2.5.1) or cost reductions (see 2.5.2) attributable to the merger are included in the forecasts, which are then discounted back to the present and compared with the purchase price. This is a dangerous procedure because large errors can be made in valuing the company (Brealey & Myers, 1991:820):

- The estimated net gain may come up positive, not because the merger makes sense, but because the cash-flow forecasts are too optimistic; and
- A good merger may not be pursued if the target's potential as a stand-alone business is not recognised.

The procedure should start with the target's stand-alone market value and should concentrate on the changes in cash flow that would result from the merger. Before acquiring a company, a good investment decision must be made: *value is created when there is an additional economic gain.* Thus the company must have

a competitive edge that other companies cannot match and the target company's managers cannot achieve on their own (Brealey & Myers, 1991:820).

After the cost has been estimated in a case where a merger or acquisition can be financed by shares or by cash, the terms of exchange that will be the most beneficial must be determined.

2.9 TERMS OF EXCHANGE

Both companies in the proposed merger or acquisition will seek the best terms possible for their shareholders. If negotiations are successful, the combination will be formed, provided it is legally sanctioned. Often, however, negotiations are unsuccessful, and the proposed combination is called off. The aim of negotiations is to agree the terms of exchange, which indicate what each party receives and gives up by entering into the combination (Jones, 1992:634).

While an informed target company always knows how much an acquiring company can afford to pay, the attractiveness of any price to the seller is usually related to a historical benchmark. The most common benchmark for sellers is the level of prices paid in comparable transactions in the immediate past (Martin, 2000: 54).

2.9.1 CASH PURCHASE

Assume that the Investment Corporation is analysing the acquisition of the Sell Corporation for R1 million. The Sell Corporation has expected cash flow (after-tax earnings plus depreciation) of R100 000 per year for the next five years and R150 000 per year for the 6^{th} through the 20^{th} year. Furthermore, the synergistic benefits of the merger, in this case, combining production facilities, will add R10 000 per year to cash flow. The Sell Corporation has a R50 000 tax loss carry forward that can be used immediately by the Invest Corporation. Assuming a

40% tax rate, the R50 000 loss carry-forward will immediately shield R20 000 of profit from taxes. The Invest Corporation has a 10% cost of capital, and this is assumed to remain stable. The analysis will be as follows:

Cash outflow:

Purchase price	R 1 000 000
Less tax shield benefit from tax-loss carried forward (R50 000 x 40%)	R 20 000
Net cash outflow	R 980 000

Cash inflows:

Years 1-5:	Cash inflow	R 100 000
	Synergistic benefit	R 10 000
	Total cash inflow	R 110 000
Present value of R110 000 x 3,791		R 417 000
Years 6-20:	Cash inflow	R 150 000
	Synergistic benefit	R 10 000
	Total cash inflow	R 160 000
Present value of R160 000 x 4,723		R 755 680
Total present value of inflows		R1 172 690

The present-value factor for the first five years (3,791) is based on n = 5 and i = 10% (Appendix A). For the 6th through to the 20th year the present-value factor for n = 20 and i = 10% is taken, and the present-value factor for n = 5 and i = 10 % is subtracted from it (Appendix A). The NPV of the investment can thus be calculated as follows:

Total present value of inflows	R1172 690
Net cash outflow	980 000
Net present value	R 129 690

The acquisition thus represents a desirable alternative for the expenditure of cash, with a positive NPV of R129 690 (Block & Hirt, 1992:591-592).

2.9.2 SHARE-FOR-SHARE EXCHANGE

Assume that Expand Corporation is considering the acquisition of Small Corporation. The following information on the companies before the merger is provided:

Table 2.2: Information on Small Corporation and Expand Corporation before the merger

	Small Corporation	Expand Corporation
Total earnings	R 200 000	R 500 000
Number of shares outstanding	50 000	200 000
Earnings per share	R 4,00	
P/E ratio	7,5	
Market price per share	R 30,00	

One share of Expand Corporation (R30,00) will thus trade for one share of Small Corporation (R30,00). If 50 000 new shares of Expand Corporation are traded in exchange for all the old shares of Small Corporation, Expand Corporation will have 250 000 shares outstanding. At the same time its claim to earnings will rise to R700 000 when the two companies are combined. The post-merger earnings per share for Expand Corporation will thus be R2,80 [(R200 000 + R500 000)/(200 000 + 50000)].

The earnings per share of Expand Corporation have thus increased from R2,50 to R2,80 as a result of the merger. This has occurred because Expand Corporation's P/E ratio was higher than that of Small Corporation at the time of the merger.

It is unlikely that Small Corporation will give up its shares at the current market value of R30,00 per share. Assume that Expand Corporation is willing to pay 33 % over market value. This would imply that the shareholders of Small Corporation would receive R40,00 worth of stock for each share outstanding. Since Expand shares are trading at R30,00 per share, it must offer 4/3 shares of Expand Corporation for each share of Small Corporation. This means that Expand Corporation will have to issue 66 667 new shares (50 000 x 4/3). Post-merger earnings for Expand Corporation will now be R2,62 [(R200 000 + 500 000)/(200 000 + 66 667)].

Although Expand Corporation is enjoying an immediate appreciation in earnings per share, the long-run impact of the merger and its influence on the ultimate objective of market-value maximisation must be considered. Suppose that Expand Corporation without the merger could be expected to grow at 10% per year, while Small Corporation would only grow by 6%. Since Expand Corporation is initially contributing R500 000 to earnings and Small Corporation R200 000, the post-merger weighting on earnings is 5/7 and 2/7 respectively. Without

considering any post-merger operating benefits (synergy), the new weighted growth rate for Expand Corporation after the merger would be:

$$5/7\ (10\%) + 2/7\ (6\%) = 7{,}14\% + 1{,}71\% = 8{,}85\%$$

The net effect will thus be that Expand Corporation will suffer a decline of 1,15% in its growth rate at the same time that it enjoys a 12 cent immediate increase in earnings per share (R2,50 to R2,62). The combined effect of these two variables, as the time horizon is extended to 10 years, will be as follows:

Table 2.3: The combined effect of the growth rate and earnings per share for Expand Corporation without the merger

Year	Beginning earnings per share	Growth rate	Anticipated earnings per share
1	R2,50	10%	R2,75
2	R2,75	10%	R3,03
3	R3,03	10%	R3,33
4	R3,33	10%	R3,66
5	R3,66	10%	R4,03
6	R4,03	10%	R4,43
7	R4,43	10%	R4,87
8	R4,87	10%	R5,36
9	R5,36	10%	R5,09
10	R5,90	10%	R6,49

Table 2.4: The combined effect of the growth rate and earnings per share for Expand Corporation with the merger

Year	Beginning earnings per share	Growth rate	Anticipated earnings per share
1	R 2,62	8,85%	R 2,82
2	R 2,85	8,85%	R 3,10
3	R 3,10	8,85%	R 3,37
4	R 3,37	8,85%	R 3,66
5	R 3,66	8,85%	R 3,98
6	R 3,98	8,85%	R 4,33
7	R 4,33	8,85%	R 4,711
8	R 4,71	8,85%	R 5,13
9	R 5,13	8,85%	R 5,58
10	R 5,58	8,85%	R 6,07

Although earnings per share will be 12 cents higher immediately as a result of the merger, the slower post-merger growth rate of 8,85% indicates that after four years there will be an indifference point between earnings with and without the merger at R3,66. After 10 years non-merging would actually provide 42 cents more in earnings per share (R6,49 versus R6,07). The long-term dilutive effect on earnings is the result of the differential growth rates and the absence of synergy. If the merger produced synergy by increasing the operating effectiveness of the combined companies by 15% the immediate effect would be to increase the earnings per share to R3,01 (R2,62 x 1,15) and tenth-year earnings to R6,98 (R6,07 x 1,15). Nevertheless, synergistic benefits may be difficult to achieve (Block & Hirt, 1992:592-596).

As an alternative strategy, Expand Corporation can acquire Growth Corporation. The financial information for Growth Corporation is presented in the following table along with data from Expand Corporation:

Table 2.5: Financial information on Growth Corporation and Expand Corporation before the merger

	Growth Corporation	Expand Corporation
Total earnings	R 200 000	R 500 000
Number of shares of stock outstanding	50 000	200 000
Earnings per share	R 4,00	R 2,50
P/E ratio	14	12
Market price per share	R 56,00	R 30,00
Growth rate in earnings per share	18%	10%

In order to effect a merger, it is assumed that Expand Corporation will pay the shareholders of Growth Corporation a 40% premium over the market value. This would indicate a price of R78,40 (R56 x 1,4). To purchase the 50 000 shares of Growth Corporation, the total value exchanged would be R3 920 000 (R78,4 x 50 000). Since R30,00 shares of Expand Corporation are to be traded in the merger, 130 667 (R3 920 000/30) shares must be given to the shareholders of Growth Corporation. The post-merger earnings per share are R2,12 (R700 000/330 667). The earnings per share of Expand Corporation have thus been diluted from R2,50 to R2,12 as a result of the merger. Once again, the reason for this can be found in the relative P/E ratios. Growth Corporation is being purchased at a 40% premium over its current P/E ratio of 14, or at 519,6 times earnings, and since Expand Corporation's P/E ratio is only 12, dilution has set in. A strong inducement factor for Expand Corporation is the high rate of increase in earnings per share of 18% for Growth Corporation. On a weighted basis, this will increase

the post-merger earnings per share growth rate of Expand Corporation to 12,3% [5/7(10%) + 2/7(18%)]. The anticipated stream of future earnings for Expand Corporation with and without the Growth Corporation merger is indicated in the following tables:

Table 2.6: The anticipated stream of earnings for Growth Corporation without the merger

Year	Beginning earnings per share	Growth rate	Anticipated earnings per share
1	R 2,50	10%	R 2,75
2	R 2,75	10%	R 3,03
3	R 3,03	10%	R 3,33
4	R 3,33	10%	R 3,66
5	R 3,66	10%	R 4,03
6	R 4,03	10%	R 4,43
7	R 4,53	10%	R 4,87
8	R 4,87	10%	R 5,36
9	R 5,36	10%	R 5,90
10	R 5,90	10%	R 6,49

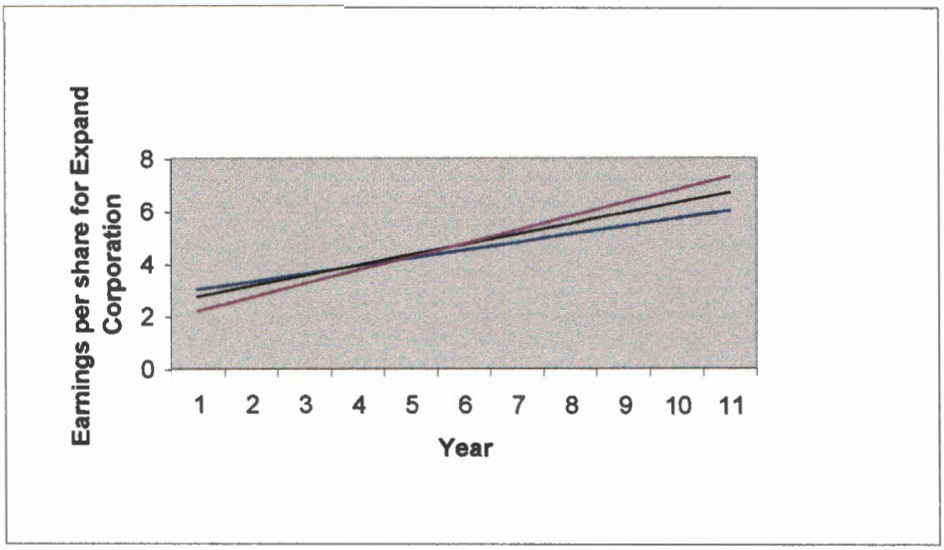
Table 2.7: The anticipated stream of earnings for Growth Corporation with the merger

Year	Beginning earnings per share	Growth rate	Anticipated earnings per share
1	R 2,12	12,13%	R 2,38
2	R 2,38	12,13%	R 2,67
3	R 2,67	12,13%	R 3,00
4	R 3,00	12,13%	R 3,37
5	R 3,37	12,13%	R 3,79
6	R 3,79	12,13%	R 4,26
7	R 4,26	12,13%	R 4,79
8	R 4,79	12,13%	R 5,38
9	R 5,38	12,13%	R 6,04
10	R 6,04	12,13%	R 6,79

Expand Corporation will thus eventually benefit from the merger with the 10^{th} year earnings per share at a level 30 cents higher than without he merger. Although it may take a dilutive, high-growth acquisition longer to show positive benefits, the eventual gains may be substantial and the presence of synergy would usually shorten the break-even period and expand the long-term positive benefits.

A comparison of the two merger plans for Expand Corporation is presented in the following figure.

Figure 2.2: Impact of alternative plans of Expand Corporation



- With Growth Corporation
- Without Merger
- With Small Corporation

(Block & Hirt, 1992:598)

The basic merger plans shown in the figure indicate the possibilities that exist in buying a slow-growth company at a relatively low P/E ratio and a high-growth company at a relatively high P/E ratio. There is no right or wrong decision as such and the ultimate answer lies in the concept of market value maximisation. Not only the immediate impact on earnings per share must be considered, but also the effect of the surviving company's post-merger P/E ratio. The merger's portfolio effect on the risk/return posture of the company is important, because the reduction or increase in risk may influence the P/E ratio as much as the change in the growth rate. To the extent that the overall risk of the company in a merger is diminished, the P/E ratio may increase even if the potential earnings growth is unchanged. Business risk reduction may be achieved through acquiring another company that is influenced by a set of factors in the business cycle

opposite from those of the acquiring company, while financial risk reduction may be achieved by restructuring the post-merger financial arrangements to include less debt (Block & Hirt, 1992:596-600).

2.9.3 SUMMARY

Nowadays, the larger part of all deals is paid for entirely in shares. This has profound ramifications for the shareholders of both acquiring and target companies. In a cash deal, the roles of the two parties are clear-cut, and the exchange of money for shares completes a simple transfer of ownership. However, in an exchange for shares transaction, it becomes far less clear who is the buyer and who is the seller, and the shareholders of the target company can end up owning most of the company that bought their shares. Companies that pay for their acquisitions with shares share both the value and the risks of the transaction with the shareholders of the company they acquire. The decision to use shares instead of cash can also affect shareholder returns, because the shareholders of the acquiring company can fare worse in share acquisitions than they do in cash transactions at the time of announcement (Rappaport & Sirower, 1999:1).

Transaction that have taken place or that will take place must be valued on a continuous basis in order to determine whether success is or can be achieved. The most popular valuation technique is the NPV analysis (see 2.8). This technique will be discussed again in the following section for purposes of comprehensiveness, together with other valuation techniques.

2.10 ACQUISITION VALUATION TECHNIQUES

2.10.1 NET PRESENT VALUE (NPV)

Long-term financial decisions like mergers or acquisitions require a NPV analysis. According to Diacogiannis (1994:661-662), company A can analyse the possible purchase of company B by calculating the present value of the incremental cash flows created by the merger:

Present value of the incremental cash flows created by the merger	=	Post-merger market value of the combined company	-	Pre-merger market value of the buying company	-	Pre-merger market value of the selling company

(9)

The NPV to company A from the merger with company B is equal to the present value of the future benefits from the merger minus the merger's initial cost. The former equals the present value of company B plus the present value of the incremental cash flows attributable to the merger. The present value of the merger to company A would thus be:

Net present value of the merger to company A	=	Pre-merger market value of the target company	+	Present value of the incremental cash flows generated by the merger	-	The cost of the merger paid for the target

(10)

According to Harrington (1993:140) the NPV can also be described as the present value of the net worth an investment will contribute to a company by the end of its useful life.

If it is supposed that the acquiring company (A) offers to *pay cash* for the target company (B), the analysis starts with the establishment of the range of cash payments that company A will be willing to pay to company B. The minimum amount of cash acceptable to company B for the merger can be calculated as follows:

Minimum amount of cash payment acceptable to the target company	=	Number of pre-merger ordinary shares of the target company	x	Pre-merger market value per share of the target company

(11)

The maximum amount of cash payment acceptable to company A for the merger should be equal to the benefits created by the merger (in present value terms). Such an amount is calculated as:

Maximum amount of cash payment acceptable to the acquiring company	=	Pre-merger market value of the target company	-	Present value of the incremental cash flows created by the merger

(12)

The actual amount of cash payment (or the bid price) offered by the acquiring company to the target company can be expressed as follows:

Amount of cash payment offered by the acquiring company	=	Minimum price acceptable to the target company	+	Bid premium for the target company

(13)

The bid premium is defined as the difference between the amount of cash offered to the target company and the minimum price acceptable to the target company. A combination of equations (10) and (13) gives:

Net present value of the merger to company A	=	Present value of the incremental cash flows created by the merger	-	Bid premium for the selling company

(14)

A merger can thus be evaluated by estimating the present value of the incremental cash flows created by the merger and comparing it with the bid premium. If the latter is lower than the former, then the NPV to A of the merger with B is positive. The target company's NPV of the merger with company A equals the bid premium as shown below (Diacogiannis, 1994:661-664):

$$NPV_B = (PV_B + Premium) - PV_B \quad (15)$$

$$= Premium \quad (16)$$

When company A (the buyer) offers to pay for company B (the seller) with its *shares*, an exchange ratio must be established. The exchange ratio is defined as the number of new shares of the acquiring company that are exchanged for every outstanding share of the target company. The number of shares the acquiring company issues to the target company equals the exchange ratio times the number of outstanding shares of the target company. The post-merger share price of the combined companies is calculated as follows:

Post-merger share price of the combined companies	=	Post-merger market value of the combined companies	/	Post-merger number of shares of the combined companies

(17)

where the post-merger number of shares of the combined companies equals the exchange ratio times the number of pre-merger shares of company B plus the number of pre-merger shares of company A. The total price that the acquiring company pays to the target company can be calculated as follows:

Total price the acquiring company pays to the target company	=	Post-merger share price of the combined companies	x	Number of shares the target company issues to the acquiring company

(18)

The number of shares the target company issues to the acquiring company equals the exchange ratio times the number of pre-merger market shares of company B. The present value of the incremental cash flows created by the merger would be equal to the post-merger market value of the combined companies minus the sum of the pre-merger present values of both companies. The NPV of the merger to the acquiring company can be calculated by using equation (2), and the NPV of the merger to the target company can be defined as the difference between the cost of the merger paid for the target company minus the pre-merger market value of the target company (Diacogiannis, 1994:664-666).

A good way to analyse a merger or acquisition is thus with a present value analysis of the proposed merger or acquisition. Merger or acquisition analysts can also use several other valuation techniques. According to Harrington (1993:181) the following techniques should be used only as a supplement to the

NPV analysis, and not as a substitute for it as each of them has limitations if compared with the NPV analysis.

2.10.2 EARNINGS VALUATION

To avoid complicated projections of cash flows, risks and required rates of return, the relationship of a company's projected earnings to its present earnings are used. To use this approach, the earnings of the company to be target must be estimated first and then the relationship between those earnings and the share price, the P/E ratio (Harrington, 1993:178). From this ratio the price per share for the company to be acquired is estimated as follows (Harrington, 1993:178):

$$\text{Price per share} = \text{EPS} \times \text{P/E} \qquad (19)$$

Where EPS = Earnings per share.
P/E = The company's estimated P/E ratio after acquisition.

Or the price for the whole company would be:

$$\text{Price} = \text{Earnings} \times \text{P/E} \qquad (20)$$

where earnings are equal to annual net income.

If a company is not publicly traded, and thus has no market price or P/E ratio to use as a starting point, the average P/E ratio for a group of similar, publicly traded companies are used as a substitute for this unobtainable P/E ratio. To use this substitute method, the assumption must be made that companies in the same industry or with similar earnings records are equally risky and that the market will pay a standard multiple of earnings for shares of equivalent risk (Harrington, 1993:178).

These assumptions are not always valid, as the P/E multiples of comparable shares in comparable industries can be very different. The P/E-ratio method for valuation can be questioned for various reasons (Harrington, 1993:178-180):

- In using this approach the assumption is made that the recent earnings represent the real earning power of the company. The effects of inflation, and the accounting treatment of those effects, combined with changes in accounting methods for such items as retiree health benefits, have made the reported earnings only vaguely represent companies' real earning power; and
- This method also assumes that the P/E ratio is a reliable indicator of value. While the current P/E of a publicly traded company reflects its shareholders' present estimates of its future as an independent company, it does not reflect the potential synergies that might result from a merger. To estimate the value of synergies (see 2.5.1) using the earnings-valuation approach, the new earnings after the merger as well as the P/E ratio must be forecasted.

The P/E-multiple method is thus not very good for valuing an acquisition. According to Harrington (1993:180) it should rather be used to put the present-value analysis into a capital-market perspective by comparing the P/E that is implied by a present-value analysis to a P/E estimated by using the earnings analysis.

2.10.3 BOOK VALUE

Book value, that is net assets minus liabilities, can be calculated by using balance sheet figures. Unfortunately, this is a poor estimate of economic value due to several factors (Harrington, 1993:181):

- Book value depends on the accounting practices of a company and this is usually a vague approximation of the real economic value;

- Book value ignores intangible assets. Intangibles like copyrights, trademarks, patents, franchise licences and contracts have value because they protect a company's right to market its goods and services. If the book value of assets is less than the present value of the cash flows of the company, intangible assets can account for this discrepancy;
- Book value ignores liabilities not reflected in the balance sheet. These liabilities may be such items as employee retirement benefits that are not reported in the balance sheet; and
- Book value ignores the price appreciation of real assets. Since assets are valued on the balance sheet at their depreciated cost, some assets, for instance mineral reserves or precious metals, may be valued far below their liquidation value.

2.10.4 LIQUIDATION VALUE

Liquidation value is the cash value that the acquiring company would receive if the assets of the target company were sold. This method of valuation is used in the following circumstances (Harrington, 1993:182):

- If the acquiring company intends to sell the assets of the target company;
- In determining the fair book value of under- or overvalued assets;
- As a floor price for an acquisition: If liquidation value exceeds the present value, the company is worth more if the assets are sold; and
- A terminal value in valuing a company when its products or services have a definite life.

2.10.5 REPLACEMENT COST

This is a measure of the cost of replacing the assets of the potential acquisition. Although replacement-cost estimates can be difficult to make, replacement cost

is sometimes used to set a ceiling price on the acquisition (Harrington, 1993:182).

2.10.6 MARKET VALUE

A good starting point in estimating an acquisition's price is the market value (see 2.7.3) of the company's shares. If the shares are publicly traded, its market value is simply the market price per share times the number of shares. If the acquisition is expected to increase value for the shareholders of one or both companies, this increase in value is unlikely to be reflected in the public price of the common shares of either company. Thus, if there are synergies (see 2.5.1 and 2.5.3) and value is created, the current market prices underestimate the present value (see 2.8.1) of the merging companies (Harrington, 1993:182).

2.10.7 SUMMARY

Valuation techniques can be helpful in the determination of the gains and losses that may result from mergers and acquisitions. All of the above-mentioned techniques have their own sets of benefits and drawbacks and it will be best to use all of them in conjunction in order to get a clearer picture of what the results of the merger or acquisition will most likely be.

2.11. RESULTS FROM MERGERS AND ACQUISITIONS

Whether or not a merger or acquisition is a success depends on the circumstances of each case. Synergy (see 2.5.1) does not automatically arise. The key to the success of the merger or acquisition turns out to be the amount of thought and planning that has gone into it and the ability of the people (see 2.5.1.8) involved (Samuels et al., 1999:525). The results of a merger or acquisition with regard to gains (see 2.5 and 2.9) can be described as follows:

2.11.1 THE ECONOMY – A SOCIAL GAIN.

Although the overall economy does not gain from merger and acquisition activity, this does not discourage managers of individual companies from engaging in such activity because (Samuels et al., 1999:526):

- Some acquisitions are successful: The managers of a company may believe that the acquisition in which they are engaged will be one of those; and
- Although an individual merger or acquisition may not benefit the economy, there are parties, for example shareholders or managers of one of the companies, involved in the acquisition who do benefit.

According to Diacogiannis (1994:684) society will benefit from mergers and acquisitions which are used to eliminate bad management or to re-allocate sources to efficient uses, but if managers are making decisions at the expense of shareholders the merger or acquisition will not be beneficial.

2.11.2 SHAREHOLDERS OF THE TARGET COMPANY

The acquiring company (bidder) almost always has to offer a premium to the shareholders of the target company to induce acceptance of the merger or acquisition (Jones, 1992:638). This leads to a gain for the shareholders of the target company and the price of the target shares usually rises even on the basis of rumours of an intended bid (Samuels et al., 1999:526).

If the directors of the target company do not fight the acquisition bid successfully, they are not benefiting their own shareholders, but only themselves in the sense that they stay independent. They should try to obtain the best possible price for their shareholders, and this might mean recommending rejection of the first bid, with the hope that the bidding company will come back with an improved offer (Samuels et al., 1999:526). If the merger or acquisition is not successful and the

company will not receive additional offers in the foreseeable future, the shareholders of the target company will realise losses (Diacogiannis, 1994:685).

2.11.3 SHAREHOLDERS OF THE ACQUIRING COMPANY

The value of an acquisition or merger to the shareholders of the acquiring company depends on the synergies arising from the merger and the price paid for the target company (Ely & Song, 2000:471). They usually do not earn much in market value from business combinations (Diacogiannis, 1994:685) and their position seems to be neutral (Samuels et al., 1999:526).

2.11.4 DIRECTORS ON THE ACQUIRING COMPANY

The directors of the acquiring company gain from a successful acquisition policy as they receive increased status and power from running a larger company, and at the same time they may receive increased financial rewards (Samuels et al., 1999:528). They may, however, also lose their jobs, when the company becomes engaged in unsuccessful mergers or tender offers (Diacogiannis, 1994:685).

2.11.5 DIRECTORS OF THE TARGET COMPANY

The directors of the target company lose because they are likely to be dismissed from their jobs, either because they are judged to be inefficient (see 2.5.1.8) or because they have fought the acquisition and so cost the acquiring company a lot of money. However, there are exceptions (Samuels et al., 1999:5528):

- A number of managing directors of larger companies have come into those companies as a result of being a director of a target company; and
- Directors of the target company usually own shares and options and so will gain from the premium offered above the pre-bid share price.

2.11.6 EMPLOYEES

A number of the employees of the target company may lose as certain parts of the target company may be closed down, due to the duplication of functions and processes. In order for a merger or acquisition to be a financial success it may be necessary to create such redundancies. It can also be that the target company had more employees than was necessary, and it was this inefficiency that has made it an acquisition target (Samuels et al., 1999:528).

2.11.7 FINANCIAL COMPANIES

Financial companies involved in negotiations and any resulting battles benefit from acquisitions and mergers because their expertise is considerable, and their fees have to be paid whether or not their advice leads to success (Samuels et al., 1999:525-5).

Although mergers and acquisitions are usually extremely well planned in terms of financial and legal aspects, poor results can be obtained due to poor human resource planning. For a sustained competitive advantage to be achieved, a sound behavioural approach must be followed (Appelbaum et al., 2000:649). Cultural issues are thus strategically important in mergers and acquisitions and the success of corporate restructurings depend on the ability to meld two or more separate corporate cultures into a coherent new one that is embraced by all employees (Tompkins, 1998:2).

2.12 CORPORATE CULTURE

Corporate culture is defined by the formal and informal values, beliefs and practices that exist within a company. Corporate culture encompasses the way in which the company presents itself to the outside world as well as the way in which internal operations are conducted (Harper, 1998:3).

The following three dimensions can be distinguished in corporate culture (Palmer et al., 1992:383-386):

2.12.1.1 The depth or vertical dimension

The basic objectives and values of the company are spelt out in this dimension. These objectives and values are the reason for the existence of the company and are expressed in specific actions. These actions include the formulation and acceptance of policies, programmes and procedures.

