

## **Capital Adequacy for Banks and Other Credit Institutions**

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### **Summary**

This paper is intended to summarise the background to the rules on capital adequacy currently being adopted by the international banking community and by other credit institutions across the EC. The work of the Basle Committee on Banking Regulation and Supervisory Practices in developing capital adequacy ratios\* is described and an outline of their recommendations is given. The practical application of the recommendations is described using UK banks and UK building societies as examples. Finally, a brief commentary relates the rules as developed to the underlying risks for the institutions concerned and contrasts capital requirements for credit institutions with those for life assurance companies.

\* Also referred to as the BIS capital ratios and the Cooke ratios.

### **Résumé**

#### **Niveau des Fonds Propres pour les Banques et Autres Institutions de Crédit**

Cet article a pour but de résumer la toile de fond des règlements sur le niveau des fonds propres actuellement en cours d'adoption par la communauté bancaire internationale et par d'autres institutions de crédit dans toute la CE. Le travail du Comité de Bâle sur les Réglementations Bancaires et les Pratiques de Surveillance afin de mettre au point des rapports\* de niveau de fonds propres est décrit et un résumé des recommandations est donné. L'application pratique des recommandations est décrite en utilisant en exemples les banques et sociétés de financement immobilières britanniques. Enfin, un bref commentaire met en rapport les règlements mis au point et les risques sous-jacents pour les institutions concernées et met en contraste les exigences d'investissement pour les institutions de crédit et celles des compagnies d'assurance sur la vie.

\* Egalement appelé les rapports de fonds propres de la Banque des Règlements internationaux BR; et les rapports Cooke.

## INTRODUCTION

(1.1) Arising from the first life directive the harmonisation of insurance company legislation across the EEC resulted in the setting up of minimum solvency requirements for authorised insurance companies. The primary concern was to safeguard the interests of policyholders, however the requirements also had the secondary effect of reducing any competitive inequality due to differences in solvency requirements across EEC countries.

(1.2) Similar concerns applied within the international banking community although the issue of competitive inequality is relatively more important. The force for change here was the Basle Committee of Banking Regulation and Supervisory Practices comprising of representatives of the central banks and supervisory authorities of the Group of Ten countries (Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, United Kingdom, United States) and Luxembourg. The Committee met at the Bank for International Settlements in Basle under the chairmanship of Peter Cooke, then head of supervision at the Bank of England. A preliminary report was issued in December 1987 followed by a final report in July 1988 titled "International Convergence of Capital Measurement and Capital Standards". This introduced proposals for new capital standards for banks and all of the member countries involved agreed to introduce the recommendations in stages leading to full implementation from the end of 1992.

(1.3) A parallel initiative from the EC resulted in a directive dated December 1989 extending the capital requirements from banks to all credit institutions across the EC.

(1.4) This paper sets out the background to the Basle Committee deliberations and summarises the results of those deliberations in terms of capital requirements for banks. The application of the recommendations in the UK placing them in the context of the general supervision of the institutions concerned is then described. Finally a commentary sets out observations on the theoretical background, the style and nature of the risks that the capital requirements are intended to cover and an example of the application of the regulations in practice contrasting the capital requirements with those for an EC insurance company issuing a similar product.

## (2) BASLE CONVERGENCE AGREEMENT

### (2.1) Background

The Basle Committee's work on regulatory convergence had two fundamental objectives in establishing a new framework for capital requirements. These were, firstly, that the new framework should serve 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 an existing source of competitive inequality among international banks. The framework developed is mainly directed towards setting capital adequacy in relation to credit risk (the risk of counterparty failure). Other risks that need to be taken into account by supervisors in assessing overall capital adequacy were identified but have not been allowed for. In particular the Committee noted a continuing investigation into possible approaches in relation to interest rate risks and the investment risks on securities.

### (2.2) Components of Agreement

The agreement contained four components:

(a) definition of capital included in a bank's capital base.

(b) the risk weights to be applied to different categories of asset or off-balance sheet exposure.

(c) a target minimum ratio of capital to weighted risk assets.

