

Part I

The Assessment of Risk and its  
Strategic Importance

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# Introduction

## 1.1 EXECUTIVE OVERVIEW: RESPONSIVENESS, COMPETITIVE ADVANTAGE, AND SURVIVAL

*It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.* Charles Darwin

Given the advanced nature of the global financial community and its level of complexity it may seem incredible that failures can occur that result in the demise of major financial institutions or even threaten the entire system itself. On a lesser scale, losses due to operational risk events occur on a daily basis in all organizations. Their combined value is without doubt very significant, although difficult to determine since many go unreported. The results of such inefficiencies are a reduction in overall global wealth-creation and associated living standards.

### 1.1.1 Banking is a highly competitive global industry

Banking is a highly competitive and dynamic industry in which there exists over-capacity. However, disintermediation, product commoditization, and technological advances are resulting in globalization and rationalization. In addition, institutional shareholders are becoming increasingly powerful and demanding growth in shareholder value, both in the short term and longer term. Consequently, for an individual bank, survival and growth have become primary concerns, requiring careful strategic positioning based upon the bank's particular franchise and chosen risk reward profile. It is the flexibility and responsiveness of an organization, its ability to innovate and adapt quickly to change, which assists in creating competitive advantage.

### 1.1.2 Regulation is necessary but not sufficient<sup>1</sup>

As part of this changing market place, one of the more important developments is the increasing emphasis being placed on transparency, together with a growing recognition of the need for "a more forensic approach" including consideration of longer-term enhanced analytic factors.<sup>2</sup> The dynamic nature of the banking and financial services industry has inevitably resulted in regulation and legislation lagging some way behind market developments. Consequently, the banking and financial services sector is being subjected to more demanding regulatory and legislative requirements, including the introduction of risk-based regulatory capital and a drive towards enhanced market discipline. The New Basel Capital Accord (Basel II) indicates the regulators' desire to promote more effective risk-based management through market forces rather than adopting a wholly prescriptive compliance approach. Whilst regulatory intervention is an important factor, it acts primarily as a catalyst, merely influencing the market's rate of change.<sup>3</sup> In a dynamic competitive environment, leading banks will naturally strive continuously to gain strategic competitive advantage in order to improve their performance and standing.<sup>4</sup>

### **1.1.3 How well a bank manages operational risk has a direct impact upon competitive advantage**

Risk is concerned with volatility in outcomes and the possibility that objectives will not be achieved either in whole or in part. Principally, operational risk<sup>5</sup> is concerned with efficient and effective management;<sup>6</sup> its primary aims being to improve the quality and stability of earnings<sup>7</sup> and reduce the probability of failure, by optimizing risk and improving responsiveness.<sup>8</sup> It is for these reasons that a discipline, which was virtually unheard-of 10 years ago, is now being afforded such prominence. Fundamentally, the commercial imperative<sup>9</sup> of operational risk stems from its potential to impact upon an organization's reputation and ability to do business. Given that in extreme cases operational risk can threaten an organization's survival,<sup>10</sup> it is receiving increasing attention not only from the board of directors of banks but also from the investment community<sup>11</sup> and their service providers (i.e. credit rating agencies) as well as the regulatory and legislative authorities.

Risk assessment is an integral part of informed decision making, influencing strategic positioning, and direction. It is a key differentiator between competing management teams. This is particularly so in the financial services sector where the performance of an organization is inextricably linked to its ability to manage risk. Although it is often rightly stated that not all risks can be quantified, it remains incumbent upon management to determine the impact of possible risk-events on financial statements<sup>12</sup> and to indicate, within stated confidence bounds, the level of variation in projected figures. Consequently, management performance must be assessed in the light of how well the team manages risk and achieves their stated objectives.

### **1.1.4 A more forensic approach is required to properly understand and manage risk given its dynamic nature**

Management action can reduce the level of risk by reducing both the impact and likelihood of a loss event. This requires a detailed understanding of event-cause-effect relationships, together with an expert ability to properly interpret loss data.<sup>13</sup> Breaking risk down into appropriate granular categories is important for analysis and understanding, since different categories can have different loss-distribution curves and different risk drivers. However, it is also important to see how risks react overall – i.e. “the whole can be greater (or less in some cases) than the sum of the parts,” depending upon interactions and correlations. Consequently, there is need for both a holistic enterprise-wide risk management approach and detailed forensic analysis.

Since the boundaries of good practice move continuously, there is a need for responsiveness and practical optimization,<sup>14</sup> both within specific business units and for the group as a whole. What is appropriate for a particular organization will change continuously and will be dependent upon its particular circumstances (contingency theory),<sup>15</sup> including such factors as market position and the level of sophistication. Consequently, pursuing best practice quixotically is inappropriate. Risk management must be integrated into the business and involve continuous assessment. Resources must be continuously reallocated to achieve efficiency and effectiveness.

### **1.1.5 Capital supplements risk management but does not replace it**

Capital is considered to be a key factor in a bank's strategy, providing the last line of defense against unexpected losses and thus providing protection for those having dealings with the

organization (i.e. investors, depositors, creditors, counterparties, and employees). Furthermore, capital is a prime regulatory consideration, providing protection against systemic risk; banks operating with borderline solvency margins lack the flexibility necessary for dealing with unexpected loss-events. In addition to minimum regulatory requirements, economic capital is necessary to meet the growth and development needs of an organization, in order to maintain and enhance competitive positioning. Economic capital techniques are considered to be of potential importance in risk management and, consequently, their use is increasing. However, it should be noted that the rating agencies have stated that there is no direct correlation between a bank's credit rating and its level of capital,<sup>16</sup> other factors such as earnings potential and liquidity also being of significant influence.

Typically, an increasing level of competition requires companies to take more risk with less capital (all other things being equal). This eventually leads to rationalization within the market. Significant institutional failures in recent years have demonstrated the need for more responsive approaches to risk management and have changed the business environment.<sup>17</sup> As a consequence, credit rating agencies and equity analysts are being asked by investors to take an ever more forensic approach.<sup>18</sup> In general, the market can digest bad news but hates uncertainty and reacts badly to shocks. Investors are fundamentally concerned with the quality and stability of earnings. Unfortunately, as stated previously, risk introduces volatility<sup>19</sup> (both in service levels and earnings) with the impact of risk-events being difficult to predict (as expounded by complexity theory).<sup>20</sup> Uncertainty increases with time, hence investor pressure to concentrate on increasing gains in the short term. Unfortunately, short-termism can adversely affect the overall risk profile. Given that an organization has finite financial strength,<sup>21</sup> the level of risk accepted influences the probability of long-term survival.<sup>22</sup> Analysts and professional investors are therefore increasingly recognizing the need for enhanced analytics.

#### **1.1.6 Adequate and appropriate risk measures are essential**

Intercompany comparisons of performance must take into account those companies' differing risk profiles in order to have meaning. A weakness of traditional measures such as return-on-assets (ROA) or free cashflow is their inability to take account of risk. Whilst traditional P/E ratios are forward looking and include an implicit assessment of known risks, they are not based on a forensic technical analysis of an organization. Instead, they are influenced by events known to the market causing movement about a current position rather than an absolute base. In addition, they are heavily influenced by the herd mentality of investor sentiment, leading to timing (market) risk. Consequently, efforts have been made to introduce risk-adjusted indicators such as RAROC (risk adjusted return on capital employed). Techniques such as economic value added (EVA) or cashflow return on investment (CFROI) provide a link to shareholder value as well as providing a clearer basis for choosing between alternatives. A "balanced scorecard" approach facilitates coordinated enterprise-wide risk management. Key performance indicators and key risk indicators (KPIs and KRIs) provide useful early warnings for management, although many practitioners remain sceptical of their predictive capabilities.<sup>23</sup>

In practice, it is often found that banks pursue cost reduction without taking into account possible changes in risk profile.<sup>24</sup> The development of risk management typically comprises three broad stages. The first is concerned with the establishment of sound systems and management controls, with the aim being to prevent the occurrence of losses. This is closely related to a quality-management based approach (Section 26.10).<sup>25</sup> The second stage is concerned

with increasing the level of responsiveness – i.e. fine-tuning systems so that where loss-events do occur, their impact can be mitigated by “catching them early.” This requires greater understanding of those risks being faced, enabling resources to be efficiently and effectively appropriated in both time and place. The third stage is concerned with attaining competitive advantage through enhanced reputation.

### **1.1.7 Quantification of risk serves to increase understanding – this is more important than any derived number**

Mathematical tools and techniques are naturally becoming an increasingly important part of this more forensic approach and they will inevitably continue to be developed and enhanced over time. Unfortunately, the usefulness of mathematical tools can be constrained by the quality and quantity of data available, with contamination and data shortage being serious limiting factors. The calculation of a regulatory capital charge for operational risk, to a high degree of confidence, means that by definition very little data is available in the tail of the loss distribution curve. Therefore, the margin for error can be very large. Further, even where there is a comparatively large amount of data in the tail Extreme Value Theory (EVT) may fail to be statistically robust and therefore any value calculated must be suspect. Consequently, there is a need to understand the underlying factors influencing extreme events. To overcome the deficiencies of traditional actuarial techniques, other methods such as advanced Delphi techniques, causal modeling, fuzzy logic, and scenario analysis are being applied with varying degrees of success by different organizations. However, it has been argued that, in some cases, extreme loss events may simply be due to random chance<sup>26</sup> and therefore the application of logic-based pattern approaches may be inappropriate.