2.12.1.2 The breadth or lateral dimension

This refers to the scope of the various types of activities carried out. In this dimension various actions must be co-ordinated. Lateral co-ordination is achieved by means of well-planned systems of record keeping, convening meetings and appointing committees.

2.12.1.3 The dimension of progression

This refers to the extent to which different plans of action that are in progress at a certain point in time have continuity and permanence. This is also closely related to the assurance that the different streams of activities are continually linked to the basic objectives of the company.

According to Clemente and Greenspan (1999:9) corporate culture can be broken down into three basic determinants:

2.12.2.1 Structure

In this context, culture can be determined by certain identifiable characteristics. Structural factors include, for example, the size, age and history of the company;

the industry in which it operates; the geographic location of the company's operations; and whether it is a product or service provider. These factors should be studied, as they influence the way a company works on a day-to-day basis and how its employees interact with each other, their customers and their markets.

2.12.2.2 Politics

Here, culture can be defined as the distribution of power throughout the company and the modes of managerial decision-making. A company's political composition sets the tone within a company, which impacts directly on the employees' functional activities and contributes to the sentiments employees hold toward their roles within the company. From a political standpoint, corporate cultures move along a continuum that modulates from a dictatorial point of reference on one extreme, to one of total employee empowerment on the other.

2.12.2.3 Emotions

Culture is also influenced by the personal feelings individual employees hold toward the company, its policies, and the overall corporate context. On an emotional level, therefore, corporate culture is defined as collective thoughts, habits, attitudes and patterns of behaviour from the employees' individual perspective.

Cultural compatibility is one of the most important factors in merger and acquisition planning, because, as mentioned above, the success of corporate restructurings is dependent on a good culture fit.

2.13 CULTURAL COMPATIBILITY

The issue of cultural compatibility is related to the type and implicit terms of the organisational contract or partnership agreement (Cartwright & Cooper, 1992:72). The following types of cultures can be distinguished:

2.13.1.1 The power culture

A power culture is typically found in very small companies where culture is dependent on a central power source (Palmer et al., 1992:392) because these cultures are often impossible to sustain, as the company grows larger, necessitating the diffusion of power, or when key individuals leave (Cartwright & Cooper, 1992:60). This culture is characterised by few rules and regulations and control stems from a nucleus comprising a few key individuals (Palmer et al., 1992:392).

Power cultures impose the highest level of constraint on individuals in that they provide the least opportunity for employee participation and concentration. Employees are instructed to obey instructions without question and the managerial style is highly commanding (Cartwright & Cooper, 1993:5).

Power cultures can be further differentiated in terms of type and perceived legitimacy of power exercised as being patriarchal as opposed to autocratic. Patriarchal power cultures derive power from direct ownership, or at least from some financial or recognised personal stake or commitment to the continuing future of the business. The nucleus of power rests with an individual or small group of individuals, which is perceived by the rest of the workforce to be its "champions" or "protectors". Such cultures may be experienced as oppressive, but the exercise of power is considered legitimate, often benevolent and therefore understood. Patriarchal power cultures tend to retain a high degree of support and employees often act out of personal loyalty to the founder or

organisational leader. In contrast, individuals in purely autocratic cultures justify their power by virtue of their status or position in the organisation rather than any links of ownership, personal involvement, or self-sacrifice. Unlike patriarchal power cultures, those in authority are not recognised or considered to be genuinely interested in the continuing future of the organisation, because they are likely to soon move on to other opportunities. Such cultures are frequently experienced as more oppressive and dissatisfying than patriarchal cultures, because power is resented and worker alienation is a common feature. Employees often act out of fear of punishment, and organisational commitment within power cultures tends to be compliance based (Cartwright & Cooper, 1993:5).

Although such companies are often successful, the morale of employees is usually low, with a high staff turnover, especially at the lower levels of the company. People who are employed often manifest a strong orientation towards power, politics and risk taking (Palmer et al., 1992:392).

2.13.1.2 The person/support culture

This culture regards the individual as the pivot on which the company hinges and the company is thus subordinate to the individual and depends on the individual for its existence (Palmer et al., 1992:392). In this culture, structure is minimal, the culture exists and functions solely to nurture the personal growth and development of its individual members, and information as well as influence and decision-making are shared collectively (Cartwright & Cooper, 1992:64).

This culture is more often found to operate in communities and co-operatives, but it may also be encountered in certain professional partnerships where there is a common agreement to share facilities such as office space or secretarial services (Cartwright & Cooper, 1992:64).

2.13.1.3 The role culture (bureaucracy)

Many organisations, by virtue of their size, develop role cultures (Cartwright & Cooper, 1993:6). These cultures are based on certain functional specialities. They function along the lines of certain stipulated procedures (Palmer et al., 1992:392), and their guiding principles are logic, rationality and the achievement of maximum efficiency (Cartwright & Cooper, 1992:62).

Formal procedures and regulations concerning the way in which work is to be conducted are a central feature of this type of culture and role requirements, boundaries of authority and reporting arrangements will be clearly defined (Cartwright & Cooper, 1992:62).
As a rule, a small number of senior managers are responsible for co-ordinating the whole company. A great deal of value is attached to job descriptions and an individual's main source of power is his/her position. An individual is therefore appointed specifically to play a role successfully in a company and not for achievement as such (Palmer et al., 1992:393).

This culture is successful in stable environments such as insurance and banking (Palmer et al., 1992:393), but their high degree of formalisation makes them slow to change (Cartwright & Cooper, 1992:63). Certain important benefits can be derived from role cultures. These include security and predictability, promotions at a constant rate and opportunities to acquire skilled knowledge (Palmer et al., 1992:393). Role cultures often constrain innovative and risk-taking behaviour and they are frequently experienced as impersonal and frustrating as employees of such a culture tend to feel that they are small cogs in a large organisational mechanism (Cartwright & Cooper, 1992:63).

2.13.1.4 Task/job/achievement culture

An important feature of this culture type is the emphasis it places on accomplishing the task, and the energy it directs towards securing the necessary task-related sources and skills. Task cultures are further characterised by their flexibility and high levels of worker autonomy, making them potentially creative and satisfying environments in which to work (Cartwright & Cooper, 1992:63-64).

Influences within the company stem mainly from expert power, although personal power may also play a role. Task cultures are team cultures, based on co-operation among groups in an effort to achieve greater efficiency. Decision-making is in the group and people have greater control over their own work (Palmer et al., 1992:393).

Task cultures tend to exist within companies, for example in specific departments, such as research and development, but as task cultures seek to offer their customers tailored products, they are often encountered in high-technology and service industries. The lack of formal authority means that control is problematic to task cultures and in times of crisis, they tend to change into role cultures (Cartwright & Cooper, 1992: 63-64).

While there is no best culture for organisational success, the different culture types create different psychological environments for their members. Some evoke deeper commitment and are experienced as more satisfying than others (Cartwright & Cooper, 1993:5).

When a company acquires or merges with another, there are three possible forms such a contract may take, dependent on the motive, objective and power dynamics of the combination (Cartwright & Cooper, 1992:72):

2.13.2.1 The open combination

This occurs when the acquirer or the dominant partner is satisfied with the present performance of the target company, and has confidence in its existing management and its ability to realise its future growth potential. In such circumstances the acquisition is usually considered to represent a purely strategic extension of the acquiring company's business activities and the acquirer sees its own role primarily as supporting its acquisition and furthering its development and growth.

The essence of the open combination is that of non-interference, whereby the acquirer allows the target company to operate as an autonomous business unit and maintain its existing culture. In this case, change is likely to be minimal and provided that the acquisition continues to produce the expected financial results, the target company is prepared to tolerate any cultural differences and will not move to introduce any managerial or wider socio-cultural integration.

2.13.2.2 The traditional combination

This occurs when the acquirer or dominant partner is dissatisfied with the present performance of the target company and/or its existing management. In such circumstances the acquisition may have been made for strategic and/or financial reasons.

In a traditional contract the acquirer usually sees its own role as primarily being to redesign the target company, and the essence of the traditional "marriage" is that of radical and wide-scale change, whereby the target or the other merger partner totally adopts the practices, procedures, philosophy and culture of the acquirer. The success of the traditional contact thus depends upon the willingness of the combining partner to adopt and assimilate into the culture of the acquiring company.

2.13.2.3 The modern or collaborative combination

This occurs when there is a high degree of respect between the parties, and a genuine recognition that the integration of the operations or the exchange of expertise will ultimately be of mutual benefit. In such circumstances it is not the case of the successful company taking over the unsuccessful company, but a combination of different but complementary forces, wherein both parties have a contribution to make.

The essence of the collaborative combination is shared learning and this combination seeks to positively build on and integrate the two or more companies to create a 'best of both worlds' culture. Collaborative combinations are not without their problems and successful integration is dependant upon the ability and speed with which senior management acts to diffuse any feelings of threat which exist between the two or more merging workforces, and moves to facilitate meaningful co-operation between such workforces.

When two cultures come together, the term *acculturation* can be used to describe the resultant process of contact, conflict and adaptation. As merger success in both traditional and collaborative or modern "marriages" is dependent upon the speed and extent to which an unambiguous and coherent culture is established, it becomes crucially important for consensus to exist between the combining companies and their members as to the desired mode of acculturation. Acculturation occurs through four different modes, depending on the extent to which members are satisfied with and value their existing culture, and their evaluation of the attractiveness of the other culture (Cartwright & Cooper, 1993:7-8):

- Assimilation: When members of the target company willingly relinquish their existing culture, and adopt and become absorbed into the culture of the acquirer or dominant merger partner, they assimilate. If members of the target

company resist and are unwilling to abandon their culture, separation occurs. Often acquirers seek to enhance assimilation and avoid the problem of separation by displacing resistors;

- Deculturation: When members of the target company are dissatisfied with their existing culture, but unconvinced as to the attractiveness of the other culture, deculturation occurs. Consequently employees experience confusion and alienation;
- Integration: Ideally, there are interaction and adaptation between the two cultures, which result in the evolving of a new culture that represents the best of each culture. However, this requires change and ultimate balance between the two cultural groups, which, as a merger is rarely a combination between equals, seems to occur infrequently in practice. This situation represents considerable potential for culture collisions and fragmentation; and
- Separation: This occurs when members of the target company resist any attempt to assimilate or adapt to the culture of the acquirer and the maintaining of separate cultures is likely to result in culture collisions and a lack of cohesiveness.

Analysing and assessing cultural compatibility is necessary for effective merger and acquisition planning. The corporate function best suited to help senior management avoid pitfalls of incompatible cultures is human resources (Clemente & Greenspan, 1999:9-10).

In the assessment of a company's culture, corporate data must be gathered. An analysis of both companies' organisational charts is a good starting point. A look into the age, years of service and qualifications of senior and middle managers generates important information on the cultural make-up of each company. By examining these people's experience prior to joining the company, a perspective on the industries and technical areas from which management are hired can be determined (Clemente & Greenspan, 1999:9).

It is also necessary to accumulate data relative to the employee base's psycographic or attitudinal composition. Such research can provide valuable input on workers' beliefs regarding different aspects of the company. After the restructuring, employee surveys of the newly acquired workers must be conducted regularly. Inquiring about the changes that have taken place in the restructured company and how people feel about them reveals their sentiments toward the initial phases of re-alignment – input that is necessary to craft future consolidation initiatives (Clemente & Greenspan, 1999:9-10).

The commonalities found in the social, political and emotional areas of analysis helps to create the backdrop for all attempts at long-term cultural alignment. The attitudes and beliefs that are not shared need to be quickly identified and addressed. If the belief systems are going to change, employees first need to understand their feelings about these issues. They need to be shown that holding or adopting a belief other than their current one can empower them better and make them better respected and rewarded. This is the key challenge to managing change. Some individuals are more resistant than others, and may require patient guidance, but belief systems can be changed, if their benefits are clearly demonstrated and continually reinforced (Clemente & Greenspan, 1999:10).

Once the cultural compatibilities of the two or more companies involved in restructuring are determined, the differences in the cultures will be clear and actions can be taken to survive and manage them effectively.

2.14 CULTURAL DIFFERENCES

Many companies suffer from culture clashes. Culture clashes can be explained as value similarities and differences (Risberg, 1997:257). According to Harper (1998:5), if a merger or acquisition is a done deal, and things are not going well,

the following can be warning signs that a corporate culture clash can be the problem:

- A significant rise in customer complaints;
- Product quality problems;
- Missed or delayed goals;
- Overt conflicts between employees or departments;
- Key employees or customers who begin leaving;
- Low morale, often evidenced by lower attendance at work and company events, more accidents or a rise in insurance premiums due to increased usage; and
- Unexpected financial losses, such as a drop in earnings or stock prices.

According to Weber (1996:1185) the degree of cultural differences may also determine the effectiveness of the integration process and eventually the financial performance of the merger.

Companies must have three basic characteristics if they are to survive cultural differences and want to prosper through proper cultural management. They need (Hoecklin, 1995:53-54):

- Cohesion among members about common purposes;
- Co-operation between various parts of the company; and
- Some form of hierarchical order that is recognised as legitimate, acceptable, proper and preferably motivating.

Regardless of the current organisational form, industry, size or culture, there is an opportunity to derive tangible benefits from cultural differences. Recognising this possibility and acknowledging what culture is and is not, failures and mistakes from cultural misunderstandings and mismanagement can be

prevented. Managers can also begin to realise the potential advantages of using culture strategically (Hoecklin, 1995:53).

Acknowledging cultural issues and committing to dealing with them constructively and methodically can avoid cultural differences. An important key is realising that change, while inevitable, is not inevitably debilitating, that it can be envisioned and managed (Farmer, 1996:35).

Minimising all or at least most cultural differences in mergers and acquisitions starts with a process called cultural due diligence. That is, weighing the suitability of a cultural merger or acquisition before the deal is finalised, and using this information to plan a rapid and smooth integration (Harper, 1998:3).

In the process of cultural due diligence, all areas of the involved companies' cultures must be examined. The areas to cover include (Harper, 1998:3-4);

- Business philosophy: This involves the company's philosophies and ethics regarding employees, customers, shareholders and the community. Differences here can lead to clashes over strategic direction, goals, staffing decisions, layoffs, employee benefits and raises, charitable donations, financial reporting and even environmental issues;
- Critical success factors and measurements: This involves the company's definition of critical success factors such as customer service or quality. Different answers to these issues have an impact on what is measured. For example, customer service could be measured by how quickly the customer receives a response, or it could be measured by the customer's reported satisfaction with the response;
- Leadership/management style: This includes the characteristics of the "ideal leader" in the company. For example, are decisions primarily made by consensus or from above?; What is communicated to employees, and how?; Are policies enforced loosely or strictly?; and how are creativity and

innovation fostered?; Contrasts here can mean the difference between satisfied, committed employees who will do anything for the company and disgruntled employees who feel like their job is just a job and nothing more;

- Organisational structure. This involves the determination of the structures of the companies involved. The one can for example be hierarchical while the other can be flat or matrix. Incongruities in this area can lead to confusion and clashes about roles in the company and who will have authority over whom;
- Work flow/practices: This involves the flow of work between departments in each of the two companies. For example, is one or both organisations ISO 9000 certified? Drastic differences in the use of technology, systems and procedures can mean increased organisational "fires" along with a slip in quality and efficiency when the two companies merge;
- Perceptions/expectations: This includes the trust and comfort levels between divisions and departments, and between management and employees. For example, is either company unionised? Merging a high-trust company into a low-trust company can dramatically hamper productivity as conflicts escalate between individuals and groups;
- Customs/artifacts: Every company has its own special customs and artifacts. For example, do employees leave right at 4:30 or are they expected to stay until all hours?; Do people dress casually or formally?; Are honours awarded or bonuses given?; Extreme contrasts in these areas indicate fundamental value differences that may have a negative impact on employee morale, productivity and retention; and
- Facilities/work environment: This involves the messages conveyed by the work environment. If one company has private offices for its employees while the other has workstations for all but executives, it may send out unintended messages of job importance and regard for workers.

Recognising and addressing all these elements of corporate cultures, the differences and similarities between companies can only make a merger or

acquisition go more smoothly by enabling early planning with regard to any obstacles that may interfere with or slow down integration (Harper, 1998:4-5).

People who have expertise in organisational change, human resources or communication are most likely to be included on due diligence teams. The commencing of cultural due diligence while negotiations are in progress gives merger parties a valuable early start in making transition plans. Important questions can be addressed during due diligence, for example, is the prospective target's culture risk-averse or entrepreneurial?; Does it promote team-building or individual effort?; Does it emphasise expense control or revenue growth?; and do its cultural attributes clash with those of the acquiring company (Farmer, 1996:35)?

Once all the cultural differences have been sorted out, the establishment of a new culture can commence. The establishment of a new culture is important because it will be a mistake to impose the acquiring company's culture on all employees as the new management is then giving up a unique opportunity to capture the best from each company and to think beyond what each was before. Building a culture based on elements of both companies' styles also helps put all employees on an equal footing and can eliminate any turf rivalries or power struggles. The new company should not operate the way the old one did as the old ways are not necessarily the best ways for the new company (Huret, 1993:16).

After a new culture has been established, this culture must be integrated throughout the company, in order to help employees adjust.

2.15 CULTURAL INTEGRATION

The integration team must both identify a culture (i.e. values, norms, beliefs and behaviours) that supports the company's strategic goals, and inculcate that culture throughout the joined companies (Tentenbaum, 1999:32).

The *first phase*, identifying an appropriate culture to support the business goals, is difficult and time consuming. It is assumed that every company is clear about its goals and the environment needed to support these goals. In reality, few companies pay sufficient attention to establishing the connection between the two. Companies will often identify five or more positive-sounding values (e.g. customer service, respect for the individual, innovation, diversity and teamwork) that bear no relationship to the work of the company. A meaningful value system must be effected by the management (Tentenbaum, 1999:32).

The *second phase*, inculcating the new culture throughout the company, is equally difficult, for three reasons (Tentenbaum, 1999:32):

- Size alone is an issue: Recent mega-mergers call for integrating many people into one entity all sharing the same vision, values, norms and commitment;
- Many mergers are built upon previous mergers, with some employees having participated in a bewildering array of mergers and acquisitions and being too change-weary to embrace yet another company with yet another culture; and
- Culture addresses individual and organisational beliefs and values, elements which are among the most difficult to change.

The integration team can manage the integration of the merging companies' different cultures in two major ways (Tentenbaum, 1999:32):

- The team can draw upon cultural artifacts to create the blended culture. A powerful artifact is the use of symbols (e.g., logos, slogans, pictures, signs and uniforms) to convey an image and then make use of a variety of activities

(e.g., storytelling, rites, rituals and ceremonies) to reinforce that image. It is up to the integration team leader to ensure that there is substance to the cultural efforts, that they are authentic, consistent with the company's goals, and appropriate to the image of the company; and

- Culture can be managed by collaborating with managers throughout the company to leverage the combined company's strengths in the face of the disruption caused by a union. One way to get both sets of employees on board while maintaining productivity and preventing slippage is to set a super-ordinate goal, one that can only be achieved by both companies working together effectively.

The merger or acquisition of two or more companies as well as the integration of a new culture throughout the new company leads to change and transition for all involved. Change and transition must be managed for optimal results.

2.16. THE DIFFERENCE BETWEEN CHANGE AND TRANSITION

Change is not the same as transition. Change is situational, for example the new policy or the new team roles. Transition is the psychological process people go through to come to terms with the new company. Situational change thus hinges on new things, but psychological transition depends on letting go of the old reality and the old identity that prevailed before the change took place. Change will thus only work if transition takes place (Bridges, 1991:3-4).

The management of change is an important cultural factor as the culture of an existing company may either facilitate organisational change, or it may be a factor in bringing about the downfall of any such change (MacKrill, 1996:13). According to Bate (1994:26) a culture change can bring about a change in the structure as well as a change in the strategy of a company. In the wider sense, a change in culture will thus bring about a change in the company.

Four approaches can be used for implementing cultural change. This involves the following (Bate, 1994:168):

- The aggressive approach: This approach is power-coercive, conflict-centred, non-collaborative, unilateral and imposed;
- The conciliative approach: This approach is collaborative, emergent and integrative. Group problem solving is important, with the aim being win-win situations;
- The informal approach: This approach is political, coalitional, unplanned and evolutionary; and
- The indoctrinative approach: This approach is normative re-educative.

Usually none of the four approaches described above is likely to give a company all that it wants. It is far better to assume that a change program will have to be built up piece by piece, tailor-making it to the company's particular aims and requirements (Bate, 1994:212). The following design parameters can be used as a guide (Bate, 1994:204-205):

- Expressiveness: The ability of an approach to express a core idea;
- Commonality: The ability of an approach to create a unifying set of values;
- Penetration: The ability of an approach to permeate different levels of the organisation;
- Adaptability: The ability of an approach to adjust to changing circumstances; and
- Durability: The ability of an approach to create a culture that will be lasting.

The above design parameters thus provide a basis for evaluating the effectiveness of any cultural change programme. The four approaches discussed above can be analysed, so that the areas in which they are strong and weak can be identified. Each approach can then be given a simple rating of high, medium and low on each of the five design parameters, and from this an initial impression

of effectiveness can be gained. This can be supplemented by a brief qualitative analysis (Bate, 1994:210).

According to Bridges (1991:5-6), once it is understood that transition begins with letting go of something, the first step in the task of transition management is taken. The second step is to understand the neutral zone, that is, what comes after letting go. The neutral zone is a time when the old way is gone and the new way does not feel comfortable yet. This zone is the core of the transition process and is both a dangerous and opportune place. A new beginning can only be made if an ending is made first and if some time has been spent in the neutral zone.

According to Tearle (1992:89) managing transition not only requires careful planning, but also requires a change in the hearts and minds of all the people involved in the company. The following basic steps are involved in the transition management process (Tearle, 1992:89):

- The company must form a picture of where they want to be in the future, that is, develop a vision;
- The company must form a picture of themselves today. The current position thus has to be compared to the vision;
- The company must develop plans to move from where they are today, to where they want to be in the future. This involves setting goals to bridge the gap between the current situation and the vision; and
- The company must identify factors that will either block or support their plans. They must develop plans to overcome these barriers, and build their strengths.

2.17 CONCLUSION

This chapter introduced the theory of mergers and acquisitions. Depending on the relation that companies have with regard to each other, mergers and acquisitions can be divided into three categories: horizontal; vertical and conglomerate mergers and acquisitions. Merger and acquisitions differ from each other in the sense that with a merger, the one company is completely absorbed by another and all of the assets and liabilities are acquired, with the shareholders and directors of the companies supporting the idea of the combination while they continue to have an interest in the combined company. With an acquisition a company will acquire another by buying most or all of its assets or by acquiring the companies voting shares in exchange for cash, other securities or a combination of the aforementioned but neither the pre-bid shareholders nor the directors of the target company will have any continuing interest in the enlarged company.

A company can acquire another in several different ways, namely by means of a merger or consolidation, an acquisition of shares or an acquisition of assets. All of these methods have their advantages and disadvantages and the choice between them depends on many factors, such as cost, time and the viewpoints of the shareholders and management of the target company. Resistance against acquisition bids sometimes occur. This is usually because people feel that they are going to lose something that is valuable to them, for example managers are afraid to lose their jobs, and shareholders their control over the company. In making a decision on whether to reject a bid or not, directors must not be self-interested but must rather do what is best for the shareholders.

If synergy is expected from a merger or acquisition, it is expected that the present value of the combined operations of the companies involved will exceed the cost of executing the merger, including the cost of acquiring the other company's shares or assets. This synergy can be a possible source of gains

from mergers or acquisitions. Gains can also come from several other sources, including revenue enhancement, cost reduction, taxes, changing capital requirements, technology or managerial skills. However, all reasons for mergers and acquisitions can be reduced to one, namely the creation of wealth for the target company's shareholders. Mergers and acquisitions can also have financial side-effects, such as earnings per share growth and diversification.

The gain from a merger or acquisition is defined as the difference between the market value of the post-merger company relative to the pre-merger market values of the two companies as separate entities. The gain can be calculated by using various techniques. Of these techniques, the present-value analysis is the most important, but other techniques like the earnings-valuation, book value, liquidation value and market value techniques are also useful as a supplement to the present-value analysis.

Before any corporate restructurings take place, the factors influencing the success or failure of a merger or acquisition have to be examined carefully. A merger or acquisition is a long-term decision and once executed, it cannot be reversed if the results are not what they have been expected to be.

For a merger or acquisition to be successful, members on both sides must recognise and accept the terms of the contract (Cartwright & Cooper, 1992:86) and the acquiring company's culture must not be imposed on all employees. A new culture must be established and this culture should incorporate the best parts of the cultures of each of the involved companies prior to the combination.

The strategic risk management framework that prevails in banks plays an important role in managing mergers and acquisitions in banking and will be discussed in chapter 3.

CHAPTER 3: STRATEGIC RISK MANAGEMENT

3.1 INTRODUCTION

The risks associated with a bank's operations are complex and large, requiring adequate management. Asset and liability management (ALM), as a part of strategic management, plays an important role in the management of a bank. The asset and liability committee (ALCO) process can be seen as the strategic management process in banks and forms the basis for determining and evaluating strategies, given bank risks and the future direction of the bank. If the ALCO process is handled correctly, a bank will be able to meet its objectives and achieve increased shareholder value, while containing risks inside the limits set by the board.

This chapter starts off with a description of the role of strategic management in banks with reference to strategy formulation, implementation and evaluation. Strategic ALM issues important in banks are described next, after which a discussion of the ALCO process and the ALCO policy document follows. This chapter is concluded with a section on bank regulation, after which a conclusion follows. It is thus important for mergers and acquisitions in the banking environment to be conducted with strategic risk management and bank regulations in mind. In this chapter only the general bank strategic risk management theory and bank regulations will be discussed, while the application of this theory to mergers and acquisitions will be discussed in chapter 5.

3.2 STRATEGIC MANAGEMENT IN BANKS

Palmer et al. (1992:107-108) define strategic management as the set of decisions and actions resulting from strategies designed to achieve the objectives of a bank. According to Preble (1997:770) the strategic management process includes three primary components: strategy formulation (strategic

planning), strategy implementation and strategy evaluation or control. These components will be discussed next.

3.2.1 STRATEGY FORMULATION (STRATEGIC PLANNING)

Strategy formulation (strategic planning) is concerned with determining the future direction of a bank and it usually includes conducting an external audit or scan that results in the specification of key external opportunities and threats, and an internal audit of the bank's most important strengths and weaknesses. Also included in this phase are the development of a mission and/or vision statement and the specification of long-term objectives (Preble, 1997:770). Strategy formulation is thus instrumental in classifying management's thinking and it also helps in making critical choices needed to achieve success (Chorafas, 1999:26). The components of strategy formulation will be discussed next.

3.2.1.1 Strengths, weaknesses, opportunities and threats (SWOT)

Once an information base is generated, the bank's strategic strengths, weaknesses, opportunities and threats will be analysed (in a so-called SWOT analysis). This forces managers to critically appraise the quality of specific individuals' skills, bank products, marketing policies and the bank's past operating performance (Koch, 1995:158). The SWOT analysis can be used to assess and validate existing strategies, and to develop new strategic objectives by seeking to leverage strengths, address weaknesses, harvest opportunities, and attack threats (Frigo et al., 2000:5). Strengths, weaknesses, opportunities and threats can be defined as follows:

- Strengths: Strengths are areas in which the bank has an inherent advantage over competitors (Koch, 1995:158). This may arise from a large customer base, name recognition, strong capital and asset quality, as well as strong and positive regulatory performance as described in 3.4 (Frigo et al., 2000:8).

