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FINANCIAL ANALYSIS OF BANKING INSTITUTIONS

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The paper is intended to guide non-bankers, especially economists working on Investment Centre missions, on the application of the tools of financial analysis in project work. Other books, particularly "Banking Institutions in Developing Markets" Volume 2 (by Chris J. Barltrop and Diana McNaughton), World Bank, Washington, deal extensively with interpretation of financial statements. Although I owe an intellectual debt to the authors, I do not pretend that I have necessarily covered all of those aspects of financial analysis, or that I have covered them in comparable depth. The aim is rather, to provide a simple guide of practical relevance to those concerned with analysis of the financial condition and financial performance of banks.

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CONTENTS

CHAPTER 1. INTRODUCTION.....	1
CHAPTER 2. SAVINGS	4
Demand Deposits	4
Savings-Passbook	5
Interest Rate Policy.....	7
Rediscounting Policy	7
Branching Policy	8
Reserve Requirements on Deposits.....	8
Tax on Depositor's Interest Income	8
Deposit Insurance	8
Improving Savings Mobilization	9
Policy Alternatives Towards the Informal Market.....	10
Protection of Small Savings	10
CHAPTER 3. LENDING	11
Loan Concentration	12
Lending to Related Parties	12
Loan Quality	12
Total Recovery Rate.....	15
Ageing of Overdues	15
Recovery Profile	16
CHAPTER 4. CAPITAL ADEQUACY	17
Capital Adequacy Ratio.....	17
CHAPTER 5. LIQUIDITY	20
Cash Ratio	20
Loans to Deposit Ratio	21
Loans to Assets Ratio	21
CHAPTER 6. EARNINGS PERFORMANCE.....	23
Measures of Profitability	23
Return on Assets	23
Return on Equity.....	24
Return on Loans.....	25
Return on Investments	25
Interest Spread	25
Net Interest Margin	26

Other Operating Income to Total Assets	27
Intermediation Margin.....	27
Net Income per Staff.....	28
Net Income to Staff Expense.....	28
Lending Risks.....	28
Composition Analysis of the Income Statement	30
Subsidy Dependence Index.....	31
SDI Analysis	31
Components of SDI.....	32
CHAPTER 7. CONCLUSIONS AND RECOMMENDATIONS.....	33
Analysis of Financial Statements	33

TABLES

- 1. The Agbank Balance Sheet**
- 2. The Agbank - Income and Expenses Statement**
- 3. The Agbank: Cash Flow Statement**
- 4. Subsidy Dependence Index for PBDAC**
- 5. Performance Analysis of AB Bank**
- 6. Financial Performance Ratios**

FINANCIAL ANALYSIS OF BANKING INSTITUTIONS

CHAPTER 1. INTRODUCTION

1.1 The distinguishing features of state-owned banks, whether agricultural, industrial or multipurpose are their dependence on Government and external donors for resources at concessional interest rates, availability of larger subsidy than non-public banks, offer of narrow range of financial services (for example, they do not accept demand deposits on a significant scale, do not provide money transfer services and do not have safe custody facilities) and political pressure to lend to risky or uncreditworthy borrowers with consequent default rates running high. They also have ready access to government resources generally at low cost. As a result, they feel little pressure to be operationally efficient, to strictly enforce loan recovery or to mobilize savings of rural populations. They serve generally as intermediaries between the Government and the rural sector instead of savers and borrowers.

1.2 Given their wider social responsibilities and the use governments make of them in carrying out macroeconomic policies (both of which are likely to conflict with profitability), it is unsatisfactory to assess their performance solely or even mainly in terms of earnings performance. In a private sector bank, profitability may be an acceptable way of assessing both efficiency and effectiveness but it is a very partial measure in a state-owned bank, whether agricultural or otherwise.

1.3 The degree of earnings in these banks is determined mainly by the margin between the funding costs and lending rates, which in turn are strongly influenced by the policies of the government. The capital of the bank is contributed by the government, and the central bank supplements this funding with low-cost funds to finance its lending business. These lower costs are designed to reduce the impact for higher costs and greater risks of agricultural lending on the ultimate profitability of the bank. Assessment of the bank's performance in terms of earnings level may thus reveal more about government policy than about the bank's own efficiency. Further, it ignores the wider economic and social responsibilities of the banks. It is therefore important to get away from the idea that it is possible to encapsulate an agricultural bank's performance as a whole in a single figure of profitability. A variety of performance indicators would be necessary to reveal the different aspects of its performance. These indicators would be built around the concept of prudent banking.

1.4 Prudent banking, agricultural or otherwise, involves the development of adequately diversified portfolios of loans and investments (which are generally the risk assets) through the avoidance of over-concentration, either geographically and/or by sector, in loan portfolios, and liabilities, on a large enough capital base, and with sufficient liquidity to ensure the protection of depositors and investors and an adequate supply of funds to borrowers and profits to investors.

1.5 This paper is intended to provide an improved analytical framework to present the different aspects of performance. The framework divides the analysis into five different but interrelated aspects of the health of the institution, and uses a time-series to analyse any positive or negative trends. The five divisions are:

- (i) **Deposit mobilization** which is central to the success of a financial institution. It provides independence from the political pressures associated with government funding. Apart from contributing to sustainability and mobilization of investment resources, deposits provide security to depositors against future adversities and help build financial discipline and creditworthiness of individuals (regular transactions build up a lender-borrower history, and accumulated deposits can be used to support loans).
- (ii) **Quality of lending** which focuses on the most critical part of the bank's financial analysis and requires uniform supplementary data usually not provided in the published accounts. The main points to be reviewed are access to formal credit, risk concentration, portfolio classification, interest accrual and provision for loan losses.
- (iii) **Capital adequacy analysis** which determines the quality of assets and the adequacy of provisions since any overvaluation of assets or shortfalls in loan loss provisions will overstate capital. It expresses capital as a percentage of total risk-weighted assets and shows the margin of protection available to both depositors and creditors against unanticipated losses that may be experienced by the bank.
- (iv) **Liquidity analysis** which quantifies the ability of the banks to meet debts as they fall due. This ability depends not only on the extent of conversion of assets without loss but also on the bank's ability to raise loans in the market to meet debts, that is the broader aspects of asset and liability management.
- (v) **Earnings performance analysis** which determines if the bank's operation is generating adequate returns on the assets and equity. As most of the agricultural banks are in the public sector, the analyst may not generally pay much attention to return on equity. Considering the emerging trends towards privatisation, however, it is appropriate to introduce emphasis on return on equity.