The rating agencies have stated<sup>27</sup> that quantification has its place; however, truly effective operational risk management will continue to remain primarily underpinned by qualitatively stronger elements such as solid corporate governance, a healthy risk culture throughout the organization, effective operational risk management at all levels, tight procedures and controls, performing technology and, not least, well qualified and honest people. This recognizes the complexity of risk and emphasizes the need for a detailed forensic view, incorporating quantification where appropriate. It also recognizes the importance of considering risk in its entirety.

### **1.1.8 Corporate governance, social, and environmental issues are of growing importance, particularly to longer-term institutional investors**

The importance of sound corporate governance, which is seen by many as the cornerstone of operational risk management, has been acknowledged at an international level by the OECD (Organisation for Economic Co-operation and Development) and the World Bank. Any organization that is recognized as exercising sound corporate governance can expect to attract relatively more financial resources at lower rates. The efficient and effective use of resources enables more to be achieved with less.<sup>28</sup> Similarly, a country having sound legislative and regulatory standards can expect to attract relatively more external investment and consequently see an increase in economic and social standards. There is growing recognition amongst institutional investors that, in order to meet their fiduciary duties and to better align these with broader objectives of society, it is necessary to take account of environmental, social, and

corporate governance issues, which can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes, and over time). In recognition of the increasing relevance of environmental, social and corporate governance (ESG) issues to investment practices, the United Nations (UN) has given its support to an international group of institutional investors, in the development and promotion of “Principles for Responsible Investment” (PRI).<sup>29</sup>

### **1.1.9 Transparency is essential for the market to function properly and for crime to be prevented**

Transparency is widely recognized as being essential for the market to work effectively; opacity undermines market confidence and increasing volatility. Key regulatory and legislative factors influencing the level of transparency are: the New Basel guidelines (particularly Pillar 3 of Basel II) and its European legislative equivalent (the Capital Requirement Directive); the US Sarbanes-Oxley Act; the International Financial Reporting Standards (IFRS), which came into force in 2005; and new accounting standards being developed by the International Accounting Standards Board (IASB). Transparency is seen as a facilitator of competition and efficiency as well as being a barrier to fraud, corruption, and financial crime. Increased transparency, including an improvement in financial disclosure and the quality of financial statements, could markedly improve banking practices and thereby improve investor confidence.

## **1.2 UNDERSTANDING THE INCREASINGLY COMPLEX AND COMPETITIVE BANKING ENVIRONMENT**

The banking industry has experienced unprecedented and accelerating change over the last 20 years. As a result, the banking environment is becoming increasingly complex and competitive.

Traditionally, banking was built upon trust and discretion, epitomized by the monolithic pillars of the great banking halls. Parsimony of disclosed information, which often cloaked substantial hidden reserves, was considered a virtue and helped to instill public confidence. However, traditional banking was, and to some extent remains, an inherently unstable activity, borrowing short and lending long. The banking crises of the late 1980s and early 1990s signalled the need for change, in order to meet the needs of a changing world. Events such as the Asian Crisis, the Russian Default, and the structural problems of the Japanese banks highlighted the weaknesses of a globally interrelated industry and the need for improved risk management. The recent credit crunch (of 2007–2009) has confirmed the need for continuous improvement.

Some of the major changes that have been instrumental in transforming the banking industry, improving its overall soundness and financial stability, are as follows.

### **1.2.1 Increased regulatory and legislative requirements**

In an endeavour to prevent systemic risk, banking regulators from the leading industrialized nations implemented the original Basel Accord in 1988. This required banks to maintain a minimum level of regulatory capital, based on their weighted assets. Unfortunately, the detailed requirements of the Accord led to perverse lending actions, increasing risk. Hence the new Basel Accord (Basel II), which was introduced after much deliberation, attempts to relate regulatory capital to the underlying risks within a particular bank. The Capital Requirements Directive, applicable within the EU, converts the Basel II guidelines into legislation.

The Sarbanes-Oxley Act,<sup>30</sup> although much criticized, has been of significant influence in increasing transparency and developing a risk-aware culture within organizations. Ultimate legal responsibility rests firmly with the chief executive officer and the chief financial officer, who are required to certify that the organization's internal controls are adequate and effective. In addition, the company's external independent auditor is required to attest to management's assessment of internal controls. Whilst the Sarbanes-Oxley Act relates specifically to companies under the jurisdiction of the US Securities and Exchange Commission (SEC), its influence has been much more widely felt. Unfortunately, the Sarbanes-Oxley Act had the perverse effect of initially stopping research into the assessment of operational risk (which had reached an advanced stage) by effectively preventing the rating agencies offering independent operational risk ratings.

### 1.2.2 Greater transparency

Both the quantity and the quality of information disclosed have increased considerably in recent years. This will assist in improving the quality of banks' balance sheets, through endeavouring to curtail their involvement in excessively risky activities. This will result in an overall improvement in the soundness of the banking industry. However, the International Accounting Standards Board (IASB) acknowledges that there remains much to be done.

Sir David Tweedie,<sup>31</sup> chairman of the International Accounting Standards Board, has stated that there is a need to improve transparency, particularly with regard to high-risk structured investment vehicles that are typically held off-balance sheet. These vehicles are currently used to veil billions of dollars of exposure by global institutions, distorting asset-liability statements and consequently distorting stock prices. Leading institutions such as Citibank and HSBC have already indicated their intentions to include structured investment vehicles on their balance sheets. The IASB has indicated its intention to make this compulsory, possibly through the use of parallel balance sheets.<sup>32</sup> Increased transparency, including better financial disclosure, could markedly improve banking practices and the quality of balance sheets, thereby improving investor confidence.

The third pillar of the new Basel Accord, which is directly concerned with transparency, aims to facilitate the control of risk through use of market forces. It seeks to reinforce the other two pillars of the Accord, which involve regulatory intervention.

The International Financial Reporting Standards (IFRS), which came into force in 2005, have assisted to some extent in further improving disclosure, giving a clearer insight into the financial condition and the earnings capability of individual banks. This has improved cross-boarder comparisons and will facilitate mergers and acquisitions.

### 1.2.3 Improving Corporate Governance

There has been a growing recognition of the importance of corporate governance over the last 20–30 years. In the UK, this began in earnest in 1991, with publication of the Cadbury Report, following a number of high-profile failures which threatened confidence in the City. In the US, the Sarbanes-Oxley Act came into force in 2002 as a reaction to the loss of investor confidence following the demise of major organizations including Enron, Arthur Andersen, and others. This improved both corporate governance and disclosure.

In recognition of the impact corporate governance can have on the economic development of countries, organizations including the World Bank and the OECD have issued various guidelines.



In February 2006, the Basel Committee on Banking Supervision published a revised paper entitled: “Enhancing Corporate Governance for Banking Organisations.” This paper, which sets out eight principles, recognized the sensitivity of banks to ineffective corporate governance.

#### **1.2.4 Deregulation of banking**

Deregulation seeks to improve efficiency and effectiveness through creating a level playing field, thus encouraging competition. Deregulation of the banking industry began in earnest in the early 1980s in the US, and shortly afterwards in the UK, with Continental Europe following suit throughout the 1990s. Deregulation has enabled banks to broaden their activities by diversifying into areas where previously they had not been allowed to operate.

In the City of London, the removal of restrictive practice (Big Bang) took place on 27 October 1986.<sup>33</sup> This was an event of profound significance, which resulted in rapid internationalization and cross-sector mergers, leading to the City’s current elevated status as the world’s largest financial centre for global business. Now there are approximately 260 foreign banks with a presence in the City, and more than 300 foreign firms listed on the London Stock Exchange.

#### **1.2.5 Disintermediation and changing funding structures**

The formative phase of disintermediation of assets and savings began in the United States during the 1970s and 1980s. Financial liberalization in the developed countries led to broader and deeper capital markets. This attracted a greater share of savings and loans, which previously had been the preserve of banks.

Levels of disintermediation vary significantly by region. In the US, the level of bank deposits (as a percentage of total financial stock) was 20 % in 2003 (23 % in 1993, 41 % in 1980); in Japan, 37 % in 2003 (40 % in 1993, 48 % in 1980); in the Eurozone, 30 % in 2003 (32.5 % in 1993, 50 % in 1980); in the UK, 27.5 % in 2003 (25 % in 1993, 32 % in 1980).

More recently, particularly in Europe, there had been evidence of reintermediation. Banks had been changing their funding mix (in response to the growing demand for residential, commercial, and public sector loans) issuing bonds, MTNs, and commercial paper in order to grow their loan portfolios. However, the longer-term impact of the credit crunch on these activities has yet to be fully determined.

#### **1.2.6 Commoditization of products**

The financial services industry relies upon its ability to innovate, continuously creating new products to meet customers’ changing needs, in an endeavour to secure more lucrative margins. However, increasing competitive pressure reduces the period over which a product can achieve above-average returns. Securitization and the increasing use of derivatives have resulted in certain products effectively become commoditized.

#### **1.2.7 Globalization**

Banking is a global industry. Rationalization is continuing to take place (with excess capacity being eliminated), as the major players fight to secure their position in a market that, in the future, may be dominated by only a few mega financial institutions with oligopolistic influences.

