

The measurement of capital

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A Introduction and general considerations

1 In 1975 the Bank of England published the conclusions of a Joint Working Party which had been formed by the Bank and the London and Scottish clearing banks to examine the nature of capital and of liquidity and to develop principles for assessing their adequacy.⁽¹⁾ Two methods of assessing the adequacy of capital were outlined: a 'free resources' ratio and a 'risk asset' ratio. The first broadly relates current liabilities to capital resources, excluding that part of capital which is devoted to financing infrastructure and other non-banking assets. The second broadly relates the risk of losses which are inherent in the assets of the business to the capital which is available to finance such losses. The 1975 paper argued that the risk measure was the more useful, and in recent years the Bank has come to place increasing emphasis on it.

2 Since 1975 the Bank has been able to test the conclusions of the Working Party in the course of supervisory discussions with a wide range of individual banks; and in the summer of 1979 a consultative paper was circulated developing further the principles put forward in 1975. This paper was the subject of further thorough discussion with the banking community. The present paper incorporates the results of this consultation and establishes, for the purpose of the Bank's continuing supervision under the Banking Act, a basis for assessing the adequacy of capital of all deposit-taking institutions as protection against the risk of loss.

3 In general, the Bank's approach to the assessment of capital adequacy rests on the following considerations. It must be flexible, taking account of the particular character of each institution, and should have regard not only to the interests of depositors with individual institutions but also to the maintenance of confidence in the system as a whole. It is concerned essentially with the capital needs of a continuing business. It must also take account of the acknowledged division of responsibilities among supervisory authorities internationally.

4 Thus the Bank considers that to prescribe a precise numerical guideline for the capital needs of all institutions or for groups of institutions would be inappropriately inflexible. Such an approach would endorse overtrading by some companies and be harmfully restrictive to others. Furthermore, it is recognised that a sufficient flow of earnings is essential as a first defence against losses and as a source of fresh capital to allow a business to grow or even to maintain the scope of its operations during a period of

inflation. Profitability and other prudential considerations have their place within the assessment of capital adequacy so that, within a common framework for the measurement of capital applying to all institutions, the Bank's final assessment of the capital adequacy of a particular institution will involve qualitative judgments depending on the nature of its business. Within the field of supervised institutions there will therefore be a range of capital ratios regarded as adequate.

5 A broad international consensus has grown up in recent years that the primary responsibility for supervision of a banking institution rests with the authority of the country in which the head office of that institution is based. At the same time, it is also generally agreed that in assessing the capital adequacy and risk exposure of banking groups it is necessary to take account of the business of all the branches at home and abroad and all the wholly-owned and majority-owned subsidiaries engaging in financial business. In the case of UK-incorporated deposit-taking businesses, it is thus the Bank's approach in assessing capital adequacy to take account of their world-wide operations on a consolidated basis. The Bank also considers that deposit-taking subsidiary companies in the United Kingdom should be adequately capitalised in their own right. In addition to a consolidated measure the Bank will thus also have regard for the capital adequacy of individual deposit-taking companies within a group.

The objectives

6 The following have been identified as the two most important objectives of capital ratios:

- (i) to ensure that the capital position of an institution is regarded as acceptable by its depositors and other creditors; and
- (ii) to test the adequacy of capital in relation to the risk of losses which may be sustained.

7 The first objective makes it desirable that one of the measures of capital to be employed by the Bank should be constructed of elements as far as possible available to the public. Depositors and other creditors have to form judgments about the capital adequacy of an institution using published information, and their reaction to these judgments will have an important bearing on the stability of each institution. The second objective requires information, an important part of which is likely to be available only to the supervisory authority and the institution itself. And the more sophisticated the testing mechanism, the less likely it is that the information will be available to the public in the necessary detail.

(1) The paper was reproduced in the September 1975 *Bulletin*, page 240.