1.6 For the purpose of a bank's financial analysis, it is important to use a consistent framework for developing its performance indicators. The analytical

framework normally used in this process is a set of financial accounts. Financial statements are therefore the starting point of bank financial appraisal. The term 'financial statements' refers to balance sheets, profit and loss (or income) statements, cash flow statements and other statements and material which collectively are intended to give a true and fair view of the financial position and results of operations of a bank. A true and fair view implies appropriate classification and grouping of the items in the financial statements. It also implies the consistent application of generally accepted accounting principles. Before starting an analysis of the financial statements, their usefulness and reliability must be checked by their consistency with generally accepted accounting principles (as defined by the International Accounting Standards Committee [IASC]); national accounting policies; the legal and regulatory framework; inflation accounting standards based on Accounting Standard 29 of the IASC; an auditor's report, particularly when qualified, for example, in respect of a change in accounting policies, inadequate provisions for losses and unrealistic revaluation of assets; and the reasons for change of auditor, if any.

1.7 To ensure reliability of these statements, it is necessary to have them audited by auditors who are independent (of the control of the entity to be audited and of the person appointing them), experienced, competent and reputable, using procedures and methods that conform with the relevant national standards or practices established within the country on the entity's annual financial statements which are prepared in accordance with International Accounting Standards or relevant national standards for banks. This process of examination and verification (i.e. audit) normally results in a written opinion and report by the auditor, indicating the extent to which the financial statements and supporting information reports provide a true and fair view of the financial condition and the financial performance of the bank. Audited statements for at least three to five financial years and the accompanying notes would be detailed enough to allow meaningful analysis. Provisional financial statements can be accepted pending audit provided they are certified by the management. It must, however, be remembered that the publication of financial statements generally takes place 6-9 months after the close of the financial year and the exclusive dependence on these statements may not reflect a realistic up to date performance, unless supplemented by internal management accounts.

1.8 The overall analysis presented in this paper is largely based on the financial statements of a sample bank (Agbank). The balance sheet profit and loss statement and the cashflow statement of the Agbank are given in Tables 1, 2 and 3 respectively.

CHAPTER 2. SAVINGS

2.1 A bank's major role is to raise funds largely through deposits and equity, and invest them in productive assets. The resulting differential interest income (interest earnings on assets minus interest costs on deposits) will go to meet operating costs including loan provisions and provide the institution with its net earnings. An agricultural bank or development bank is funded mainly with debt rather than deposits and interest on debt is as much a cost as interest on deposits.

2.2 A bank mobilizes savings in a variety of forms - savings account, time deposit account, and certificate of deposit. Deposits can be classified by ownership (private, public or inter-bank), and form of withdrawal (savings, time or demand deposits). Because deposits are so important to the profitable operation of a bank, most banks tend to compete aggressively for them.

2.3 **Savings deposits** have no specified maturity and no contractual provisions that require the depositor to give written notice of an intention to withdraw funds.

2.4 **Time deposit** contracts are distinguished from demand and savings accounts by provisions specifying maturity or other withdrawal conditions. A time deposit is a deposit which has a written contract with the depositor that neither the whole nor part of it may be withdrawn prior to the date of maturity, which could vary from 30 days to 5 years after the date of the deposit. If funds are withdrawn prior to maturity, the depositor will forfeit interest specified by the bank.

2.5 A **Certificate of deposit** is a deposit evidenced by a negotiable or non-negotiable instrument (certified) that provides on its face that the amount of each deposit is payable either on a certain date specified in the certificate or at expiry of a specified period not less than 30 days after the date of the instrument.

2.6 The major factors helping the attraction of different types of deposits are set out below.

Demand Deposits

2.7 The aggregate amount of demand deposits at any given time is the result of central bank's monetary actions controlling the money supply. Each bank has to compete for its share on the basis of services rendered to the depositor, since interest is not paid on these current account balances.

2.8 Banks generally calculate the costs of services to ensure that the value of the related deposits compensates them for that cost and provides a profit margin.

This is done by calculating a service charge representing the actual cost plus profit margin and offsetting this charge, in whole or in part by an earnings credit. Both the service charges and earnings credits are competitive rates, representing the value of the funds to the bank. The net cost to the bank of services rendered (to depositors) reflects its cost of money for those deposits. The most successful bank will be the one that can produce the needed services at the lowest cost and thereby market its services at the lowest price and still maintain an adequate profit margin. Of equal importance in attracting demand deposits is the willingness to lend. This is another important service that banks perform for its customers who maintain sizeable demand deposit balances.

Savings-Passbook

2.9 To compete successfully in the savings market, banks will have to go beyond mere convenience and offer additional incentives. The special purpose account (for example Investment Savings account in Sri Lanka qualifying depositors for housing loans after regular savings of fixed amounts for a specified period) has blossomed into a popular one to save 'to build a house'. Similar accounts for education are being offered. People save for pre-determined reasons. Interest earned is secondary. The reason may be general or specific but the process should be made easy, attractive and convenient. For savers who are interest conscious, the Savings Certificate may be an attractive option to passbook savings. They are usually sold in minimum denominations of a specific amount. Interest may be paid monthly or quarterly or in some cases accumulated to maturity.

2.10 The assumption that farmers and rural poor have no savings has been seriously challenged in recent years. Farmers and the rural poor can and do save, albeit in small amounts of cash and more in kind like cattle, jewellery or food grains. There is potential for savings mobilization in rural areas. Several actions need to be taken:

- there may be a need to change attitude to thrift of rural population through savings campaign with mobile facilities;
- provision of convenient access for deposits and withdrawal at outlets close at hand;
- introduction of innovative savings instruments, tailored to the appeal of the rural populations with low literacy including contractual deposits;
- measures that enhance commercial banks to mobilize savings in general (by expanding branch network) and improve their services; and
- maintenance of the safety of savings programme.

2.11 Savings mobilization can be monitored using the following indicators:

(i) Proportion of deposits from rural areas to total number of deposit accounts.

$$\frac{\text{No. of deposit accounts in rural areas}}{\text{Total no. of deposit accounts}} \times 100$$

This shows the relative share of deposit accounts generated from the rural areas in the total number of deposit accounts of an institution. An increase in the value of this variable also indicates the extent to which efforts to mobilize rural savings are intensified with success.

(ii) Proportion of deposits from rural areas to total amount of deposits.

$$\frac{\text{Amount of deposits from rural areas}}{\text{Total amount of deposits}} \times 100$$

This shows the relative share of rural deposits in the total volume generated by the banking institution.

(iii) Average amount of deposit.

$$\frac{\text{Amount of deposit}}{\text{No. of deposit accounts}}$$

This could be computed for rural and urban accounts.