Traditionally, banks existed to serve their local community and their country of origin, facilitating the creation of wealth and jobs. In countries such as Germany, some sectoral banking organizations retain a strong social *raison d'être*. Unfortunately, this tends to reduce profitability and thus constrain growth. In addition, it can lead to inefficiency, as evidenced in Eastern Europe. With the removal of governmental protectionism, such organizations become vulnerable.

Within emerging market economies<sup>34</sup> the banking sector has experienced a significant influx of global financial institutions. In some countries, such as Poland, the banking industry is now dominated by foreign controlled financial institutions. This has brought all-round benefits by providing expansion and diversification opportunities for international organizations whilst also improving the quality of banking within the host nation. However, it has also brought additional risks. The possibility of cross-border failures is of significant concern to regulators.

In some of the advanced countries, such as Italy, there appears to have been a somewhat nationalistic reaction by governments, who have deliberately sought to promote home banks to international echelons. In contrast, Germany has seen one of its leading banks, Deutsche Bank, substantially move away from its country of origin in its drive towards becoming a truly global bank.

### 1.2.8 Greater shareholder power

The emergence of transnational investment funds, brought about by savings disintermediation and the pooling of significant levels of institutional and retail savings, has resulted in a greater transfer of power to shareholders. Such investors concentrate on the quality and stability of earnings, requiring continuous growth in shareholder value, with no exceptions and no excuses. This has had a direct impact upon the strategies adopted by banks, with there being a concentration on short-term performance, in some cases at the expense of weakening long-term competitive position.

Those banks with underlying weak performance (i.e. low profitability, volatile earnings, and low growth rates) are unattractive to institutional investors. As a consequence, in the absence of governmental support, they face increasing uncertainty and vulnerability.

### 1.2.9 Technological developments

Information and communication technology (ICT) has been and will continue to remain a key enabler, facilitating globalization and increasing efficiency. It has made possible the move from local branches to call centres (often now located in low-cost countries,<sup>35</sup> such as India) to the development of E-commerce via the Internet.<sup>36</sup>

Increased processor power and straight-through-processing (STP) methods have substantially lowered the cost of transactions as well as vastly improving the speed of distribution of information. Vast amounts of data can be rapidly processed, with data-mining techniques (enabling patterns in activity to be identified) facilitating the identification of fraud and systems' weaknesses. The ability to identify patterns in customer behaviour and thereby improve customer service (thus preventing reputational risk and degradation of competitive advantage) are of significant importance.

ICT has played an important part in reducing traditional risks; however, it has brought with it other types of risk. In the event of systems down-time, significant losses can result in addition to reputational damage through the loss of customer confidence. Hence systems suppliers place great emphasis on resilience and robustness.

Technology and systems are developing rapidly. Typically, the life of a system is three years; hence there is continuous pressure on banks to replace existing systems, at considerable cost. Unfortunately, new systems are often built on top of older legacy platforms and systems, which can result in inefficiency as well as giving rise to potential failure risk.

### 1.2.10 Risk management and risk transfer tools

A bank can now structure its risk profile more precisely. The use of new risk management techniques, together with a growing market for risk transfer instruments, has had a profound impact upon bank strategies and resulting balance sheets.

It is interesting to note that development and expansion of the credit risk transfer (CRT) market appears to have been limiting disintermediation, particularly in Europe, with banks having been more willing to increase their corporate loan activities. The CRT market has expanded considerably in recent years. In June 2005, the world market for credit derivatives was estimated to be \$12.43 trillion. This represented a 128% increase compared to the previous year.

Some commentators, including Warren Buffett, have likened derivatives to a time bomb, saying they represent a significant systemic threat to the financial system. However, a Joint Forum study undertaken in 2004,<sup>37</sup> concluded that the notion of credit risk not going away but ending up in the hands of those less able to assess it was ill founded and that there was no evidence of “hidden concentrations.” In general, the working group concluded that participants (including nonbanking entities) were aware of the risks and able to properly manage them. The 2007–2009 credit crunch has clearly demonstrated the dangers of not properly understanding risk.

## 1.3 RISK MANAGEMENT AND STRATEGY – IDENTIFYING WINNERS AND LOSERS

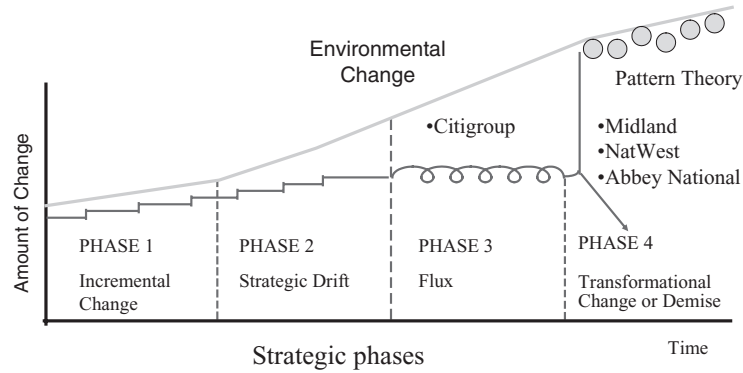
*Look not only at the upside potential but look also at the downside risk.* Lord Hanson

### 1.3.1 Introduction

Risk management is an applied management science rather than an exact pure science. As such, it cannot be precisely prescribed. Management expertise and judgement are essential requirements, involving a combination of logic, tacit knowledge, and intuitive forecasting. Given that businesses are constantly changing, risk management is concerned with possible developments whose “actual” manifestation may not be fully and precisely predicted. Survival and growth require responsiveness to change. Professor Gerry Johnson has suggested that rigidity, as enshrined in organizational culture, leads to economic drift, resulting in underperformance by the firm and to its eventual demise (see Figure 1.1). Responsiveness requires sound risk assessment and proactive management.

### 1.3.2 Strategy

The essence of strategy is competition and the creation and maintenance of competitive advantage. This requires an understanding of the risks an organization faces (both internal and external), its strengths and weaknesses, and its threats and opportunities (SWOT). In theory, the most successful organizations will be those that are well focused (concentrating on their core activities) and who dominate the market sectors in which they operate. Theory also

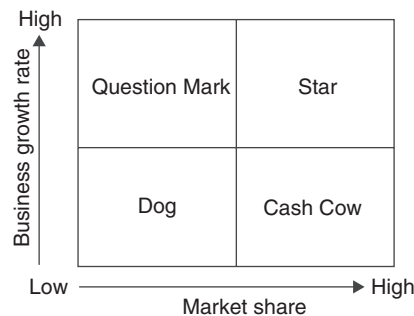


**Figure 1.1** Survival and growth requires responsiveness to change.  
 Source: Professor Gerry Johnson

suggests that a large market share creates a virtuous circle since it leads to lower unit costs and, in turn, to increased sales and hence to increased profits. These profits are then available to develop the next generation of products and services, thus further increasing market share. It is here that brand names and reputation (developed through customer satisfaction) also become important, since branding allows product differentiation, thereby enabling the company to obtain premium prices for its product and services, thus generating higher profits.

Although traditional strategic categorizations – as originally espoused by the Boston Consulting Group (see Figure 1.2) and also by McKinsey – allow broad inferences to be drawn regarding the cash-generative characteristics of individual products or services, no explicit attention is given to the earnings capacity or the total risks associated with the portfolio. Concentration on market share alone is insufficient, since many other factors such as corporate culture, quality of management, technologies and product lifecycles have to be taken into account as they impact upon the risk profile.

It is important to recognize that the organization’s chosen risk profile determines the appropriateness of strategies. A high-risk strategy is not of itself a problem providing it offers the appropriate risk-adjusted rate of return and management have the appropriate skills and resources to address the resultant level of volatility. Low risk, low growth strategies can also



**Figure 1.2** Traditional strategic categorizations.

be acceptable (for example, in countries such as Belgium and Germany), provided the bank has an appropriate franchise. However, overly cautious risk strategies and excessive levels of (underutilized) capital will lead to below-par performance and result in a poor rating. It should be borne in mind that a particular risk profile will attract certain types of stakeholders. Consequently, an organization may not be free to readily change its pre-established risk profile.

### 1.3.3 Market segmentation

Banks can be broadly categorized according to market segmentation and related strategies, as follows:

- global;
- regional and cultural;
- domestic; and
- specialized.

#### *Global*

Whilst a number of banks have aspired to become truly global and to offer a full range of services, few – if any – have actually achieved this; the two main players in this sector being Citigroup and HSBC. Instead, several banks have established a global footprint but have restricted their activities depending upon their relative strengths and areas of expertise. Examples of selective global strategies and those banks applying them include:

- retail and business banking – ABN AMRO (now gone);
- consumer finance – BNP Paribas;
- investment banking – Credit Suisse, Deutsche Bank, and UBS;
- direct banking – ING.

#### *Regional and cultural*

Several banks with a significant domestic presence have engaged in cross-border activities, partly to overcome limited growth prospects in their home market. Expansion has tended to be into neighbouring countries and other countries where there is a cultural affinity. Examples include:

- Nordic region – Danske Bank, Nordea;
- Baltic states – SEB, Swedbank;
- Central and Eastern Europe – HVB/Bank Austria, Erste Bank, RZB, UniCredito, KBC;
- Latin America – BBVA, Santander.

Cross-border consolidation within the Eurozone was advanced by a number of large transactions, including: HSBC and CCF of France; Santander (Spain) and Abbey (UK) in 2004; ABN AMRO (Netherlands) and Banca Antonveneta (Italy) in 2005; UniCredito and HVB in 2005. Whilst this appears to indicate the way forward, a perfectly level playing field still does not exist, with significant socio-economic cultural and politically nationalistic barriers remaining.