- Weaknesses: Weaknesses are areas that need significant improvement or restructuring (Koch, 1995:158). This may arise from an ageing customer base, a lack of knowledge of the customer profile, a lack of marketing resources or a lack of technological resources, as well as Internet banking (Frigo et al., 2000:8).
- Opportunities: Managers should draw up a prioritised list of all internal and external opportunities that could provide a competitive advantage (Koch, 1995:158), for example cross-selling opportunities to existing customers or an increased presence by means of additional ATMs (Frigo et al., 2000:8).
- Threats: Managers should make a prioritised list of all external and internal threats to the bank (Koch, 1995:158). Such threats can come in the form of non-bank competition, inefficiencies within the operations of the bank, turnover of staff, lack of appeal to younger affluent potential customers and the inability of staff to adapt to the changing banking environment (Frigo et al., 2000:9).

3.2.1.2 Mission statement

Koch (1995:153-155) states that a mission statement answers the question "What is the bank?" and should include the following (Koch, 1995:153-155):

- A description of the business in which the bank is and the business in which the bank does not want to be;
- A description of what makes the bank different from the competition;
- A description of the bank's key values that must be adhered to by all employees;
- The values reflected in the bank's corporate culture (compare 2.14) and realistically expressed by senior management;
- Guidelines that allow for flexibility in response to internal and external change; and

- Demonstration of an understanding of market opportunities and how the bank will respond.

According to Channon (1985:12) a bank must make sure that it understands its own mission, as well as the mission of its competitors, to be able to establish successful strategies. According to Channon (1985:12-13) the mission of a bank can be determined by the following factors:

- Corporate history: The past history of the bank will have a significant impact on behaviour as past successes will influence the choice of future directions whilst past failures will tend to lead to areas of avoidance;
- Corporate culture: Every bank has its own unique internal culture made up of the way things are normally done, the type of people employed and the set of organisational norms and practices which govern both formal and informal behaviour as described in 2.14;
- Hierarchical management structure: The hierarchical management structure of the bank will significantly improve behaviour. This can apply to both the formal and the informal behaviour structures; and
- Key decision-makers: The style, aspirations and values of key decision-makers have a significant effect on the basic purpose of the bank. Just about no major shift in strategy or organisation can occur without a prior change of leadership.

3.2.1.3 Vision

A vision is important in the management of change and as mentioned in section 2.14 it can be described as a picture of where the bank wants to be in the future.

3.2.1.4 Objectives

According to Channon (1985:13) objectives are set by the board of directors and top management, taking into account the potential of the external environment, any self-imposed constraints identified by the overall mission statement (as mentioned above), the internal resources of the bank and the requirements of the shareholders.

Objectives allow a bank to allocate funds, labour, computer time and other resources in an objective manner. It also allows the communication of organisational intent by relating each employee's job to overall bank objectives. Objectives are best established after management has come to understand the internal and external environments and thus the strengths, weaknesses, opportunities and threats a bank faces (Koch, 1995:153).

In evaluating the objectives of the bank and its operating units, it is important to check that they are internally consistent, and that the achievement of the one does not exclude the achievement of another. The objectives of the operating units must also be consistent with those of the bank as a whole (Channon, 1985:13).

Strategy formulation not only helps bank managers determine what risks (see discussion 4.2 and 4.3) to take but also assists them in balancing credit risk (see 4.4.1), interest rate risk (see 4.4.3), liquidity risk (see 4.4.2), capital risk (see 4.4.8) and operational risk (see 4.4.7) with potential returns available from various strategies (Koch, 1995:153).

A sound planning methodology should characterise every strategy, because strategy is not an objective in itself, but a master plan towards accomplishing objectives (Chorafas, 1999:27). Strategy integrates the following aspects (Chorafas, 1999:28-34):

- Human resources, i.e. the clients, employees and shareholders: The human resources strategy is the most fundamental because a bank's most important asset is not cash, but its employees, its customer base and its customers' confidence. An important issue concerning strategic planning in connection with human resources is the bank's own personnel, including its management. This involves selecting and hiring, the establishment of individual responsibilities, indicators and objectives, the able handling of management inventory, lifelong learning and promotion and salary.
- Marketing and sales within the chosen market(s): The marketing strategy is concerned with ways to identify the bank's market and the developing of a plan to reach it in the most effective way.
- Product development, product appeal and life cycle(s): The bank's product strategy looks at the range of services offered to the market, the way they are priced, whether or not they respond to market requirements, and how well they are being supported through communications, computers and software.
- Financial resources and financial staying power: Financial strategy addresses the planning of liquid resources and those easily converted into cash without financial loss, in spite of uncertainties and turbulence. It also aims to protect and grow the economic resources available to the bank.
- Technological competence, moving ahead of competition: Technology is an enabling tool making it possible more effectively to reach the goals of the different plans. All the components of strategic planning must thus involve information technology sustaining an absolute and relative level of technological advancement and addressing technology and investments, return on each investment, solutions by competition, modelling and experimentation, available functional performance and technology transfer requirements.

Chorafas (1999:29) states that if a master plan rests on the able building and execution of these five major components, it will be in a position to address today's challenges. These include, but are not limited to (Chorafas, 1999:29):

- Product line choices;
- Market segmentation;
- Delivery channels;
- Marketing and branding;
- Pricing strategy;
- Risk management strategy;
- Scale of operations; and
- Operations in the back office.

Strategy is thus necessary to set priorities and to give a sense of direction (from here to there), while planning establishes the detailed road map that will be used to get there (Chorafas, 1999:78). To plan correctly, a bank needs to know how its market will change in the near future, and to alter its business strategy accordingly (Chorafas, 1999:112). Planning should thus be much more than just a corporate activity directed at marketing, and plans must be formulated on every level of the bank (Chorafas, 1999:79).

3.2.2 STRATEGY IMPLEMENTATION

According to Preble (1997:770) strategy implementation involves the modification of organisational structures and processes to ensure that planned results are obtained. This phase includes processes such as the establishment of annual goals and policies, the allocation of resources to obtain objectives, and adjusting motivation and reward systems in order to better match strategic thrusts (Preble, 1997:770).

According to Channon (1985:49-58) the following conditions are needed for the successful implementation of a bank's strategic plan:

3.2.2.1 A recognised need

For strategic planning to be accepted within a bank there must be a clear and unequivocal, recognised need that increased attention should be paid to the forward direction of the bank. Need recognition usually comes about through the emergence of the following factors:

- Unsatisfactory financial performance: When financial performance has deteriorated in relative terms in comparison with major competitors, top management will come under increasing pressure from large shareholders, and especially companies, to re-establish their relative market position;
- Successful competitive pressure: The superior performance of key competitors often prompts a management reaction in the form of the introduction of strategic plans to counter the competitors' strategy;
- Sudden and unplanned serious loss: When sudden and unplanned losses occur there is always a major inquest inside any bank. The result of such an inquest usually means changes in control systems in an attempt to prevent any recurrence of the problem; reorganisation to penalise those responsible for the area of loss; and reappraisal of the planning system to reduce business uncertainty; and
- Strategic shocks: A strategic shock can prevail when a major unexpected event occurs for which top management has no prepared response, for example, an acquisition bid or tender offer. If management has not adequately planned for the future, the shock of such an event forces rapid and rigorous reappraisal of plans and the planning system.

3.2.2.2 Leadership commitment

Without the clear commitment of the chief executive office (CEO), planning is unlikely to be successful. The ALCO, as described in 3.3.5 should be acting as

the arm of the senior executive management in the construction and implementation of bank strategic plans.

3.2.2.3 External catalyst

Most of the major changes in a bank's ALCO have been undertaken in conjunction with the use of external catalysts, mainly management consultants. These external consultants serve as a source of assistance and conceptual advice. They are also relied upon to modify the power base and culture of the bank by the introduction of management information as well as suitable planning and control systems.

3.2.2.4 Suitable reorganisation

The ALCO provides a strategic tool for the management of the bank as a whole. A carefully developed strategy will normally subdivide the bank's business into a portfolio of opportunities with alternative investment strategies. This has an impact on the way the bank is organised and a structure will be adapted to fit the needs of strategy rather than the strategy being unsatisfactorily fitted onto the existing structure.

3.2.2.5 Development of an information base

In small banks the key problem in initiating an ALCO is the lack of availability of suitable data for strategic analysis. A prerequisite for the successful introduction of the strategic plan is the collection and organising of suitable data for strategic analysis. Information required would include data to allow, for example, correct market identification.

3.2.2.6 Suitable control system design

The development of an appropriate management information and control system allows the bank to make better decisions on, for example, segmentation, a delivery system and pricing strategies. Without such information the bank may provide uneconomic services to customer groups that may be unattractive, through an inappropriate and over-expensive delivery system, for most of the time. In addition to financial controls, banks also need strategic controls, that is, the ALCO process, to monitor the progress of strategic plans and point to contingency action as appropriate at specific predetermined trigger points. The precise choice of what controls to concentrate on will vary for individual banks, depending upon their primary strategy.

3.2.2.7 Reward and sanction system balance

The successful implementation of strategic planning is enhanced by ensuring that the bank's reward and sanction system reinforces the planning process. It is important that this reward and sanction system is consistent with bank strategy, with behaviour positive to the plan being rewarded, and negative behaviour being sanctioned.

3.2.2.8 Good communication

It is imperative for successful strategic planning to communicate the desires of top management and the aspirations held about individual business units. A bank that does not adequately communicate its intentions can have inconsistency in the strategic objectives of the individual bank units and the bank as a whole. Communication also aids in creating a commonality of purpose, helps overcome the inertia that exists in many banks and acts as a positive motivating force.

3.2.2.9 Time

It is important that sufficient time be given to permit the development of good quality plans, which are credible and acceptable as most banks' earliest plans are of poor quality. It can take a couple of plans before a planning system settles down and starts to produce meaningful results.

3.2.3 STRATEGY EVALUATION (CONTROL)

According to Preble (1997:770-772) strategy evaluation is primarily concerned with traditional control processes, which involve the review and feedback of performance to determine if plans, strategies and objectives are being achieved, with the resulting information being used to solve problems or to take corrective actions.

2.3.4 THE LINK BETWEEN STRATEGIC MANAGEMENT AND ASSET AND LIABILITY MANAGEMENT.

ALM can be seen as an important part of strategic management because it is the process of evaluating actions to control risks (as described in 4.3) and to achieve the bank's goals and objectives (Goedken, 2001:8). The following steps are involved in this process (Uyemura & Van Deventer, 1993:9-10):

- Policies and guidelines: Operating limits (boundaries) must be set up for the risk-and-return trade-offs within which the bank feels it can safely operate. This helps establish the risk tolerance of the bank;
- Analysis: This refers to determining the bank's current position in every risk dimension. The aim of this step is to determine if the bank is currently outside of its risk limits or whether the bank will move outside its risk limits at some point in the future;

- Decisions: This is the responsibility of the bank's ALCO. If the bank is currently outside its limits, or is forecast to migrate outside its limits, a decision must be made as to how to correct the situation. Two types of decisions can be made. One is to attempt to adjust the current or future risk position of the bank or to alter the maturity structure of the future balance sheet through new pricing strategies or investment decisions. Another decision is to determine if the old risk limits are still appropriate for the bank. The ALCO can recommend to the board that the risk limits must be permanently or temporarily altered due to new circumstances, for example technological change;
- Execution: When the ALCO decides to alter the risk profile of the bank, a set of securities or off-balance sheet positions must often be undertaken. The treasury is normally responsible for the execution of these transactions; and
- Evaluation: Proper accountability and performance measurement are critical to the successful implementation of ALM. The success or failure of the attempted adjustment to the bank's risk profiles must be determined in a timely, objective manner.

3.2.5 SUMMARY

In this section the three components of strategic management were discussed. Strategic management can be seen as the process by which decisions and actions are taken to achieve objectives, given the future direction of the bank. To achieve its objectives a bank not only needs to evaluate and follow its existing strategies, but must also amend them or develop new strategies if necessary. ALM can be seen as the bank-specific component of strategic management, and in banks the ALCO process is used for the development, evaluation and amendment of strategies.

3.3 ASSET AND LIABILITY MANAGEMENT

ALM is thus an important part of strategic risk management and plays a role in the management of a bank's risks. As a discipline, ALM has been around since the early 1970s (Fabozzi & Konishi, 1996:1). At the beginning, it started out in the form of a simple liquidity gap model that analysed risk in terms of cash inflows and outflows and the gaps or mismatches in these cash flows. Later on, the cash flow gap models gave way to duration gap models (see 4.3.2) that look more at the attributes of cash flows rather than the cash flows themselves. Further advances are currently taking place in the ALM area (Fabozzi & Konishi, 1996:1) and ALM is no longer limited to interest-rate risk (Fabozzi & Konishi, 1996:2), but focuses on an integrated risk management approach, including risk-adjusted profitability measurement and capital allocation (see 4.3.8) for internal profitability analysis (Decillion, 1999). Specialised management teams, specifically tasked with ALM, are also set up in many banks.

The relatively rapid progress in the ALM field has been and will be propelled by many driving forces. Among these are:

- The phenomenal growth in the capital markets in the 1990s: This growth is fuelling the development of new hedging instruments and derivative products with increased hedging effectiveness. At the same time, the growth is also infusing enough liquidity into these products to make them useful and efficient (Fabozzi & Konishi, 1996:1-2);
- The advancement in the theory and technology of risk analysis, which in turn is advancing the state of the art in the ALM field: The most notable breakthrough is the parametric approach to risk evaluation i.e. total return, duration and convexity. By using these and even newer techniques, ALM can be simplified and at the same time expanded to include many capital market instruments (Fabozzi & Konishi, 1996:1-2);

- The education of financial intermediaries in the necessity as well as in the implementation of ALM: Customer education has advanced ALM more than any other endeavour and it will continue to be the most essential requirement of capital markets in the 1990s (Fabozzi & Konishi, 1996:1-2);
- Volatility in financial markets: The 1997/1998 decline in the Rand, escalation of interest rates and emerging market crises highlighted the true market exposure levels of many banks. The resulting profit squeeze forced banks to consider the tools at their disposal, which would prevent such a recurrence. As a result, ALM has developed from serving purely as a reporting tool to one that pro-actively manages the bank's potential risk (Decillion, 1999);
- Technological development of new products: Improvements in analytical tools and computer technology have facilitated the development of a framework that allows the integration of traditional market risk (see 4.4.6), credit risk (see 4.4.1) and operational risk (see 4.4.8) in the ALM process. New valuation techniques have been particularly useful in relating the various risk components to one another in a consistent risk management framework, enabling an assessment of the impact of transactions on the returns to shareholders on a risk-adjusted basis (Decillion, 1999);
- Regulatory initiatives: Until recently, only credit risk (see 4.4.1) was regulated in the financial sector. An improved understanding of the interrelationships between credit risk and market risk (see 4.4.6) is changing this scenario. Already, market risk for trading products is being defined in terms of a bank's capital holdings. Interest rate risk (see 4.3.3) from an accrual perspective will almost certainly also be regulated in the near future (Decillion, 1999); and
- Heightened awareness among senior management: The growing recognition of the ability of ALM to integrate the entire business of the bank is resulting in management attaching greater importance to the process (Decillion, 1999).

As interest rate risk (see 4.4.3) is usually one of the major problems that banks face, ALM focuses upon controlling the gap between rate-sensitive assets and rate-sensitive liabilities and upon the volume and mix of these instruments. The

central theme of ALM is however the management of a bank's entire balance sheet (Sinkey, 1983:481). ALM, among other functions, is thus concerned with strategic risk management and provides a comprehensive and dynamic framework for measuring, monitoring and managing the various risks of a bank that need to be closely integrated with the bank's business strategy (Internet Securities, 1999:3). ALM also involves the employment and raising of funds (Thornhill, 1990:10) as well as contingency planning in the sense that the bank must analyse the impacts of unexpected changes in the environment (for example interest rates, competitive conditions and economic growth) and how it will respond to those changes (Uyemura & Van Deventer, 1993:2).

Because of the importance of ALM in banks, ALM will be discussed next with reference to the techniques used for ALM, the selection and implementation of an ALM model, the responsibility for ALM, the ALCO process and the ALCO policy document.

3.3.1 ALM TECHNIQUES

A variety of techniques that can be used in ALM exist, for example asset allocation, asset conversion, trend analysis, forecasting, simulation models and linear programming models (Mason, 1979:410-424). Bank managers usually employ a combination of these techniques (Sinkey, 1983:501). Some techniques require more time and expertise than others and some involve no forecasting at all, while others include highly sophisticated methods of forecasting and balance sheet control. It is important that the individual banks decide what they can best afford, use and understand, and they should then choose the technique that benefits them most within their individual budgetary and manpower constraints. The choice of the technique will also depend on the bank's resources (Mason, 1979:410).

3.3.2 THE SELECTION AND IMPLEMENTATION OF AN ALM MODEL

According to Fabozzi & Konishi (1996:3-4) a bank wishing to implement ALM must consider three requirements:

- ALM concepts: A thorough understanding of the risks involved in a bank is important. ALM not only includes a formalisation of this understanding, but also a way to quantify and manage these risks. Even in the absence of a formal ALM programme, the understanding of these concepts is of value to a bank, as it provides a truer picture of the risk-reward trade-off in which the bank is engaged;
- ALM information system: It is only possible to manage risk if it can be monitored, and if the information necessary to measure the risks can be collected; and
- ALM decision-making process: Once the ALM concepts have been understood and the necessary data have been gathered to determine risks, a prudent decision as to the management of these risks can be made. The decisions are made by the ALCO.

The importance of a model stems directly from its use in considering the impact of different interest rate scenarios and volume forecasts on the future income streams of the bank (Aiken & Peat Banking & Finance Group, 1994:2). A wide variety of asset and liability models are currently available (Bitner & Goddard, 1992:157). Factors such as information about the supplying bank, model hardware requirements, downloading capability, model installation time, cost, vendor support and the ability to account for synthetic instruments like futures and swaps can be considered in the selection of a model (Bitner & Goddard, 1992:37-42). Another primary consideration when selecting a model is that it must be able to produce the reports (balance sheet, income statement, gap reports) required by the ALCO, in a format that is easily understood by the

committee members (Bitner & Goddard, 1992:17). The model should thus be a key instrument in the management of the bank (Styger, 2000:5).

Once the model has been selected, implementation can begin. According to Bitner & Goddard (1992:43) the implementation process may require one or two months. The process begins by developing a time line for each component of the plan and determining the resources required to successfully complete the project.

ALM relationships embody the entire scope of a bank's operations, and because of this, an effective ALM model includes an integrated process of co-ordination, analysis and communication that must include all operational units (Farm Credit Administration, 1991:2).

3.3.3 RESPONSIBILITY FOR ALM

According to Uyemura & Van Deventer (1993:8) the following four financial departments are usually actively involved in various aspects of ALM activities:

- Finance and internal audit department: This department reports historical financial performance, and therefore establishes the current balance sheet and income statement from which all risk analyses will be done;
- Budgeting (or financial planning) department: This department establishes the current year's financial objectives in terms of balance sheet volumes and revenues and expenditure based upon a "most likely" set of assumptions for interest rates, market trends and local economic and business cycle trends. This is normally a *bottom-up* process whereby individual units commit to specific financial objectives and the sum of the units determines the total bank goals. The budget can thus be seen as the outcome of the strategic risk management process and represents the financial side of the strategic plan;
- ALM department: This department forecasts the bank's balance sheet, cash flows and income statement, given changes or variances in the bank's budget

assumptions. This area thus simulates the bank's financials should the base case assumptions turn out to be wrong. This area also gauges the sensitivity of the bank's earnings and balance sheet strength (in terms of asset quality, liquidity and capital ratios) to unexpected changes in interest rates or market conditions. With this knowledge, the bank's management team can anticipate unfavourable circumstances and be ready to respond to them should they arise. ALM can also be a *top-down* process. It thus undertakes all analyses at the total bank level and sends signals to lower levels of the bank if adjustments are desired (Uyemura & Van Deventer, 1993:8); and

- Treasury: The activities of the treasury department can be divided into *local* and *foreign* activities. The funding, investment and interest rate risks are important with regard to local activities, and with regard to foreign activities, foreign exchange risk plays an important role.

3.3.4 THE ALCO PROCESS

ALM follows a specific sequence of identifying and quantifying risks, estimating interest rates and exchange rates, projecting future income and testing strategies to arrive at a strategy that is considered most appropriate for the bank. This is referred to as the ALCO process (Maré, 1995:1). The ALCO process can be seen as the most important part of strategic management in banks and comprises the following ten steps:

3.3.4.1.1 Step 1: Reviewing the previous month's results

The aim of this step is to determine whether the bank has followed the ALCO's decisions and whether the targets set for the bank have been met. According to Styger & Bothma (1998:2) the variance report forms the basis of this evaluation and the policy document should specify the limits of variance that can be tolerated, the procedures to identify the causes of the unacceptable variance, the

procedures to correct unacceptable deviations and steps to prevent future occurrences.

3.3.4.1.2 Step 2: The assessment of the current balance sheet structure (present situation)

According to Styger & Bothma (1998:2) the ALCO policy document (see 4.3.5) should specify the different benchmarks that should be used to evaluate the present situation.

These benchmarks include (Styger & Bothma, 1998:2):

- Financial management benchmarks such as return on assets (ROA), return on equity (ROE) and the cost/income ratio;
- Strategic risk benchmarks such as credit risk (see 4.3.1) on an aggregated level, liquidity (see 4.3.2) and liquidity buffers, and market segment exposure;
- Tactical risk benchmarks such as value at risk (VAR) as described in 4.3.5 and totals of the various hedging portfolios;
- Performance measures such as Return on capital (ROC) and risk-adjusted return on capital (RAROC) as described in 4.3.8; and
- Regulatory requirements (see 3.4) and in-bank benchmarks regarding amounts over and above the prescribed requirements.

Reviewing past performances (step 1) and existing balance sheet structures (step 2) form an essential part of the ALCO process, but too much time must not be spent on it in the ALCO meeting, because the past is only important in the sense that it is the foundation upon which the future will be planned. Future strategies are thus the main concern (Maré, 1995:2). The above-mentioned two steps can thus be seen as part of strategy evaluation.

3.3.4.1.3 Step 3: Doing future projections of the exogenous factors for various scenarios

Exogenous factors are those factors that emanate from outside the bank and over which the bank has very little or no control, for example interest rates and exchange rates (Maré, 1995:2). These factors affect the bank's income, expenditure and the value of certain products (Bothma, 2000:2). Exogenous factors must thus be forecast in order to be able to manage any adjustments in them and to prevent declines in the bank's income and in the value of certain investments. According to Bothma (1998:3) there are various techniques to forecast these factors (Delphi, Regression, Monte Carlo) and systems are also available to help with this forecasting. A large number of forecasts are required, for example forecasts for each product for each period (Bothma, 2000:2). Decisions about the upper and lower limits, as well as the most likely scenarios for these variables, should be decided upon (Styger & Bothma, 1998:3).

3.3.4.1.4 Step 4: Developing asset and liability strategies in the light of the projected exogenous factors

In response to the exogenous factors and taking the strategic direction and objectives that were set for the bank into account, a variety of strategies should be developed (Maré, 1995:3). All the developed strategies need to be investigated. According to Styger & Bothma (1998:3) the results of any viable strategy(-ies) should be forwarded to the ALCO meeting with recommendations for further investigation and implementation (Styger & Bothma, 1998:3).

3.3.4.1.5 Step 5: Simulating the various strategies for the various projected exogenous factors over the chosen future period

The policy statement should provide guidelines regarding the timeframes that should be used for different simulations, as well as guidelines regarding the

different outcomes. A list stating the purpose of the different simulations, for example, to determine funding needs, the capital requirements and growth scenarios for specific types of business should also be supplied to ensure that the ALCO meeting is provided with the required information needed to formulate strategies (Styger & Bothma, 1998:3). The above-mentioned three steps can thus be seen as part of strategy formulation.

3.3.4.1.6 Step 6: Determining the most appropriate strategy

The ultimate purpose of an ALCO meeting is to arrive at the most appropriate strategy for the bank, given its perception of the future (Mare, 1995:3). The most appropriate strategy is the one that gives the best results and not necessarily the one with the smallest risk or the greatest profit. Strategies must however be of such a nature that adequate profit will be made.

3.3.4.1.7 Step 7: Transforming the ALCO decisions into measurable targets

The chosen bank strategy must be transformed into targets. The different benchmarks that are used to access the present situation (step 2) are also the benchmarks used to set targets. Targets should be realistic and achievable, and the policy statement should specify how to involve the operational divisions in setting these targets and how to obtain their inputs and co-operation since the targets will have to be met by them. The person responsible and the time frame for each target should be specified (Styger & Bothma, 1998:4).

3.3.4.1.8 Step 8: Communicating appropriate targets to managers

Sometimes decisions taken or strategies decided upon by ALCOs fail to be communicated or communicated effectively to the managers as well as to the personnel of the different line functions (Maré, 1995:4). The policy statement should contain a detailed list of personnel responsible and accountable for

specific tasks. This list should form the basis of the communication process and should be channelled from the ALCO to the responsible persons (Styger & Bothma, 1998:4). Targets may be expressed in volumes of new business, type of product or price range and should be clearly communicated to the relevant parties (Maré, 1995:4). The above-mentioned three steps can be seen as the implementation of the strategic plan.

3.3.4.1.9 Step 9: Monitoring the bank's activities on a regular basis to ensure that the ALCO' s strategies are followed and targets are met

The ALCO must meet regularly. The number of ALCO meetings is determined by the risk profile attached to the bank's balance sheet. As a general rule the ALCO should normally meet formally between one and two times a month (Aiken & Peat Banking & Finance Group, 1994:2). According to Aiken & Peat Banking & Finance Group (1994:2) feedback on the process through the forum of informal meetings should continue between the set formal meetings. The terms of reference for the evaluation of personal achievements as well as corrective or incentive actions should be clearly specified in the ALCO policy statement and should be in accordance with the broad personnel policy. Guidelines on the use of the variance analysis, the benchmarks used to evaluate the success, the steps used to determine the reason for not achieving the targets and the process for corrective measures that should be taken should be specified (Styger & Bothma, 1998:4). This step together with the following step can be seen as strategy evaluation.

3.3.4.1.10 Step 10: Determining if the current strategy is appropriate

The assumptions regarding the exogenous factors that the strategies were based on might have changed. The bank has to adjust to these changes and the present strategies must be such that most advantage can be taken of the

opportunities (Styger & Bothma, 1998:4). It is thus necessary for the strategies being followed to be re-evaluated on a regular basis to determine whether they are still appropriate. Likewise, previous decisions and their objectives must be reviewed continuously (Maré, 1995:4). The policy statement should, again, provide guidelines, procedures and responsible personnel to enable this process to be as effective as possible (Styger & Bothma, 1998:4).

The ALCO process is sometimes not clearly understood. This creates many problems that can lead to a watered-down version of the ALCO process (De Beer, 1994:1). The problems created by a lack of a clear understanding of the ALCO process as well as possible solutions will be discussed next.

3.3.4.2.1 A lack of understanding of the purpose of the ALCO meeting

Far too many banks spend most of the ALCO meeting reviewing past performance (see step 1) and present situations (see step 2). The sole purpose of an ALCO meeting is to derive the most appropriate strategy for a bank to follow, given its perception of the future (see step 7). The main thrust of the meeting should thus be about the future, and the input documents, minutes, etc. should reflect this focus (De Beer, 1994:1-2).

3.3.4.2.2 Weak leadership/control of the ALCO meeting

The calibre of the chairperson (usually the CEO) of the ALCO meeting is of critical importance as he sets the tone of the meeting. The chairperson must thus ensure that discussions stay relevant and practical (De Beer, 1994:1-2).