Transaction cost of small savings are higher compared to larger savings. Can Agribank afford to do this while engaged in small lending which also carries higher cost? One solution to this problem seems to be in the institutional linkages between the bank and village-level financial self-help groups.

2.12 The main factors which influence deposit mobilization by financial institutions include the interest rate, re-discounting, branching and other policies adopted by the central banks.

Interest Rate Policy

2.13 Nominal interest rates have been rigid and no significant changes occurred until about 1977, with sharply fluctuating rates of inflation. Ex-post real interest rates have varied considerably. Deposit rates have in most years been negative. The interest rate structure thus created little incentive for commercial banks to mobilize time deposits. This has led to a growing recourse to refinancing from the central banks to finance priority sectors. The implications of interest rate policy for deposit mobilization and the adequacy of financial instruments that are currently available will need to be evaluated. For example, in Bangladesh an increase in real interest rates from 0% to 5% between FY1975-1977 raised the ratio of monetary assets to GNP by some 2-3% over a period of two years or equivalently raised financial savings by roughly Tk1 billion (0.5% of GNP) during the two year period. While relatively small in absolute terms, this is quite significant when compared to an estimated national savings rate of 4.5% of GNP. With regard to the adequacy of financial instrument, it is useful to draw a distinction between urban and rural demand for financial assets. In the urban areas there is a need to identify the types of new instruments e.g. certificates of deposits, which may have a significant market particularly for higher income groups and/or workers' remittances from abroad. The demand for financial assets in rural areas poses particular problems. The volatility of income in the rural areas implies a greater concern for liquidity in household portfolio preferences and some thought on the design of appropriate financial instruments.

2.14 The prevailing range of interest rates on the banks in many countries has largely been influenced by the authorities, that is through the Bank and Treasury bill rates set by the central banks.

Rediscounting Policy

2.15 Banks have been induced to channel loans to preferred sectors, from funds provided by the central bank at concessional interest rate. The availability of low-cost funds through rediscounting is considered a major factor discouraging banks from mobilizing deposits which cost more. For example, the resource structure of the Philippines' rural banking system from 1973-1982 revealed heavy reliance on borrowings from the Central Bank, with borrowings accounting for nearly 50% of their total resources. The much lower share of deposits of rural banks compared to borrowings demonstrated that they operated more as credit retail outlets of the Central Bank rather than as intermediaries between rural savers and borrowers.

2.16 Following financial sector reforms, the central banks have deregulated interest rates and implemented policy changes to discourage dependence on central bank funds.

Branching Policy

2.17 The performance of financial savings is in part due to the extensive branch network of the banking system. As a result the access to financial services in rural areas has improved considerably in the last decade. The number of branches of commercial banks operating in rural areas of India, Bangladesh, Sri Lanka and elsewhere has expanded. A study in Philippines found that bank presence has not significantly influenced financial savings in the districts. Most of the rural branches are concentrated in the relatively more developed areas/commercial centres, apparently dividing the deposit market among the institutions in the locality. To foster competitive efficiency in deposit generation, it is preferable to allow setting up of new branches in high density areas rather than discontinue them.

Reserve Requirements on Deposits

2.18 Reserve requirements against deposit liabilities have been used as a policy instrument for controlling banks' liquidity. While enabling the authorities to maintain monetary aggregates at desired levels, reserve requirements influence the banks' intermediation costs. Even as banks incur interest costs on savings and time deposits, a proportion of such funds must be held in the form of lower-return assets to comply with regulations. Reserve requirements are differentiated by the type of deposit-taking institution and in some cases by type of deposit liability. In view of their lower reserve requirements, specialized financial institutions and rural banks are allowed to lend more per unit of deposit than commercial banks. This policy is supposed to be designed to encourage deposit mobilization in rural areas. However, it is seen that the impact of other more innovative approaches to rural deposit mobilization has been greater.

Tax on Depositor's Interest Income

2.19 In some countries, such as Philippines, the Government levies a uniform tax rate on interest income from deposits for all banks whether urban or rural. Tax on interest income normally works as a disincentive to depositors. It promotes the breaking up of fixed deposits into minimum units and the distribution of such placements among several banks, thereby increasing the bank's per unit costs of servicing the fixed deposits. Only large depositors are likely to benefit.

Deposit Insurance

2.20 To promote depositors' confidence in the banking system through deposit insurance, State insurance companies were created to insure deposits in current, savings and time deposits. Member banks pay a premium fee of a specified

percentage of their deposit liabilities, net of allowable deductions. In return, depositors are guaranteed to be paid up to a fixed amount, which varies from country to country. The maximum guarantee payment for deposits is raised from time to time as part of a strategy to provide security to small depositors.

Improving Savings Mobilization

2.21 Although statistically not documented, there are indications that savings in cash or kind in the form of cattle, foodgrains, jewellery or other inflation hedges are still a widespread phenomenon, particularly with the poorer segment of the rural population. This shows that, despite much progress in mobilizing rural deposits, there is still scope for further efforts by adopting more flexible interest rate policies and promoting a more competitive financial system. At present, there exist several distortions that hinder savings mobilization by the rural financial institutions.

2.22 **Absence of level-playing field:** The preferential interest rate offered by the state-owned savings banks is a serious distortion. These preferential rates are fixed by the Government without reference to the market forces. Savings banks compete with commercial banks for deposits at whatever rate is necessary to maintain their market share regardless of cost considerations. The savings banks have no incentive to reduce deposit rates to levels consistent with the yield on its assets, which are Government-bonds because the resulting negative differential is met by transfers from the budget. These savings banks are exempt from reserve requirements, have a risk-free asset portfolio, have no obligation to make profits and would be expected to have lower administrative costs than commercial banks. These banks are 'used' by the Governments to collect savings and also to finance budget deficit. The question is whether the Governments could not raise equal, if not more, deposits at lower costs by selling some type of government securities directly to the public at market rates.

2.23 **Link between savings and lending:** A common obstacle in the financial systems of many counties is the poor link between savings and lending activities, particularly within rural financial institutions. This is in part due to the existence of specialized savings and credit institutions like National Savings Bank and the National Development Bank in Sri Lanka, and in part due to concessional loan schemes and refinancing facilities for preferred sectors, which reduce the effort of banks to mobilize savings for rural lending. This situation is further exacerbated by the existence of below-market level of interest rates for rural credit, which would not allow the coverage of high transaction cost and greater risks in lending to small farmers, micro-enterprises and women.

2.24 **Outflow of savings from rural areas:** Savings mobilized in rural areas are generally not fully lent locally but transferred to urban areas. This is partly

explained by low prices received by farmers for their produce which diminish their ability to use financial markets, less willing to borrow, less able to repay loans and have lower capacity to save. The non-utilization of rural savings in rural areas can be eliminated by improving the terms of trade in favour of agricultural sector.