### *Domestic*

A number of large banking groups have adopted a domestically-focused strategy. These include:

- UK – Lloyds TSB, HBOS;
- France – Banque Fédérative du Crédit Mutuel;
- Netherlands – Rabobank;
- Norway – Den Norske Bank ASA;
- Sweden – Svenska Handelsbanken;
- Spain – Banco Popular Español, Caja Madrid, La Caixa;
- Portugal – Caixa Genal de Depósitos;
- Hungary – OTP Bank.

The ability of such groups to maintain their existing strategy in the long term is likely to be tested as globalization continues.

### *Specialized*

A few organizations have adopted a specific business-line strategy. For example, Dexia specializes in public sector lending, with activities in France, Belgium, Germany, Austria, Italy, Spain, and Sweden.

In addition, there remains a considerable number of smaller specialist niche players, such as:

- mortgage banks – in Germany, France, Denmark, etc;
- development banks – in Germany, Austria, Japan, South Africa, etc;
- export finance houses;
- cooperative banks;
- savings banks.

Many of these organizations developed their franchise before deregulation and liberalization of the financial markets. Some have adapted and survived successfully; however, many face a difficult and uncertain future due to competitive forces reducing their market share and margins. Limited resources and a small customer base effectively prevent growth and diversification. In contrast, a number of relatively small specialist investment houses have sprung up in recent years and are currently very profitable, although their longevity has yet to be proved in the face of adverse economic factors.

## **1.3.4 Mergers and Acquisitions**

Organic growth is of key importance. However, organic growth alone can constrain the rate at which an organization develops and can thereby affect its competitive position.

The mergers and acquisitions arena has been described as a marketplace in which competing management teams vie for the right to manage scarce resources by offering alternative corporate strategies. Hence takeovers offer the opportunity to discuss competing ideas on corporate strategy in the public domain and allow shareholders, particularly the large pension funds, to exercise their considerable but often latent powers. Undoubtedly, the intense pressure

on public companies to boost earnings per share is a significant influencing factor. Progress towards the establishment of a level playing field and hence creation of a truly global market has also provided an important stimulus.

Given over-capacity and rationalization in the banking industry, mergers and acquisitions are important. Acquisitions enable an organization to grow and develop at a considerable pace. Substantial empires can be created via acquisitions in a relatively short period of time. The takeover of Midland Bank by HSBC and the acquisition of NatWest by Royal Bank of Scotland created significant banking groups. Acquisitions also allow established companies to quickly change direction and reposition themselves when they find their traditional activities are no longer capable of producing the performance demanded by shareholders/owners. In addition to corporate strategic activities, acquisitions are useful at the business development level, where it is necessary to fill in gaps in the organization's product-market profile, or to acquire specialist skills and expertise.

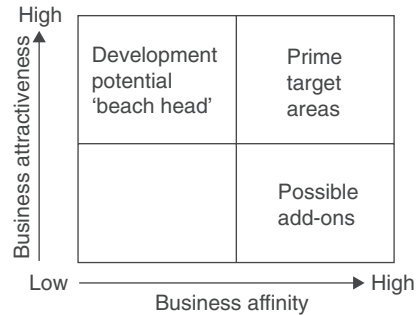
Research has shown that acquisitions often lead to a reduction in the wealth of shareholders of the acquiring company. To succeed in an acquisition attempt, the acquirer company will undoubtedly have to pay a premium to the market price ruling, prior to the approach being made to the target company. This means that it would be cheaper for the shareholders personally to buy the shares of the target company in the marketplace, rather than allowing the acquirer company to do it for them.

Why, then, does the market seem to actively encourage takeovers? Is it simply that it is the market's *raison d'être*, that to survive and create wealth for itself it must do deals? Certainly there is an element of truth in this; however, recent acquisition and merger activity appears to have been based on more sound economic and financial factors. In recent periods the more highly regarded, better-performing organizations have tended to take over less well-run organizations despite the fact that the company being taken over could be considerably larger than the acquirer. This is in contrast to the historical concept of large companies being valued at a premium and tending to take over smaller well-performing organizations. It should be borne in mind that organizations that make acquisitions and fail to perform could find that they themselves become targets.

A fund manager presented with the opportunity of a substantial short-term gain will be under considerable pressure to accept in order to maintain his own rating. Fund managers whose portfolios underperform do not last long. However, evidence shows that, on balance, the market is rational and in the longer-term eventually takes account of fundamental underlying issues.

When considering an acquisition as part of an overall corporate and business development strategy it is necessary to identify clearly how the acquisition will result in added value to the group, how quickly these benefits can be obtained and how the overall risk profile of the group will be affected. Consideration needs to be given to two key criteria: the level of business affinity and the business attractiveness (i.e. market size, growth, profitability, etc) of the target company (see Figure 1.3).

Primarily, there are only two reasons why an acquiring management may be able to extract greater returns from the assets of a business than the previous management team (all other things being equal). Firstly, through greater management ability (combined with entrepreneurial flair), and secondly through synergy (including economies of scale). With regard to synergy there should be a certain amount of scepticism. Synergy is not inherent in a situation; such potential gains come as a reward for management effort. The release of profit potential in an acquisition or merger depends upon the existence of sound management, the depth of management skills



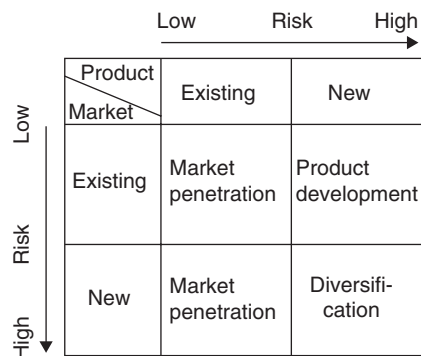
**Figure 1.3** Key criteria.

and the level of motivation. Effective hands-on management is essential immediately after an acquisition to ensure that required changes are implemented and the company becomes quickly integrated into the group. It is often found in practice that organizations unused to making acquisitions try to adopt a hands-off approach towards their new charges, often with disastrous consequences.

It is also argued that mergers and acquisition facilitate diversification. This is based on the idea of portfolio theory, with the objective being to reduce risk by broadening the range of business activities. However, product-market theory suggests that risk increases as the organization moves into new areas in which it is unfamiliar and that diversification represents the highest-risk strategy (see Figures 1.4 and 1.5).

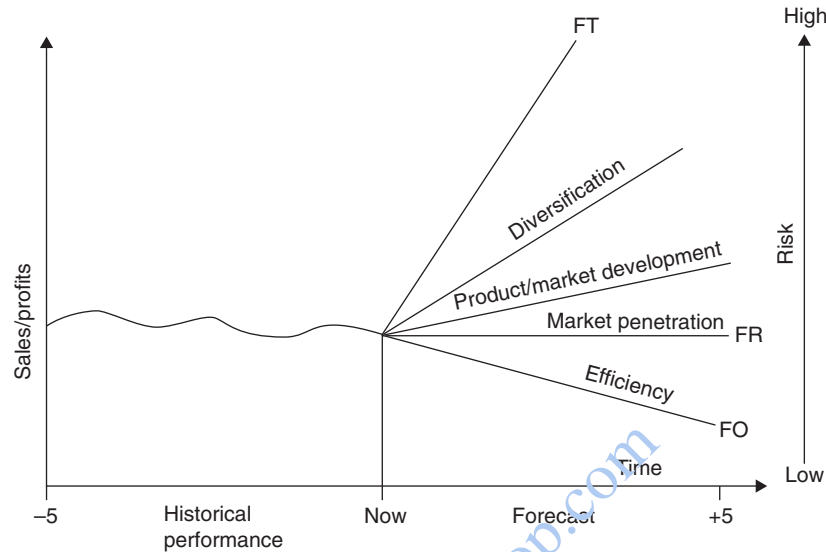
Shareholders expect to see growth in earnings per share each year without fail and with no excuses. Hence if gains from an acquisition are likely to take several years to come through, shareholders are likely to withdraw their support. Investors and rating agencies have long experience of companies making acquisitions in pursuit of esoteric strategies that fail to produce the required growth in shareholder value. The market takes into account the level of risk in an investment. If the risk profile of the company changes due to acquisition, the share price will be adjusted accordingly by the market to reflect this change.

Merger and acquisition activity in the European banking sector was seen in the first half of the 1990s following the banking crisis. It took place again in the late 1990s and the early part of the 2000s as a result of increased focus on strategies aimed at enhancing shareholder value and



**Figure 1.4** Business risk factors.





The level of risk increases as the forecast is increased from FO (original forecast) to FT (the target)

The original forecast (FO) is based on the company's continuing as it is with its existing weaknesses.

The revised forecast (FR) assumes an increase in internal efficiency, following a review of existing internal strengths and weaknesses.

**Figure 1.5** Gap analysis.

Source: Brendon Young, ORRF

increasing performance efficiency. This resulted in the creation of a number of significantly more powerful groups, including:

- the UK – HBOS (from Halifax and Bank of Scotland); the acquisition of NatWest by the Royal Bank of Scotland; and Barclay's acquisition of the Woolwich;
- France – Crédit Mutuel/CIC, Banque Populaire/Natexis, BNP Paribas, Crédit Agricole/ Crédit Lyonnais;
- Italy – UniCredito, Intesa, Sanpaolo IMI, Capitalia;
- Spain – BBVA, Santander Central Hispano.