3.3.4.2.3 Too large an ALCO committee or a wrongly constituted ALCO committee

The CEO, sometimes together with the Board, is responsible for appointing the members of the ALCO. Cade (1997:74) states that the composition of this committee must be treated with some care, in order for it to be integrated into the management structure and the strategic planning process and not to be seen as a law unto itself. The members of the ALCO can be drawn from throughout the bank, with the emphasis being placed on members who can make a positive contribution to the ALCO process and people who will ensure the proliferation of the strategy throughout the bank (Aiken & Peat Banking & Finance Group, 1994:2). The committee must be large enough to include the major areas of the bank that will be involved in the ALM process, but it must not be so large that it becomes difficult to function effectively. Ideally the committee should consist of at least four members but should not exceed eight members (Bitner & Goddard, 1992:12). In the South African context, a membership of approximately seven representatives has been found to be affective (Aiken & Peat Banking & Finance Group, 1994:2). More than ten regular members on an ALCO should be exceptional and should only occur in instances where consolidated meetings take place, like for a region. There should also only in exceptional circumstances be more than one representative of a particular line function. Most staff functions are likely not to be represented on a full-time basis, but could be involved in the main meeting on an "as requested" basis (De Beer, 1994:1-2).

3.3.4.2.4 Future scenarios are not properly developed or explained

Because it is expected of the ALCO to make decisions about the future, the perceptions of the future referred to in the meeting should either be their own or those of people or a bank that they respect. All views and scenarios should be examined to such an extent that they can see how these affect the bank, and it should be demonstrated clearly that the suggested strategies that they are asked

to approve have been developed in response to those perceptions of the future (De Beer, 1994:1-2).

3.3.4.2.5 Too low expectation levels on the side of members

Very few ALCO members know to what extent various strategies can be quantified and tested before the meeting and most of them will be quite happy to accept stacks of paper rather than interactive graphs, displayed on state-of-the-art equipment. It is the responsibility of the ALCO officer to continually raise the knowledge and expectancy levels of the ALCO (De Beer, 1994:1-2). Information must be set out clearly and concisely and it should not result in an information overload. The results must be restricted to the minimum number of pages needed to communicate the relevant information and it should include feedback on the prior ALCO meeting (step 1), the decisions taken (step 6) and the effectiveness thereof as described in step 10 (Aiken & Peat Banking & Finance Group, 1994:2).

3.3.4.2.6 Absence of or diminished importance of the PRE-ALCO meeting

The pre-ALCO meeting often does not receive the major attention that it should. In the pre-ALCO meeting the major players (for example the head of operations, head of funding and the ALCO officer) reviews the interest rate and foreign exchange views, the external assumptions as well as the internal assumptions for realism and attainability, and the simulated results. It is thus a screening of input and output that should result in a proposed strategy(-ies) for the main ALCO to approve, as well as a revised budget resulting from the strategies. The pre-ALCO meeting also determines where focus needs to be placed, what will be presented and how it will be presented. The pre-ALCO meeting thus determines the ALCO meeting's contents (De Beer, 1994:1-2).

3.3.4.2.7 Quality and presentation by the ALCO officer

In many banks the responsibility for developing scenarios/views is devolved to too low a level. As the persons who have developed the scenarios are usually not on the ALCO, they have to transfer their knowledge to a person who will be present at the meeting. The vision and the insight of this person determine the quality and the tone of both the pre-ALCO meeting and the final ALCO meeting. Unless the ALCO officer is familiar with what can or should be achieved, the quality of the ALCO process and meeting will be affected (De Beer, 1994:1-2).

The ALCO's operation and its effectiveness are thus affected by many factors. Of these factors the following can be considered the most important (Bothma, 2000:4-5):

- The total support of the CEO must be obtained;
- The CEO must see ALM as a high priority and communicate that message to all senior managers;
- All the major areas of the bank, for example, treasury, must be involved;
- The number of ALCO members should be between 4 and 8;
- The balance sheet must be viewed, as a very complicated interest rate arbitrage and interest rate forecasts are very important; and
- A sophisticated computer simulation model (see 3.3.2) that can not only produce a balance sheet, income statement and gap report but also cash flows, graphs, budgets and a variance analysis must be used.

The following steps can be taken to manage the ALCO more effectively (Aiken & Peat Banking & Finance Group, 1994:1-2):

- The ALCO must be established as a separate profit centre. The benefits of such an approach is that the commitment of the ALCO members to the

process can be obtained since they will be evaluated directly against the objectives established for the ALCO;

- The formalisation of the process in terms of minutes taken and the subsequent review thereof to identify the decisions taken and the specific roles played by the individual members will contribute significantly to evaluating the performance of the ALM function and of the individual members serving on the ALCO; and
- The level of understanding and communication between the ALM specialists and the members of the ALCO must be improved.

Banks tend to focus on maximising profits (Bothma, 2000:4). This is important, as there can be no healthy growth without profits to build the capital of the bank. The danger is that a short-term perspective can jeopardise the longer-term profitability, liquidity risk (see 4.3.2), credit risk (see 4.3.1) etc. For this reason a longer-term perspective must always be taken that will also accommodate the shorter-term goals. The following might be seen as the primary functions of the ALCO (Bothma, 2000:4):

- The provision of adequate liquidity;
- The management of interest rate risk within acceptable parameters;
- The maintaining and enhancement of the capital position of the bank; and
- The maximisation of the risk-adjusted returns to shareholders over the long term.

3.3.6 THE ALCO POLICY DOCUMENT

An important component of an acceptable ALM function is the development of an appropriate policy that provides boundaries for decision-making (Farm Credit Administration, 1991:2). According to Aiken & Peat Banking and Finance Group (1994:2) the establishment of a policy is necessary because:

- It provides the parameters within which the ALCO functions and is essential to ensure that the ALM process remains focused and effective;
- It provides senior management with a means of communicating the decisions taken with respect to the positioning of the bank in terms of its desired risk profile; and
- It provides a means for past ALCOs to communicate the benefits of experience gained to new members of the committee.

Most ALM policies begin with a statement describing the general objectives of the ALM function within the bank. Following the opening statement, the general goals are listed. The purpose of the general goals is to provide a broad focus as the framework for the more specific objectives to be defined later in the policy. A section describing the structure of the ALCO and its responsibilities is then presented. This section also describes the composition of the ALCO (see 3.3.4.2.3), mandates a regular meeting schedule (see 3.3.4.1.9), requires the maintenance of minutes for each meeting and designates the ALCO as being responsible for the bank's asset and liability process, as described above (Bitner & Goddard, 1992:57-58).

3.3.7 SUMMARY

ALM embodies the entire scope of a bank's operations, and its main responsibilities are the measuring, monitoring and managing of risks and the integration of these risks into the bank's strategy(-ies) in order to achieve objectives. The last aspect that needs attention is the regulations affecting banks.

3.4 REGULATION

Strategic risk management must always take place within a bank's regulatory framework. It is thus important to analyse the rules and regulations a bank must adhere to. Bessis (1998:38) states that regulation aims to improve the safety of

banks. Recent regulations have had a decisive impact on risk management and the regulatory framework sets up the constraints and the guidelines that inspire risk management, and simulates the development of internal risk management models and processes within banks. They have promoted more accurate definitions of risks, more adequate methodologies to measure them, and the concept of "risk-based capital" (compare 4.3.8), that is, the capital necessary to cover the actual risks of banks. At the same time the rules setting the minimum required capital are a strong incentive to improve risk measures and control (Bessis, 1998:38).

The strategies adopted by banks as financial service institutions and the objectives set by regulators have to be consistent with each other (Marcus, 2000:1). Numerous incentives for taking risk exist for banks, but taking risk creates other risks, for example, systemic risk (Bessis, 1998:39). The regulatory framework in South Africa within which bank supervision takes place, together with the authority, powers and responsibilities of the regulator, is provided by the Banks Act of 1990; the Mutual Banks Act of 1993, regulations relating to banks, regulations relating to mutual banks, and the core principles for effective bank supervision (Marcus, 2000:3).

Banking regulation has to keep a balance between two different needs. On the one hand it must relax barriers and unjustified limits to banks' activities, erasing bureaucratic attitudes that have often characterised public action. On the other hand, the awareness of the riskier environment in which intermediaries operate, and the recent failures, might require supervisors to take a more active part in a bank's strategic choices (De Bonis et al., 1999:73). The following aspects are regulatory concerns, because they could impact on the stability of the financial system as a whole (Marcus, 2000:1-2):

3.4.1 CONTAGION RISK

Banks operate in a highly competitive environment, encouraged by the development of new markets, instruments and techniques. Although many of these changes provide the means of diversifying risk, they also allow for greater risks to be taken. These developments provide challenges to central banks in attaining the appropriate balance between risk and stability in the financial system. It is the central bank's responsibility to provide a financial system in which the users of financial services can benefit from healthy competition between banks, but, at the same time, to ensure public confidence in the monetary system as a whole (Marcus, 2000:2).

In the case of a bank, contagion can best be described as the risk that a problem or problems in one or more associate entities contaminate the bank, leading to negative perceptions and sometimes also the failure of the bank (Marcus, 2000:2). The lack of confidence associated with one poorly performing bank thus spreads to other, healthy banks and contagion arises because customers know that once a run on a bank begins, liquidated bank assets will decline in value very quickly. Even healthy banks will thus be subject to bank runs and if most banks are affected, the financial system may also collapse (Heffernan, 2000215). The risks of individual financial failure will also increases as the potential for contagion increases (Marcus, 2000:2).

Contagion is more serious in banking than in other industries, because in banking, contagion is perceived to occur faster, result in a larger number of failures, result in larger losses to creditors (depositors) at failed banks and spread more widely within the industry and also beyond the banking industry to other sectors, the macro-economy and other countries (Kaufman, 1996:3).

3.4.2 SYSTEMIC RISK

Systemic risk is the possibility that the failure of one bank to settle net transactions with other banks will trigger a chain reaction, depriving other banks of funds and, in turn preventing them from closing their positions (Marcus, 2000:2). Systemic risk thus refers to an event having effects on the entire banking, financial or economic system, rather than on just one or a few banks (Bartholomew & Whalen, 1995:4). The consequence of this is a frequent loss of confidence in the whole banking system (Marcus, 2000:2).

One of the major sources of systemic risk relates to foreign exchange contracts (see 4.3.4). These contracts are typically settled two days from the date of conclusion for spot market transactions. If one of the parties fails during this settlement period, counterparties would be exposed to substantial losses on their transactions, should exchange rates move unfavourably. Depositor runs on banks if confidence in the banking system is shaken is also an important source of systemic risk. These runs can affect both healthy and unhealthy banks and lead to significant short-term credit availability problems. Another source of systemic risk associated with the failure of large banks relates to the role these banks play in the market for mortgage-backed securities, government securities and municipal securities. Large banks provide liquidity to many of these markets because the banks play the role of a market-maker. Consequently, the sudden collapse of a large bank could temporarily damage the operations of these markets (Moyer & Lamy, 1992:4-5).

The regulator's ability to monitor and supervise the group risk management practices within banks and banking groups is therefore becoming increasingly important (Marcus, 2000:2). The dominant form of regulation to promote systemic stability is risk-based capital adequacy and instead of limiting banks' activities, regulators ensure that banks are adequately capitalised against the risks they run (Crocket, 1997:13).

3.4.3 "LENDER OF LAST RESORT" ASSISTANCE

One of the main responsibilities of a central bank is to prevent financial system instabilities and when pressures that cannot be avoided by preventive supervision do arise, central banks should try to contain these pressures through direct central bank intervention, acting as a "lender of last resort" (Marcus, 2000:2). "Lender of last resort" assistance is thus a recognised role of central banks, with the objective to provide support to solvent but illiquid banks to avoid the possibility that they would have to liquidate assets that would generate losses and lead to an avoidable insolvency (Crockett, 1997:12). The "lender of last resort" function should never be seen as an automatic facility available to all banks in distress, and should be used only when the failure of a bank could pose a serious threat to the financial system as a whole. The primary aim of the "lender of last resort" facility is therefore not to save the bank in distress, but rather to consider the effect that the failure might have on the system and what should be done to protect the system from contagion as described in 3.4.1 (Marcus, 2000:2).

3.4.4 TOO BIG TO FAIL

This term might best be applied to banks that are so large that their activities make up a significant portion of a country's payment system, credit granting process, or other key financial roles. As a result, any substantial disruption in a particular bank's operations would be likely to have a serious effect on a country's financial markets, either preventing the markets from operating properly or raising questions about their integrity. The consequence of the "too big to fail" factor is that countries extend protection to large banks and their customers that is not granted to others (Marcus, 2000:2).

The need for a monetary authority to act as a "lender of last resort" arises in the case of a banking panic, that is, a widespread attempt by the public to convert

deposits into currency and, in response, an attempt by commercial banks to raise their desired reserve-deposit ratios. Banking panics can occur when a bank failure or series of failures produce bank runs which in turn become contagious, threatening the solvency of otherwise sound banks. Two sets of factors, some internal and some external to banks, can lead to bank failures. Internal factors, which affect both financial and non-financial enterprises, include poor management, poor judgement and dishonesty. External factors include adverse changes in relative prices and in the overall price level (Bordo, 1990:2).

The too big to fail policy can be problematic for three reasons (Heffernan, 2000:295):

- Moral hazard is heightened because the too big to fail banks have an incentive to take on greater risks, in their knowledge that their importance will mean that they will be bailed out;
- Bank supervisors may not monitor the activities of the smaller banks as closely as they otherwise would, if the principle is applied selectively; and
- The too big to fail doctrine gives large banks a competitive advantage over small banks.

Large banks are more secure than small banks and if they do get into difficulty, there is a greater probability that the bank will be rescued. This may also be off benefit to managers and owners. To the extent that this view is also held by customers, a large bank may be able to secure deposits more cheaply than small banks because the implied risk premium is lower (Falkena & Llewellyn, 1999:95).

3.4.5 SUMMARY

Every bank must follow certain regulations that must be consistent with bank strategic management. Contagion risk, systemic risk, the "lender of last resort" doctrine as well as the too big to fail doctrine are regulatory issues because they

can impact on the stability of the financial system. According to Crockett (1997:2) financial stability, being defined as the stability of the key banks and markets that make up the financial system, is thus an important objective of bank regulation, and stability requires that the key banks in the financial system are stable, in that there is a high degree of confidence that they can continue to meet their contractual obligations without interruption or outside assistance and that the key markets are stable, in that participants can confidently transact in them at prices that reflect fundamental forces and that do not vary substantially over short periods when there have been no changes in fundamentals.

3.5. CONCLUSION

This chapter explained the general theory of strategic management. The ALCO process can be seen as the strategic management process in banks and this process is used for the development of new strategies, the evaluation of recent strategies and the amendment of these strategies if necessary to achieve objectives, given bank risks and the future direction of the bank. The stability of the banking system can be achieved by adhering to all bank regulations and by ensuring that all steps in the ALCO process are understood and followed.

CHAPTER 4: BANK RISK MANAGEMENT AS PART OF THE STRATEGIC MANAGEMENT FRAMEWORK

4.1 INTRODUCTION

In this chapter, the role of a bank's risk management system will be discussed. Success can be assured by the integration of the above-mentioned system into the strategic risk management framework and by managing all risk areas appropriately. According to Shirreff (1998:56) the term risk management can have different meanings. To some it means risk measurement, that is, the assembling of data and the identifying and quantifying of the different risk classes. To others it means risk control, which can be explained as the monitoring of risks run by departments and individuals in a bank. In its broadest sense risk management includes risk measurement, risk control and the use of these tools to improve the bank's risk/return ratio. If a bank's risk/return ratio can be improved, a bank can move closer to its objectives, including an increase in shareholder value.

This chapter starts off with a general explanation of risks, after which a section follows in which the current risk management systems used in banks are discussed with reference to the definition, measurement and management of risks to achieve objectives. A conclusion then follows. In chapter 5 a merger and acquisition application of the theory discussed in this chapter is made.

4.2 RISKS IN BANKING

4.2.1 INTRODUCTION

Risk is an inherent characteristic of all strategic decisions, for example mergers and acquisitions, in that there is some degree of uncertainty associated with

decision outcomes (Pablo & Sitkin, 1996:2). Thornhill (1990:1) states that risk can be defined as:

- The possibility of or exposure to loss;
- The probability or chance of loss;
- Peril which may cause loss;
- Hazard, or a condition which increases the likely frequency or severity of loss;
- The potential amount of loss;
- Variations in actual losses; and
- The probability that actual losses will vary from expected losses.

Risk in banking can be defined as the volatility or standard deviation of the net cash flows of a bank (Heffernan, 2000:164), the unpredictability of future returns (Sinkey, 1983:38) or the adverse impact that several sources of uncertainty can have on profitability (Bessis, 1998:5). With respect to mergers and acquisitions, risks can be defined as any event or circumstance that impedes the attainment of goals or a successful transaction (Saavedra-Lim, 1998:2).

Banks are exposed to several major risks in the course of their business, for example credit risk, interest rate risk, market (price) risk, liquidity risk, foreign exchange (currency) risk, operational risk, investment risk and capital (solvency) risk.

4.2.2 RISKS IN BANKING AND STRATEGIC MANAGEMENT

According to Haubenstock & Morisano (1997:61) strategic risk management can be the key tool for measuring and managing risk and assessing how each project contributes to shareholder value for banks. This, however, does not suggest that banks should abandon current systems for measuring and managing risk. On the contrary, these systems form the foundation for strategic risk management. The following factors are essential to the transformation:

4.2.2.1 Culture

People throughout the bank need to unite behind a shared culture and common goals. To support this, the bank must consistently evaluate performance and value creation.

4.2.2.2 Vigilance

Managers should be mindful of the bank's risk appetite and tolerance, and this requires a careful blend of managerial oversight and communication.

4.2.2.3 Infrastructure

A well-defined support system is needed, and this entails a tight blend of comprehensive policies, information systems, organisational structures, measurements and controls.

4.2.2.4 Measures

Business performance should be measured on a risk-adjusted basis, and this framework should be used to allocate human, intellectual and capital resources in ways that advance the bank's long-term strategy.

4.2.2.5 Visibility

Strategy should be clear, compelling and conspicuous, in order for employees to know where to focus their efforts. Investors can appraise progress.

4.2.2.6 Rewards

Incentive compensation should be based on how well managers perform against risk-adjusted performance targets.

4.2.3 SUMMARY

Banks are exposed to several risks in the course of their business. Risks are associated with uncertainty and must therefore be measured and managed on a continuous basis. Strategic risk management can be seen as the key tool for measuring and managing risk. However, current risk management systems must also be taken into consideration, because they form the foundation for strategic risk management. The current risk management systems for measuring and managing risk are thus an important part of strategic management.

4.3 THE DEFINITION, MEASUREMENT AND MANAGEMENT OF RISKS IN BANKING

4.3.1 INTRODUCTION

Before the impact of the different bank risks on the bank's strategies can be determined, the definition, measurement and management of these risks need to be understood. Bank risks will be discussed next in terms of their definitions, measurement and management.

4.3.2 CREDIT RISK

Credit risk is the risk of customers failing to comply with their obligation to service their debt, that is, not repaying the principal and interest on a timely basis. This can trigger a total or partial loss of any amount lent to the counterparty. Credit risk can also be defined as the risk of a decline in the credit standing of the

counterparty. Such deterioration does not imply default, but means that the probability of default increases (Bessis, 1998:7). Koch (1995:107) describes credit risk as the potential variation in net income and market values of equity resulting from non-payment or delayed payment.

Credit risk can be divided into three risks, namely default risk, exposure risk and recovery risk (Bessis, 1998:81). There are several possible definitions for default risk, for example the missing of a payment obligation, the breaking of a covenant or economic default (economic value of assets decreases to below the value of outstanding debts). Exposure risk can be defined as the amount that is exposed to risk, in the case of default, without taking recoveries into consideration. Exposure risk is thus generated by the uncertainty prevailing with future amounts at risk. The recoveries in the event of default are not predictable and they depend upon the type of default and other factors such as the guarantees received from the borrower, the type of such guarantees, for example third party or collateral, and the context at the time of default (Bessis, 1998:82-84).

Credit risk is critical since the default of a small number of important customers can generate large losses, which can lead to insolvency (Bessis, 1998:7). As debtors can be individuals, companies or governments of foreign countries, credit risk can further be divided into three main categories, namely personal (consumer) risk, corporate (company) risk and country (sovereign) risk. As a company, as well as a natural person, can be described as legal entities, both can be declared insolvent. States cannot be declared insolvent as they are considered sovereign entities and are not subjected to the laws of other countries. The costs of not fulfilling the financial obligations to the creditor must be considered as a part of credit risk and although the debtor and creditor may arrange new terms, the creditor is nevertheless faced with additional cost (Falkena & Kok, 1991:18).

Traditionally credit risk was measured by ratios such as the loans to assets, non-performing loans to loans, loan losses to loans and reserves for losses to loans (Hempel & Simonson, 1999:92-93). However, these measures are somewhat deficient because they lag in time behind the returns gained by taking higher credit risk. Today credit risk is measured by means of loan concentration in geographic or industry areas, rapid loan growth, high yields on categories of loans, and the ratio of loan loss reserves to non-performing loans. Although none of these measures is a perfect predictor, weaknesses in one, and particularly more than one, may be a sign of future credit problems. Techniques for managing credit losses include selecting credit with an appropriate credit philosophy and culture, the use of credit analysis or internal credit scoring and portfolio risk assessment (Hempel & Simonson, 1999:92-93). VAR, as described in 4.3.6.1, is currently also an important technique which is frequently used.

Credit analysis is the most important and the most widely used of these techniques. According to Heffernan (2000:183) most banks have separate credit risk analysis departments, the objective of which is the maximisation of shareholder value added, which is the aim of any merger or acquisition. Qualitative and quantitative methods can be used to assess credit risk. If a bank is unable to access information on a potential borrower, it is likely to employ a qualitative approach to evaluating credit risk, using a checklist to take into account factors specific to the borrower, such as the past credit history (usually kept by credit rating agencies), the borrower's gearing (or leverage) ratio, wealth of the borrower, the extent to which borrower earnings are volatile, and whether or not collateral or securities are part of the loan agreement. The extent to which the future macro-economic climate will affect the borrower is also important. The credit risk group will thus have to consider forecasts of macro-economic indicators, such as the interest rate, the inflation rate, and future economic growth rates. Quantitative methods of credit risk analysis require the use of financial data to measure and predict the probability of default by the borrower (Heffernan, 2000:183).

Credit risk management covers both the decision-making process, before the credit decision is made, and the follow-up of credit commitments, plus all monitoring and reporting processes. The decision-making process covers all the steps followed by a credit application, while the follow-up is done through periodic reporting reviews of the bank commitments by customer, industry and country (Bessis, 1998:85-86).

In determining whether to grant credit to a particular borrower a banker must assess the risk of non-payment (Kelly, 1993:366). The bank lending officer must record all data likely to be pertinent in the decision-making process. Credit analysts refer to the five C's of credit analysis (character, capital or ownership of assets, collateral, economic conditions, and ability and capacity to generate cash income) in analysing the attributes of applicants for bank credit (Kelly, 1993:370). The purpose of credit analysis is to ascertain the ability and willingness of a would-be borrower to pay interest on the requested credit and to repay capital (principal) in accordance with terms agreed upon with the lender (Kelly, 1993:366).

Once the applied-for credit has been granted, credit officials of the bank must monitor the performance of the borrower in fulfilling the terms of the credit agreement. Should the borrower default, the procedures best suited to the bank's interest must be followed in finding ways to obtain payment and minimise or eliminate the loss of the bank (Kelly, 1993:367). Each bank must apply a consistent evaluation and rating scheme to all its investment opportunities in order for credit decisions to be made in a consistent manner and for the resultant aggregate reporting of credit risk exposure to be meaningful. To facilitate this, a substantial degree of standardisation of process and documentation is required. This has led to standardised ratings across borrowers and a credit portfolio report that presents meaningful information on the overall quality of the credit portfolio. All credits must be monitored and reviewed periodically to ensure the accuracy of the rating associated with the lending facility. In addition, a material change in the

conditions associated either with the borrower or the facility itself, such as a change in the value of collateral, will trigger a re-evaluation.

There are five ways in which a bank can further minimise credit risk (Heffernan, 2000:182-183):

- Loan pricing: Different types of assets are likely to have different default probabilities. Loans usually exhibit the greatest credit risk (Koch, 1995:107). The reason for this can be that many of the loans a bank makes are to individuals, local companies and privately owned companies, with the result that their creditworthiness is often not reviewed or rated by nationally recognised credit assessment companies like Moody's or Standard and Poor's (Bitner & Goddard, 1992:77-78). Bank investment securities will generally exhibit less credit risk because the borrowers are predominantly federal, state and local government units, and banks are restricted to investment grade securities that exhibit less risk (Koch, 1995:107). A bank will try to ensure that the "price" of a loan exceeds the risk-adjusted rate and includes all loan administration costs. The loan rate should thus consist of a market rate, a risk premium and administration costs. The riskier the borrower, the higher the premium. Should the risk profile of the loan be altered, the rate must be changed. However, this strategy must be balanced by the possibility of adverse selection, that is, a borrower may agree to pay a higher loan rate because he/she knows the probability of default is high.
- Credit limits: Credit risk is limited by constraints aiming at limiting losses in the event of default. Before any credit decision is made, an authorisation has to be specified. The authorisation sets the maximum amount at risk with any customer or group of customers. Within the authorisation, credit decisions can be made, provided that they meet the standard of the bank. The risk reporting system should be able to consolidate all facilities with a customer in order to constantly check that the line usage remains within limits (Bessis, 1998:86). To set up limits, the following principles hold (Bessis, 1998:86):

- A situation in which any single loss endangers a bank must be avoided;
- Commitments must be diversified across various dimensions, such as customers, industries and regions; and
- It must be avoided to lend an amount to a borrower which would increase the borrower's debt beyond its borrowing capacity.

Heffernan (2000:182-183) states that most banks do not rely solely on loan rates when making a lending decision. Instead, the availability of a certain type of loan may be restricted to a selected class of borrowers. In retail markets, banks normally quote one loan rate and then restrict the amount of individuals or small companies that can borrow according to certain criteria, such as wealth. For large, established companies, where the bank has access to independent auditors' reports on a company's financial performance, a risk premium will be applied, so the rate paid by each company will vary.

- Collateral or security: Banks also use collateral, as mentioned above, to reduce credit risk. However, if the price of the collateral becomes more volatile, then for an unchanged loan rate, banks will have to demand more collateral to offset the increased probability of loss on the credit.
- Diversification: Additional volatility created from an increase in the number of risky loans can be offset either by new injections of capital into the bank or by diversification. New lending markets should allow the bank to diversify and so reduce the overall riskiness of its lending portfolio, provided it seeks out assets which yield returns that are negatively correlated.
- Credit derivatives: Credit derivatives can be seen as a tool for achieving cost-effective management of credit risk and they also enable firms to carve out the credit exposures inherent in certain debt obligations and transfer that risk to other firms better adapted to manage such risk (Moser, 1998:2-5). This also allows banks to trade their credit risk exposures cheaply, and so make it much easier to reduce the riskiness of their loan portfolios (Anon, 1998:2).

4.3.3 LIQUIDITY RISK

Liquidity is generally discussed in terms of assets (loans), with reference to an owner's ability to convert assets to cash with minimal loss from price depreciation. Bank liabilities (deposits) can also be liquid in the sense that debt can be easily issued to obtain cash at a reasonable cost. Thus when banks need cash, they can either sell assets or increase borrowing (Koch, 1995:107).

The needs for liquidity on the part of banks may be classified under four headings (Kelly, 1993:352-353):

- The need by a bank to replace net outflows of funds due to retail deposits being withdrawn, or wholesale funds (deposits and loans) not being renewed;
- The need of a bank to compensate for non-receipt of expected fund inflows, due to a borrower not meeting his commitments timeously;
- The need by a bank to obtain further funds when contingent liabilities actually arise, as when existing overdraft facilities or lines of credit are suddenly more fully utilised, or when commitments resulting from endorsement of bills or promissory notes have to be met when the latter are dishonoured; and
- The need of a bank to be able to undertake new desirable transactions, such as when an important customer requests further funds.