Policy Alternatives Towards the Informal Market

2.25 The relative success of informal institutions is largely due to their insulation from control from the authorities unlike formal financial institutions which are regulated and supervised. For this reason, any kind of external assistance is contradictory to the internal logic and economic rationale of informal groups which derive their relative economic advantages against formal institutions just from their independence from the Government and other organizations including donor agencies. Donor agencies have pursued the approach of concessional credit for special target groups and women within the poorer segment of the population. The assumption was that these target groups lacked saving capacity. Experience suggests that, in practice, target groups have seldom benefited by these concessional loans. Production in the informal sector was confined to be financed internally or with loans from the informal sources at interest rates higher than those prevailing in the formal sector.

Protection of Small Savings

2.26 Unlike savings in formal institutions, most savings schemes with micro-credit programmes and NGOs are not regulated, raising concerns with their safety. While it is not cost-effective to supervise the typical NGO-sponsored savings mobilization schemes on the same basis as banks, there are other cost-effective guarantor/supervision approaches. One would be voluntary self-regulation (as done by professional accountancy bodies) by establishing a "monitoring body" by the participating NGOs. Another would be the setting up of an appropriate auditing institution not structured like the accounting firms but at a lower level to give cost-effective audit of organizations like micro-lending programmes. Yet another method would be to follow Indonesian example and give the supervision of these programmes and NGOs to a premier bank of the country. Whatever the method, a high priority on the welfare of savers requires a cost-effective guarantee/supervisory mechanism.

CHAPTER 3. LENDING

3.1 **Access to Formal Credit.** In evaluating the performance of a banking institution, it is important to assess the extent to which farmers, for example, have availed of institutional credit. In quantifying this 'access' criterion, the following performance indicators can be used.

(a) **Number of agricultural loans disbursed to total loans disbursed.**

$$\frac{\text{No. of agricultural loans disbursed}}{\text{Total No. of loans disbursed}} \times 100$$

The banks generally compile data on the number of loan accounts rather than the number of borrowers. It is sensible to use the number of loan accounts for indicators particularly because an individual borrower can borrow for agricultural purposes as well as non-agricultural purposes.

(b) **Proportion of agricultural loans disbursed to total amount of loans disbursed.**

$$\frac{\text{Amount of agricultural loans disbursed}}{\text{Total amount of loans disbursed}} \times 100$$

It is important to interpret indicator (a) along with (b). For example, if (a) is decreasing over time while (b) is increasing, it means fewer agricultural borrowers are receiving bigger size of loans. On the other hand, if (a) is increasing over time while (b) is decreasing, it means that more agricultural borrowers are receiving loans but at smaller size per borrower.

(c) **Average amount of loan disbursed.**

$$\frac{\text{Amount of loans disbursed}}{\text{No. of loans disbursed}}$$

This average could reinforce the trend revealed in (a) and (b).

Similar ratios as above [(a), (b) and (c)] can be calculated for loans outstanding.

(d) **Distribution of loans by size of farms.** The majority of banks does not compile data to determine the distribution of loans by farm size,

i.e. whether the loans are accruing to `small' or `big' farmers. This is a useful data to assess beneficiary impact of loans disbursed by banks.

- (e) Distribution of loans by land tenure. Most of the Asian farmers either lease their farms from the owner or work in owners' land on a sharecropping basis. Leaseholders and sharecroppers are hardly served by banking institutions. The dearth of information on loans distribution by land tenure is a barrier to assessment of the extent to which leaseholders and sharecroppers have gained access to institutional credit.

Loan Concentration

3.2 Prudent banking generally stipulate ceilings on loans approved to any one borrower or group of related borrowers of between 10% and 25% of unimpaired capital. Similar risk diversification policies are also adopted by banks in respect of exposure to particular economic sectors to ensure that problems in one particular sector do not cause excessive losses through the simultaneous failure of many smaller borrowers. Specialized banks such as agricultural banks are particularly vulnerable to risk concentrations in both assets and liabilities.

Lending to Related Parties

3.3 A major source of bank failures has been irrecoverable loans that were made to related companies or individuals. Loans to affiliated companies, shareholders or directors are not always made on a strictly commercial basis and represent a potential source of impairment of the bank's capital.

Loan Quality

3.4 **Portfolio Classification and Provision for Loan Losses.** This more refined approach provides a review of the risk asset portfolio classified by degree of risk and may include an analysis of the adequacy of loan provisions. The value of the loan portfolio and hence of the bank's equity will only be fairly stated if the loan provisions correctly adjust the book value of loans to the recoverable value. This analysis classifies risk assets (loans, advances, overdrafts, guarantees, investments, etc.) by performance (e.g. repayment performance and financial position of the borrower) to provide the basis for estimating provisions for possible losses. Classification guidelines vary from country to country, but the most common practice is to divide the portfolio in the following four categories:

- (i) **Normal risk assets** which are problem-free and are performing according to the agreed amortization schedule;
- (ii) **Sub-standard assets** performing satisfactorily at present, but certain indicators suggest that some potential difficulties may arise (e.g. losses on recent operations, deficiency in documents);
- (iii) **Doubtful assets**, in respect of which a non-performance has occurred; and
- (iv) **Loss** in which all or a part of the loan is not expected to be recovered.

For each of the above categories, provisions for possible losses are created representing an estimate of losses. It is necessary to review the provisioning guidelines and decide if they represent a realistic estimate of the potential portfolio losses.

3.5 Loan Provision. The recommended practice is to establish 'General Reserves' corresponding to the percentage of currently normal loans that historical analysis shows eventually become troubled. This percentage can be one or above depending on the long-term effectiveness of the bank's risk management process. The Basle Committee recommendations allow for such general reserves to be counted as part of the equity for the determination of capital adequacy. Specific reserves or provisions should be established on the substandard, doubtful and loss categories. Typically, a percentage (based on historical experience) of sub-standard loans would be used plus full provisions on all loans classified as loss, with a case by case analysis and rough estimates determining the amount to be allocated against doubtful loans.

3.6 Overdraft Financing. Overdraft financing, whereby banks let customers overdraw their current accounts, is a common form of financing in many developing countries. Evaluating such financing in the absence of strong regulatory rules and system is difficult. Generally, an overdraft account should be considered non-performing and appropriate provisions made if:

- (i) the account has been inactive for 180 days or more (i.e. either there has been no deposit or deposits have been less than the interest accrued for that period);
- (ii) the outstanding balance exceeds by more than 10% the authorized limit for 60 days or more;
- (iii) there is an overdraft outstanding for 90 days without any authorized limit; and

- (iv) the authorized limit has been cancelled or the customer is under foreclosure proceedings.