8 In the light of the discussions and consultation mentioned earlier, the Bank has reviewed the ratios currently employed and their components to determine to what extent these objectives are met. It has concluded that the first objective is broadly met by relating current liabilities to capital resources (the 'free resources' ratio, which will hereafter be called the 'gearing ratio'); and that for the purpose of supervision the second objective is the more important so that the risk measure of capital adequacy should take precedence. But the gearing measurement will have a place in ensuring that an institution is not running ahead of its probable capacity to sustain its business in normal circumstances.

9 On the construction of the ratios, the Bank has concluded that some modification of its traditional method of calculating the gearing ratio is necessary; and that some amplification of the simple outline of the risk asset ratio presented in the 1975 paper is required in order more adequately to reflect the degree of risk attaching to different classes of asset.

10 The remainder of this paper is concerned with the construction of these ratios: basic definition of capital, definition of capital and liabilities for the gearing ratio, and definition of capital and risk assets for the risk asset ratio. For neither ratio is any specific numerical guideline established. The Bank takes the view that to publish such numbers would allow insufficient flexibility to take account of the different circumstances of particular institutions. Publication could also impair the ability of an institution to raise fresh capital when most in need. The Bank's views on capital adequacy have been discussed with individual banks in confidence for some time past. This will continue. The guidelines that are evolving are not intended to be inflexible. However, the Bank is firmly of the view that over the longer term certain standards must obtain. It will therefore wish to be assured that in planning for expansion all deposit-taking institutions give due weight to maintaining an acceptable margin of capital.

B The capital base

11 The capital base will comprise the following:

(i) *Share capital*

The amount paid up (whether in full or in part) on the issued ordinary and non-redeemable preference shares. Share premium.

N.B. Authorised but unissued shares or the amount not paid up on any issued shares are *not* included. Redeemable preference shares are treated as subordinated loan capital (see below).

(ii) *Loan capital*

Loan capital which is fully subordinated to other creditors (including depositors), which has a minimum initial term of five years to maturity and incorporates no restrictive covenants: subject to a maximum of one third of the total capital base net of outstanding goodwill and to straight line 'amortisation' in the last five years of life (paragraphs 14-19).

(iii) *Minority interests*

When included in accounts as a result of the consolidation of subsidiary companies not wholly owned (paragraph 24).

(iv) *Reserves*

Balance on profit and loss account. General reserves, however described, including 'inner' reserves (paragraph 12).

(v) *Provisions*

General bad debt provisions, less any associated deferred tax asset (paragraphs 12 and 21).

N.B. Provisions against specific bad debts and for interest suspended, and provisions for deferred and current taxation, are *not* included (paragraphs 20, 22 and 23).

12 This definition of capital does not wholly accord with the objective of enabling depositors and creditors to see fully the position of an individual institution because inner reserves will not, and general bad debt provisions may not, be apparent to the public although their existence may be known. However, in the Bank's view, it would be unreasonable to disregard these important elements of capital in arriving at the gearing ratio; and for the risk asset ratio, it is accepted that the necessary information will not be fully available to the public.

13 This proposed definition of capital differs in its treatment of loan stocks and of provisions from that contained in the 1975 paper. The considerations that have led to these modifications are described below, together with a note on minority interests.

Loan stocks

14 The 1975 paper considered that the function of loan stocks is not to provide a reserve against losses but to finance part of the infrastructure of the business; and that such loan stocks should be subordinated and medium or long-term. This conclusion rested on the view that loan stocks are an inadequate substitute for shareholders' funds because of their impermanence and inability to absorb losses without precipitating a liquidation. The Bank has reviewed this approach to loan stocks in the context of a fresh look at the purposes for which capital is required and has concluded that the approach in the 1975 paper is too limited.

15 The following have been identified as the important purposes for which capital is required:

- (i) to provide a cushion to absorb losses;
- (ii) to demonstrate to potential depositors the willingness of the shareholders to put their own funds at risk on a permanent basis;
- (iii) to provide resources free of fixed financing costs;
- (iv) to be a suitable form of finance for the general infrastructure of the business.