Two approaches are available for measuring a bank's liquidity needs. The first approach compares the available liquid assets of a bank with either total liabilities or certain categories of liabilities. This approach is intended to provide an estimate of a bank's ability to survive a sudden withdrawal of deposits by utilising its stock of liquid assets. The second approach assesses the ability of a bank to meet its financial commitments by examining its expected cash flows (Falkena & Kok, 1991:82).

The problem of a liquidity crisis arises because of a shortage of liquid assets or because the bank is unable to raise cash on the retail or wholesale markets (Heffernan, 2000:165). A bank liquidity crisis can also be triggered by poor management practices, a loss of confidence in a bank or because a bank is a victim of a loss of confidence in the financial system, possibly caused by the failure of another bank (Heffernan, 2000:193). Liquidity risk (compare 3.4.7) is thus the risk of insufficient liquidity for normal operating requirements (Heffernan, 2000:165) and can best be defined as the risk of a funding crisis which can be associated with an unexpected event, such as a large charge off, loss of confidence or a crisis of national proportions (Santomero, 1997:10).

Traditional measures of liquidity risk, such as the loan-to-deposit ratio or the proportion of liquid assets to deposits, tended to focus on the liquidity of assets on the balance sheet (Hempel & Simonson, 1999:93). More progressive measures, for example the borrowing cost, liquid assets or the ratio of borrowings to deposits focus more on actual or potential cash flows to meet cash needs. For example, how much a bank has in purchased or volatile funds may be indicative of the bank's needs for liquidity and how much of its potential borrowing reserve the bank has used. The same may be true for a bank that has to pay higher than average borrowing costs. The difference between liquid assets and borrowings, related to some proxy for potential liquidity perhaps requires a good indicator of liquidity risk. Management techniques for controlling liquidity risk may include a liquidity plan, a contingency plan, a good cost-pricing model, and the continuous development of funding sources (Hempel & Simonson, 1999:93).

A balance between too little and too much liquidity must be achieved, as both could over a period of time cost the bank money. Too little liquidity may force the bank into the market at a time when rates are high and too much liquidity will cost money when the bank has to fund a cash position with long-term deposits at a higher interest rate (Falkena & Kok, 1991:85).

Liquidity risk management can thus be seen as the continuous process of raising new funds, in the case of a deficit, or investing excess resources when there are excesses of funds (Bessis, 1997:127). Bank management can reduce liquidity risk by avoiding undue concentration of maturities and by monitoring its exposure to certain clients. The basic funding principle is to control the amount of funds that have to be raised on any given day by currency, country and source. For a large bank it is nearly always possible to attract more funds in the money market by simply increasing its deposit rates relative to what is being offered in the market. For a smaller bank, however, the upward adjustments of its deposit rates may have a positive result at first but, if the rates it is offering are too far out of line with those being offered by the rest of the market, this will be interpreted as an indication of a liquidity problem and will then have the opposite effect, with a possible run on the bank's deposits (Falkena & Kok, 1991:86). Liquidity risk management also aims at avoiding a situation where the net liquid assets are negative and gap analysis, as described in 4.3.4.1, can be used to manage this type of risk (Heffernan, 2000:193).

4.3.4 INTEREST RATE RISK

An interest rate determines a bank's cost of funds as well as the "selling price" of its funds (Styger & Van der Westhuizen, 1995). Interest rate exposure is a characteristic of any financial company and stems from assets and liabilities maturing or repricing at different times. Liabilities may, for example, mature before assets do, necessitating the rollover of such liabilities until a sufficient quantity of assets mature to repay the liabilities. The risk here lies in the fact that interest rates may rise and that these more expensive funds have to be used to fund assets that are yielding lower returns. Assets may also mature before liabilities, in which case they have to be reinvested until they are needed to repay the liabilities (Falkena & Kok, 1991:37). Net interest income (interest earned on assets less interest paid on liabilities) are thus left vulnerable to changes in market interest rates and the magnitude of the interest rate risk depends on the

degree of mismatch between the times when asset and liability interest rates mature or reprice (Simons, 1995:2). Interest rate risk (see 4.3.4) can be defined as the potential variability in a bank's net interest income and/or market value of equity due to changes in the level of market interest rates (Koch, 1995:108).

Banks are typically exposed to the following primary forms of interest rate risk (BIS, 1997:6-7):

- Repricing risk: As financial intermediaries, banks encounter interest rate risk in several ways. The primary and most often discussed form of interest rate risk arises from timing differences in the maturity (for fixed rate) and repricing (for floating rate) of bank assets, liabilities and off-balance sheet positions. While such repricing mismatches are fundamental to the business of banking, they can expose a bank's income and underlying economic value to unanticipated fluctuations as interest rates vary.
- Yield curve risk: Repricing mismatches can also expose a bank to changes in the slope and shape of the yield curve and yield curve risk will arise when unanticipated shifts of the yield curve have adverse effects on a bank's income or underlying economic value.
- Basis risk: Another important source of interest rate risk arises from imperfect correlation in the adjustment of the rates earned and paid on different instruments with otherwise similar repricing characteristics. When interest rates change, these differences can give rise to unexpected changes in the cash flows and earnings spread between assets, liabilities and off-balance sheet instruments of similar maturities or repricing frequencies.

Interest rate risk has traditionally been measured by using gap analysis. Gap analysis will be discussed next.

4.3.4.1 Gap analysis

Gap analysis is the most well-known ALM technique, normally used to manage interest rate risk, though it can also be used in liquidity risk management (Heffernan, 2000:189). Gap (mismatch) analysis is derived from the concept that the money value of assets that reprice within any period should be compared to the money value of liabilities that reprice within the same pre-defined period. Repricing refers to changes in interest rates paid or received within a specific period. Gap can thus be defined as the difference between the money value of assets and liabilities that reprice in a given period. Gap can also be seen as the net amount of assets and liabilities that are sensitive to interest rate risk (Ooi, 1995:2).

Gap analysis still takes place in most banks, but it must be used in conjunction with other risk management tools. The reason for this is that (Heffernan, 2000:190-191):

- It ignores mismatches that fall within each time bucket; and
- Some bank products, such as non-maturity accounts, non-market rate accounts and off-balance sheet items cannot be handled in a gap analysis framework. Part of this problem can be overcome by duration gap analysis as discussed in 4.3.4.6.

According to Johnson (1993:299) gap can be measured in absolute rand terms (GAP = money value of rate-sensitive assets – money value of rate-sensitive liabilities) or in relative terms (GAP ratio = money value of rate-sensitive assets / money value of rate-sensitive liabilities).

Monitoring the interest rate sensitivities and maturities of a bank's assets and liabilities is called gap management (Gardner & Mills, 1994:542-543). Three

general strategies are available to a bank in managing its gap ratio (Shaw, 1992:4-5):

- The bank may maintain a balanced position by allowing the money value of the rate-sensitive assets to be supported by the money value of the rate-sensitive liabilities. This option is attractive at times of substantial movements in interest rates. However, the option does have its drawbacks, because the respective rate levels on both sides of the balance sheet do not necessarily move in concert as a result of lags which may occur following a movement in interest rates. This position may also cause a bank to turn away fixed-rate lending opportunities to maintain its equilibrium stance;
- A bank may hold an asset-sensitive position where the monetary value of the rate-sensitive assets that can reprice exceed the monetary value of the rate-sensitive liabilities that can reprice, the concern here being to give sufficient flexibility to cover possible rapid changes in the cost of funds; and
- The third management option is to maintain a liability-sensitive position where the money value of the rate-sensitive liabilities that can reprice exceeds the money value of the rate-sensitive assets that can reprice. The thinking underlying this strategy is that short-term money or money-market instruments cost less than longer-term funds, and so the bank should make additional profits provided it does not get caught in a yield curve inversion where long-term money becomes cheaper than short-term.

A positive gap means that a larger amount of assets than liabilities reprice in a period, whereas if a larger amount of liabilities reprice, the bank is said to have a negative gap. The bank is said to be perfectly matched if the money value of the rate-sensitive assets that reprice are equal to the money value of the rate-sensitive liabilities that reprice (Ooi, 1995:2). A negative gap (money value of rate-sensitive assets < money value of rate-sensitive liabilities) may be desirable and will enhance profitability, if the bank management anticipates falling interest rates at the end of an expansionary economic cycle. On the other hand, if the

economy is poised at the beginning of a period of anticipated economic expansion, during which interest rates are expected to increase, a positive gap may be advisable (Johnson, 1993:303).

One of the principal advantages of gap analysis is that it permits the analyst to get a quick and simple overview of the profile of exposures (Hudson, 1992:77). However, banks that rely on gap analysis in their risk management programmes should also be fully aware of the limitations inherent in this approach (Ooi, 1995:3-4):

- It is difficult to determine the ideal gap that will maximise the profitability of the bank, as a positive gap is not necessarily good in the rising rate environment, whereas a negative gap is not necessarily favourable in a declining rate environment. Either of the above positions taken can thus be favourable or unfavourable;
- Although gap analysis can be prepared with a large number of buckets covering large time intervals in one month, or a smaller number of buckets which cover a large time period, the selection and combination of the size of the bucket and the time intervals can make a material difference in gap analysis;
- In reality, all rates do not change to equal extents or at the same time and changes in the general level of interest rates causes the rates on various types of instruments to change by different magnitudes. Whether a bank has developed a method that can totally eliminate mismatches in their book, there would still be interest rate exposure that this method fails to capture;
- There is no perfect gap method: Static gap analysis (see 4.3.4.2) fails to capture future changes in the volume of a bank's assets and liabilities. Dynamic gap (see 4.3.4.3) has been developed to capture this dynamic process in a bank's portfolio, but there are many assumptions, for example the amount and timing of the runoffs from the current book, and future

changes in volume, timing and mix of new business, that are needed to be known before dynamic gap analysis can be used;and

- Gap analysis fails to consider foreign exchange risk (see 4.3.5).

4.3.4.2 Static gap analysis

Static gap can be defined as the bank's gap position at a single point in time (Bitner & Goddard, 1992:267). Static gap can also be seen as a sensitivity measure as described in 4.3.4.4. According to Koch (1995:246) there are four basic steps to static gap analysis:

- Management must select a timeframe for determining whether assets and liabilities are rate-sensitive or fixed-rate;
- Assets and liabilities must be grouped into time "buckets" or intervals according to maturity or the time until the first possible repricing;
- The gap equals the difference in rate-sensitive assets and rate-sensitive liabilities for each time interval; and
- Management interprets gap information directly and indirectly via sensitivity analysis (see 4.3.4.4).

The information obtained is used either to hedge net interest income against changing interest rates or to alter the size of the gap in an attempt to raise net interest income. Hedging involves reducing the volatility of net interest income either by adjusting the rand amount of rate-sensitive assets and liabilities or by taking an off-balance-sheet position, such as with forwards, futures, option contracts and interest rate swaps (Koch, 1995:249).

The strengths of static gap analysis are that (Koch, 1995:257):

- It is easy to understand. Periodic gaps indicate the relevant amount and timing of interest rate risk over different maturities and suggest magnitudes of

portfolio changes necessary to alter risk. They also indicate specific balance sheet items that are responsible for the risk; and

- Gap measures can be easily calculated once the cash flow characteristics of each instrument have been identified.

The weaknesses of static gap analysis are that (Cade, 1997:155):

- The format does not cater for the imponderability of options sold or bought or of "embedded options", such as a mortgage borrower's conditional right to repay the bank early;
- The gap report only addresses open position risk, that is, the assumption that all interest rates will move together in the same direction by the same amount. It has nothing to say on yield curve risk or basis risk;
- It only features existing assets and liabilities, and does not model future business developments; and
- The static gap report is mathematically naïve, in that it ignores interest flows and the time-value of money.

A bank that relies on static gap analysis will often observe substantial errors in its forecast of net interest income. The reason for this is that the static gap ignores important information about the true repricing sensitivity of many assets and liabilities relative to interest rates. It will thus be better to use dynamic gap analysis, as it recognises that the effective gap across a time interval is dependent on the level of interest rates and the direction in which rates move (Koch, 1995:264-265). More progressive measures or management techniques for interest rates risk thus include gap measures at several maturity times and dynamic gap measures based on selected reinvestment and rate assumptions (Hempel & Simonson, 1999:93).

4.3.4.3 Dynamic gap analysis

Dynamic gap can be defined as the bank's gap position viewed over several different time periods (Bitner & Goddard, 1992:264). Dynamic gap analysis follows the same steps as static gap analysis but allows assets and liabilities to differ in their rate-sensitivity according to the interest rate environment. Dynamic gap analysis thus adjusts the gap calculation in step three (above) according to specific repricing features of a bank's assets and liabilities that recognise any constraints or options that influence rate sensitivity. The associated sensitivity analysis in step four (above) that projects changes in net interest income and market value of equity subsequently reflects changing gap values over different interest rate environments (Koch, 1995:248).

The factors that may cause repricing sensitivity to change must be identified and the subsequent changes must be incorporated when a sensitivity analysis (see 4.3.4.4) is conducted. Assets and liabilities are described as having embedded options. Two of the most common are the prepayment option that bank loan customers have and the early withdrawal option that depositors have (Koch, 1995:255).

With the *prepayment option*, banks find that borrowers repay loans early when rates fall. The bank then gets the principal from borrowers earlier than anticipated and have to invest the proceeds at lower rates unless it takes greater risks. With the *early withdrawal option*, deposit customers with fixed maturities will withdraw funds when rates rise high enough, pay the interest penalty and reinvest at higher rates. Thus when banks would have liked to lock in long-term deposits at below market rates, customers withdraw the funds. Dynamic gap analysis involves combining sensitivity/simulation analysis (see 4.3.4.4) with option valuation techniques to forecast the changes in net interest income and market value of equity more precisely (Koch, 1995:265-266). Sensitivity and simulation analysis will be discussed next.

4.3.4.4 Sensitivity and simulation analysis

The fourth step in GAP analysis (see 4.3.4.1) involves conducting sensitivity and/or simulation analysis. These two terms refer to forecasting a bank's future income and market value of equity in different economic environments. Sensitivity analysis is associated with allowing one or two key inputs to change, then examining the impact on net interest income and/or the market values of shareholders' equity. Simulation analysis involves letting all factors that affect value change, and often randomly draws values for these factors from a probability distribution of outcomes (Koch, 1995:264).

Sensitivity and simulation analyses are thus required because the influence of certain factors are impossible to determine without some modelling. According to Cade (1997:157-158) the strengths of simulation and/or sensitivity analysis is that it permits an examination of a bank's interest rate sensitivities and strategies. Dattatreya (1996:41) also states that it can deal with more complex market conditions and assumptions than can analytical methods.

A bank may want to reduce or enlarge its risk exposure (Falkena & Kok, 1991:59). This can be done by using strategies that change the bank's interest rate sensitivity by altering various components of the balance sheet. Altering a bank's interest rate risk exposure is creating an interest rate risk situation that will either counter or exacerbate the bank's existing interest rate risk exposure. All the members of the ALCO must understand the full impact of each strategy, as a bank can get into serious financial difficulty if the members of the ALCO implement interest rate risk strategies, they do not understand (Bitner & Goddard, 1992:109). The following strategies can be implemented (Bitner & Goddard, 1992:109-128):

- Strategies using the investment portfolio;
- Strategies using pricing and new product development;

- Strategies using loan sales and purchases;
- Strategies using brokered deposits; and
- Strategies using borrowed funds.

To implement strategies effectively the asset and liability manager must have the ability to co-ordinate the activities of the various departments that are responsible for managing each section of the balance sheet (Bitner & Goddard, 1992:131).

Duration measures for the bank's assets, liabilities and off-balance sheet items can also be seen as a more progressive measure or management technique for interest rate risk (Hempel & Simonson, 1999:93). Duration will be discussed next.

4.3.4.5 Duration analysis

Duration can be defined as a measure of a financial instrument's average life, or the weighted average time of cash receipt (Johnson, 1993:305). According to Cade (1997:155) it takes account of interest flows and the time value of money and Falkena and Kok (1990:221) state that it is based on market (present) values, and can be used for interest rate (see 4.3.4), investment (see 4.3.8) and capital risk (see 4.3.9) analysis. Duration analysis measures the impact on shareholders' equity if a risk-free rate for all maturities rises or falls. Duration analysis also allows for the possibility that the average life (duration) of an assets or liabilities differs from their respective maturities (Heffernan, 2000:191).

Duration can be calculated by aggregating the present values of all future cash flows within a portfolio and then weighting them by their respective periods to maturity. The total of the weighted values divided by the present values gives a single number representing the duration of the portfolio, normally expressed in years (Cade, 1997:155-156).

Such calculations can be performed for a bank's assets and liabilities (Cade, 1997:156). The difference between the duration of the asset structure and the duration of the liability structure is the bank's net duration. If the net duration is positive, that is, the duration of the assets is longer than the duration of the liabilities, a decrease in interest rates will increase the net value of the bank and an increase in interest rates will decrease the net value of the bank. If the duration of a bank's asset structure matches that of its liability structure, the company has immunised the risk, that is, the market value of the bank will remain constant when interest rates change (Bitner & Goddard, 1992:102).

According to Cade (1997:156) duration analysis has several advantages:

- It provides a simple and accurate basis for hedging a portfolio by taking a new equal and opposite position in a security with the same duration;
- Duration can be used as a standard of comparison for alternative business development and funding strategies; and
- Duration and yield to maturity provide the essential elements for the calculation of interest rate elasticity or price elasticity. These project the approximate percentage change in the present value of a financial instrument or a portfolio that will result from a given percentage change in interest rates.

Duration analysis also has some weaknesses:

- An important weakness of duration analysis lies in its simplicity, as a single number cannot tell the whole story, if it happens to be masking extreme mismatches within narrower periods which offset one another in the aggregate (Cade, 1997:157);
- When interest rates change, there will be a parallel shift in the yield curve. For a given level of default risk, yields across the entire structure will thus change equally. The interest rate elasticities of two investments can only be

compared without some distortion if this assumption holds (Gardner & Mills, 1994:243);

- The mathematical formulae linking duration to prices are valid only for small changes in interest rates (Hudson, 1992:82);
- The theory that the durations of different instruments can be added together in order to estimate the duration of a portfolio is based on the implicit assumption that the rates on all instruments move in parallel if they move at all. This assumption is unrealistic (Hudson, 1992:82); and
- The application of duration to certain products, such as those with embedded options or with imprecisely defined cash flows, is not as objective as it should be (Hudson, 1992:82).

The most significant implication of duration analysis is that bank asset and liability portfolios with the same duration will have similar market value sensitivities to interest rate changes. The process of matching durations of asset and liability portfolios can significantly reduce interest rate risk. However, this matching will not necessarily eliminate the risk (Johnson, 1993:307).

Although duration is an old technique, it is thus still useful in the management of asset and liability portfolios. The asset and liability manager intending to use duration as a tool should be aware of the behaviour and the meaning of duration values under different market scenarios. However, just as gap analysis, duration has to be used in conjunction with sophisticated tools, because the results of a duration analysis will only be as valid as the underlying assumptions (Joubert, 1994:4).

4.3.4.6 Duration gap analysis

Duration gap analysis improves upon static gap analysis (see 4.3.4.2) by quantifying the impact of interest rate changes on the net worth of a bank, rather than focussing on the temporal repricing characteristics of the bank's balance

sheet (Bhattacharya et al., 1996:151). This form of analysis mixes both gap analysis as described in 4.3.4.1 and duration analysis as described in 4.3.4.4 (Heffernan, 2000:192). A duration gap is created by exposing the bank to interest rate risk (Heffernan, 2000:191) and duration gap analysis involves comparing the interest rate elasticity of assets to that of liabilities. The purpose of duration gap analysis includes the management of the bank's net interest income and the management of the value of shareholders' equity (Payne et al., 1999:2).

Measuring the duration gap is complex because the rand amount and the timing of cash flows for both assets and liabilities must be identified. In the calculation of the duration gap, the maturities and yields for assets and liabilities must be calculated. Once this has been done, the average durations of assets and liabilities can be estimated and the duration gap can be calculated (Gardner & Mills, 1994:570-572).

Duration gap analysis requires that the bank specify a performance target, such as the market value of equity, and manage the difference between the average duration of total assets and the average duration of total liabilities. Each can be obtained by summing the products of the durations of individual securities with their respective proportionate market values. Each proportion equals the market value of the asset or liability divided by the market value of total assets or total liabilities (Koch, 1995:268).

With the market value of its equity as its measure of performance, a bank may manage its interest rate risk position in terms of its duration gap (DGAP) (Kelly, 1993:334):

$$DGAP = DA - uDL$$

WhereDA = overall duration of assets, as the sum of the products of each asset's duration and proportionate share of total asset market value,

DL = overall duration of liabilities as the sum of the products of each liability's duration and proportionate share of total liability value, and

u = ratio of total liability portfolio to total assets portfolio.

When DGAP is positive, the market value of equity declines with rising interest rates and increases with falling interest rates. When DGAP is negative, the market value of equity increases when interest rates rise but decreases when interest rates fall. A bank can immunise its equity value from interest rate changes only when DGAP equals zero. The greater the absolute value of DGAP, the greater the interest rate risk. A bank that is perfectly hedged will thus operate with its asset duration slightly below its liability duration to maintain positive equity (Koch, 1995:271).

There are many alternatives to adjust the size of the DGAP to zero. Banks may choose to target variables other than market value of equity in managing interest rate risk. A bank for example can choose to stabilise the book value of net interest income. This can be done with the following measure (Koch, 1995:271-272):

$$DGAP^* = MVRSA\ (1 - DRSA) - MVRSL\ (1 - DRSL)$$

Where MVRSA = cumulative market value of rate sensitive assets (RSAs)

MVRSL = cumulative market value of rate sensitive liabilities (RSLS)

DRSA = composite duration of RSAs equal to the sum of the products of each asset's duration with the relative share of its total asset market value, and

DRSL = composite duration of RSLs equal to the sum of the products of each liability's duration with the relative share of its total liability value.

If DGAP* is positive, the bank's net interest income will decrease when interest rates decrease and increase when rates increase. If DGAP* is negative, the relationship is reversed. When DGAP* is zero, interest rate risk will be eliminated. Duration gap analysis can thus be used to stabilise a number of different variables that reflect bank performance (Koch, 1995:272).

Active duration gap management presents a complication in the sense that the duration gap is subject to frequent changes, because durations change with each interest rate change. To avoid this problem some banks choose to use a limited duration-based management strategy. Matching the duration of designated deposits and assets causes the duration gap on a portion of the balance sheet to be zero. That part of the balance sheet is then immunised against unexpected changes in the interest rates. With immunisation, an investor can for example select a security of a specified duration to lock in a current market yield during a predetermined holding period (Koch, 1995:576).

The potential use of this strategy is enhanced by the removal of most restrictions on the types of accounts that banks can offer. This strategy has a further advantage in the sense that, if the bank is uncomfortable with making interest rate forecasts on which its entire portfolio depends, immunisation provides relief for this problem, because once the spread between particular assets and liabilities has been immunised, it is essentially fixed, regardless of the next rate change (Gardner & Mills, 1994:576-577).

The strengths of duration gap analysis are that (Koch, 1995:273):

- It provides a comprehensive measure of interest rate risk for the total portfolio;
- It recognises the time value of each cash flow, avoiding the difficulty with time buckets; and

- It takes a longer-term viewpoint and provides managers with greater flexibility in adjusting rate sensitivity because they can use a wide range of instruments to balance value sensitivity.

The weaknesses of duration gap analysis are that (Koch, 1995:273):

- It is difficult to compute duration accurately as duration measures require numerous subjective assumptions;
- Duration analysis requires that each future cash flow be discounted by a distinct discount rate reflecting the expected future rate at the time the cash flow arises;
- The duration of a portfolio must be continuously monitored and adjusted; and
- It is difficult to estimate the duration of assets and liabilities that do not earn or pay interest.

Various other methods for the measurement and management of interest rate risk also exist and include NPV analysis, volatility and derivatives. These methods will be discussed next.

4.3.4.7 Net present value

The most accurate estimate of the impact an interest rate change can have on a bank's market value is obtained by conducting a NPV analysis. This analysis determines the NPV of all the cash flows simulated by an asset/liability modelling system. A well-designed and carefully maintained modelling system will take into account embedded options and basis risks, as described above. The model also has the ability to use various interest rate scenarios that provide an opportunity to simulate changes in the shape of the yield curve (Bitner & Goddard, 1992:103).

4.3.4.8 Volatility

Volatility, as mentioned above, can also be used by the ALCO to determine the possible boundaries of the magnitude of the interest rate changes. This will also be helpful in determining the amount of scenarios that have to be simulated (Styger & Van der Westhuizen, 1995:2). Many banks are currently also using balance sheet simulation models (see 4.3.4.6) to investigate the effect of interest rate variation on reported earnings over a time horizon. These simulations are a bit of science and a bit of art as they require relatively informed repricing schedules, as well as estimates of prepayment and cash flows. Once completed, the simulation reports the resultant deviations in earnings associated with the rate scenarios considered. Whether or not this is acceptable depends upon the limits imposed by management, which are usually couched in terms of deviations of earnings from the expected or most likely outcome.

The notion of earnings at risk (EAR) is emerging as a common benchmark for interest rate risk. However, it is of limited value, as it presumes that the range of rates considered is correct, and/or the bank's response mechanism contained in the simulation is accurate and feasible (Santomero, 1997:17-18). Nonetheless, the results are viewed as indicative of the effect of an underlying interest rate mismatch contained in the balance sheet. Because of concerns over the potential earnings outcomes of the simulation, treasury officials often make use of cash, futures and swap markets to reduce the implied EAR contained in the bank's embedded rate exposure. However, such markets contain their own sets of risk. Accordingly, every bank has an investment policy in place that defines the set of allowable assets and limits to the bank's participation in any one area. All banks also restrict the activity of the treasury to some extent by defining the set of activities it can employ to change the bank's interest rate position in both the cash and forward markets (Santomero, 1997:17-18).

4.3.4.9 Derivatives

Off balance sheet products do not appear on the balance sheet, but they can have a major impact on the bank's net interest income during periods of rapidly changing interest rates. The three basic types of synthetic instruments used to manage interest rate risk are financial futures, interest rate swaps, and caps, floors and collars (Bitner & Goddard, 1992:132-133). Banks can manage interest rate risk efficiently by entering into plain-vanilla swaps, where they pay a floating rate, usually denominated in the Johannesburg interbank acceptance rate (JIBAR), and receive a fixed rate, usually the treasury rate of equivalent maturity plus a premium. A liability-sensitive bank, on the other hand, can enter into a swap where it pays a fixed rate and receives a floating rate. The bank can also use a basis swap, where both sides pay floating rates but the index rates are tied to the bank's cost of funds and lending rate. Specifically, the bank would pay the prime rate and receive JIBAR. Alternatively the liability-sensitive bank can buy a cap on JIBAR. If JIBAR rises above a certain predetermined level, the seller will thus pay the bank the difference between JIBAR and that level (Simons, 1992:3).

A similar approach is a "costless" collar on JIBAR, where the bank buys a JIBAR cap from the dealer and at the same time sells a JIBAR floor to the dealer, with the premium on the bought cap exactly offsetting the premium on the sold floor. In this way the bank reduces the cost of buying protection from a rise in JIBAR by giving up a potential benefit to its earnings from a fall in JIBAR. The advantage of derivatives over more traditional methods of ALM is that derivatives can transform the duration of the balance sheet while neither increasing it nor incurring significant additional capital requirements (Simons, 1995:3-4).

Derivatives are also the most effective way to address certain interest rate risk management problems as derivatives do not materially leverage the balance sheet and can be put into place quickly. When necessary, they can also be done in substantial size so as to have a significant impact on the bank's interest rate

risk exposure without affecting the bank's liquidity position (Bitner & Goddard, 1992:132-133).