3.7 **Collection Analysis.** It is necessary to determine how much of the amounts due are actually collected in cash in a year. Banks should, at a minimum, demonstrate a collection rate which - given its lending margin - avoids erosion of capital. For this purpose, the following three ratios are calculated using the suggested outline given below.

- (i) arrears collection rate (total principal and interest amount collected against arrears at the start of the year as a percentage of total arrears at the start of the year);
- (ii) current collection rate (total amount of principal and interest collected against amounts falling due in the year as a percentage of total amounts due in the year); and
- (iii) total collection rate (total amount of principal and interest collected during the year as a percentage of total of arrears at the start of the year and falling due during the year).

The total of ratios (i) and (ii) should equal (iii).

- 3.8 Other measures used are:
- (a) ageing of overdues; and
 - (b) recovery profile.

3.9 These measures will have to be interpreted carefully. Firstly, early starters in lending carry overdues in their books dating back to several years. Measurement of loan recovery by using recovery rate is likely to give a very poor picture of these institutions. This can, of course, be overcome by using the alternative measure of ageing of overdues although this measure has at least three disadvantages. One is that ageing only identifies a loan as troubled once payment is overdue, as opposed to when future payment becomes questionable as is the case with portfolio classification system (para. 3.4). Another drawback is that ageing understates the extent of the problems in loan portfolio as it does not capture borrowers' other commitments which are on time but may be at risk of non-payment. Finally overdue loans may be rescheduled, even though the chances of recovery may not have improved. Secondly, there can be no uniformity in accounting policy relating to interest accrual. Cooperatives generally levy interest on loans on a simple interest basis while commercial banks charge on compounding basis. As a result, book balances of overdue loan accounts would be higher for the same amount of loan in a commercial bank than in the books of cooperatives. Thirdly, credit institutions can and do 'recover' old loans by granting new loans by

way of renewal or rescheduling. Fourthly, there are difficulties in making comparisons of recovery performance of short-term loans due to the possibility that roll-over facilities may be partially administered. Finally, there are limitations in the use of percentage analysis for comparative purposes. Banks starting operations from a low base might reflect better results.

Total Recovery Rate

3.10 As shown in the example below, overdues of loans continued the deteriorating trend, with the recovery rate falling from 60% in 1990 to 40% in 1992.

Total Loan Recovery Rate

Year	Demand ^{a/} (Rs million)	Recovery (Rs million)	Recovery Rate (%)
1990	5,000	3,000	60
1991	7,000	3,500	50
1992	10,000	40,000	40
^{a/} Past dues and current dues.			

Ageing of Overdues

3.11 Ageing of overdue loan amounts of a bank is summarized below.

Ageing of Overdues

Age	1990	1991	1992
 (%)		
Up to 12 months	25	26	20
12-24 months	10	20	25
24-36 months	18	12	15
36-60 months	22	19	16
Over 60 months	25	23	24
Total Overdues	Rs2,000 million	Rs3,500 million	Rs6,000 million

Of the total overdues of Rs6,000 million in 1992, those for over 3 but below 5 years amounted to Rs960 million or 16%, a high level by any standard and a clear indication of the financial problems of the lending banks. The potential bad debts could be as high as 16% if one assumes that the overdues of over 3 years are counted

as irrecoverable, or 24% if overdues of over 5 years are considered really bad. These levels of bad debts are generally beyond the interest spread available to the bank.

Recovery Profile

3.12 The overall recovery profiles for short-term loans are presented below:

Overall Recovery Profiles

Short-Term Loans Disbursed During	Loan Recovery Up to 30 June 1993
1990	90%
1991	80%
1992	75%

3.13 A significant feature is noticeable from the above information: repayments within due date are about 75% of the loan disbursed in 1992. This means that if the same volume of lending were to be maintained, additional (external) sources of funds will have to be found to finance the remaining 25%.

3.14 **Rescheduling Standards.** Rescheduling is necessary from time to time because of natural disaster or other causes beyond the control of the borrowers, but should be done within explicit and realistic policies. Loans are rescheduled only when: (i) the customers are sound and creditworthy; and (ii) the bank before rescheduling, has satisfied itself that all necessary steps have been taken to enhance the repayment capacity of the borrower. Rescheduling should not be used for window dressing the portfolios and earnings. In general, not more than 20% of a bank's portfolio should have been rescheduled, and not more than 5% of the portfolio should have been rescheduled more than once.

3.15 **Single Borrower Exposure.** Prudential regulations normally provide for a bank's maximum exposure limits for individual customers, both in terms of kinds of exposure (e.g. loans, equity investment, guarantee, etc.) and total exposure. Banks, if not required by local regulations, should set such prudential guidelines. Such exposure limits apply to net outstanding commitments (i.e. amount committed minus repaid and/or cancelled) for all types of financial assistance including off balance sheet items. In countries lacking adequate prudential guidelines and policies, and their enforcement, the portfolio is analysed in terms of concentration of portfolio in a few enterprises or groups (including those affiliated with bank's directors), a particular economic sector, a particular country or region to determine where excess exposure requires corrective measures.

CHAPTER 4. CAPITAL ADEQUACY

4.1 Banking has a pivotal role in the functioning of the economy. Public confidence is a key factor in the efficient operation of the banking industry. As a result, the banking industry continues to be publicly regulated and closely supervised. Because of the association of capital with bank soundness, one of the main tools of supervisors is the periodic evaluation of the adequacy of bank capital.

4.2 A bank must have sufficient capital to absorb risk of losses inherent in the assets of the business so as to protect depositors and other creditors. For specialized banks like agricultural banks with no or limited access to deposits and liquidity, capital must be adequate to satisfy its maturing obligations in the event of a material fall in its loan collections. Prescription of 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 and be harmfully restrictive to others. However, it is generally believed that commercial banks should maintain a minimum capital adequacy ratio of 8%, the established specialised banks at least 10%, but new specialised banks and those with not very satisfactory performance at least 20%.

4.3 In defending itself against loss, a bank has both its capital and its continuing profits. Since banks expect to make profits as a going concern, the expected level of loss is covered, in a healthy organization, by the continuing profits. Thus, the function of capital is not to cover this expected loss but to cover the peak losses, losses arising from concentration in assets or a high co-variance of loss.

Capital Adequacy Ratio

4.4 This ratio expresses capital as a proportion of total risk-weighted assets. Both capital and assets should be fairly stated with the appropriate loan loss provisions and intangible assets having been deducted.