16 Shareholders' funds are suitable for all these purposes. They carry no obligation for repayment and are available to absorb losses; they provide evidence of the commitment of

the shareholders to the company; there is normally no contractual obligation to pay dividends—and this characteristic, together with the stability of shareholders' funds, means that they are suited to financing infrastructure.

17 Loan stocks are less suitable for these purposes. They do not provide a reserve against losses for a business which continues to trade. They do not demonstrate to depositors a willingness of the shareholders to put capital at risk on a permanent basis; nor do they provide the same flexibility as that provided by shareholders' funds to pay or not to pay servicing costs. In times of low profitability loan stocks can impose a burden because of their fixed servicing costs. On the other hand, loan stocks, providing they are fully subordinated, do protect depositors against loss in a liquidation. There is, in a going concern, some reassurance to be gained from the presence of loan stocks, provided that they are medium or long-term, during periods of temporary loss: although they cannot be written down to absorb losses, their presence could enable the losses to be absorbed by ordinary capital and reserves with less threat to creditors' confidence in the institution. An incidental advantage of loan stocks is that where they are long-term and denominated in foreign currencies, they may improve the maturity and currency match between a bank's banking assets and liabilities. Thus it is clear that while the characteristics of subordinated loan stocks do not make them a full substitute for share capital, their presence can enhance the level of protection available to depositors.

18 The Bank has concluded that, subject to a limit referred to in the next paragraph, fully-subordinated loan stocks should be included within the capital base provided that they have a minimum initial term of five years and are subject to an 'amortisation' factor applied to loan stocks with less than five years remaining to maturity. This factor would discourage unduly short initial terms, soften the impact on capital ratios when loan stocks mature and are not replaced, and reflect the diminishing comfort afforded. In addition, the Bank will wish to ensure that loan stocks used as capital do not have performance or other unduly restrictive conditions attached to them which might trigger their immediate payment, probably when it could least be tolerated from a prudential standpoint.

19 The extent to which the capital base can prudently be enlarged by loan stock subject to the above conditions defies precise measurement. Clearly an institution with a given gearing and a given continuing rate of loss will survive for less time with positive net worth if its capital base contains a high proportion of loan stocks. How high a proportion is prudent must to a large extent be a matter of judgment. The Bank considers that the probability of losses of a size and a duration to cause real difficulty would not be perceptibly increased if subordinated loans were to form an amount not exceeding one third of the capital base net of outstanding goodwill. Institutions are, of course, not precluded from

issuing loan stocks in excess of this figure, but the Bank would not include such excess in the capital base when assessing the adequacy of capital.

Provisions

20 The 1975 paper included specific provisions against advances and provisions for suspended interest within its definition of capital. The Bank has reconsidered this and concluded that amounts set aside to cover possible or probable losses that have already been identified provide no protection against future unidentified losses and they should therefore be excluded from the capital base. By the exclusion of specific provisions the Bank does not wish to penalise the prudent institution. Indeed the Bank attaches great importance to the early identification of bad debts and the creation of adequate provisions against them. Supervision will seek to ensure that all companies employ prudent policies in this regard and apply them consistently.

21 The Bank is aware that opinions differ about the nature of the general provision. Some argue that it is designed to cover latent but as yet unidentified bad debts already in the balance sheet, while others claim that in practice it is an unencumbered resource akin to reserves. The Bank has concluded that, where it is satisfied that a general provision is freely available to absorb future losses, it is appropriate to include it within the Bank's definition of the capital base. This is in line with the 1975 paper.

22 The treatment of deferred tax provisions has recently been clarified by the accounting standard SSAP 15⁽¹⁾ which states that, in future, provision should not be made for potential tax liabilities on which there is judged to be no claim in reasonable prospect. In principle the Bank accepts that such additional sums as now accrue to reserves (instead of to deferred tax account) under the standard should form part of the capital base. It follows that where continuing provision is made for this purpose, the Bank would not include this provision in its calculation of capital.