In practice a bank is not able to avoid interest rate risk, as banks often have to accept funds from clients with maturities they do not really want, for competitive reasons. If banks refuse clients' funds too often, this will be detrimental to its client base. As a fully matched book often denies a bank any long-term interest rate strategies, a bank that is trying to avoid any interest rate risk may be forced out of the market place by banks or financial companies that are willing to take such risks (Falkena & Kok, 1991:37-38).

4.3.5 CURRENCY OR FOREIGN EXCHANGE RISK

Most banks view activity in the foreign exchange market as beyond their franchise, but some are active participants. The former will take virtually no principal risk, no forward open positions, and have no expectations for trading volume. Within the latter group, there is a clear distinction between those that restrict themselves to acting as agents for corporate and/or retail clients and those that have active trading positions (Santomero, 1997:19).

Under flexible exchange rates, any net short or long open position in a given currency will expose the bank to currency risk (Heffernan, 2000:168). Currency risk can thus be defined as losses in earnings due to changes in the exchange rates (Bessis, 1998:11). Currency risk thus arises whenever a bank receives or makes a payment in a foreign currency (Koch, 1995:109).

According to Falkena & Kok (1991:90) currency risk is regarded as having three sides:

- Transaction risk: This represents the price impact of an exchange rate change on foreign receivables and foreign payables;

- Economic or business risk: This relates to the impact of exchange rates on a bank's long-term competitive strength; and
- Translation risk: This arises from the periodic consolidation of the financial statements of a parent and its affiliates for the purpose of uniform reporting to shareholders.

Dealing in different currencies can thus bring risks and opportunities as currency mismatches can add value or erode value, depending on the currency movements. The simplest way to avoid currency risk is to ensure that mismatches or gaps (see 4.3.4.1) that exist in individual currencies are identified and reduced to zero or near zero. Banks are also allowed to set gap limits (Internet Securities, 1999:7). In the foreign exchange markets, duration analysis (see 4.3.4.4) can be used to compute the change in the value of a foreign currency security in relation to foreign currency interest rates, domestic currency interest rates, or spot exchange rates. Some banks also reduce currency risk through multi-currency based share capital, that is, denominating their share capital in multiple currencies (Heffernan, 2000:193-194). Currently it is also required of banks to adopt the VAR approach (see 4.3.6.1) to measure and manage risk associated with forward exposures (Internet Securities, 1999:7).

Currency risk can also be managed in the following ways:

- There must be written policies in which the exposures that must be hedged over a specified time horizon as well as the derivatives that must be used for the hedging should be defined. The extent to which treasury must be allowed to manage positions based on its view of foreign exchange rates must also be specified (Wallace, 1998:2);
- The foreign exchange position must be marked-to-market frequently and a combination of risk measures, for example value-at-risk (see 4.3.6.1), sensitivity analysis (see 4.3.4.4) and stress-testing (see 4.3.6.2) must be used

to gain insights into the risk of the foreign exchange position that is being managed (Wallace, 1998:2);

- Foreign exchange accounting practices must be uniform throughout the banking group (Wallace, 1998:2); and
- Hedging that uses forward agreements, futures, currency swaps and/or currency options is also a solution (Falkena & Kok, 1991:103).

4.3.6 MARKET OR PRICE RISK

Bessis (1998:9) defines market risk as the risk of adverse deviations of the marked-to-market value of the trading portfolio during the period required to liquidate a transaction.

For banks, market risk arises if financial instruments are held on the trading book or if a bank holds equity as some form of collateral (Heffernan, 2000:194). Market risk comes in many different forms. For the banking sector, however, two are of greatest concern, namely variations in the general level of interest rates and the relative value of currencies. Most banks will try to estimate the impact of these risks on performance, attempt to hedge against them and thus limit the sensitivity to variations in undiversifiable actions. Accordingly, most will track interest rate risk closely and they will try to manage the bank's vulnerability to interest rate variation, even though they cannot do so perfectly. At the same time, international banks with large currency positions will closely monitor their foreign exchange risk (see 4.3.5) and try to manage as well as limit their exposure to it. VAR can be seen as the most general method to measure and manage market risk and will be discussed next.

4.3.6.1 Value at risk

VAR can be defined as the maximum expected loss of a portfolio within a given time horizon for a given confidence interval or level of probability. The time

horizon and confidence interval reflects both the holding period and liquidity of the portfolio. VAR is thus an estimate of the amount that a company can lose in a defined period under normal market conditions (Venkat & Malhorta, 1998:2).

Originally VAR was used as an information tool. In other words, it was used to communicate to management a feeling for the exposure to changes in market prices. Market risk was then incorporated into the actual risk control structure. Currently it is commonly used in the incentive structure as well. VAR is thus a component determining risk-adjusted performance (see 4.3.4.10) and compensation (Schachter, 2000:3).

The exact computation of VAR will depend on assumptions about the following (Heffernan, 2000:194):

- The distribution of price changes, for example, if they follow a normal distribution;
- The extent to which the present change in the price of an asset is correlated to past changes in the price;
- The extent to which the characteristics of mean and standard deviation (volatility) are stable over time;
- The interrelationship between two or more different price moves; and
- The data series to which the assumption applies.

The calculation of a VAR figure is generally performed using one of three methods:

- Historical VAR: A series of historical market returns will be applied to current market levels. The portfolio will then be revalued at each of these new levels, using standard methods. This will give a distribution of changes in value, from which a VAR figure can be calculated (Jones, 1999:88). The primary

advantage of this method is the ease of implementation, the amount of market data detail, and the portfolio drill-down capability (Arapoglou, 1998:6);

- Simulation VAR: A series of possible future market levels can be generated through the use of a carefully selected sequence of random numbers. The levels are generated in such a way as to be consistent with historically observed drifts, variances and correlations. The portfolio is then revalued at these levels and a VAR figure is calculated from the distribution of possible changes, as for the historical method. This method is considered to be forward looking, because the possible future values are generated from random numbers. The generation of scenarios, however, requires assumptions to be made about the attribution of returns. The method is thus only as good as the assumptions (Jones, 1999:88); and
- Variance/Covariance VAR: In this approach all instruments are expressed as equivalent positions in a finite set of standard instruments, such as equity indices and interest rate positions. These standard instruments are referred to as vertices. Using market data, the variances and correlations of the returns from the vertices are calculated. Once the portfolio is represented in terms of these vertices, the distribution of the portfolio's return can be estimated. This allows a VAR figure to be produced. This method is easy to perform and is generally quite fast. It can however lead to loss of accuracy since some characteristics of individual instruments are lost when they are mapped onto the vertices (Jones, 1999:88).

VAR's most important strength is that it aggregates several sources of market risk into a single quantitative measure of potential value change for a portfolio (Johansson et al., 1999:96). VAR also provides a proactive risk measurement tool that can help senior management make strategic risk-based decisions to enhance shareholder value. However, it is not a substitute for sound risk management judgement and appropriate risk controls. Senior management should identify and understand the limitations of VAR and advocate its use as a means for strategic risk management (Venkat & Malhotra, 1998:5).

VAR have the following limitations:

- VAR is not a worst-case scenario and it is very difficult to compute the worst loss, because this could have occurred many years ago (Rahl & Esseghaier, 2000:50);
- VAR does not measure losses under any particular market conditions (Rahl & Esseghaier, 2000:50);
- VAR does not readily capture liquidity differences among instruments (Schachter, 1997:2);
- VAR does not readily capture model risk (Schachter, 1997:2);
- VAR does not address the risk of extreme events that occur in the tails of distribution and thus does not capture the financial distress implications of traders' actions (Davis & Fouda, 1999:1);
- Different VAR calculations can produce different results and, depending on the selection of the time horizon, database and correlation assumptions, the same model may produce divergent VAR opinions of the same portfolio and thus different capital requirements (Davis & Fouda, 1999:3); and
- VAR numbers cannot be taken at face value, since the VAR process has risks embedded in it. All the methods for calculating VAR figures combine existing positions with estimates of risk. These estimates are based on historical data and are consequently affected by estimation risk that introduces measurement error into the VAR number (Davis & Fouda, 1999:4).

To compensate for the limitations of VAR, banks must design and implement risk-management add-ons to address the inherent weaknesses. (Rall & Esseghaier, 2000). VAR should also be complemented by other risk measurement techniques to develop a portfolio approach to risk measurement. These risk measurement techniques will for example include sensitivity analysis (see 4.3.3.4) and stress testing as described below (Venkat & Malhotra, 1998:5).

4.3.6.2 Stress testing

The VAR analysis, as discussed above, can be complemented with stress tests (Rahl & Esseghaier, 2000), because stress tests introduce the human element into the calculations.

According to Rahl & Lee (2000:2) no risk-measurement model is without limitations or implied assumptions. It is helpful to understand what will happen should some of the underlying assumptions break down. Stress testing is the term for doing a series of scenario analyses to investigate the effect of violating some of the basic assumptions underlying the risk model (Rahl & Esseghaier, 2000:50). It is thus important to anticipate new events, shocks and linkages and to look for paradigm shifts and structural changes. The shocks and events that can cause severe losses must be determined.

The following types of stress tests can be distinguished (Blanco & Aragones, 1999):

- Historical scenarios: This is an analysis of what would have happened to the current portfolio under extreme historical events in the markets. It is usually a good starting point, but by no means sufficient. The main problem is that the number of relevant extreme historical events by definition are very limited;
- Hypothetical scenarios: This is manifested in user-designed scenarios of fluctuations in yield curves, exchange rates, commodity prices, volatilities and correlations. The choice of these scenarios is the key input in this analysis. It is necessary to identify possible events that could result in large losses and to quantify their potential impact on certain financial variables; and
- Mechanical stress tests: This is manifested in the "what if" analysis of specified market shocks like parallel and non-parallel shifts in the yield curve; exchange rate and equity market changes; changes in volatilities; etc. In each scenario, all current positions are revalued using a specified set of scenarios

of market prices and rates. The price and volatility shocks could be an absolute value, a percentage or a certain number of standard deviations.

A further distinction can be drawn between stress tests that are based on economic scenarios, for example a stock market crash, and stress tests that are "matrix" based, for example the determination of outcomes if assumptions about correlations and variances are changed (Schachter, 2000:4).

Stress tests are often performed to establish expected market and credit exposure over the life of an instrument and/or portfolio (Mezrich, 1998:2), and the frequency of stress tests should be a function of how often the portfolio risk exposures change in nature (Blanco & Aragones, 1999). Stress test results can be interpreted in various ways. It can, for example, involve an evaluation of tail events, or an evaluation of progressively severe market moves, or extreme standard deviation scenarios (Rahl & Lee, 2000:3).

The main benefit of conducting regular stress tests is that it encourages managers to think systematically about how financial shocks can impact on business (Blanco & Aragones, 1999).

The weaknesses of stress tests are that:

- Mechanical stress scenarios and historical stress scenarios may not offer a complete picture of risk (Blanco & Aragones, 1999);
- The managers in charge of evaluating results usually do not have enough authority to reduce the portfolio exposures under extreme conditions (Blanco & Aragones, 1999);
- The choice of the "user-defined" scenarios may leave large risk areas uncovered (Blanco & Aragones, 1999);

- Some events are not stressful enough: Smaller moves are not relevant for stress testing and are already taken care of in risk and capital measures. As long as the events are not impossible, no matter how unlikely they may seem, it is important to include them. Also, it is important to account for the speed and duration of the stress event (Wee & Lee, 1999);
- The key assumptions are not identified: The key assumptions that would change the results, if changed, must be identified. Unless explicitly examined, key assumptions tend to remain hidden (Wee & Lee, 1999);
- The risks are not made transparent: The difficult-to-visualise, non-linear, asymmetric risks, such as options and prepayment risks must be described and measured (Wee & Lee, 1999);
- Risks are compartmentalised: Linkages across risks and markets must be identified and the way in which these can change, for example, the impact of correlations on liquidity or the impact of extreme correlations on prices, must be described (Wee & Lee, 1999);
- Stress tests are not updated systematically: Stress tests must be refreshed and updated systematically to capture new sources of surprises and current portfolio characteristics (Wee & Lee, 1999); and
- Stress tests are not aligned to the company's culture: To be effective, methods selected should take into consideration the culture, management style and processes of the company (Wee & Lee, 1999).

The "Amendment to the Capital Accord to Incorporate Market Risks (1996)" is the Basle Committee's pronouncement on capital charges for market risk. It sets forth two approaches to calculating the capital charge to cover market risks, the standardised approach (similar to the framework discussed above) and the internal models approach. For banks that choose to use their own internal models, the capital charge will be the higher of (IFCI Risk Watch, 2000:1):

- The previous day's VAR (see 4.3.6.1); or

- Three times the average of the daily VAR of the preceding sixty business days.

Eligible capital under both the internal models approach and the standardised approach consists of shareholders' equity and retained earnings (Tier 1 capital), supplementary capital (Tier 2 capital), and a new Tier-3 capital, consisting of short-term subordinated debt. The latter is subject to the following conditions (IFCI Risk Watch, 2000:1-2):

- It must have an original maturity of at least two years and will be limited to 250% of the bank's Tier 1 capital that is allocated to support market risk;
- It is only eligible to cover market risk, including foreign exchange risk (see 4.3.4) and commodities risk;
- Insofar as the overall limits in the 1988 Accord are not breached, Tier 2 elements must be substituted for Tier 3 up to the same limit of 250%; and
- It is subject to a "lock-in" provision that stipulates that neither interest nor principal may be paid if such payments mean that the bank's overall capital would amount to less than its minimum capital requirement.

Banks that do not meet the qualitative criteria set down by the Basle Committee are not allowed to use their internal models and must use the standardised measurement framework, albeit with a few changes. The capital for their option positions can be calculated on a 'simplified' or 'scenario' approach, depending on whether the company buys and/or sells options (IFCI Risk Watch, 2000:2).

Although the Basle Committee has accepted the validity of using internal models to calculate market risk capital, it felt that potential weaknesses in these models had to be provided for in the capital charge. These weaknesses exist because (IFCI Risk Watch, 2000):

- Market price movements are not always normally distributed because they display fat tails, i.e. they tend to have a wider dispersion of extreme events;
- Models cannot adequately capture event risks arising from exceptional market circumstances;
- VAR estimates are typically based on end-of-day positions and generally do not take account of intra-day trading risk;
- Funding risk is not assessed in a VAR measure; and
- The past is not always a good approximation of the future and assumptions must be broken down.

As a result of these weaknesses the Basle Committee deemed that all internal VAR numbers had to be multiplied by a minimum factor of three (a capital buffer), provided the predicted VAR numbers accurately reflected realised daily profits and losses. If there were a significant discrepancy between actual trading and model-generated numbers, then a plus factor would be added to the minimum number of three. The regulators are thus using the threat of a plus factor to give financial companies an incentive for building models with good predictive quality to help internal risk control and not ones with the sole purpose of facilitating a lower capital requirement (IFCI Risk Watch, 2000:3).

4.3.7 INVESTMENT RISK

Investment risk can be defined as the possibility of loss, resulting from a fall in the market prices of marketable securities and other investments held (Kelly, 1993:414). Investment risk refers to interest rate (see 4.3.4) as well as maturity risk, as the value of fixed-income instruments decline when the interest rates rise. Investment risk also encompasses opportunity-cost risk, since locking in fixed-rate assets before rates rise means foregoing the opportunity to earn those higher rates (Sinkey, 1983:38).

The assessment of investment risk can be explained by concentrating on the balance sheet structure of an institutional investor such as a pension fund. The assets of such an investor usually consists of five main categories: cash and deposits; fixed-interest securities; ordinary shares; and loans and property, while their liabilities are usually represented by only two items, namely the accumulated funds of policy holders, and provisions, which together effectively constitute policy-holders' interest. The liability sides of the balance sheets of these institutional investors are usually completely fixed in the short-term. This implies that they face interest rate (see 4.3.5), liquidity (see 4.3.3) and currency (see 4.3.5) risk exposures in a much narrower sense than banks, because institutional investors cannot manipulate the maturity structure of the liability side of their balance sheets. Institutional investors are faced with a contractual inflow of funds that is more or less constant in the short-term and that has to be invested on the most profitable terms in the long run (Falkena & Kok, 1991:124).

It is unacceptable for depositors and investors that their investments decline in nominal terms during the investment period. If all external factors were negative, it would be best to liquidate the total portfolio and re-invest the proceeds in the money market. Although such a policy would not generate much current income, it will at least prevent capital losses. However, for large portfolios it is impossible to switch out of long-term investments into cash because of market constraints. Small portfolios are in contrast virtually completely flexible in the sense that material structural changes will be relatively easy to effect, without any marked influence on the market. Therefore, in the case of large portfolios, changes in investment strategies are liable to be manifested mainly in the way cash flow is invested, rather than in major portfolio switches as such (Falkena & Kok, 1991:143).

4.3.8 OPERATIONAL RISK

Defining as well as quantifying operational risk can be very difficult (Young, 1999:79) because there is no agreed upon or universal definition (Basle, 1998:3). In defining operational risk, most banks start of with an all-encompassing definition and then break this down into key risk or functional areas specific to the individual bank (Anon, 1998:38-39):

- Definition one: This encompasses every risk source that lies outside the areas covered by market risk (see 4.3.6) and credit risk (see 4.3.2);
- Definition two: This encompasses the risk run by a bank that its internal practices, policies and systems are not rigorous enough nor sophisticated enough to cope with adverse market conditions or human and technological errors;
- Definition three: This encompasses all dimensions of a bank's decentralised resources (such as relationships and personnel) as well as technology, property and assets for which they are responsible. This can also capture external areas such as regulatory risk and fraud risk;
- Definition four: This encompasses the potential for loss from events such as the breakdown of processes, ineffective technology, faulty reporting and business interruptions. Operational risk exists throughout the company and occurs before, during and after the completion of a business transaction. Operational risk can be generated by for example, product choices or customer perceptions; and
- Definition five: Operational risk can encompass back-office operations such as transaction processing, fund pricing, cash and securities movement and systems.

It is essential that banks choose the right definition for themselves, but they must be conscious that, unlike other risk types, operational risk attracts many different kinds of definitions. The bank must relate their definition to their purpose in hand

and they must be able to explain why their definition is the same as or different from definitions in the outside world (Anon, 1998:38).

According to Bessis (1998:12-14) operational risk can appear at two different levels:

- Technical level: Technical risks cover a large number of specific risks which can include (Bessis, 1998:12):

  - Errors in the process of recording transactions;
  - Deficiencies of the information systems; and
  - The absence of adequate tools for measuring risks.

- Organisational level: Risk monitoring covers all information systems, reporting and subsequent actions. As malfunctioning can have a large number of causes, some principles can help build a sound system (Bessis, 1998:13-14):

  - The management rules should not constrain the risk-taking process too much as being too prudent slows down the decision-making process and limits the volume of business;
  - Commercial business units that generate risk should be distinct from those whose mission is to supervise and limit risk; and
  - There should be incentives to disclose risk when they exist, rather than encourage managers to hide them.

The Basle committee, saying that operational risk has become too important to ignore, decided that banks must take a disciplined and proactive approach to managing it, and it will be required from banks to apply an explicit capital charge to cover losses arising from operational risks. Ultimately, this would require two measurement models: one for operational risk and one to determine how much capital must be allocated (Bloom & Galloway, 1999:1). If models are not

available, a percentage of non-interest expense or another data substitute can be relied on to establish the required capital cushion. The inherent risk in this is that, regardless of operational risk performance, all banks would be treated alike, and better performers would be penalised. However, there is an exemption to the percentage plan as banks that develop models to accurately measure their operational risk can allocate just enough capital to cover their exposure. Banks that manage their risk effectively, measure it effectively, and allocate capital effectively would thus be rewarded with a smaller regulatory burden and more capital to support innovation and to expand (Bloom & Galloway, 1999:2). The capital needed to cover operational risk can also be calculated by using an add-on, based on key operational ratios such as variability in earnings, staff turnover; error rates and technology costs. Another approach that is used involves applying a base requirement reflecting the scale of a bank's activities, for example a percentage of fixed costs (IFCI Risk Watch, 1999).

True competitive advantages arise from developing an organisational culture (see 2.14) that proactively manages day-to-day risk, identifies new risk, shares best practices and systematically tracks exposures. Building the right culture for that begins with instituting a disciplined approach to operational risk management, starting with the board and filtering down through every level and business unit and across every major process in the bank. Once the infrastructure is in place, banks must learn to assess the quality of their risk management programmes and assign rand values to the risks they confront (Bloom & Galloway, 1999:2).

4.3.9 CAPITAL OR SOLVENCY RISK

Capital risk represents the possibility that a bank may become insolvent, that is, when it has negative economic net worth. The economic net worth of a bank is the difference between the market value of its assets and liabilities. Capital risk thus refers to the potential decrease in net asset values before economic worth is

zero (Koch, 1995:109). Capital risk also refers to the risk of a bank's own capital resources being adversely affected by external developments (Falkena & Kok, 1991:5). According to Bessis (1998:11) capital risk is the risk of being unable to cover losses, generated by all types of risks, with the available capital.

Charging net losses against capital is a normal business practice. As long as net losses can be fully offset against capital invested by a bank's owners, the legal claims of depositors or other creditors are not compromised, and the bank can continue to function without interrupting its operations. When such losses are of a magnitude that will wipe out the capital resources, and therefore impair the bank's ability to pay its liabilities in full, the bank will be forced to close. In this sense capital risk can be considered as solvency risk (Falkena & Kok, 1991:150).

It is required of banks to operate with at least a minimum amount of capital. The intent with this is to limit risk-taking. Bank capital reduces bank risk in three ways (Koch, 1992:3-4). First, it provides a *cushion to absorb losses*. The greater a bank's equity capital, the greater the amount of assets that can go into default before a bank is insolvent. More importantly, if a bank customer defaults on a loan, cash inflows decline because the bank can no longer receive all the promised principal and interest. Cash outflows rise slightly because the bank must still meet its payment obligations plus pay collection costs. Second, capital provides *access to financial markets* and thus helps prevent liquidity problems caused by deposit outflows. Banks with high quality assets and a large capital base can easily issue new stock or borrow at relatively low prices. Finally, capital requirements serve to *constrain growth and thus limit risk-taking* in terms of new investments. Regulators can thus control bank risk-taking by altering capital requirements. Each bank's minimum requirement is tied to the riskiness of its assets. Assets are categorised in one of four classes with different risk weights ranging from zero to 100 percent. Selected off-balance sheet commitments are similarly categorised. Banks then compute a risk-weighted asset figure equal to the sum of each risk weight times the value of the assets in that class. Banks

with insufficient capital have the choice of shifting assets to lower risk classes, selling off assets or obtaining new capital. An increase in the minimum capital needed to operate a bank would lead to all but the strongest banks being desperate for more capital (Koch, 1992:3-4).

To ensure capital adequacy and confidence in the banking system, minimum capital requirements for individual banks must thus be imposed (Koch, 1995:388). Requirements can be met when banks obtain an acceptable amount of financing in the form of qualifying equity capital and related long-term debt sources (Koch, 1995:388). Risk-adjusted performance measures and capital-at-risk (CAR) can be used to measure and manage capital risks and these techniques will be discussed next.

4.9.3.1 Risk-adjusted performance measures (RAPM)

Capital is becoming a scarce resource for banks, as a result of more stringent capital adequacy requirements and declining financial performance of the banking sector. This means that more effective balance sheet planning is necessary to produce the optimum return profile within the constraints of the chosen business strategies. In order to improve capital allocation, it is essential for a bank's performance measurement framework to support the allocation decision-making process and to highlight those areas where the best use of capital can be made (Stott & Watson, 1992:15).

Banks can improve their performance by using an RAPM framework. This framework consists of four major categories (Stott & Watson, 1992:18):

- Return on risk-adjusted capital (RORAC): This identifies the capital at risk for a particular type of transaction and compares this to the return which can be earned on the transaction (Stott & Watson, 1992:18);

- Risk-adjusted return on capital (RAROC): This identifies the return that can be earned on a product and adjusts it for the extra return that is estimated to be required to compensate for the perceived level of extra risk incurred over and above that incurred to earn the risk-free rate of return. This risk-adjusted return is then compared to the actual (i.e. paid up) or regulatory (risk-weighted) capital required to support the product or activity. In this case, it is the return which is risk-adjusted to reflect the perceived increase in riskiness, rather than the capital to support the company (Stott & Watson, 1992:18);
- Return on risk-adjusted assets (RORAA): This is similar to RORAC, except that it compares the returns earned to the risk-adjusted assets or credit equivalent amount required to earn the return, rather than the risk-adjusted capital (Stott & Watson, 1992:18); and
- Risk-adjusted return on assets (ROROA): This is similar to RAROC, except that the risk-adjusted return is compared with the balance sheet assets required to support the activity in question (Stott & Watson, 1992:18).

The RAPM framework is the key performance measurement tool that links results, risk and shareholder value creation. The risk component is frequently the one that differentiates "best practice" financial companies from others. RAPM must not only be theoretically sound, but also consistent across the bank and understandable by business line management. Should business performance deviate from expectation, bank management has the opportunity to adjust portfolio and portfolio mixes. The foundation of the RAPM framework is the calculation of economic capital (capital-at-risk) or "risk-adjusted capital" used by each asset, each line of business, and even each customer. All financial statements, including profit and loss and balance sheet, should be designed down to the product level. In making these risk capital decisions, banks define and estimate risk and allocate capital to that risk. The internal capital allocations are used to measure the relative profitability of bank activities and the management of the bank's capital (Morisano, 1998:32).

4.3.9.2. Capital at risk.

CAR is a risk-based economic measure of capital and can be defined as the capital required to absorb potential losses, due to all risks, at a given tolerance level (Bessis, 1998:237). The tolerance level associated with CAR is identical to the default probability of the bank, and the lower the tolerance level, or default probability, the higher the CAR will be, given other risks (Bessis, 1998:34-35).

CAR serves the following purposes (Bessis, 1998:237):

- The measurement of the risk-based capital for the entire bank;
- The measurement of the risk of business units, and the comparing of these risks with normative capital allocations set by the management; and
- The measurement of risk-adjusted performance, by relating performances to measures of risk.

CAR also addresses the issue of capital adequacy and thus the allocation of capital to business units in proportion to their risk (Bessis, 1998:237).

CAR is generally calculated using factors based on credit grading and trends, historical volatility of the market or product, the size of the position taken and the speed of response possible to any adverse movement in the price (Stott & Watson, 1992:18).

Three essential elements must be present to develop a successful capital management activity (Morisano, 1998:30-32):

- Defined risk culture: A culture (see 2.14) is the coding of values and deeply held beliefs that mould a company's decision patterns, guides its actions, and drives individual behaviour. A risk culture can be defined as one that has an awareness of each risk and the consciousness that each risk could either

present a downside surprise or serve the purpose of generating profits. Banks are moving towards an enterprise-wide risk management framework that can provide the comprehensive risk measurement and reporting structure to create risk awareness and quantify risk appetite. A company that has a sound risk culture also has a proactive risk awareness process, with decisions being made according to a risk/reward framework;

- Clear organizational goals: From a capital management standpoint, goal-setting must be consistent with the overall premises that capital is managed as a scarce resource and that banks must create sufficient returns to generate shareholder value. Financial targets should not only focus on revenue and profit but also on the shareholder value created. Another factor, quality of earnings, can be indicated by a combination of risk measures and volatility of income. There needs to be a balance of current-period results and long-term growth. A set of values for profitability that provides feedback to all on management is also important. While an individual transaction or product may destroy shareholder value, it may be critical for an overall customer relationship; and
- A capital management infrastructure: Capital management requires a combination of daily monitoring, periodic analysis and long-term planning. On a daily basis, banks need the infrastructure to accumulate positions, measure economic and regulatory capital needs, and manage liquidity. Overall risk-adjusted performance calculations must be performed both on an economic and a regulatory basis, at least monthly. As long as there is sufficient capital to meet regulatory constraints, key decisions must be made on an economic basis. A capital management infrastructure reduces confusion and debate and establishes a one-company approach to management. The quantification capabilities inherent in a sound infrastructure provide bank management with the information needed to make timely and often difficult decisions. Long-term planning requires analysis of the overall capital structure as well as modelling of the growth and capital needs of each company. The capital management infrastructure links the strategic planning, financial planning and risk

management processes to create risk-adjusted long-term forecasts. The reporting infrastructure supports capital-related key decision-making. The mix and allocation of capital is perhaps the most important decision, because this drives current and future performance. "Best practice" banks minimise capital investment if they have no control of the outcome of the information to reduce uncertainty. Capital decisions are made hand-in-hand with strategic plans, financial goals, risk profiles and tactical strategies.