4.5 This ratio indicates the margin of protection available to both depositors and creditors against unanticipated losses that may be incurred by the bank. For the Agbank, the ratio is computed as:

1991	1992
$\frac{\text{Equity Capital}}{\text{Risk-weighted assets}} \times 100$	$\frac{\text{Equity capital}}{\text{Risk-weighted assets}} \times 100$

4.6 The calculation of this ratio involves weighing each category of assets for risks, deducting intangibles from assets, and adding contingent liabilities in risk-weighted assets. A suggested outline for risk-weighting of assets is given below.

Suggested Outline for Weighing of Risks in a Bank's Assets

Risk Classification	Asset Composition	% of Asset Values Recommended as Capital Requirement
a) Without Risk Assets	Cash on hand, bank balances, selected marketable foreign and domestic short-term securities, other assets of comparable quality and short-term maturity.	None
b) Low Risk Assets	Loans and investments that have less than normal credit risks and that may be readily pledged or sold, including government securities with maturities over three years, loans guaranteed by government, loans secured by similar assets (or by savings passbooks, cash value of life insurance, negotiable securities, prime commercial paper, etc.), and building having readily convertible sales or lease value.	5% - 10%
c) Moderate Risk	Assets (including loans) with normal or slightly above normal risks such as adverse economic conditions, uncovered foreign exchange risk assumed by borrowers, over-extended loan disbursements, insufficiency of security guarantee, and unfavourable record of obligator.	10% - 25%
d) High Risk Assets	Loans and stocks classified as doubtful by appropriate Bank Officers, or external examiners, defaulted securities and real estate that may not legally be acquired except by foreclosure.	50% (depending on inflation rate)
e) Fixed Assets, Furniture Equipment	Mixed assets without ready resale or market value, or which may not be disposed of without having negative effect on bank's operation.	100%

4.7 The creation of the risk asset ratio system reflects several factors. A major one is the desire of the authorities to catch up with the innovations in banking technique and in the securities markets in recent years, so as to ensure that the capital of the banks is in appropriate relationship to the types of risks which banks face. Second, there is a general perception that the banks may have too low a level of capital in relation to their risks, and perhaps some of the assets in their balance sheets are overvalued. Third, the risk asset ratio system has been discussed internationally among supervisors notably at the Basle Committee, and has become the norm in relation to international banking.

4.8 A number of other ratios may be used in some situations:

4.9 **Earning Assets to Total Assets Ratio:** This consists of earning assets (interest-bearing investments, loans and advances) divided by total assets. It will reveal the extent to which bank's assets are put into productive use. Investment in equipment and buildings may not directly generate income but they are important for the bank's operations. For the Agbank, the ratio is computed as:

	1991	1992
	$\frac{\text{Earning assets}}{\text{Total assets}} \times 100$	$\frac{\text{Earning assets}}{\text{Total assets}} \times 100$
=	$\frac{39,213}{42,384} \times 100 = 93\%$	$\frac{39,356}{45,064} \times 100 = 87\%$

4.10 **Loan Loss Provisions to Total Loans Ratio:** This ratio will give useful insight into the quality of a bank's loan portfolio. For the Agbank, the ratio is calculated as:

	1991	1992
	$\frac{\text{Loan loss provisions}}{\text{Total loans}} \times 100$	$\frac{\text{Loan loss provisions}}{\text{Total loans}} \times 100$
=	$\frac{4,778}{41,985} \times 100 = 11.4\%$	$\frac{6,482}{43,918} \times 100 = 14.8\%$

CHAPTER 5. LIQUIDITY

5.1 Banks must be capable of meeting their obligations when they fall due. If the depositors or other lenders do not have confidence that the claims can be met, they will stop depositing or lending funds to the bank. The acquisition of deposits and other funds is a necessary condition for the expansion of loans and investments beyond the amount permitted by the use of equity only. Maintaining adequate liquidity is a key constraint on the bank's profit-making capacity. The ability to meet liquidity may be provided by:

- (i) holding adequate cash or liquid assets;
- (ii) securing an appropriately matching future stream of cash flows from maturing assets; and/or
- (iii) maintaining a diversified deposit base in terms of both maturities and range of parties, bank and non-bank, which may provide the ability to raise new deposits at reasonable cost.

5.2 Liquidity ratios provide the primary means of judging a bank's liquidity position.

5.3 Norms for liquidity ratios of business firms are possible because their liabilities are predictable due to their fixed maturities. For banks, there are no universally recognized liquidity ratios as a large percentage of their liabilities (e.g. deposits) are due on demand. Nevertheless the following ratios can be used as partial indicators.

Cash Ratio

5.4 This ratio relates the sum of cash in hand and at banks including the Central Bank to total deposits. For the Agbank, the ratio is calculated as:

1991	1992
$\frac{\text{Cash in hand and at banks}}{\text{Total deposits}} \times 100$	$\frac{\text{Cash in hand and at banks}}{\text{Total deposits}} \times 100$
$= \frac{1,606}{3,466} \times 100 = 46.3\%$	$= \frac{3,791}{1,818} \times 100 = 208.5\%$

Most of these cash resources are not available to meet liquidity requirements, and total deposits is an imperfect measure of an individual bank's liquidity.

Loans to Deposit Ratio

5.5 This ratio is a measure of bank liquidity; the higher the ratio, the lower the liquidity. For the Agbank, the ratio is calculated as:

	1991		1992
	$\frac{\text{Loans}}{\text{Deposits}} \times 100$		$\frac{\text{Loans}}{\text{Deposits}} \times 100$
=	$\frac{41,985}{3,466} \times 100 = 1,211\%$		$\frac{43,918}{1,818} \times 100 = 2,416\%$

This ratio does not indicate anything about future loan demands or expected deposit withdrawals. It does not also indicate anything about the liquidity of the remaining assets or the nature of the banks' other liabilities which could be a source of great liquidity need.

Loans to Assets Ratio

5.6 The loans to asset ratio is similar to the loans to deposits ratio. Other things equal, a rise in this ratio would indicate lower liquidity and the need to evaluate other liquidity ratios. For the Agbank, the ratio is computed as:

	1991		1992
	$\frac{\text{Loans}}{\text{Assets}} \times 100$		$\frac{\text{Loans}}{\text{Assets}} \times 100$
=	$\frac{41,985}{42,384} \times 100 = 99\%$		$\frac{43,918}{45,064} \times 100 = 97\%$

5.7 There is no standard way to measure a bank's liquidity. Those without access to internal data will have to use a number of ratios. Larger banks will have greater flexibility in liquidity planning because they can practise liability management nation-wide. Because of this ability, their liquidity planning horizon is much shorter than it is for smaller banks.