(d) transitional arrangements until the end of 1992 by when all banks undertaking significant cross-border business will be expected to meet the standard in full.

The framework would apply on a consolidated basis to banking groups.

### (2.3) Definition of Capital

The capital base of a bank is the sum of two elements referred to as Tier 1 (core capital) and Tier 2.

Tier 1 : (a) Paid up share capital (common stock)  
(b) Disclosed reserves.

- Tier 2 :
- (a) Undisclosed reserves
  - (b) Asset revaluation reserves
  - (c) General provisions/general loan loss reserve
  - (d) Hybrid debt capital instruments
  - (e) Subordinated term debt.

Goodwill and investments in unconsolidated banking and financial subsidiaries must be deducted from the capital base.

At least 50% of the capital base must consist of Tier 1 items. Within Tier 2, subordinated debt is limited to a maximum of 50% of Tier 1. Unrealised gains on equity investments are subject to a discount of 55% when forming part of asset revaluation reserves. General provisions are limited to a maximum of 1.25% of risk weighted assets.

#### (2.4) Risk Weights

A simple framework of weights (0, 10, 20, 50 and 100%) is applied to the value of asset thus providing a broad categorisation of relative credit risk. No standardisation is attempted for the treatment of investment risk, interest rate risk, exchange rate risk or concentration risk. Country transfer risk is treated broadly by distinguishing between assets from OECD countries and other countries. Assets are allocated to the different risk weights as follows :

<u>Weighting</u>	<u>Class of Asset</u>
0%	Domestic cash and OECD central government and central bank issues.
20%	Multilateral development banks issues. Claims on OECD banks. Claims on non-OECD banks with a residual maturity of up to 1 year. Claims on non-domestic OECD public sector entities.
50%	Loans secured on owner-occupied residential property.
100%	All other assets including fixed assets, investments and claims on the private sector.

Domestic public sector entities can take weightings of 0, 10, 20 or 50% at national discretion.

Off-balance sheet exposures are converted to risk asset equivalents by multiplying the nominal principal amounts by a credit conversion factor ranging from 100% for standby letters of credit serving as guarantees for loans to 0% for cancellable standby facilities. The exposures from interest rate and exchange rate contracts are converted in a similar fashion.

#### (2.5) Target Standard Ratio

The target minimum standard ratio of capital to risk weighted assets is 8 per cent.

#### (2.6) Transitional and Implementing Arrangements

Each country can decide the way in which the recommendations are introduced and applied. However the target standard ratio should be achieved by the end of 1992. At the end of 1990 intermediate standards are to be achieved based on a minimum ratio of 7.25%. During the implementation period, the Committee will continue to monitor and review the applications of the framework. It will also consider how it may be possible to monitor provisioning policies and take account of different national fiscal and accounting policies.

#### (2.7) EC Directive

The Basle Committee's work was directed specifically at banks undertaking international business but had the aim of ensuring the maximum degree of consistency with the framework for common solvency ratios to be applied to credit institutions within the EC. A directive issued in April 1989 established a definition of "own funds" for credit institutions as broadly equivalent to the capital based of a bank under the Basle rules although terms such as Tier 1 are not used explicitly. A Directive issued in December 1989 developed risk weighted asset values and required the adoption of measures by 1 January 1991 leading to the 8% minimum ratio of own funds to risk weighted assets and off-balance-sheet items being enforced from 1 January 1993. No interim targets were set.

### (3) BANKS IN THE UNITED KINGDOM

(3.1) The Bank of England ('The Bank') supervises UK banks under the provisions of the Banking Act 1987. The supervisory criteria to be satisfied include provisions on directors, controllers and managers being fit and proper persons and business being conducted in a prudent manner as regards adequacy of capital, liquidity, provisions and accounting records and control systems.

(3.2) The Bank exercises control over capital adequacy by specifying target and trigger ratios as monitored by regular standardised returns. Each institution is set an individual minimum capital ratio ('trigger ratio') based on an assessment of its risk management capabilities. The assessment factors include the expertise, experience and track record of the management, internal control systems and accounting systems, plans for future development of the business, size and position in its chosen markets and the future prospects in its areas of business.