4.3.10 SUMMARY

In ensuring that a bank moves in a certain direction that is consistent with the bank's objectives, a bank must not only use general strategic risk management principles, but must also identify, measure and manage all the various bank risks by means of the current risk management system. In this system there are different methods available for the measurement and management of risks and the combination of methods that suits the bank best, given the objectives of the bank and other constraints, must be used.

4.4 CONCLUSION

Strategic risk management must be complemented with the current risk management systems of a bank to enable it to function effectively and to achieve its objectives.

Banks must know what risks they are exposed to, understand the implications of these risks, and be able to identify, measure and manage them. The bank risk management system can be used for this and it can also provide a comprehensive framework that will help managers in the pursuit of projects, offering the highest growth and returns in the long term, with the ultimate result of increased shareholder value. Current risk management systems can also serve

as an aid in decision-making, helping with the development of a competitive advantage for the bank.

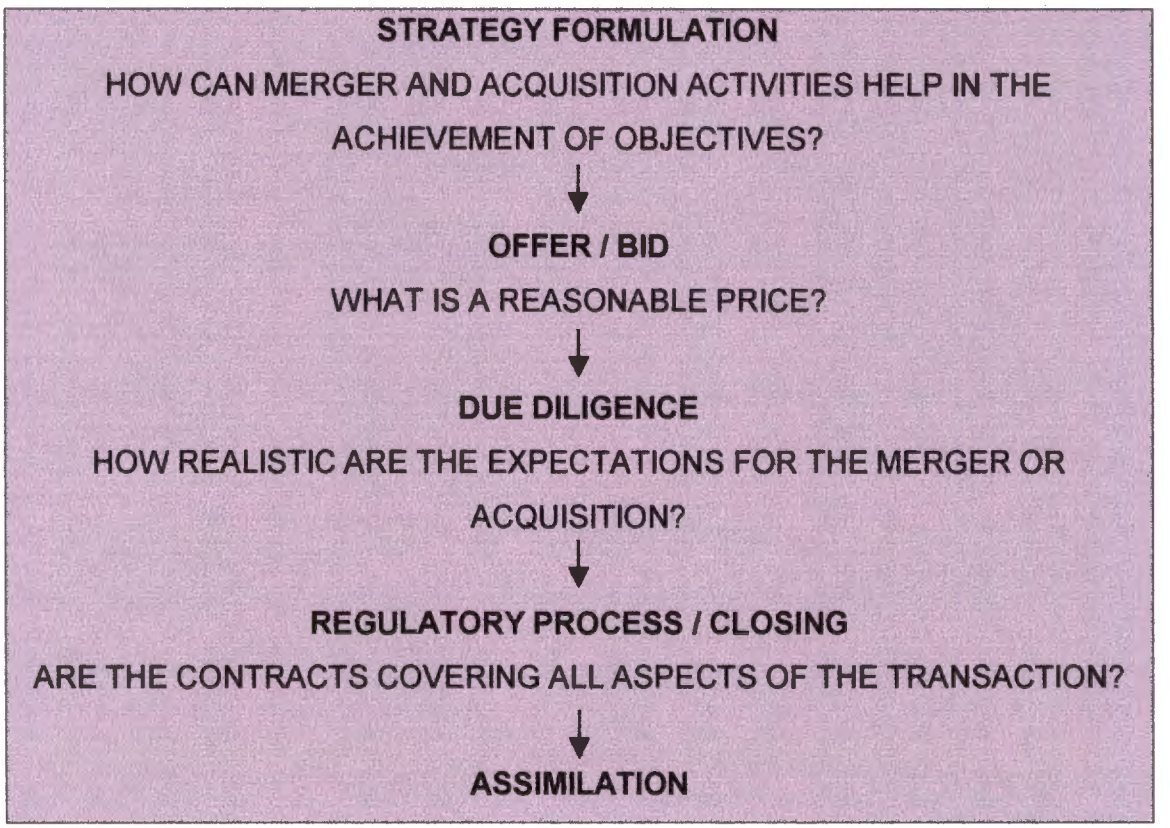
In chapter 5 a merger-specific application of the theory discussed in chapters 2, 3 and 4 will be made. It will be shown that a merger or acquisition in the banking sector can be realised successful if the general merger and acquisition principles as discussed in chapter 2 are not used on their own, but are integrated into the regulatory framework and strategic risk management framework of banks as discussed in chapters 3 and 4, to make it possible to consider a merger or acquisition from a strategic risk-management viewpoint.

CHAPTER 5: APPLICATION - A GUIDE FOR MERGERS AND ACQUISITIONS IN BANKING

5.1 INTRODUCTION

Mergers and acquisitions in the banking industry must be treated differently from other corporate restructurings, because of the risk management as well as the strategic risk management framework and regulations that prevail in banks. This chapter serves as a guide on how to plan, implement and evaluate mergers and acquisitions in banking more effectively in order for objectives, which usually include an increase in shareholder value, to be achieved. The following merger or acquisitions process is the most commonly used:

Figure 5.1: A chronological model for a basic merger or acquisition transaction (from an acquirer's perspective)



HOW ARE THE EMPLOYEES MOTIVATED TO WORK TOGETHER?

Saavedra-Lim, 1998:3

The steps in this process must be followed accurately, in order to improve the likeliness of a merger or acquisition to be successful. In the next section the general merger or acquisition principles will be discussed, after which the role of strategic management, the role of ALM, the ALCO process as a bank-specific application of strategic management, and the impact of risks on mergers and acquisitions are analysed.

5.2 THE GENERAL MERGER OR ACQUISITION PRINCIPLES

5.2.1 INTRODUCTION

In the initial merger or acquisition discussions all aspects as described in chapter 2 must be taken into consideration in order to make the right decisions. A merger or acquisition decision is a long-term decision and it cannot be reversed once implemented if it is not as successful as it was expected to be.

5.2.2 THE NATURE OF A MERGER OR ACQUISITION IN THE BANKING INDUSTRY

A merger or acquisition between banks can be seen as a horizontal merger or acquisition because all the companies involved are in the banking industry. Horizontal mergers or acquisitions can impair competition and this sometimes causes concerns by government, which may lead to planned mergers and acquisitions not being executed.

5.2.3 THE WAYS IN WHICH A MERGER OR ACQUISITION TRANSACTION CAN BE AFFECTED

If restructuring takes place in any way, it can happen by means of a merger or consolidation, shares, cash or a combination of shares and cash, depending on the situation. All of these methods have their own advantages and disadvantages and the choice between them depends on factors such as cost, time and the viewpoints of the shareholders and management. Banks will be more determined to engage in a merger or consolidation because it is legally simple and does not cost as much because the banks simply agree to combine their operations. However, a merger or consolidation has the disadvantage that it has to be approved by a vote of the shareholders of each bank and it can be difficult and time-consuming to obtain enough shareholder votes, in which case these methods will not be used and restructuring will take place by means of shares, cash or a combination of shares and cash. Shares will be used if the board of directors and the target bank's management do not approve of the restructuring and the acquiring bank then deals directly with the shareholders of the target bank. However, the cost of a merger or an acquisition by shares is higher than is the case with a consolidation. If capital gains will be realised, cash transactions must not be used, because this will be taxable, where a transaction by means of shares will not be taxed. Care must however be taken that the earnings per share of the acquiring bank will not be diluted by a share transaction. If the share price of the acquiring bank is overvalued, a share transaction must be used because it is less costly than a cash transaction.

5.2.4 THE REASONS FOR A MERGER OR ACQUISITION TRANSACTION

The reasons for mergers or acquisitions as described in 2.6 may be diverse. Whatever the reason, each bank's relative advantage must be utilised best and the potential for growth and profit must be increased because this will lead to an increase in shareholder value. Before committing themselves to a deal, the

acquiring bank and the target bank must therefore assess the effect on each bank's shareholder value should expectations fail to materialise.

5.2.5 THE REJECTION OF A MERGER OR ACQUISITION BID AND POSSIBLE DEFENCES

The target bank's management can reject the merger or acquisition bid if the price is inadequate, the offer is poorly timed or if there will be adverse effects for some of the concerned parties. If the acquiring bank does not accept the rejection, the target bank can employ many defences to prevent a merger or acquisition. These defences may substantially weaken the financial condition of the targeted bank, with the goal of keeping the bank independent. Defences can sometimes be justified, but it can also be that the merger or acquisition may be a good idea, but that the directors or shareholders do not like it because their positions may be threatened. It is important for the creation of shareholder value to be the main consideration in such a decision.

5.2.6 THE COST OF A MERGER OR ACQUISITION AND THE TERMS OF EXCHANGE

If it is decided that the bank is going through with the merger or acquisition, the cost of the merger or acquisition must be estimated, after which the terms of exchange that will be the best for the shareholders must be determined, whether shares or cash will be used. A common benchmark for sellers is the level of prices paid in comparable transactions in the immediate past.

5.2.7 THE VALUATION OF A MERGER OR ACQUISITION TRANSACTION

Transactions that have taken place or that will take place must be valued on a continuous basis in order to determine whether success has been or can be achieved. Valuation techniques can be helpful in the determination of merger and

acquisition gains and losses and can give a clear picture of merger or acquisition results. The valuation technique of net present value (NPV) is the best and most commonly used, and this comes down to estimating the present value of the incremental cash flows created by the merger or acquisition and comparing it with the bid premium. Other valuation techniques, for example the earnings valuation, book value, liquidation value, replacement cost and market value as described in 2.10 can be used as a supplement to the NPV analysis, but not as a substitute, because each of them has limitations compared to the NPV analysis.

5.2.8 THE ROLE OF CULTURE IN A MERGER OR ACQUISITION TRANSACTION

The success of a merger or acquisition depends on the circumstances of each case, and the key to the success of a merger or acquisition is clearly the amount of thought and planning that has gone into it and the ability of the people involved. Although mergers and acquisitions can be well-planned in terms of financial and legal aspects, poor results can be obtained due to poor human resource planning. Cultural issues are thus strategically important in mergers and acquisitions and the success of corporate restructuring depends on the ability to meld two or more separate cultures into a coherent new one that is embraced by all employees.

A bank is perceived as having a role culture because banks have formal procedures and regulations concerning the way in which work is to be conducted, there are boundaries of authority, reporting arrangements will be clearly defined and their guiding principles are logic, rationality and the achievement of maximum efficiency. Because of this high degree of formalisation, a merger or acquisition in the banking industry may take longer than restructuring in other industries. Role cultures are advantageous in the sense that they are secure and predictable. However, they constrain innovative and risk-taking behaviour.

Analysing and assessing cultural compatibility is necessary for effective merger and acquisition planning. A look into the age, years of service, qualifications and backgrounds of employees generates important information on the general make-up of each bank. Data on the psychographic and attitudinal composition of the employee base must also be obtained because such data can give valuable input on workers' beliefs.

Cultural differences must be minimised and managed effectively because they can determine the effectiveness of the merger or acquisition. The cultures must thus be integrated from the beginning. After the integration there must be cohesion among members about common purpose, co-operation between various parts of the bank and a hierarchical order that is recognised as legitimate, acceptable, proper and preferably motivating.

The business philosophy, critical success factors and measurement, leadership or management style, the organisational structure, the work flow/practices, perceptions and expectations, artifacts and the facilities or work environment must be examined, with the aim of smooth integration of the involved banks.

The recognition of the differences and similarities between banks can thus make a merger or acquisition going more smoothly by enabling early planning with regard to any obstacles that may interfere with or slow down integration. Once the cultural differences has been sorted out, a new culture can be established. This culture must be established based on elements of both banks' styles, because this may help to put all employees on an equal footing and can eliminate any power struggles. A way to get both sets of employees on board, while maintaining productivity and preventing slippage is to set a super-ordinate goal, that can only be achieved by both banks working together effectively. Employees must thus let go of the old reality and the old identity that prevailed. The change program have to be build up piece by piece, tailor-making it to the bank's particular aims and requirements.

Part of cultural integration is the acceptance of policies, programmes and procedures by all the banks involved in the merger or acquisition. Co-ordination must also take place with regard to the various activities of the involved banks by means of well-planned systems of record keeping, convening meetings and appointing committees. The different streams of activities must also continually be linked to the basic objective of the combined bank with the merger or acquisition.

5.2.9 SUMMARY

A merger or acquisition is a permanent decision, and all aspects involved must thus be considered carefully in order to prevent any future mishaps. The use of the right restructuring method, whether it be a merger or consolidation, shares, cash or a combination of these, is thus important. In examining a merger or acquisition decision the reasons to carry out a merger or acquisition can include the greater utilisation of the bank's relative advantage, the potential for growth or increased profit. All these reasons, however, come down to one, namely an increase in shareholder value.

A merger or acquisition bid can, however, be rejected by the target bank on different grounds, and many defences as described in 2.5.2 can be used by them for protection. These defences are not always justified and the most important consideration for rejecting a bid must always be decreased shareholder value. If the defences fail and the deal still goes through, the cost must be estimated, after which the terms of exchange must be determined.

After a merger or acquisition is a done deal, the success achieved with the restructuring must be evaluated continuously. This can be done by using a combination of valuation techniques as described in 2.10. If all techniques are used together, the best results can be obtained because all of them have their own advantages and disadvantages, so that when used together they complement each other.

In planning and implementing a merger or acquisition, human resource aspects must be taken into consideration, together with financial and legal aspects. The cultural compatibility of all the banks involved must thus be analysed and assessed and cultural differences must be minimised and managed in order for a merger or acquisition to be effective. The cultures of all the involved banks must thus be integrated from the beginning and a new culture which includes elements of both banks must thus be established.

5.3 STRATEGIC MANAGEMENT

5.3.1 INTRODUCTION

Strategic management can be seen as the decisions and actions (to merge or not or to acquire or not) resulting from strategies designed by the ALCO to achieve the objectives of a bank, which will be an increase in shareholder value in the case of a merger or acquisition. As mentioned in chapter 3 strategic management consists of three components.

5.3.2 THE FORMULATION OF A MERGER OR ACQUISITION STRATEGY(-IES)

The *formulation* of a sound corporate strategy(-ies) is paramount to success in merger or acquisition activity (Saavedra-Lim, 1998:4). Before attempting a merger or acquisition and in determining what a bank wants to achieve with a merger or acquisition, the external and internal environments of all the banks that will be involved in the merger or acquisition must be examined. An analysis of the strengths, weaknesses, opportunities and threats of all the banks involved must thus be conducted in order to be able to understand their different visions and missions. In a merger or acquisition situation advantage can be taken of the *strengths* of the involved banks, for example, a large customer base, name recognition or capital and asset quality. It is also important that management

must determine how to make changes to the restructured bank to improve on and eliminate the *weaknesses*, such as an ageing customer base or a lack of technological resources of the previously existing banks. In a bank merger or acquisition environment, managers must see each *threat* (for example, inefficiencies in the operations) as representing a lost opportunity, and they must try to convert all threats into opportunities. All *opportunities* present in the external and internal environments can then be fully utilised, in order for the restructured bank to develop a good competitive position.

The mission and vision statements of the banks that will be involved must be taken into consideration. A new mission statement specifying the direction that the restructured bank will follow in the future as well as the decisions it will take and activities it will engage in, in terms of its business, key values and corporate culture, and a new vision statement, specifying what the restructured bank wants to be, must be developed. If a bank has already done a successful merger or acquisition in the past the bank may be over-optimistic about the proposed merger or acquisition and may think that the benefits attached to it are larger than they really are. On the other hand, if a bank has already gone through an unsuccessful merger or acquisition, the bank will be very careful of another one. The mission and vision of the proposed bank, as well as those of the proposed bank's competitors, must be understood in order for an attempted deal to realise successfully.

Certain aspects with regard to human resources, marketing and sales, product development, product appeal and life cycle, financial resources and financial staying power, and technological competence are important in formulating merger or acquisition strategies. This can help the new bank to determine, for example, who is going to be its clients, who is going to be its market and what products are going to be marketed, and what technology is going to be used. The banks involved must thus take the above into consideration and alter their business strategy(-ies) accordingly.

A couple of merger or acquisition strategies must be formulated by all the involved banks, based on what has been learned and keeping in mind the objectives that the restructured bank will want to achieve with them. The ALCOs of the banks involved must then get together and choose the best strategies from all the ones developed because this will help them allocate their funds, time and other resources optimally. The specification of long-term objectives can help a bank make the critical choices that are needed to achieve success, because objectives help with the allocation of funds, labour, computer time and communication to employees about their jobs. Strategy formulation will thus help a bank determine what risks it must take and how to balance these risks in order to achieve an optimal risk/return ratio for the bank. In the strategy formulation process day by day challenges must thus be addressed in order to help the bank plan correctly, taking into account the proposed changes in the market in the future on all levels.

5.3.3 THE IMPLEMENTATION OF A MERGER OR ACQUISITION STRATEGY(-IES)

As soon as bank merger or acquisition strategy(-ies) have been formulated they must be *implemented* as part of the restructured bank's strategic plan. In this step, adjustment must be made to ensure that the planned results will be obtained, for example if the financial performance has deteriorated, the market position must be re-established in order for a bank to have superior performance in comparison with their competitors. The management of a bank must also have an immediate response if unexpected events occur. Enough time must be allowed for the development of plans and good communication is necessary because it serves as a common purpose and a motivating force for the restructured bank. In mergers and acquisitions with regard to non-banking companies the boards of directors and top managements of the companies will talk to one another. If this is all that takes place in a bank merger or acquisition

the restructuring will surely fail. It will be best to use the ALCO processes of all the banks involved and to put them together at a later stage as described in 5.5.

5.3.4 THE EVALUATION OF A MERGER OR ACQUISITION STRATEGY(-IES)

After a bank merger or acquisition strategy has been implemented the success achieved with this strategy must be *evaluated* subsequently. The performance achieved with the merger or acquisition strategy must thus be reviewed in order for the feedback to be used to determine if the plans and objectives are being achieved. If the merger or acquisition strategy has not been successful, the reason(s) for this must thus be determined in order to take corrective actions and to prevent the restructured bank from earning a negative net interest income.

5.3.5 SUMMARY

Strategic management will help a bank to carry out a merger or acquisition systematically, and it is used to examine how a merger or acquisition will contribute to the restructured bank's objectives, if the process if followed accurately.

Strategy formulation is essential for success as mentioned in 5.3.2 and before attempting a merger or acquisition and in determining what a bank wants to achieve with a merger or acquisition, the internal and external environments of all the banks involved must be examined in order to understand their different visions and missions so that a new vision and mission can be developed with the aim of specifying the direction that the restructured bank wants to follow, the decisions it will take and actions it will engage in as well as what the restructured bank wants to be in the future for the development of a competitive position. The formulated strategies must be implemented in order to mean something and in order for adjustments to be made if necessary, to ensure that the planned results will be achieved. After the implementation of a strategy(-ies) it (they) must be evaluated, in order for feedback to be received on the performance achieved.

Corrective actions must again be taken if necessary, in order to continuously maintain and improve the net interest income of the restructured bank.

5.4 ASSET AND LIABILITY MANAGEMENT

5.4.1 INTRODUCTION

ALM can be seen as a part of strategic management and is more generally used in banks than in other businesses. As stated in chapter 3, ALM embodies the entire scope of a bank's operations and is thus responsible for the management of a bank's entire balance sheet.

5.4.2 THE RESPONSIBILITY FOR ASSET AND LIABILITY MANAGEMENT

The parties responsible for ALM in all the involved banks must be aware of the proposed merger or acquisition or where in the process of merging or acquiring the bank currently stands, in order to manage the current situation effectively, because the failure of the ALM process will mean that the proposed merger or acquisition will not be as successful as it can be. It will be a good idea to set up a specialised management team to help handle ALM in a merger or acquisition situation.

5.4.3 ASSET AND LIABILITY MANAGEMENT TECHNIQUES

A variety of techniques can be used in ALM. The combination of ALM techniques that are the most suitable for the specific merger or acquisition situation, that fit the environment best and yield the best results given certain constraints must be used. In selecting a technique a bank must ensure that they have enough time to handle this technique, that they can afford this technique and that they can understand it and have the expertise to work with it. A bank must use this (these) technique(s) especially to enhance their understanding of the risks

involved in a merger or acquisition and to quantify and manage these risks in order to optimise the risk/return trade-off.

5.4.4 AN ASSET AND LIABILITY MANAGEMENT MODEL

After the ALM technique(s) best suitable for the merger or acquisition decision have been chosen, an ALM model must be selected and implemented, as an additional help in achieving success with the proposed merger or acquisition. In selecting this model a couple of factors must be taken into consideration. The most important considerations are that the model must be able to produce the relevant reports required in a format that is easily understandable, and it must also be able to anticipate unfavourable circumstances and respond to them if they arise. To implement the model may take a couple of months and this model will usually be a combination of the models of the banks involved. The ALCOs of the different banks are responsible for determining and evaluating this model, which can help with the co-ordination, analysis and communication of all aspects with regard to the merger or acquisition.

5.4.5 SUMMARY

ALM is used for the management of a bank's entire operations, and in a merger or acquisition environment specialised management teams can be set up to help handle this function. A combination of a variety of ALM models and a combination of a variety of ALM techniques can also be helpful in achieving success with a merger or acquisition transaction. In choosing the relevant models and techniques a couple of factors must be taken into consideration and the implementation of the new techniques and models may possibly take more time than planned.

5.5 ASSET AND LIABILITY COMMITTEE

5.5.1 INTRODUCTION

The ALCO process can be seen as the most important part of strategic management in banks and can be used for the determination and subsequent evaluation of merger and/or acquisition strategy(-ies). The ALCO process consists of ten steps, as described in 3.3.4, and must first be followed by all the individual banks. However, when these individual ALCO processes are followed, the individual banks must move to the same objectives. One combined ALCO process must be followed later on during and after the implementation of the merger or acquisition.

5.5.2 STEP 1

In the first step of the ALCO process, it must be determined whether the merger or acquisition decisions taken at the previous ALCO meetings of all of the banks involved are more or less the same, if they are being followed throughout the relevant banks and whether the proposed merger or acquisition targets are being achieved. The ALCO policy documents of the banks involved must be consolidated from the beginning, because it will provide boundaries for decision-making, and it is preferable that all the banks that are going to be involved in the merger or acquisition use the same boundaries in their separate ALCO processes, because these can be utilised effectively in planning for a merger or acquisition. It will also ensure that the ALCO processes of the banks involved remain focused on the proposed merger or acquisition. The tolerable boundaries, which will thus be the same for all the individual banks, must be specified and if unacceptable variances occur procedures to correct them must be followed. In the combined ALCO process this step is also important because if targets are not being achieved, contingency measures must be taken as soon as possible.

5.5.3 STEP 2

In the second step it is essential that all the banks involved understand their own as well as the other banks' present situations, and also any risk dimension, before merger or acquisition strategies are formulated by individual banks in order for the present situations of the banks to be utilised optimally, keeping in mind the future and the objectives that the restructured bank wants to achieve. The involved banks must use the same benchmarks to evaluate their present situations, because if the banks use different benchmarks they will get different answers and this will affect planning negatively.

5.5.4 STEP 3

In the third step all the banks involved must project their exogenous factors and a large number of projections must be made in order for them to be prepared for any adverse situation that may develop, as exogenous factors can affect the individual as well as the combined bank's income, expenditure and value of certain products. Adjustments must also be made if necessary, and these must be managed. All banks involved must use the same boundaries to determine whether they are currently outside their risk boundaries or whether the restructured bank will move outside its risk boundaries at some point in the future. If the restructured bank is forecast to migrate outside its boundaries, the ALCOs must make a decision on how to correct the situation and again come together and choose the best decision or combination of decisions. The ALCOs can recommend that the boundaries must be altered permanently or temporarily as a result of the new circumstances, for example, the technological change that is going to take place. A set of securities or off-balance sheet positions must thus be undertaken in order to alter the risk profile, and the banks involved must decide on the securities and off-balance sheet positions they are going to use. During the implementation phase all the exogenous factors of all the banks involved must be put together, and then be forecasted as an average. A large

number of forecasts are again required and decisions about the boundaries as well as the most likely scenarios for the variables must be decided upon by the ALCO of the restructured bank.

5.5.5 STEP 4

In the fourth step, different merger or acquisition strategies must be developed by the different banks for various values of the different banks' exogenous factors, taking into account the objectives aimed at with the merger or acquisition and the future strategic direction of the restructured bank. All strategies developed must be investigated, and all the different banks must choose their best strategies and forward them to the combined ALCO meeting, for it to choose the best one.

5.5.6 STEP 5

In the fifth step, the different strategies with regard to the new entity, for example, products, markets and capital expenditure, must be simulated, in order to investigate the realisation of the merger or acquisition.

5.5.7 STEP 6

The most appropriate strategy must then be chosen in the sixth step, given the perception of the proposed bank. In other words, it must fit in with the new strategic plan or with the new board's goals.

5.5.8 STEP 7

In the seventh step, in other words, the implementation of the strategic plan, decisions on strategies taken by the banks involved must be transformed into targets, which should be measurable, realistic and achievable for the restructured bank.

5.5.9 STEP 8

Communication of decisions to all the parties involved in the merger or acquisition in all the involved banks is also important, and can be seen as the eighth step. Communication must be effective in order for the merger or acquisition to realise without any misunderstandings. After implementation the combined ALCO must make sure that employees can communicate successfully with one another and the success or the failure of the merger or acquisition process must be communicated to all involved parties the whole time during implementation.

5.5.10 STEP 9

In the ninth step activities must be monitored by all the banks involved to ensure that the chosen strategy(-ies) are followed in order for targets to be met. Feedback with regard to the decisions concerning mergers and acquisitions should take place in between formal meetings, and these decisions must be communicated to all parties concerned. If the targets are not achieved, the reasons for this must be determined and corrective measures must be taken. This should also be communicated to all the parties because they will feel more comfortable if they know what is going on.

5.5.11 STEP 10

There might be changes in the exogenous factors before, during and after the implementation of the merger or acquisition, and as a result of this the restructured bank must determine new strategies that are more appropriate and from which the advantage from the opportunities may be bigger. In the tenth step the objectives of the bank can change slightly. This must be taken into consideration and strategies must be amended accordingly, through the ALCO process.

5.5.12 PROBLEMS WITH REGARD TO THE ASSET AND LIABILITY COMMITTEE PROCESS.

Problems in the ALCO processes of the individual banks as well as in the combined bank may occur as a result of a lack of understanding of these processes by persons on the relevant ALCO in the different stages of the merger or acquisition. If the individual or combined ALCO processes are not effective, the reasons for this must be determined in order to correct the problem.

It may be that the leadership or control of the individual or combined ALCO meetings is weak. Adequate attention will then not be paid to the merger or acquisition and it will fail more easily. This problem can be avoided by using a pre-ALCO meeting, because it determines what the ALCO meeting will focus on and what strategies are going to be proposed for approval.

The ALCO can also be constituted wrongly. All the persons on the combined ALCO must make a positive contribution, and help with the dissemination of the chosen merger or acquisition strategy throughout the restructured bank. While a merger or acquisition is planned and implemented, it will also be a good idea temporarily to appoint experts in the field of mergers and acquisitions to the ALCO. These experts must have a thorough knowledge of banks and their key functions because their advice can help implement the changes in the power base and the culture of the restructured bank.