5.8 Successful use of liability management techniques depend on many factors: capital adequacy, profit trends, growth in deposits and assets, the bank's past record in loan losses and the competence of bank management.

CHAPTER 6. EARNINGS PERFORMANCE

6.1 Banks, like other business entities, need to make profit. At least, three main reasons can be identified for banks' profit motive: to provide an appropriate return to the shareholders; to give confidence to the depositors that the business is sound and competently managed; and to maintain and expand the bank's capital base, in order to satisfy prudential criteria and facilitate business growth in real terms. Above all, earnings are the first line of defence against the risks of losses in banking; as well as losses arising from credit risk, interest rate risk, liquidity risk or currency risk.

Measures of Profitability

6.2 Important measures of profitability are:

- (a) Return on assets
- (b) Return on equity
- (c) Interest spread
- (d) Interest margin
- (e) Other operating income to total assets
- (f) Intermediation margin
- (g) Net income per staff
- (h) Net income to staff costs

Return on Assets

6.3 Return on assets, often described as the primary ratio, relates the income earned by the bank to the resources employed by it.

6.4 Normally 'return' is taken as profit before extraordinary items, since these items fall outside the scope of the bank's normal operations. This does not mean that extraordinary items should be ignored by the analyst, but that their significance should be assessed as a separate exercise from the analysis of the bank's performance.

6.5 There are a number of different ways of computing ratios on capital employed. The following is the most common:

$$\frac{\text{Profit before tax}}{\text{Average total assets}} \times 100$$

6.6 For the Agbank, the ratio would be computed as follows:

1991	1992
$\frac{114}{40,856} \times 100 = 0.28\%$	$\frac{152}{43,724} \times 100 = 0.35\%$

6.7 Profit before tax is generally preferred because calculations using net income after tax figures may show trends due simply to changes in the rates of taxation. It may also be noted that the test of efficiency should be based on the gross assets at the disposal of the bank irrespective of the method used to finance them. The usual average would be that of capital employed at successive year ends. But problems of seasonality, new capital introduced or other factors may necessitate taking the average from a greater number of periods within a year. The purpose of obtaining finance in various forms (share capital, deposits, long- and short-term borrowings) is to make loans and investments for gain.

6.8 The ratio of profit before tax to average total assets essentially is an indication of management ability to generate income and its ability to control expenses. The variations in this ratio could be due to a number of factors including a portfolio shift to higher or lower yielding assets, an increase or decrease in the level of interest rates, or an increase or decrease in fees and other income not related to the employment of assets.

Return on Equity

6.9 This ratio relates profit earned after tax by the bank to resources contributed by its owners, i.e. ordinary share capital plus reserves. For the Agbank, the ratio would be computed as:

1991	1992
$\frac{114}{3,852} \times 100 = 2.9\%$	$\frac{152}{4,594} \times 100 = 3.3\%$

Since the Agbank is exempt from tax, profit before and after tax is the same. Since profit after tax is a flow over a period (in this case a year), it is appropriate to use an average figure for equity capital instead of the year-end total in 1991 and 1992. For shareholders, this ratio is the most important measure of profitability, because it relates profit after tax to the book value of their claims.

Return on Loans

6.10 Loans are the important earning asset for the bank. The ratio of interest and fees earned on loans to total loans is a significant measure of management's ability to price its loan and to achieve an optimum loan mix. For the Agbank, the ratio would be computed as:

1991	1992
$\frac{4,314}{39,604} \times 100 = 10.9\%$	$\frac{4,404}{42,952} \times 100 = 10.3\%$

Since loans are a flow over a period, an average figure for gross loans has been used instead of the year-end totals.

Return on Investments

6.11 This ratio relates interest earned on securities to total book value of securities held by a bank. Government securities are held primarily for liquidity purposes while other securities are held for getting benefit from their tax-free status. For the Agbank, the ratio would be computed as:

1991	1992
$\frac{120}{2,361} \times 100 = 5.1\%$	$\frac{151}{1,963} \times 100 = 7.7\%$

Agbank's yield on security depends on the general level of interest rates and the maturity distribution of the portfolio. Typically, a portfolio with long-term securities earn more than one with short-term securities, the differential accounting for lower liquidity. As in loans, an average figure has been used instead of the year-end totals.

Interest Spread

6.12 When a trader buys goods, he adds to its cost an amount to cover expenses and to earn a certain level of profit, and the difference between the cost of goods and the selling price is called a 'margin' or 'spread'. Banks behave in a similar manner, but they deal in money and not goods. Banks acquire funds such as time and savings deposits, and inter-bank borrowing; in return, they promise to pay interest. Banks invest in assets such as loans and investments, for which they receive interest and fees. The difference between what they pay for funds and what they get for funds is a 'spread'. The spread is thus the difference between the rate

earned on income-producing assets and the rate on the interest-bearing liabilities. For the Agbank, this is computed as:

$$\begin{array}{r}
 \text{Interest + fees on loans} \\
 \hline
 \text{Total loans}
 \end{array}
 \times 100
 \quad - \quad
 \begin{array}{r}
 \text{Interest expense} \\
 \hline
 \text{Interest bearing liabilities}
 \end{array}
 \times 100$$

$$= \left\{ \frac{4,314}{39,604} \times 100 = 10.9\% \right. \quad - \quad \left. \frac{1,721}{29,039} \times 100 = 5.9\% \right\} = 5\%$$

This ratio includes only those assets and liabilities that carry an interest rate. As a result, it reflects the impact of interest rate on bank profits. This would provide a better understanding of the sources of bank earnings and of the vulnerability of bank profitability.

Net Interest Margin

6.13 This ratio measures the net interest income as a percentage of average total assets. For Agbank, the ratio is computed as:

$$\begin{array}{r}
 \text{Interest income - Interest Expense} \\
 \hline
 \text{Average total assets}
 \end{array}
 \times 100
 \qquad
 \begin{array}{r}
 \text{Interest income - Interest Expense} \\
 \hline
 \text{Average total assets}
 \end{array}
 \times 100$$

$$= \frac{4,434 - 1,721}{40,856} \times 100 = 6.6 \qquad \frac{4,551 - 1,539}{43,724} \times 100 = 6.9$$

Interest income includes interest on loans and interest on government securities (investment income).

Other Operating Income to Total Assets

6.14 This ratio relates other operating income to average total assets. For the Agbank, the ratio is calculated as:

	1991		1992
Other operating income		Other operating income	
<hr style="width: 100%;"/>		<hr style="width: 100%;"/>	
Average total assets		Average total assets	
=	$\frac{120}{40,856} \times 100 = 0.29\%$		$\frac{151}{43,724} \times 100 = 0.35\%$

This ratio shows the dependence on income other than (operating) interest earnings on loans.