23 However, the Bank has noted that for many institutions a substantial proportion of capital resources is subject to a potential tax liability. It is also apparent that, in their interpretation of the accounting standard, companies and their auditors have adopted widely differing views on the probability of the tax becoming payable. This disparity of treatment appears to arise both from the inherent uncertainty of the judgment directors are required to make as well as from differences in the underlying nature of the business conducted by particular institutions. This means that, for the purpose of assessing capital adequacy, unquestioning acceptance of each institution's practice could penalise those who choose to adopt a more cautious policy. In time and with greater experience, the Bank would hope that a more consistent treatment of deferred tax will develop. Until then the Bank will monitor closely the policies adopted, particularly in those cases where potential tax liabilities are large in relation to other capital and where

(1) 'Accounting for deferred taxation', *Statement of standard accounting practice No. 15*, The Institute of Chartered Accountants in England and Wales, October 1978.

the absence of provision is justified on the assumption that existing timing differences will be replaced by new timing differences in future years. If for any institution the profile of maturing deferred tax suggests that the potential crystallisation of a tax payment in any future year could only be met by a material reduction in reserves rather than from an existing provision, the Bank may wish to deduct a proportion of the unprovided potential tax liability in calculating the appropriate capital base.

Minority interests

24 Minority interests are included in the capital base for the assessment of group capital adequacy on the grounds that minority capital in a subsidiary is available to support the proportional part of the liabilities of the subsidiary which is included in the group consolidation. However, the Bank considers that minority interests do not provide support to the group in equal measure to that provided by the parent's own share capital since, unlike that share capital, the minority capital is not available to support losses elsewhere in the group. Accordingly, the Bank would propose to examine carefully all those cases in which minority interests contribute significantly to the consolidated capital base, and to consider whether some part of them should properly be excluded from the base.

C The gearing measurement

25 There are several possible gearing measurements, of which the simplest would be the ratio of the capital base to total liabilities (other than capital liabilities). The free resources ratio, however, incorporated some adjustments to the capital base. The Bank has reviewed these for the purpose of calculating the gearing ratio and has concluded that some of them tended to confuse elements of gearing, risk and liquidity in one calculation.

26 The Bank considers that the following deductions, which were referred to in the 1975 paper, should continue to be made:

(i) *Investments in subsidiaries and associated companies and trade investments*

Such investments are likely to be used as a basis for gearing by the affiliate, and unless some adjustment is made the capital in the parent will therefore be geared on twice. The preferred treatment in this case is to consolidate the business of the subsidiary and the parent, but when this is not done a deduction from the parent's capital is essential. Although not mentioned in the 1975 paper, lending to such companies which has the character of capital should also be deducted in full.

(ii) *Goodwill*

This is justified on the grounds of the uncertainty of the value of that part of the cost of acquiring an asset which exceeds its net asset value.

(iii) *Premises*

(iv) *Equipment and other fixed assets*

The argument for continuing to make a deduction of items (iii) and (iv) is that it is imprudent to employ depositors' funds to finance the offices from which banks operate and the equipment used in the business. The Bank has therefore concluded that a full deduction should continue to be made for the gearing ratio.

27 On the other hand, the following, which were commonly deducted in the free resources calculation (although not mentioned in the 1975 paper), are not considered appropriate deductions:

(i) *Unquoted investments*

This is one of the elements in which risk and liquidity are confused with gearing potential. These elements should be handled in the risk and/or liquidity measurement. For gearing purposes a total deduction is too harsh, particularly as some unquoted investments may be terminable fixed interest and in credit terms relatively risk-free.

(ii) *Connected lending (other than capital-type lending to subsidiaries)*

In practice it is recognised that connected lending is not homogeneous. The dangers are risk-related rather than gearing-related and are more appropriately observed in that context.

28 It remains to determine the non-capital liabilities ('public liabilities' in terms of the 1975 paper) to which the capital base, as adjusted, should be related in arriving at the gearing ratio. Past practice has been to take account only of deposit liabilities, although to this the Bank has traditionally added liabilities on acceptances. However, these definitions fail to take account of claims by other creditors. Furthermore acceptances, like other contingent liabilities, are more appropriately considered within the risk measure of capital adequacy; and the inclusion of acceptances (which are not always separately identified in published balance sheets) is inconsistent with the objective that the gearing ratio should, so far as possible, be capable of being calculated from published accounts. Thus for the purpose of the gearing ratio the Bank will measure the adjusted capital base against all other non-capital liabilities apart from contingent liabilities which are incorporated within the balance sheet.⁽¹⁾ This will effectively aggregate the claims of depositors and other creditors.