And similarly in Austria, Belgium, Norway, Portugal, Sweden, and Switzerland, etc. Also, during this period of activity, rationalization was taking place amongst the numerous smaller financial institutions, including mortgage banks, cooperative banks, savings banks and the state-owned sector.

In Germany, the financial services sector is very fragmented and profitability is low. Rationalization of the cooperative banking sector has been going on for some time. In public sector banking, the removal of state guarantees (in 2005) proved a stimulus. Alignment of the Landesbanken with savings banks is producing more effective regional banking groups. The German mortgage sector is also experiencing consolidation.

In November 2007, the underperforming Dutch bank ABN Amro, a major European bank, was acquired by a consortium led by Royal Bank of Scotland Group plc, (and included Fortis Group NV of Belgium and Santander Central Hispano SA of Spain). At the time, this represented the largest financial services merger in history. Merger and acquisition activities often result in further secondary redistribution of assets to other interested third parties.

More recently (in 2008), as the severity of the credit crunch increased, a growing wave of mergers and acquisition took place. This was actively encouraged by both the US and UK governments (including their central banks and regulators), in an endeavour to avert total collapse of the world's financial system. Initially, in the UK, Northern Rock collapsed and was nationalized. Shortly after, HBOS had to be rescued by Lloyds TSB. In the US, the demise of Bear Stearns was quickly followed by Lehman Brothers. Subsequently, a number of other major financial institutions had to be rescued, including the world's largest insurer (AIG), and major US mortgage institutions, Fannie Mae and Freddie Mac. Similarly, in Europe (as well as other parts of the world), major banks like Fortis experienced severe difficulties. The full impact of the credit crunch, which was initiated by the US sub-prime mortgage crisis, has yet to be determined but will undoubtedly have fundamental repercussions.

#### *Bancassurance*

In addition to straight merger and acquisition activity within the banking sector, some integration has taken place between insurance companies and banks. This was brought about with the aim of cross-selling services to a larger combined customer base, thus making better use of the existing channel-to-market infrastructure (branches, staff, customer information, etc) and consequently lowering unit costs. This strategy is more appropriate in Europe where life insurance products are seen as an alternative form of long-term savings. In the UK, the life insurance market is more sophisticated and in the US there are barriers restricting adoption of the bancassurance model. In the early years of the new millennium the insurance industry experienced difficulties when stock markets declined (due to overexposure to the equity markets). This resulted in difficulties for banks associated with insurance companies, since the banks were required to provide capital to meet the resultant shortfall experienced by their insurance company.

### **1.3.5 Management**

There is a widely accepted assertion in Venture Capital that the only thing to consider when evaluating an investment is the quality of management. Excellent management will introduce new products and services at the appropriate time, use resources efficiently and effectively, and develop winning strategies.

Whilst changes in economic conditions create opportunities, business is about people, those with vision and ability. In their book *In Search of Excellence* (profile Business, 2004), Peters and Waterman refer to individuals with the drive, determination and ability to succeed as "champions." Such individuals will undoubtedly continue to drive their organizations forward despite increasing regulation and the ups and downs of the stock market. Personal motivation and ambition are significant influencing factors when assessing the derivation of strategy and the ability to effectively implement it. Mergers and acquisitions are often driven by personal ambition, with economic considerations being secondary. However, management is primarily about leadership, not leaders. Research shows that longer-term success correlates

with leadership. Sound leadership creates belief in and commitment to corporate objectives. Weak leadership, on the other hand, leads to blameism, with employees deliberately hiding risks and mistakes, and managers consequently making decisions based on wrong information. High staff turnover, low morale, excessive restrictions, an inability to take preventive action (i.e. responsibility without authority), and excessive levels of pressure to perform, are clear indicators of weakness.

In assessing management it is necessary to take account of many factors, including:

- *The appropriateness of the approach adopted by the Chief Executive.* A dominant chief executive can be appropriate where there is a necessity to bring about change and develop a more responsive organization. However, for a well-performing organization in a developed market, the primary requirement is to create a professional management team and harness their combined skills.
- *The level of experience and ability of senior management.* This can be a particularly serious issue in emerging markets when there is a move away from state influence towards a free market economy. Management may be ill-equipped to cope with the change from political acquiescence to the market demand for transparency combined with the efficient and effective use of resources.
- *The competence and motivation of second tier management.* These are vital considerations when determining the ability of the organization to properly implement its strategies.
- *The existence of a risk-aware culture.* The existence of a culture that recognizes the importance of risk management and control is evidenced by how well risk-based systems and controls are embedded as demonstrated by the use-test.
- *The appropriateness and effectiveness of review and reward schemes.* These must be appropriate for the particular activity being carried out. High levels of pressure, particularly on traders in investment banks, have resulted in significant operational risk losses.

The ultimate tests for management are the ability to achieve acceptable (risk adjusted) financial performance (including growth in earnings per share), to maintain and grow market share, and to maintain and enhance the organization's reputation, whilst also balancing the requirements of other stakeholder groups. These are largely functions of how efficiently and effectively resources have been applied, together with how effectively external threats have been mitigated. In emerging markets, it is important to recognize that the ability to manage may be constrained by ingrained cultural issues (preventing restructuring and the removal of excess labour) together with the level of economic development within the country itself (restricting the use of new technologies and risk management tools).

### 1.3.6 Identifying winners and losers

Those banking groups that survive prosper and grow in the increasingly competitive and dynamic financial services environment will exhibit many, if not all, of the following qualities:

- a visible and valued brand worldwide, achieved through creation and retention of a satisfied customer base;
- sound corporate governance, culture, and ethics;
- dynamic strategies facilitating responsiveness and resilience;

- a strong and defensible franchise position (i.e. a leading position in retail financial services, including a dominant share of the domestic market together with a strong international market presence);
- high and sustainable recurring earnings – any organization relying upon business-to-business (B2B) activity without a well-established business-to-customer (B2C) activity is likely to have a weak franchise with uncertain earnings;
- provision of a broad range of both banking and nonbanking services, possibly including fund management, bancassurance, pensions, and private banking, as well as Internet and retail banking;
- efficient and effective use of resources, including IT;
- The ability to attract and retain excellent managers having vision and motivation; and
- a sound risk management culture, properly embedded throughout the organization.

A report by the Senior Supervisors Group,<sup>38</sup> into the risk management practices of those firms that performed better in the recent credit crunch, revealed that such firms demonstrated a comprehensive firm-wide view of risk. They often aligned risk management with other functions, including treasury, and were therefore able to enforce more active controls over the organization's consolidated balance sheet, capital, and liquidity requirements. The management team engaged in more effective dialogue across the firm, sharing quantitative and qualitative information more effectively. In particular, they:

- had more dynamic and adaptive risk measurement processes and risk management systems that could rapidly adjust to cater for current circumstances;
- viewed risk exposures from a number of different perspectives, relying upon a wide range of risk measures (both qualitative and quantitative); and
- employed effective stress testing with greater use of scenario analysis.

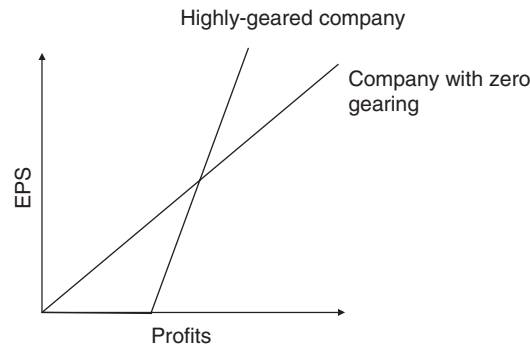
## 1.4 CAPITAL – UNDERSTANDING AND ASSESSING ITS IMPORTANCE AND LIMITATIONS

*Capital is part of the regulatory tool kit, but only a small part. For most problems capital is not our preferred response. Sir Howard Davies*

### 1.4.1 Historical assessment approaches

The level of equity held by a bank has traditionally been regarded as a measure of financial strength and a protection against moral hazard, since the greater the level of equity capital shareholders (owners) have at risk the more likely they are to ensure the bank is managed prudently. Since margins have historically been thin in banking, high levels of gearing have been necessary in order to generate adequate returns on equity (see Figure 1.6). Prudent management has therefore been necessary since any errors in highly-g geared organizations are greatly magnified.

Traditionally, capital strength was measured by two primary ratios: *equity:assets* and *equity:deposits*. In the early 1900s an accepted rule of thumb used in the United States was 1 dollar (\$1) of capital to 10 dollars (\$10) of deposits. However, this was found to be inappropriate for the period of economic expansion following the Second World War. Consequently, the US Federal Reserve introduced a benchmark figure of 8% for equity-capital to total-assets. The actual level of leverage (which is simply the inverse of the equity-capital to total-assets



**Figure 1.6** Shareholders benefit from rapid growth in Earnings Per Share (EPS) in a highly-gearred company, after interest-on-borrowings has been paid. However, in times of stress, a highly-gearred company may not be able to meet its obligations as and when they fall due and therefore faces an increased risk of insolvency.