(3.3) In October 1988 the Bank issued a notice setting out in detail how it would implement the Basle Committee proposals. These follow the Basle agreement closely with a few specific arrangements as follows:

(a) All holdings of bank and building society capital instruments are deducted from capital.

(b) Published interim current year retained profits can be included in Tier 1 capital; if not published in Tier 2. Current losses will be deducted from Tier 1 capital.

(c) Nil credit risk weighted fixed rate government issues will receive a 10% weighting if under 1 year to maturity and a 20% weighting otherwise. This is identified as a temporary proxy for interest rate risk.

(d) A 10% weight is applied to loans to discount houses and gilt-edged market-makers.

(e) A 20% weight is applied to public sector entities and UK building societies.

(3.4) The 8% minimum standard will become the base line for the bank's discretion in setting capital requirements but the intention is to continue to use trigger and target ratios as agreed with each bank and reflecting the bank's particular circumstances (in most cases these ratios will be considerably higher than the 8% minimum). Reporting on the new basis was required from the end of 1989 with the intention of implementing the full 8% standard in all respects with one minor exception from that time.

#### (4) BUILDING SOCIETIES

(4.1) Building Societies in the UK are mutual organisations whose principal function has been secured lending on residential property financed by retail deposits. The Building Societies Act 1986 widened the powers of societies, clarified the mechanisms by which they can demutualise and established the Building Societies Commission as the supervisory authority. In establishing a supervisory environment the Commission initially identified the risks to which societies are subject and the action that they should take. Best practice and the details of supervision were then established by a series of prudential notes covering most aspects of the control building societies. The first of these notes introduced the concept of an Annual Capital Monitoring Return establishing the capital adequacy as at each financial year-end.

(4.2) The capital adequacy calculus comprises two parts, a definition of capital and minimum capital ratios for classes of asset. Thus the risk weights and a single target capital ratio as specified for banks are combined into a set of capital ratios.

#### (4.3) Definition of Capital

Qualifying capital comprises general reserves which includes general bad debt reserves. A building society has no paid-up capital. The Commission can specify other capital resources and has set out requirements for subordinated loan capital to be acceptable. Whereas the Basle Agreement avoids the specification of valuation bases, because of different national approaches, the Commission has set out rules for valuation of assets but not liabilities.

Market value	Land and buildings Listed securities
Book value	Other fixed assets Liquid assets realisable within 3 months or for which interest rates are variable
Net present value	Other liquid assets
Aggregate balance due	Mortgage book Unsecured loans or second mortgages

#### (4.4) Capital Ratios

The minimum acceptable capital is 1/2% more than the percentage obtained by applying the capital ratios to a society's assets. Examples of the ratios are as follows:

##### (a) Mortgages

Core Business (Basic mortgages)	2%
High Percentage Advances	4%
Mature Mortgages	1%

##### (b) Liquid Assets

Ratios from 1% for short term assets to 7½% for 5 year securities to over 10% for longer durations.

##### (c) Fixed Assets 50%

##### (d) Other Assets including loans and amounts investe in property development have ratios between 10% and 50%

(4.5) In 1990, the Commission issued a further Prudential Note 1990/91 which introduces a risk points system for mortgages with capital ratios increasing from 2% to 4% to 6% to reflect increasing credit risk for new types of mortgage.

(4.6) The capital ratios do not follow the Basle guidelines and hence currently are not sufficient to meet the requirements of the EC directive on solvency margins. Work produced by the Building Societies Commission does however indicate a broad equivalence of amounts of capital under the two systems in that areas where capital requirements are less than the Basle Agreement, for example mature mortgages, are balanced by areas where requirements are larger, for example fixed assets. It is the intention of the Building Societies Commission to issue updated guidelines in the very near future to fully implement the EC directive but these guidelines are not currently available (November 1990).