D The risk measure

29 Some of the deductions from the capital base made in the gearing ratio are equally appropriate for the risk asset ratio. Investments in subsidiary and associated companies, trade investments, goodwill, and investment in plant and equipment will be deducted as described in paragraph 26 (i), (ii) and (iv). The 1975 paper suggested, in addition, a full deduction for premises but argued that the ready saleability of the branches of clearing banks justified a lower

(1) The liability of the Scottish and Northern Irish banks for their own note issue will not be included to the extent that it is covered by Bank of England notes and by coin. Subordinated loan stocks, disallowed by the qualifying criteria for the capital base, will also be excluded.

proportion of capital cover in their case. The Bank now considers that if the risk asset ratio is to fulfil its role as a test of the adequacy of capital in relation to the risk of loss, considerations of liquidity (of which the saleability of premises is an example) should be dealt with in a different context. Judged simply in terms of capital risk, bank premises are no more vulnerable to loss than other property assets. For the risk asset calculation, premises will therefore not be deducted but will be treated like other balance sheet assets. In calculating the capital base for the purpose of the risk measure, the Bank will have regard to any genuine hidden values in the balance sheet and to any over-statement of assets in relation to their market value.

30 In outlining the risk assets approach to the assessment of capital adequacy, the 1975 paper did not attempt to grade the risks incurred by banks and only identified three broad classes of risk assets: those with credit risk, those with forced sale risk, or those with a combination of both. The increased emphasis the Bank proposes to devote to this measure requires a more detailed differentiation between the degrees of risk attaching to various categories of asset. Consideration has also been given to whether there would be advantage in going further and attempting to incorporate additional risks such as fraud and other operational risks or concentrations of exposures on special sectoral and geographic risks. The Bank has concluded that to encompass all these elements within a single calculation would involve the construction of an excessively elaborate model whose appearance of accuracy could be dangerously misleading.

31 It is now intended that the standard risk asset calculation will take into account three types of risk inherent in the assets themselves but that weightings should be applied to different assets reflecting the extent to which they are susceptible to these risks. The three types of risk are:

- (i) *credit risk*—the risk that claims on others may not be redeemable at the due date at their full book value;
- (ii) *investment risk*—the risk that marketable claims on others, or directly held assets, may depreciate below their book value;
- (iii) and as a further element within investment risk *forced sale risk*—the risk that actual and additional losses may be sustained because of the need to make untimely sales of assets which, depending on the narrowness of the market, may yield less than their quoted value.

32 This does not mean that the Bank will ignore the other risks already mentioned. In looking at the capital position of a particular institution the Bank will assess the risk asset ratio in the light of the perceived exposure to these other risks. This will involve a series of qualitative judgments and as a result there will be a range of ratios regarded as adequate according to the character of each institution's business. The assessment will also have regard for any marked divergence from the ratios which may obtain among similar institutions, and for changes over time in the ratios of particular institutions.

33 Each category of asset currently identifiable from statistical returns has been reviewed and a factor representing a risk weight has been ascribed to it. These weights attempt to reflect the relative risk of loss arising from credit or investment and forced sale risks inherent in a particular class of asset. For this purpose commercial advances are taken as a benchmark to which a weight of unity is therefore ascribed. The risks attaching to other assets may be less or more than those attaching to commercial advances. Thus, for example, the weight ascribed to market loans to listed banks is 0.2 and the weight attached to property is 2.0. A full classification of assets together with the risk factors attaching to them are contained in Appendix A to this paper. The risk asset ratio is calculated by multiplying each balance sheet asset by its weight to produce an adjusted total of risk assets and then establishing the proportion of this total represented by the capital base as modified by the items requiring a deduction. (A summary of the method of calculation is contained in Appendix B). This calculation represents only the first step in the assessment of capital adequacy by this method. Final assessment will take into account the particular circumstances of each institution. For example, the large institution with a well diversified spread of high quality lending will inherently be less exposed to risk, and therefore requires relatively less capital cover against its assets, than the small specialist institution with a narrower customer base.