*Source:* Brendon Young, ORRF

ratio) varies considerably between different countries and banking sectors. Leverage is still widely used in the assessment of banks, particularly in emerging markets where only limited data may be available. However, leverage has serious limitations since it fails to take account of the riskiness of assets. Consequently, as part of the evolutionary development of assessment techniques, rating agencies began comparing equity to loans and to risk assets.<sup>39</sup> Whilst this enabled a bank's static capital strength to be determined, it failed to take account of its resilience as indicated by retained profits (the Internal Growth Rate Of Capital – IGRC).<sup>40</sup> The recognition of the ability of a bank to earn its way out of trouble was an important step forward but unfortunately the IGRC ratio can be subject to large fluctuations and is prone to manipulation (paradoxically, a small equity base can make it easier to achieve a high IGRC ratio). Also, historical performance is not necessarily a good indicator of future performance and survival.

#### 1.4.2 The original Basel Accord

In 1974, the central bank governors of the G10 nations established the Basel Committee on Banking Supervision, partly in response to the collapse of a small undercapitalized German bank (Bank Herstatt), which threatened the stability of the international foreign exchange market.

In 1988, the Basel Committee introduced its Capital Accord, which was originally established for internationally active banks from the G10 countries, but which became adopted as a standard by over 100 countries worldwide. The Accord was primarily prompted by the actions of Japanese and French banks, which were undercutting competitors through operating with what was considered to be unfairly low levels of capital (i.e. undercapitalized). The fundamental aims of the Accord were to strengthen the overall international banking system and to create a level playing field.<sup>41</sup> The Accord introduced a risk-weighted capital adequacy ratio, which was set at an arbitrary 8% level (see Table 1.1). Prior to the Accord, there had been no accepted definition of what constituted capital from a regulatory perspective and certainly no international benchmark for capital adequacy.

**Table 1.1** Risk weighted assets (1988 Basel Accord).

0 % Weightings

- Cash.
- Local currency deposits with central government/central bank.
- Deposits with OECD central governments and central banks (some countries applied a 10 % weighting for short-term instruments and a 20 % weighting for long-term instruments).
- Claims collateralized by cash, by OECD central government securities, or guaranteed by OECD central governments.
- Claims on domestic public sector entities other than the central government and loans guaranteed by such entities.

20 % Weightings

- Claims on or guaranteed by multilateral development banks, or collateralized by the securities of such banks.
- Claims on banks incorporated in the OECD and loans guaranteed by OECD incorporated banks.
- Claims on banks incorporated outside the OECD or guaranteed by such banks having a residual maturity of one year or less.
- Claims on or guaranteed by nondomestic OECD public sector entities.
- Cash items in the process of collection (added following 1998 amendment).

50 % Weightings

- Loans fully secured by mortgages on owner-occupied residential property.

100 % Weightings

- Claims on the private sector.
- Claims on the non-OECD incorporated banks with a residual maturity of over one year.
- Nonlocal currency claims on central governments outside the OECD.
- Claims on private sector commercial companies.
- Fixed assets.
- Real estate and other investments.
- Capital instruments issued by other banks unless deducted from capital.

The Accord originally recognized two<sup>42</sup> categories in its definition of capital:

1. Core (Tier 1) Capital – which included share-capital, retained earnings and equity reserves;
2. Supplementary (Tier 2) Capital – which included other forms of defined capital such as loan loss reserves, subordinated debt and hidden reserves.

The inclusion of supplementary capital gave the impression that banks had more capital available than had been the case under traditional measures. Also, by applying weightings to assets, the total level of assets accepted by the regulators was reduced. These two factors gave a somewhat distorted impression by making the capital-to-assets ratio look stronger than under traditional approaches.

The original Basel Accord represented an important step forward by introducing the concept of regulatory capital adequacy. Whilst the Accord was based on the traditional simple ratio of equity to assets, the major advance was in making this ratio risk based. Through international adoption, it facilitated cross-boarder comparisons. The Accord was very successful in improving capital adequacy and strengthening the international banking system; however, it created perverse incentives for banks due to assets with widely different risk characteristics being equally weighted. This resulted in banks taking on greater risks rather than adopting a more prudent approach as originally envisaged by the Accord. Fundamentally, the Accord

encouraged banks to take on higher exposures without requiring them to hold commensurate levels of risk capital. Given that the Accord effectively capped leverage at 12.5 %, banks needed to look for higher yielding stock in order to achieve a commercially competitive rate of return on equity. The Accord's broad-brush categorization resulted in sound organizations being lumped together with far less creditworthy corporations that were, of necessity, offering higher yields. Thus banks were induced to make higher yielding loans to less creditworthy customers and to securitize the most secure (but low yielding) loans. Similarly, in order to increase yields banks engaged in interbank lending, with the borrowing bank subsequently lending to riskier domestic corporations. In Thailand this contributed to the "Asian Crisis."<sup>43</sup> Another important criticism of the Accord was that it was unfairly biased in favour of OECD countries, thus preventing creation of a truly level playing field.

#### **1.4.3 Creation of a level playing field**

The European Commission has stated that institutions must not have capital requirements imposed on them that are higher than the underlying risks to which they are exposed, as this would run counter to the principle of retaining competitive equality. No institution will be obliged to adopt a more complex approach than is suitable for its capabilities and scale of operation.

The level playing field relationship must be considered both within the EU (between regulated and unregulated institutions, credit institutions and investment firms, and between low impact and high impact firms), as well as between EU and non-EU entities. In particular, prudential regulation must not become so complex that small-scale institutions, whether credit institutions or investment firms, are no longer viable. Consumer interests would be ill served if business activities shifted from regulated to unregulated (or less regulated) firms. Equally, banks and other financial institutions should not be encouraged to engage in regulatory arbitrage. The regulations must not provide loopholes ("capital arbitrage opportunities"), for financial institutions, regardless of their size, to hold insufficient capital in comparison to their risk profile, or to transfer business activities to unregulated parts of their group, since this would damage the interests of depositors and investors. There are many factors influencing competitive equality. Certainly, in a dynamic environment, no simplistic or rigid framework can be expected to be entirely appropriate.

#### **1.4.4 The impact of the new Basel Accord on the level of capital held by a bank**

The new Basel Accord (Basel II) sought to overcome the weaknesses of the original Accord by requiring banks to assess the risks they face and the level of capital necessary to protect against those risks, together with encouraging implementation of management actions necessary to mitigate and control the risks retained. The primary aim of the new Basel Accord was to enhance protection of the overall financial system (i.e. avoid systemic risk), by making regulatory capital more risk sensitive. The impact of this could be expected to provide well-managed banks with the opportunity of operating with less regulatory capital than required under the 1988 Basel Accord. But since the regulators wish to maintain the overall level of regulatory capital in the system at existing levels, other banks must expect an increase in their regulatory capital requirement. However, it must be recognized that a bank is not simply a profit maximizer; instead it will seek to optimize its capital requirement. Consequently, banks will continue to hold capital in excess of the regulatory minimum in order to inspire confidence (i.e. avoid reputational risk) and facilitate business development, as well as fulfilling the aspirations

of owners together with meeting obligations to depositors and other creditors. Whilst Basel II has acted as a catalyst and indeed represents a significant advance in the discipline of risk management, the size of regulatory capital is of relatively little importance from an analyst's perspective, although the associated management actions certainly are important. It has yet to be seen whether transparency, as required under Pillar 3 of the new Accord, will assist in making regulatory capital a useful indicator. However, it is highly likely that regulators from different countries will apply regulatory capital differently, thus reducing its usefulness from the point of view of cross-border comparisons.

#### 1.4.5 Is capital the solution to risk?

Whilst Chairman of the FSA, Howard Davies stated that with regard to the new Basel Accord, *Capital is part of the regulatory tool kit, but only a small part. For most problems capital is not our preferred response.*

Capital is certainly a protection against risk events. However, an increase in capital will not of itself reduce risk; only management action can do that. By holding a larger amount of capital, a bank will be able to withstand greater losses than would otherwise be the case. However, excess capital will reduce financial performance, as expressed by return on capital employed (ROCE) or its risk-adjusted equivalent (KAROC or RORAC), and thereby impact upon a bank's competitiveness.

#### 1.4.6 Credit rating agency view

It is a widely held misconception, inadvertently perpetrated by the regulators, that the level of capital held by a bank indicates its strength and therefore defines its credit rating. In fact, there is no direct correlation between capital and the rating assigned by the credit rating agencies. It is important to realize that capital on its own does not determine the longer-term strength of an organization. This is not to diminish the importance of capital but to indicate that, whilst it is necessary, capital on its own is not sufficient. For example, consider a bucket in which there is a hole; eventually it will run dry no matter how big the bucket or how small the hole; it needs to be continuously filled. Hence, the level of capital held by a bank is important to meet immediate needs but in the longer term the level of sustainable earnings (i.e. the minimum rate of generation of new capital) becomes an increasingly important consideration, as does leakage due to unexpected risk events. Also, liquidity (i.e. the immediate access to funding – or water in the above example – when needed) is an important consideration.