#### (5) COMMENTARY

##### (5.1) Theoretical Background

To a large extent the position mirrors the background for insurance company solvency margins, that is to say there is no theoretical background and ratios have been set by reference to practical considerations. This is clear in the EC directive that states "A level of 8% has been adopted following a statistical survey of capital requirements in force at the beginning of 1988."

(5.2) To test the practical application of the capital requirements it is necessary to assess whether shareholders can expect a return on capital utilised to support business of, say, 25% per annum. If we assume that the capital itself can be invested to earn 10% per annum and that a profit margin of between 0.5% and 1% can be obtained on the business assets supported by the capital then the ratio of those business assets to capital should be between 15:1 and 30:1. This gives a capital requirement of between 3% and 7% of total assets which is broadly consistent with the capital ratios that have been established.

### (5.3) Risks Covered

The primary risk in all of the considerations has been the credit risk associated with holding assets of any description. Basically the riskier the asset held in terms of the value placed on the asset and the ability of the institution concerned to realise that asset, the higher the capital ratio applied to that asset and hence the larger the free capital requirement for the institution to support the holding of the asset. There is reference within the Basle Committee work to the need for further work in establishing amounts required to be held in respect of interest rate risks but this is yet to be quantified. The practical application of the rules within the UK does make explicit reference to interest rate risk and indeed the capital adequacy report of the Building Societies Commission goes further in identifying, but not quantifying, other risks for building societies. The bulk of these risks are identified as not being susceptible to analytical treatment and thus requiring other forms of supervision.

### (5.4) Contrast with Life Assurance Capital Requirements

There is a close analogy between a bank accepting deposits from an individual and investing those deposits by lending them via a mortgage on residential property and a life assurance company offering a single premium bond to which non guaranteed bonuses are added each year with the premium being invested in residential mortgages. In both cases the basic solvency margin requirement is 4% so consistency appears to have been achieved (for the life assurance company there is a second element of capital requirement related to the sum at risk but for this product the amount involved is small). The application of the 4% does however differ in principle. For the bank it is applied to all assets held including "free assets". For the insurance company it is applied to the liabilities effectively restricting the capital requirements in asset terms to those assets matching the liabilities.

(5.5) It is instructive to consider how either institution could reduce its capital requirements. For the bank if lending in the form of residential mortgages is the prime criteria there is no way to reduce the capital requirement although it could be passed on to another institution via securitisation of the loan. However if it is a question of investing deposits the placing of those deposits in money market instruments or government securities would enable a reduction to under 1% or even 0%. For the life assurance company a reduction (at least within the UK environment) can be obtained by passing the investment risk to the policyholder by linking the value of the bond to the value of the assets rather than guaranteeing the nominal amount of the bond plus any allocated bonuses. This reduces the capital requirement to either 1% or 0% dependent upon other conditions attaching to the insurance contract. The capital requirements can also be passed on to a limited extent via reinsurance.

(5.6) Finally it is of interest to consider the other risks associated with these products. Residential mortgages are normally repayable on demand and thus match short term deposits or bonds. However this is matching in theory but not in practice as the ability to obtain repayment of a residential mortgage is limited. For the banks this implies a potential liquidity risk, particularly should mortgage lending become uncompetitive, in that deposits including interest to date are guaranteed in value and can be withdrawn on demand with no penalty. For the life assurance company this risk is significantly lower in that surrender values prior to the maturity of the bond may well not be guaranteed and bonuses are generally only added annually in arrears. In addition the life assurance company would normally have large volumes of marketable assets that could readily be liquidated with the residential mortgages being switched to match liabilities for other contracts. This would suggest the broad equivalents of capital requirements noted above should be adjusted in favour of life assurance companies.

## References

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- (3) Official Journal of the European Communities (No L386/14, 30.12.89): Council Directive of 18 December 1989 on a solvency ratio for credit institutions (89/647/EEC).
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- (5) Building Societies Commission (Prudential Note 1987/1): Capital Adequacy - A Framework for Assessment.
- (6) Building Societies Commission (Prudential Note 1990/1): Capital Adequacy and Class 1 Advances.