34 Present statistical returns cover only assets held by the UK offices of reporting companies. They thus, for example, exclude assets held by overseas branches and subsidiaries of British banks. The Bank attaches importance to assessing the adequacy of capital against the consolidated total of risk assets. Discussions will therefore be held with those affected in order to agree an appropriate statistical framework for the classification of assets held abroad.

Appendix A

Classification of assets and risk weights held by UK offices of reporting banks

(i) Nil weight	<ul style="list-style-type: none"> Bank of England notes and UK coin Other sterling notes Balances with Bank of England Special deposits with Bank of England Debits in course of collection on banks in the United Kingdom Balances with overseas offices of the reporting bank Lending under special schemes for exports and shipbuilding Certificates of tax deposit Items in suspense Refinanced lending at fixed rates Gold physically held in own vaults Gold held elsewhere on an allocated basis
(ii) 0.1 weight	<ul style="list-style-type: none"> Foreign currency notes and coin UK and Northern Ireland Treasury bills
(iii) 0.2 weight	<ul style="list-style-type: none"> Debit items in course of collection on overseas banks Market loans with listed banks, discount market, etc. Market loans to UK local authorities and public corporations Balances with banks overseas with a maximum term of up to one year (including claims in gold) Bills other than UK and Northern Ireland Treasury bills Other loans and advances to Northern Ireland Government, UK local authorities, public corporations and other public sector British government stocks with up to eighteen months to final maturity Acceptances drawn on UK and overseas banks and UK public sector Claims in gold on UK banks and members of the London Gold Market
(iv) 0.5 weight	<ul style="list-style-type: none"> British government stocks with over eighteen months to final maturity Northern Ireland government stocks UK local authority and other public sector stocks and bonds Acceptances drawn on other UK and overseas residents Guarantees and other contingent liabilities
(v) 1.0 weight	<ul style="list-style-type: none"> Market loans placed with other UK residents Other loans and advances, net of specific provisions for bad debts, but excluding connected lending Assets leased to customers Working capital provided for overseas offices of the reporting bank, both in the form of deposits and in other forms Balances with banks overseas with a term of one year or over (including claims in gold) Claims in gold on non-banks Aggregate foreign currency position (to be defined in the Bank's paper on 'Foreign Currency Exposure') Other assets 'other', e.g. silver, commodities and other goods beneficially owned by the reporting bank Other quoted investments, not connected
(vi) 1.5 weight	<ul style="list-style-type: none"> Connected lending (to be looked at case by case and to exclude market-type lending where this can be separately identified) Unquoted investments (subject to case-by-case treatment)
(vii) 2.0 weight	<ul style="list-style-type: none"> Property (includes all land and premises beneficially owned by the reporting bank)
Items to be deducted from capital	<ul style="list-style-type: none"> Plant and equipment Intangible assets Investments in subsidiary and associated companies and trade investments

Appendix B

Composition of gearing and risk asset ratios

	<u>Gearing ratio</u>	<u>Risk asset ratio</u>	<u>Notes and definitions in text</u>
1 Capital base		Share capital Loan capital Minority interests Reserves General provisions	Paragraph 11
2 Adjustments to capital base <i>Deduct</i>	Investments in subsidiaries and associates Goodwill Equipment Premises Other fixed assets	Investments in subsidiaries and associates Goodwill Equipment Other fixed assets	Paragraphs 26 and 29
3 Adjusted capital base (1 - 2)			
4	Deposits and other non-capital liabilities		Paragraph 28
5	Gearing ratio (3 : 4)		
6		Adjusted total of risk assets	Derived from the application of the risk weights in Appendix A
7		Risk asset ratio (3 as percentage of 6)	