#### 1.4.7 Defining regulatory, actual, and economic capital

*Despite the complexity, the essential aims are simple: to devise a set of rules that create a better fit between regulatory and economic capital; and to create incentives for banks to assess their own risks, and need for capital, more accurately and systematically than before.* Howard Davies, FSA, March 2001

Different organizations use differing definitions of capital. Therefore, the relationship between regulatory capital, actual balance sheet capital, and economic capital, needs to be clearly understood:

- Regulatory capital is the minimum amount of capital a bank is required to hold under the new Basel Accord (Basel II) taking into account its particular risk profile. Regulatory capital is



an artificial construct prescribed by the regulators to meet their stated objectives, including the prevention of systemic risk to the overall banking system. Regulatory capital can be considered as the cost to a bank of remaining in business.<sup>44</sup>

- Balance sheet capital is the actual capital that a bank is using to run its business activities. Research by the Bank of England has shown that banks typically hold an amount well in excess of the regulatory capital minimum (11.6% on average). However, the actual level can vary considerably between different countries and different banks.
- Economic capital is the amount of capital a bank should have to run its business activities taking into account the risks it is taking and its growth strategy (i.e. its risk profile). The importance of economic capital stems from its ability to act as *a tool to integrate all risks into one consistent and comprehensive risk measure*.

Economic capital methodologies vary considerably from firm to firm. However, in essence they all seek to achieve at least two basic objectives: firstly, to compare the actual capital shown in the balance sheet to the economic capital requirement (i.e. gap analysis); secondly, to calculate the return on economic capital. This provides a risk-adjusted performance measure for assessing individual business units as well as for assessing the group as a whole.

#### **1.4.8 Internal Capital Apportionment Process (ICAP)**

In Europe, many larger banking groups have adopted the Internal Capital Apportionment Process and, indeed, in certain organizations the methodology has become quite advanced. ICAP is a management control methodology that seeks to allocate capital to business units and business lines according to their individual intrinsic level of risk. It therefore enables the bank to more precisely tailor its risk profile through calculation of a risk-adjusted return on capital for each activity. The importance of ICAP stems from the ability it gives management to better control the quality and stability of earnings.

#### **1.4.9 Uses of economic capital methodologies**

The level and structure of a bank's capital, together with its earnings potential, are useful indicators of its level of resilience and its ability to respond to change. Economic capital methodologies can be used to allocate capital and to control risk, leading to:

- Improved measurement of performance, facilitating more effective risk reporting to senior management.
- More informed decision-making, enabling the risk profile to be more precisely defined.
- Comparison of risk returns, so that capital can be transferred in order to optimize performance.
- Risk assessment of business development opportunities, including mergers, acquisitions, and divestment opportunities, as well as assessment of new product/market and diversification proposals.
- Greater accountability for the management of risks.
- Determination of appropriate staff compensation and motivation schemes.
- Better indication of risk concentrations.
- Determination of correlation and diversification benefits.
- Reconciliation of financial accounts to the risk profile, allowing determination of volatility and therefore of the quality and stability of earnings for the group as a whole.

#### 1.4.10 Assessing factors influencing the economic capital requirement

There is no single deterministic value for economic capital; instead, the requirement will lie within a probabilistic range. Indeed, in a dynamic business environment the economic capital requirement will change continuously. As with critical path analysis, when one key activity varies, both the critical path and capital requirement change. In assessing the appropriateness of the level of risk capital held by an organization, there are a number of factors that need to be assessed, including:

- **The quality of management** – It has been said that “no amount of capital can save an ill-managed bank.”<sup>45</sup>
- **Risk transfer facilities** – The existence and use of risk transfer instruments, such as securitisation, insurance and catastrophe bonds, enables a bank to more precisely price risk and define its risk profile.
- **Asset type and quality** – To meet any calls resulting from losses, assets will need to be liquidated within an acceptable period of time. Where asset quality is such that the full value may not be realized (either immediately or in the future), particularly in times of stress, then a higher level of capital will be required.
- **Quality and stability of earnings** – The faster a bank can regenerate funds to replenish losses resulting from unexpected events the less capital it will need to hold.
- **Liquidity issues** – Banks tend to fail for liquidity reasons rather than poor asset quality or insolvency. Factors such as the availability of support from the parent group, external support from commercial organizations (e.g. back-up lines and swing lines<sup>46</sup>) and the realistic possibility of central bank support, need to be taken into account.

#### 1.4.11 The importance of capital in different markets

In emerging markets volatility is greater and therefore capital is more important than in developed economies. However, there is a tendency for banks in emerging markets to rely too heavily on funding from the interbank market, which can be both expensive and volatile. The Turkish bank crisis of 1994 was exacerbated by overreliance on syndicated funding from foreign banks.

In Japan, the stock market crash of 1990 resulted in the disappearance of a significant amount of hidden reserves<sup>47</sup> held by Japanese banks as part of their regulatory capital. This threatened their very survival and, consequently, government/regulatory intervention was required in order to maintain confidence and prevent systemic risk.

#### 1.4.12 Methodology for determining the amount of risk capital required

The generally accepted approach for determining the risk capital requirement involves a combination of the following methodologies, which are discussed in more detail later in this book:

- **Control Risk Self Assessment (CRSA)** – This involves (tacit) assessment by management of the main risk challenges and their associated controls.
- **Data collection and analysis** – Loss events (and also near misses) need to be recorded in a loss-register and the data analyzed for trends, patterns, and correlations.

- **Modeling** – This is used to determine the risk capital requirement at a chosen confidence level.<sup>48</sup> Some financial organizations are now using stochastic models and dynamic financial models to address the issue of risk integration.
- **Stress testing** – This involves determining the impact (on the model) of extreme events, whether experienced by the organization itself or by others or simply by varying parameters.
- **Scenario analysis** – This is concerned with the assessment of events that have not happened but against which the organization needs to protect itself (e.g. terrorism and war, pandemics, IT meltdown, etc).
- **Use test assessment** – This involves continuous evaluation in order to quickly identify any changes that could lead to an increased level of risk and result in the requirement for additional capital. Key indicators and dynamic financial analysis modeling may be used.

Where data are available, risk capital can be quantified using various statistical techniques, including:

- Taking actual loss data, ordered by size, and simply selecting a chosen percentile. This is commonly referred to as the simple VaR (Value at Risk) approach.
- Taking actual loss data and fitting a mathematical distribution curve to the tail of the loss distribution (basic Extreme Value Theory methodology).
- Using a simulation approach, where a large number of samples are taken from the existing small amount of data. These samples are then ordered by size and the value for a chosen percentile used (simulation VaR).
- Fitting a mathematical distribution curve to simulation data.
- Combining external loss data, actual data and simulation data, then applying the VaR approach.
- Applying the mathematical distribution curve approach to the combined actual data, simulation data and external data.

The appropriateness of the method chosen depends upon a number of factors such as the availability, quantity, completeness and accuracy of data, together with the resources available, computational ease and technical expertise. Given the shortage of loss data, particularly in the tail of the distribution, there is need to carry out stress testing and scenario analysis on the models developed in order to determine robustness. Important factors to take into consideration include:

- loss recognition (whether there was a single loss at a given point in time or a gradual loss build-up over a period).
- the time period over which data is collected.
- the minimum size of losses recorded (below which events are ignored).

It should be noted that, since it is not possible to accurately predict the future, there can be no correct answer for the amount of capital to be held, only a level of prudence compared to previous experience and future expectations.

## ENDNOTES

<sup>1</sup> It is not universally accepted that regulatory intervention is necessary. Indeed, it is widely considered that such intervention has the propensity to produce procyclicality. Free-market economists argue that, in theory, regulatory intervention allows poor management to survive, thus rewarding them for excessive risk taking, but by so doing punishes good management, putting them at a competitive

disadvantage. However, the argument makes strong tacit assumptions about existing types of regulatory intervention rather than proposing possible alternatives. In essence, it appears simply to be an argument for management change through shareholder activism, which has an important (additional, not alternative) place. Free-market economists also argue, correctly, that depositor protection schemes have a perverse effect in that they effectively remove the risk from depositors, thereby encouraging them to seek those financial institutions taking greater risks and offering higher rewards. However, the theories of free-market economics ignore social issues such as the destruction of social capital and the impact upon the lives of people; put simply, it takes time to redistribute capital and retrain people who may be relatively immobile (both physically and mentally). The destruction of the UK's industrial base in the 1980s, which dramatically reduced the level of diversification in the economy, provides clear evidence of the risk of unforeseen consequences.

<sup>2</sup> See [www.enhancedanalytics.com](http://www.enhancedanalytics.com)

<sup>3</sup> In fact, Basel II has been a main driver in the speed of development of Operational Risk.

<sup>4</sup> Commerzbank Group 2005 Risk Report, page 93: "We believe that considerable value leverage for further boosting the Group's earnings performance over the next few years lies in the claim to 'being the benchmark in risk control and management,' . . . The importance of highly-developed risk management was also confirmed in an international benchmarking study last year, where it is seen as the most significant challenge to successful business management for internationally competitive banks. . . . We share this view and are confident that we can achieve further major breakthroughs in risk control and management during this decade. . . . This will prove highly positive for the market positioning of the Commerzbank Group."

<sup>5</sup> The Basel Committee on Banking Supervision simply defines Operational Risk as: *the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.*

<sup>6</sup> Operational risk involves taking a forensic approach to the assessment and management of risk.

<sup>7</sup> From a regulatory perspective, the aim is to prevent systemic risk rather than to protect any one particular organization.

<sup>8</sup> An important secondary aim is ensuring regulatory and legislative compliance. Less sophisticated organizations may actually regard this as being the most important objective.

<sup>9</sup> Operational Risk:

- increases volatility;
- threatens the existence and long-term survival of the organization;
- increases the cost of capital;
- strategically weakens an organization in respect to its competitors.

<sup>10</sup> As evidenced by Barings, Enron, Andersen's, etc.