An information overload can occur. It will be better if information is set out clearly and concisely as an information overload can result in a waste of precious time, because the longer it takes, the more it costs.

5.5.13 SUMMARY

Strategic management by means of the ALCO process is thus very important. In the planning phase the individual ALCO processes will be followed, and during implementation and evaluation the combined ALCO process will be more appropriate. During the planning phase combined ALCO meetings can also take place, but this will be more on an "as requested" basis. The above-mentioned steps must be followed accurately to prevent the failure of the ALCO process and the restructured bank and if problem(s) occur with regard to the ALCO process, the reason(s) for this must be determined in order for the problem(s) to be corrected as soon as possible.

5.6 THE IMPACT OF RISKS ON MERGERS AND ACQUISITIONS

5.6.1 INTRODUCTION

As mentioned in 4.2.14, risk is an inherent characteristic of strategic decisions like mergers and acquisitions in that there is some degree of uncertainty associated with decision outcomes. The attainment of objectives or a successful merger or acquisition transaction can thus be impeded by lower profitability.

5.6.2 THE RISKS PREVALENT IN ANY MERGER OR ACQUISITION

In examining a merger or acquisition, the following five key risk questions should be considered (Morisano, 1998:3):

- Is there a portfolio or segments in a portfolio that significantly under-perform against competitors or target rates of return?
- Has a sensitivity analysis (see 4.3.3.4) been performed on key performance variables?
- Does the proposal explain how specific risk factors will be managed to minimise the exposure?

- What are the risks to operations, customer service and reputation if the project does/does not proceed?
- Is there an appropriate balance of budgeting, strategic planning, and risk management concerns?

According to Saavedra-Lim (1998:3) the risks associated with merger or acquisition transactions can be explained by figure 5.1

5.6.2.1 STRATEGY FORMULATION

Strategy formulation has already been described in 5.3.2. This is an area to which banks pay much attention to avoid the risks that come in the following ways (Saaverda-Lim, 1998:4):

- The inadequate composition of the merger and acquisition team;
- Failure to adopt appropriate process protocol, for example secrecy;
- Poor industry selection;
- The introduction of inconsistencies with core business;
- A lack of strong focus or an understanding of what is being bought;
- Failure to discern strategic fit (how real are synergies?);
- A "do nothing" strategy may make a bank a target; and
- Merger and acquisition activity that does not make for permanent organisational structures.

5.6.2.2 OFFER/BID

An unprofitable transaction may occur if the acquirers end up paying too much. The areas that need attention in this phase include (Saavedra-Lim, 1998:4):

- The search/analysis/selection process for target companies;
- The communication process;

- The financial implications;
- The tax implications; and
- The organisational, managerial, and human resources implications.

Risks in this phase of the process emerge from (Saavedra-Lim, 1998:4):

- Failure to recognise inadvertent valuation signals implied in the way offers are structured;
- Failure to manage expectations from all entities (shareholders, employees, analysts etc.);
- Failure to manage advisors (consultants and lawyers) in a timely fashion;
- The payment of a price that is too high;
- The maintaining of confidentiality and secrecy in the process; and
- An unexpected impact on the acquirer's share price.

5.6.2.3 DUE DILIGENCE

This phase is a point of no return for target companies as the availability of information is irreversible (Saavedra-Lim, 1998:4). Risks in this phase of the process emerge from (Saavedra-Lim, 1998:4-5):

- Failure to triangulate conclusions by not including employees, managers, competitors and customers as data sources;
- Failure to ensure that confidentiality agreements signed do not unrealistically limit the acquirer's existing business operations;
- Failure to establish certainty of expected synergies and the source of value creation; and
- Failure to assess the disposition and strength of the target bank's management.

5.6.2.4 REGULATORY PROCESS/CLOSING

This process ensures that all regulatory and governmental agencies that might have any influence on how the transaction is handled are satisfied. The risk inherent in this phase is the inefficient and untimely selection of hired professionals. Lawyers, accountants, etc. are sometimes very knowledgeable about a specific target and it is important to retain them before the target bank does (Saavedra-Lim, 1998:5).

5.6.2.5 ASSIMILATION

In the event of a merger, the target bank will either be assimilated into another bank or the target company may be left alone. The question is not which is better, but what is the most appropriate for the specific situation (Saavedra-Lim, 1998:5). The following is a list of actions, concerns and issues that create undue risk of failure (Saavedra-Lim, 1998:5):

- The replacement of management teams fails to recognise or value the target's underlying business strengths;
- The failure to involve the future target leader as part of the acquisition team;
- The failure to provide adequate incentives for the target leader to solicit solid commitments to success;
- The failure to distinguish cultural differences and motivational drives; and
- The failure to continuously review progress on objectives set.

Possible risks which may occur in a merger or acquisition transaction were described above. However, each merger or acquisition will have its own inherent set of specific risks according to the structure of the transaction (Saavedra-Lim, 1998:6).

5.6.3 ADDITIONAL RISKS PREVALENT IN BANK MERGERS AND ACQUISITIONS

In addition to the more typical business uncertainties, acquirers in the banking sector face additional financial risks as described in chapter 4 in the course of their business, which must be managed carefully to prevent them from creating havoc (Deloitte and Touche, 2000). With regard to bank mergers and acquisitions, liquidity risk, interest rate risk and credit risk are the most important, but the other bank risks will also be discussed for comprehensiveness.

5.6.3.1 CREDIT RISK

A decline in the credit standing of a counterparty, may lead to variations in the net income or market value of equity and can mean that the probability of default may increase. The default of a small number of large bank customers or a large number of small bank customers can generate losses, which may cause insolvency, and which may in turn cause a bank to be a merger or acquisition target. Too many loans thus must not be granted to individuals or other entities before a thorough credit analysis has taken place.

If a bank suffers from credit risk, other banks must not merge with or acquire this bank because this situation may then affect the restructured bank and this will be detrimental to the financial system and the economy. On the other hand, good credit management can make a bank a merger or acquisition target, because other banks would like to acquire its expertise and would like to improve their book by adding the target bank's book. Diversification of the portfolio can thus take place.

As a result of the new Basel Accord, and the accompanying internal rating method of credit risk, small banks will be forced to merge in order to stay competitive. The combination of banks with different credit cultures and credit

appetites will however cause a merger or acquisition to fail. If banks merge, or if one bank wishes to acquire another, the combination will be more successful if the banks involved use the same credit measurement and management techniques. If the techniques are not the same, integration of the techniques must take place as soon as possible with the result that the merger or acquisition may take longer or that the merger or acquisition may not deliver the desired results.

Credit decisions must be made in a consistent manner in all the banks involved in a merger or acquisition before the integration of the different banks takes place. The documentation, process ratings of the creditworthiness of the banks and maximum amount at risk with any customer must thus be standardised. A bank that is involved can thus take advantage of one of the other banks involved by means of certain factors that they did not know of, which is actually a good indication of creditworthiness. The combining banks must also move closer to taking the same factors into account when credit decisions are made.

According to Nestler & Titan (1999:3) the following techniques can be applied to support the merger or acquisition decision, both before and after an alliance is completed. In the pre-merger (pre-acquisition) and due diligence phases, decision analysis can be used to assess critical factors such as portfolio value, customer value, product characteristics and customer compatibility. Credit quality assessment can also be facilitated via automated interfacing with credit bureaux. After the merger or acquisition, automated collections management systems can be leveraged to increase operating efficiency, reduce workforce and lower net-bad-debts. In addition, decision analysis can be used in a test-and-control environment to continuously monitor the risk portfolio, identify best practices and cost-effective processes, recognise and manage duplicate cost structures and evaluate and refine marketing campaigns and collection treatment approaches. In doing this, the new bank will continue to improve service quality, while minimising risk and maximising profitability, which is the goal of any bank busy

with a merger or acquisition, aimed at increasing shareholders' wealth (Nestler & Titan, 1999:3).

5.6.3.2 LIQUIDITY RISK

Liquidity risk is very important in a banking environment, because extreme illiquidity, which is often the outcome of other bank risks, for example credit risk, may lead to insolvency, which may cause a bank to become a merger or acquisition target, as a result of doubts with regard to the future of the specific bank. All bank risks must thus be managed adequately to prevent them from impacting negatively on bank liquidity and it is important that a bank must be able to meet liabilities as they become due, in order to reduce the probability of a merger or acquisition situation developing. A bank (especially the acquirer) must also ensure that during and after a merger or acquisition, it will have sufficient funds to meet all obligations (unexpected ones as well) as they become due. The assets and liabilities of all the banks involved must also be convertible into cash if necessary, with a minimum loss due to price depreciation.

Liquidity risk can be associated with reputation risk. The market's perception of the merger or acquisition will thus determine if the restructured bank can obtain liquidity and at what price. If the market does not like a merger or acquisition, the restructured bank's cost of funds will thus be raised and the chances of success of the merger or acquisition will be impaired.

It may also be the case that bank clients feel that if two or more banks merge the restructured bank's exposure will be too large, and clients may be afraid that there will be problems with regard to the restructured bank, so that they may want to take all or some of their funds to another bank in order to achieve a more diversified portfolio. In a merger or acquisition environment the restructured bank must thus ensure that they will have contingency measures ready in order to replace the net outflows of funds, to compensate for the non-receipt of expected

fund inflows, to undertake new desirable transactions, to side-step sudden withdrawals and to maintain good cash flow.

A merger or acquisition may be beneficial for small banks because they have a larger fund cost and have to charge higher interest rates on loans, and they therefore lose much business. A merger or acquisition can also solve the problem of market entrance for banks that are too small.

The restructured bank must make sure that during the integration phase and after the merger or acquisition they will not have too much or too little liquidity, because too little liquidity may force the bank into the market when rates are high and too much liquidity will cost money when the bank has to fund a cash position with long-term deposits at a higher interest rate.

The raising of cash on the retail and/or wholesale markets is also something that banks which are not able to do so can learn from other banks in a merger or acquisition process. As is the case with all the other risks, it will be better if the measurement and management techniques for liquidity risk in all the banks involved in the merger or acquisition are the same, because if this is not the case the merger or acquisition will probably take longer and will fail more easily.

When there is an excess of funds, the processes used to raise new funds, the liquidity plans, contingency plans and cost-pricing models of the banks involved must be made more and more the same before a merger or acquisition takes place, in order to expedite integration.

5.6.3.3 INTEREST RATE RISK

Interest rate risk, which can occur as a result of unfavourable interest rate movements, just as was the case with liquidity and credit risk, may also lead to insolvency, which may cause a bank to be a merger or acquisition target. The

banks involved in the merger or acquisition must therefore try to ensure that their assets, liabilities and off-balance sheet instruments reprice (or mature) at approximately the same time, in order for interest rate movements not to affect the net interest income and through that the competitive position of the restructured bank during the implementation phase or after the merger or acquisition.

Banks must make sure that interest rates will not rise during the merger or acquisition process, because more expensive funds which yield lower returns must then be used. A rise in interest rates must thus be hedged. Banks must sometimes accept funds with maturities that they do not really want, for competitive reasons, otherwise they will be forced out of the market and will more easily become a merger or acquisition target.

A bank should not borrow to enable it to acquire another bank, because interest rates are unstable and a bank can end up paying more for another bank than it is worth. The risk appetites of the banks involved, in other words, the philosophy of the banks' ALCOs with regard to interest rate risk management, are also important, because some banks may, for example, not like derivatives, because they feel they do not have the expertise to work with them. Mergers or acquisitions may further be beneficial for small banks, because they can gain entrance to better simulation techniques as well as expertise with regard to derivative instruments.

If one of the banks involved has a positive gap position and the other bank involved has a negative gap position, the former will benefit from rising interest rates and the latter will benefit from declining interest rates. There will thus be an imperfect correlation in the adjustment of the rates earned and paid by the different banks involved. This may cause problems necessitating boundaries for interest change to be determined. These boundaries must be more or less the same for all the banks involved. The set of activities that can be used to change

the bank's interest rate position in both the cash and forward markets must also be determined for the restructured bank.

5.6.3.4 CURRENCY RISK

Currency fluctuations will play an important role if restructuring takes place across the borders of a country. If a bank merges with or acquires a bank in another country, the former must make sure that the currencies of the relevant countries will not fluctuate much during the restructuring process because this can cause a loss of earnings, and the restructured bank may lose its long-term competitive strength. Mismatches that exist between currencies must thus be reduced to zero or near zero by effective planning through the ALCO process, and it will be better for an acquiring bank to express the transaction price in the currency of its own country.

Exchange rates must thus be estimated to prevent an exchange rate adjustment from having a large impact on earnings, which will increase the risks and reduce the shareholder value, which may cause a restructured bank to be less successful.

If a merger or acquisition takes place between banks that have different perceptions with regard to participation in foreign exchange markets, the merger or acquisition will either fail or the one bank will move more towards the approach of the other. It may also be a problem if some of the banks involved act for themselves in the markets and others act only for corporate and retail clients. On the other hand this can also be beneficial in the sense that the different banks can take advantage from the others' experience.

For a merger or acquisition to be as successful as possible, the currency risk measurement and management techniques of the banks involved must be more or less the same and must be integrated as soon as possible. There may be

problems if the banks involved do not want to use the same written policies or accounting practices with regard to the exposures that must be hedged, and if they do not want to use the same derivatives for the hedging.

5.6.3.5 MARKET RISK

If the market is unstable, and interest and exchange rates fluctuate, banks will be careful to attempt mergers or acquisitions because they are not likely to be successful under such circumstances. If mergers or acquisitions nonetheless take place under these circumstances, the banks involved must manage these movements together in order to keep up and improve on the restructured bank's returns, to improve shareholder value and to conclude the merger or acquisition successfully.

In merging with or acquiring a bank, variations in the interest rate and the relative value of currencies must be hedged by instruments that all the banks involved have used previously and with which they feel comfortable. The banks involved must use the same measures to estimate the impact of risks on performance, and the way in which the vulnerability to interest rate and currency variations are managed must also be the same, in order for all the banks that will be involved to be treated alike. The advantage here for small banks is again that they can gain access to better techniques.

The banks must use the same methods to calculate the capital charges used to cover market risk and the capital charge must also be more or less the same for all the banks involved. If some of the banks used their own internal models and the banks are combined, a new model must be developed, based on the best of the models of both banks.

5.6.3.6 INVESTMENT RISK

To merge with or acquire a bank can be seen as an investment and there may be the possibility of loss as a result of a decline in the market prices of securities and other investments of the target bank. Not merging with or acquiring a bank can also be seen as an investment risk because the opportunity to earn higher rates may be foregone. Investment risk may also exist when one of the banks involved sells some of its marketable securities and other investments.

If the market prices of securities or other investments fall at a given bank, this bank would like to merge with or acquire a sound bank, in order to benefit from the returns they earn on their securities and investments. Investment risk can thus lead to a bank's unfairly being a merger or acquisition target, because the acquiring bank needs growth, which cannot be achieved internally.

Depositors and investors will not accept it if the value of their investments decline in nominal terms during the planning or implementation phases of a merger or acquisition, and it may be best to liquidate the total portfolio and re-invest the proceeds in the money market for small investments if the merger or acquisition is not seen as positive by the market. Such a policy will prevent capital losses, although it will not generate much current income. For large investments this is not possible because of market constraints, and the investment of cash flows must be investigated.

5.6.3.7 OPERATIONAL RISK

As operational risk can be defined in various ways, it is important that a good definition be formulated for the restructured bank in order for the bank to function effectively and to be in line with its purpose. A merger or acquisition in itself can cause operational risk because if banks come together they sometimes do not know, for example, who's management style or computer systems to use, and

problems will occur because of this confusion. Operational risk can thus occur if the target bank does not perform well after restructuring has been completed because it does not have a sound post-acquisition integration plan, or does not execute the plan well.

When a merger or acquisition is busy taking place it must be remembered that operational risk exists throughout the bank and can occur before, during and after the completion of a merger or acquisition transaction.

The capital charge to cover losses arising from operational risk must be determined for all the banks involved before the merger or acquisition, and during integration the management must try to move the totals closer together, because after integration the restructured bank must only have one number serving as the capital charge to cover losses arising from operational risk.

After the integration of the two or more banks, the restructured bank's internal practices, policies and systems must be rigorous and sophisticated enough to cope with adverse market conditions or human and technological errors.

After the merger or acquisition has taken place, an organisational culture must be developed in the restructured bank that proactively manages day-to-day risk, identifies new risk, shares best practices and tracks exposure. This culture must be established at the top management levels and must then filter down through every level and business unit and across every major process in the restructured bank.

In the restructured bank there must be no errors in the recording process of transactions and the information systems must not have deficiencies. The restructured bank must also formulate principles for a sound risk measurement and management (monitoring) system, which must be a combination of the best principles of all the banks involved.

It is also important that risks be disclosed when they exists and not hidden. If operational risk exists within a certain bank, this bank might try to merge with or acquire another bank in order to obtain, for example, the latter's technology, personnel, managers, property and assets.

5.6.3.8 CAPITAL RISK

A bank must limit its net losses, because net losses are charged against capital, and if a bank does not own adequate capital, the bank cannot go forward with its normal banking practices, it may become insolvent and it may become a merger or acquisition target.

In the planning phase it must thus be ensured that if the banks are restructured, the market value of assets and the market value of liabilities must be more or less the same. The bank's resources must be prevented from being adversely affected by new developments as a result of mergers or acquisitions and areas in which the best use of capital can be made must be identified.

Banks must make sure that they have enough capital available to cover losses generated by all types of risks during a merger or acquisition and the restructured bank must operate with at least a minimum amount of capital. The banks involved must thus adapt to one another. This will ensure limited risk-taking and confidence in the banking system, which are of great importance when mergers and acquisitions take place. After a merger or acquisition, a bank must have enough capital to ensure the growth of the restructured bank, to ensure that the bank earns sufficient returns in order for shareholder value to be improved and to provide access to financial markets, because this helps prevent liquidity problems caused by deposit outflows. Capital risk also has a link with credit risk in the sense that cash inflows may decline, with the bank not receiving principal and interest. If a bank does not have sufficient capital after a merger or

acquisition, the bank can shift its assets to lower risk classes, sell off assets or obtain new capital.

In the restructured bank there must be a defined risk culture, clear organisational goals, and a capital management infrastructure, because this will mould a bank's decision patterns, guide its actions and drive individual behaviour. It is thus important that capital decisions be made hand-in-hand with strategic plans, risk profiles and financial goals.

5.6.4 SUMMARY

Risk is associated with uncertainty and can impede the attainment of objectives. There are various risks attached to the different steps of a merger or acquisition process. With regard to mergers and acquisitions in banking additional financial risks are also faced. Each merger or acquisition, however, has its own set of specific risks according to the structure of the transaction. All risks involved must be identified in order to be able to measure and manage them. These risks must also be integrated in the restructured bank's merger or acquisition strategy, in order to improve the bank's risk/return ratio and to move closer to the objective of increased shareholder value.

5.7 CONCLUSION

In planning a merger or acquisition, all the general principles, as described in 5.2, must be considered to prevent future problems, as a merger or acquisition cannot be reversed once executed, if the desirable results are not delivered. Mergers and acquisitions can be encouraged and discouraged by various motives. The most important motive for a merger or acquisition is an increase in shareholder value. A planned merger or acquisition is however sometimes discouraged and not executed. This may be due to certain defences that the target bank may use in order to stay independent. Human resource aspects

must be taken into consideration, together with financial and legal aspects, because the success of a merger or acquisition may depend on cultural compatibility. Cultural differences must thus be minimised during integration and a new culture incorporating the best of the cultures of all the banks involved must be established.

The ALCO process can be seen as the most important part of strategic management in banks and it plays an important part in the development, evaluation and amendment of merger or acquisition strategy(-ies) in order to achieve the restructured bank's objectives, given the future direction of the bank. During the planning phase of a merger or acquisition all the banks involved will use their own ALCO processes with the combined ALCO process only being used if necessary to make better decisions. During the implementation and evaluation phases of a merger or acquisition, the individual ALCO processes will be phased out gradually, and a combined ALCO process will be used. If the ALCO process is used optimally, the possibility that a merger or acquisition may be successfully executed can be increased.

It is thus important to incorporate all the risks associated with a certain merger or acquisition transaction into the restructured bank's chosen merger or acquisition strategy, in order for it to be measured and managed adequately to improve the risk/return ratio and for increased shareholder value to be achieved.

CHAPTER 6: CONCLUSION

6.1 INTRODUCTION

This chapter provides the concluding remarks on the research into bank risks to be taken into consideration when merger or acquisition transactions take place in banks. The problem, as stated in chapter 1, is that only a few of all the bank mergers and acquisitions that have been attempted have been realised successfully. The aim of this study is to make recommendations on how mergers and acquisitions in the banking industry must be treated differently from restructuring in other industries in order for them to be successful.

6.2 THE SCOPE OF THE RESEARCH

The primary focus of this study is to incorporate the general merger and acquisition principles into the regulatory, risk management and strategic risk management frameworks of banks. The research consisted of a theoretical analysis. The general principles for mergers and acquisitions as well as the importance of culture in mergers and acquisitions were analysed in chapter 2. In chapter 3 the strategic risk management framework according to which banks and everything that happens in banks are managed were discussed, with specific reference to the ALCO process. Regulatory concerns that can impact on the stability of a bank were also discussed in this chapter. In chapter 4 bank risks as well as the measurement and management frameworks for them were discussed. In chapter 5 guidelines to achieve success with a merger or acquisition in the banking industry were given. This concluding chapter includes the most important aspects of all the above-mentioned chapters. In this chapter some of the key observations from the research will thus be made.

6.3 BRIEF OVERVIEW OF STUDY CONTENT

As mentioned in chapter 2 an investment decision about merging with or acquiring another company is very important because it affects the lives of many individuals and it represents changes in the organisational structures of the companies involved. Restructuring can take place in a number of ways, namely by means of a merger or consolidation, an acquisition of shares or an acquisition of assets. All these methods have their advantages and disadvantages and the choice between them depends on factors such as cost, time and the viewpoints of the shareholders and management of the target company. Before any restructuring can take place, the factors influencing the success or failure of a merger or acquisition have to be carefully examined, because it is a long-term decision and once executed, it cannot be reversed if the results are not what they have been expected to be. Resistance to merger or acquisition bids can sometimes occur and the reason for this is usually that managers and shareholders feel that they may lose something that is valuable to them. An increase in shareholder value must always be the most important concern. After a merger or acquisition has been executed the combination of valuation techniques that is most suitable must be used to value the merger or acquisition on a continuous basis in order to determine if success is being achieved and to correct possible mistakes. A new culture, which must incorporate the best parts of each of the cultures of the companies involved must also be established because this will contribute to the success of the merger or acquisition.

In chapter 3 it was explained that a bank's operations can be managed effectively by using ALM practices, which can be seen as a part of the strategic risk management procedures. The ALCO process is the most important part of strategic management in banks and can be used for the development, evaluation and amendment of bank strategy(-ies), given the future direction as well as the risks that prevail in banks. If the ALCO process is handled correctly a bank will be able to meet its objectives and through that to increase shareholder value.

Every bank must follow certain regulations that must be consistent with bank strategic management, because this will improve the stability of the banking system. Stability will ensure that the bank will be able to meet contractual obligations without interruptions or outside assistance and this will ensure confidence in the banking industry.

In chapter 4 it is explained that banks are exposed to several risks in the course of their business. Banks must thus know to what risks they are exposed, understand the implications of these risks, and be able to measure and manage them. If the bank's risk measurement and management framework is integrated into the strategic risk management framework it will be possible to manage all risk areas appropriately, and this can lead to an improvement in the bank's risk/return ratio. The improvement of this ratio will in turn again help a bank to move closer to its objective, namely increasing shareholder value. Banks will also focus on maximisation risk-adjusted returns through their risk management, because value can be added to the bank's equity by maximising the risk-adjusted return to shareholders. For a bank profitability thus depends on the management of risk and because profitability is an indication of shareholder value, the success of a merger or acquisition will depend on the management of risk.

Chapter 5 described how, during the planning phase of a merger or acquisition, each of the banks must use its own ALCO process, but that all the banks must move towards the same objectives, with a combined ALCO process being used only on an "as requested" basis. During the integration of the banks they must start using the combined ALCO process to ensure that the combination will be managed effectively and that success will be achieved. It is important that risk management issues are addressed from the beginning, that the banks' risk management frameworks are integrated and that the best practices of risk management of both banks are brought over to the restructured bank. It must also be kept in mind that the restructured bank might have risk management

needs that are different from those of either the buyer or the seller, in which case new measurement and management techniques must be developed.

6.4 FUTURE RESEARCH

Much research has been done on mergers and acquisitions, but with regard to mergers and acquisitions in banking there are still many gaps. Possible future research may include the integration of the different departments in banks, following a merger or acquisition, or may investigate how to prevent the loss of skilled employees and customers by adhering to all principles of competitiveness from the beginning of the restructuring. Research on how to handle a merger or acquisition between different financial companies, for example, a bank and a life assurer, taking into account the regulatory and strategic risk management frameworks that prevail in each of them, may also be carried out.

6.5 CONCLUSION

Restructuring in the banking sector must be treated as a special case because of the regulatory framework that prevails in banks, but more importantly because of the particular way in which risk management and strategic risk management is practised in banks. The general merger and acquisition principles applicable to corporates must thus be integrated into the regulatory, risk and strategic risk management frameworks of banks, to make it possible to consider a bank merger or acquisition decision from a strategic risk management viewpoint. The strategic risk management processes, as conducted through the ALCO processes of the banks concerned, must thus be made reconcilable and must be combined into a new strategic management and strategic risk management process, so that a bank acquisition or merger can be planned and executed successfully.

APPENDIX A

Present value of an annuity of R1

Period	Percent									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0,990	0,980	0,971	0,962	0,952	0,943	0,935	0,926	0,917	0,909
2	1,970	1,942	1,913	1,886	1,859	1,833	1,808	1,783	1,759	1,736
3	2,941	2,884	2,829	2,775	2,723	2,673	2,624	2,577	2,531	2,487
4	3,902	3,808	3,717	3,630	3,546	3,465	3,387	3,312	3,240	3,170
5	4,853	4,713	4,580	4,452	4,329	4,212	4,100	3,993	3,890	**3,791**
6	5,795	5,601	5,417	5,242	5,076	4,917	4,767	4,623	4,486	4,355
7	6,728	6,472	6,230	6,002	5,786	5,582	5,389	5,206	5,033	4,868
8	7,652	7,325	7,020	6,733	6,463	6,210	5,971	5,747	5,535	5,335
9	8,566	8,162	7,786	7,453	7,108	6,802	6,515	6,247	5,995	5,759
10	9,471	8,983	8,530	8,111	7,722	7,360	7,024	6,710	6,418	6,145
11	10,368	9,787	9,253	8,760	8,306	7,887	7,499	7,139	6,805	6,495
12	11,255	10,575	9,954	9,385	8,863	8,384	7,943	7,536	7,161	6,814
13	12,134	11,348	10,635	9,986	9,394	8,853	8,358	7,904	7,487	7,103
14	13,004	12,106	11,296	10,563	9,899	9,295	8,745	8,244	7,786	7,367
15	13,865	12,849	11,939	11,118	10,380	9,712	9,108	8,559	8,061	7,606
16	14,718	13,578	12,561	11,652	10,838	10,106	9,447	8,851	8,313	7,824
17	15,562	14,292	13,166	12,166	11,274	10,477	9,763	9,122	8,544	8,022
18	16,398	14,992	13,7544	12,659	11,690	10,828	10,059	9,372	8,756	8,201
19	17,226	15,678	14,324	13,134	12,085	11,158	10,336	9,604	8,950	8,365
20	18,046	16,351	14,877	13,590	12,462	11,470	10,594	9,818	9,129	**8,514**

$$\text{Present Value}_{\text{Anuity}} = A\,[(1 - 1 / (1 + i)^{n}) / i\,]$$

where A = Value of annuity (R 1,00)

i = Interest rate

n = Period of time

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