<sup>11</sup> "An important scientific innovation rarely makes its way by gradually winning over and converting its opponents. What does happen is that the opponents gradually die out." Max Planck.

<sup>12</sup> Profit & Loss, Cashflow Forecast, and Balance Sheet.

<sup>13</sup> It is recommended that loss data includes near misses.

<sup>14</sup> However, risk optimization should not be construed as acceptance of compromised quality standards. In a changing business environment, what is considered to be optimal at a particular point in time will not necessarily be so in the future.

<sup>15</sup> Contingency theory states that there is no one correct solution or course of action but that what is appropriate at a given point in time depends upon the prevailing circumstances of the situation.

<sup>16</sup> *Rating Methodology: An Analytical Framework for Banks in Developed Markets*, Moody's Investors Service, April 1999, p. 36.

<sup>17</sup> Barings Bank, ENRON, etc.

<sup>18</sup> The need for a forensic approach to risk management was clearly emphasized by the catastrophic failure of the Challenger space shuttle due to an O-ring failure. Similarly, in the financial services industry, rogue trader events have resulted in very significant losses, out of all proportion to the number of people involved (often only one individual person).

<sup>19</sup> The Sharpe ratio, which compares return with volatility of return, is commonly used for financial portfolio analysis, although it can be applied more widely.

<sup>20</sup> Complexity has been defined as a measure of the variety of states in a system (Beer, S. (1970). *Managing Modern Complexity*. In Committee on Science and Astronautics, US House of Representatives, *The Management of Information and Knowledge*.; Ashby, W.R. (1973). Some peculiarities of complex systems. *Cybernetics Medicine* 9, 1–8.). Complexity increases as the number and variety

of elements and relationships within the system increase. Complexity becomes greater as the level of predictability and understanding of the system as a whole decreases (McCarthy, I.P. (1995). Manufacturing Classification: Lessons from Organisational Systematics and Biological Taxonomy. *Journal of Manufacturing Technology Management* 6, 37–49.). The emergent behaviour of the system as a whole becomes difficult to predict, even when subsystem behaviour is readily predictable. Small changes in inputs or parameters may produce large and unexpected changes in output behaviour.

<sup>21</sup> Financial strength can be defined as capital plus earnings capability.

<sup>22</sup> This can be very well demonstrated by the simple *gambler's ruin* model.

<sup>23</sup> Research by Citigroup indicated no direct link between key indicators and actual losses experience. See: <http://www.terrapinnfinancial.com/faculty.aspx?ID=19>; [http://db.riskwaters.com/public/showpage.html?page=flagships\\_opriskadvisory\\_speakers](http://db.riskwaters.com/public/showpage.html?page=flagships_opriskadvisory_speakers)

<sup>24</sup> The FSA stated in February 2003: “*In the current difficult climate, some firms may be tempted to cut back on investment in back office systems. This would be extremely short sighted.*” In imposing a fine for what was described as serious failings following implementation of a new computer system, the FSA said the particular bank had demonstrated “*inadequate controls and a lack of staff training*” and that these actions had exposed the bank to increased risk of fraud.

<sup>25</sup> E.g. Six Sigma.

Leading figures in the field of total quality management include: Edwards-Deming, Crosby, et al.

<sup>26</sup> Nassim Nicholas Taleb. *Foiled by Randomness – The Hidden Role of Chance in Life and the Markets*. ISBN: 1-58799-184-5.

<sup>27</sup> Moody's Analytical Framework For Operational Risk Management of Banks, January 2003.

<sup>28</sup> However, not all banks accept that efficient use of resources is a necessary primary goal. This is based upon their view that banks are not simply profit maximizers but have an important social responsibility.

<sup>29</sup> The Principles are available on <http://www.unpri.org/principles/>

<sup>30</sup> The Sarbanes-Oxley Act was signed into US law on 30 July 2002, in response to a number of high profile corporate scandals, including Enron, WorldCom, Adelphia, Global Crossings, etc. The purpose of the Act, as stated in the introduction to the US Senate Committee Report, is: “to improve quality and transparency in financial reporting and independent audits and accounting services for public companies, to create a Public Company Accounting Oversight Board, to enhance the standard-setting process for accounting practices, to strengthen the independence of firms that audit public companies, to increase corporate responsibility and the usefulness of corporate financial disclosure, to protect the objectivity and independence of securities analysts, to improve Securities and Exchange Commission resources and oversight.”

<sup>31</sup> Sir David Tweedie stated: “*What we don't want to do is haul things onto the balance sheet that are not really yours, nor do we want things flying off a balance sheet you have problems with. It's getting the line drawn properly.*”

<sup>32</sup> The IASB proposal is to have parallel balance sheets that would explain off-balance sheet vehicles in detail and reconcile the figures with those on the main balance sheet.

<sup>33</sup> Big Bang involved the ending of the discount house monopoly on issuing government securities and the liberalization of the London Stock Exchange. Changes at the Stock Exchange involved merging the functions of the jobber (who dealt in stocks and shares) and the broker (who mediated between the jobber and the public), introducing negotiated commission rates, and allowing foreign banks and financial companies to own British brokers/jobbers, or themselves to join the London Stock Exchange.

<sup>34</sup> Emerging market economies include: Central and Eastern Europe, the Middle East, Africa, Latin America, and Asia-Pacific.

<sup>35</sup> Referred to as “off-shoring.”

<sup>36</sup> This transformation is often referred to as “from bricks to clicks”.

<sup>37</sup> Report of the Joint Forum on Credit Risk Transfer (BIS), Credit Risk Transfer, October 2004.

<sup>38</sup> Senior Supervisors Group, Observations on Risk Management Practices During the Recent Market Turbulence, 6 March 2008.

<sup>39</sup> Capital: risk assets is defined as Total Shareholders' Equity divided by [Total Assets – (Cash + Government Securities + Fixed Assets)].

<sup>40</sup> The Internal Growth Rate Of Capital (IGRC) can be defined as the retained earnings (after dividends paid to shareholders) as a percentage of shareholders' equity.

<sup>41</sup> Page 279 footnote 6, Golin Basel Committee on Banking Supervision, “International Convergence of Capital Measurement and Capital Standards” [The 1988 Basel Accord], June 1988. “*Two fundamental*

*objectives lie at the heart of the Committee's work ... firstly ... to strengthen the soundness and stability of the international banking system; and secondly that the framework should be ... fair and have a high degree of consistency in its application to banks in different countries with a view to diminishing a source of competitive inequality among international banks."* Section 3.

<sup>42</sup> An amendment to the Accord in 1996, designed to accommodate Market Risk, introduced Tier 3 capital. This is a form of short-term subordinated debt designed to support market risk exposure in trading and treasury activities.

<sup>43</sup> The East Asian Financial Crisis (also referred to as the IMF crisis) started in July 1997 in Thailand and South Korea with the financial collapse of Kia Motors. The crisis affected currencies, stock markets, and other asset prices in several East Asian countries. Indonesia, South Korea, and Thailand were the countries most affected. There is no consensus on the causes of the crisis; however, some of the key events are as follows:

- East Asia attracted almost half of total capital inflow to developing countries prior to the crisis, due to high growth rates of 8–12 % GDP, in the late 1980s and early 1990s.
- The economies of Southeast Asia in particular maintained high interest rates, attracting foreign investors seeking high returns. This hot money produced a dramatic increase in asset prices.
- Thailand, Indonesia and South Korea had large private current account deficits. Pegged exchange rates encouraged external borrowing and led to excessive exposure to foreign exchange risk in both the financial and corporate sectors.
- In the mid-1990s the US economy recovered from a recession. In order to prevent inflation the US Federal Reserve Bank raised interest rates. This made the US a more attractive investment destination relative to Southeast Asia.
- The US dollar, to which many Southeast Asian nations' currencies were pegged, rose, making exports from these nations more expensive and thus less competitive.
- Southeast Asia's export growth slowed dramatically in the spring of 1996, resulting in a deterioration of their current accounts.
- Western investors started losing confidence in the securities of developing economies after the Mexican peso crisis of 1994. This led to a withdrawal of investments.

The IMF has been criticized for encouraging the developing economies of East Asia to adopt the policies of "fast track capitalism." This involved liberalizing the financial sector and elimination of restrictions on capital flows; maintaining high domestic interest rates in order to suck in portfolio investment and bank capital, and pegging currencies to the dollar in order to reassure foreign investors against currency risk.

Since those governments and businesses that had taken out loans in US dollars found themselves unable to pay, the IMF offered multi-billion dollar rescue packages to enable these nations to avoid default. However, the IMF's support was conditional on a series of drastic economic reforms involving structural adjustment packages (SAP). The SAPs required crisis nations to cut government spending and reduce deficits; to allow insolvent banks and financial institutions to fail; and to aggressively raise interest rates.

<sup>44</sup> Under the original 1988 Basel Accord, the regulatory capital figure was 8% of risk-weighted assets.

<sup>45</sup> Walter Bagehot.

<sup>46</sup> A "Back-Up Line" is a general liquidity support facility whereas "Swing Line" refers to a small facility designed to provide immediate and temporary support in a foreign jurisdiction.

<sup>47</sup> As a concession to the Japanese regulators, Japanese banks were allowed to count up to 45% of their hidden reserves as part of their capital adequacy.

<sup>48</sup> Basel II specifies a 99.9% confidence level for operational risk regulatory capital.