Intermediation Margin

6.15 The intermediation margin can be defined as the differential between the cost of funds and the yield on earning assets plus related fee income. The differential shows the cost of the bank for intermediating between the lenders and users of funds. For the Agbank, the ratio is calculated as:

		1991		
Yield on earning assets + related fee			Interest expense	
<hr style="width: 100%;"/>		x 100 -	<hr style="width: 100%;"/>	x 100
All financial assets			All funding liabilities	
=	$\left\{ \frac{4,434}{45,597} \times 100 = 9.7\% \right\}$	-	$\left\{ \frac{1,721}{37,859} \times 100 = 4.5\% \right\}$	= 5.2%

Net Income per Staff

6.16 Staff costs generally form a major proportion of a bank's non-interest costs. Staff productivity, as measured against staff expense or number of staff, can provide insight into a bank's efficiency. For Agbank, the ratio is calculated as:

1991	1992
Net income after tax	Net income after tax
<hr/>	<hr/>
Total number of staff	Total number of staff
= Rs. $\frac{114 \text{ M}}{10,600}$ = Rs.10,755	$\frac{152 \text{ M}}{9,400}$ = Rs. 16,170

Net Income to Staff Expense

6.17 This ratio relates return on investment in staff costs. For the Agbank, the ratio is computed as:

1991	1992
Net income after tax	Net income after tax
<hr/>	<hr/>
Staff costs	Staff costs
= $\frac{114}{772} \times 100 = 14.8\%$	$\frac{152}{811} \times 100 = 18.7\%$

It looks at the net effect of staffing decisions, regardless of whether these emphasize low cost, low expertise clerical staff, or high cost, high technical professional.

Lending Risks

6.18 As mentioned earlier, the overall objective of a bank is to make profits. Most of the profits are derived from the margin between the rate a bank pays for its funds and the rate that it earns by lending or investing those funds. In addition, it earns non-interest income, like fees for other services rendered.

6.19 Profit-making involves risks. There are a number of different types of lending `risks' that may affect the interest charged to a borrower. These may be classified as:

- **Credit Risk.** The risk that claims on others like loans may not be redeemable on the due date at their book value.

- **Investment Risk.** The risk that marketable claims on others or directly held assets, may depreciate below their book value.
- **Liquidity Risk.** The risk that withdrawal (of deposits) demand might exceed available liquid assets.
- **Interest Rate Risk.** The risk which arises from the fact that some of a bank's borrowing and lending will either be for a very short term, needing to be regularly renewed at market rates or be tied to a market rate of interest that will fluctuate.
- **Currency Risk.** The risk which arises mainly from a mismatch of a bank's currency assets and liabilities, and from imposition of exchange control.

6.20 Net interest income (interest earnings less interest expenses) is a factor both of interest rates and of the amount of borrowing and lending. A useful understanding may often only be obtained if further information is given, for example, of average interest rates, average interest- earning assets, and average interest-bearing liabilities for the period. Then the following ratios can be usefully derived for example, in the case of the Agbank.

Indicator	1991	1992
 (%)	
(a) Average yield on interest-earning assets:	11.3	11.6
(b) Average yield on loans:	10.9	10.3
(c) Average cost of deposits borrowings	4.5	3.9

6.21 Apart from interest payable on borrowed funds and provisions for bad and doubtful loans, a bank's costs consist mainly of personnel expenses, occupancy and other administrative expenses.

6.22 By far the greatest proportion - over 70% - of bank's operating costs comprise staff costs. The remaining operating expenses of a bank include rent and rates, repairs, printing and stationery and so forth. None of these items contribute more than a few percent of total operating costs. In addition, there is always a provision for bad and doubtful debts. In the case of individual banks, provisions can vary significantly from year to year. It is generally the efficient use of staff that can make for large economies in operating costs. Reductions in loan provisions will help contain total costs.

6.23 There is no unique indicator of output against which to set these costs. In

terms of volume, the main work of the bank, the Agbank, consists in borrowing and lending. However, it is possible neither to associate particular costs with particular services, nor to identify adequate indicators of the output of these Services. A rigorous analysis of the trend of costs with respect to output is therefore impossible. As possible indicators of the main lines of activity, indices of the number of loan accounts, and the value of loans could be used.

Composition Analysis of the Income Statement

6.24 Relative values provided through composition analysis present valuable perspective into a bank's efficiency and profitability. Composition analysis of the income statement involves computations of the percentage distribution of operating income and operating expenses and a comparison of the distribution with those from previous years.

Percentage Distribution of Operating Income for the Agbank

Item	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
Interest Income	98.9	96.5	97.4	95.2	97.3	96.7
Investment Income	1.1	3.5	2.6	4.8	2.7	3.3
Total Operating Income:	100	100	100	100	100	100

Percentage Distribution of Operating Expense for the Agbank

Item	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
Interest on Deposits and Borrowed Funds	39.8	37.8	40.4	44.2	39.8	35.0
Salaries and Allowances	20.2	21.9	17.0	16.2	17.9	18.5
Rent and Office Expenses	5.0	3.9	3.6	3.0	2.9	3.5
Depreciation, Repairs, etc.	4.3	3.4	2.8	2.3	1.9	1.7
Other Expenses	4.9	3.4	2.8	2.3	2.2	2.1
Bad Debt Provision	25.8	29.6	33.4	32.0	35.3	39.2
Total Operating Expenses:	100	100	100	100	100	100

Annual variations in income and expenses must be explained by the management as it relates to bank's profitability, liquidity and capital adequacy.

Subsidy Dependence Index

6.25 Subsidy dependence index is a useful measure to quantify the different monetary concessions enjoyed by a bank. Traditionally, banks have been dependent on various types of implicit and explicit subsidies, including differences between market rates and rates paid on concessional borrowed funds, losses in foreign currency denominated loans absorbed by the Government, obligatory deposits made by other institutions at below market rates, direct reimbursement of part or full operating costs and exemption from reserve requirement. There are two types of subsidies: financial subsidy and economic subsidy. Financial subsidy will arise when a bank's costs exceed its revenue and the shortfall is financial subsidy. Economic subsidy is defined as the difference between the actual costs and opportunity costs of incoming funds at the market rate of interest. Its calculation is illustrated in Table 4.

6.26 **Methodology.** In the SDI computations, subsidies have been imputed for:

- (i) Concessional borrowings;
- (ii) Equity invested in the Principal Bank for Agriculture and Development (PBDAC)^{1/}; and
- (iii) Exemption from reserve requirement on deposits.

Direct interest subsidy received by PBDAC has also been considered. The profit earned by PBDAC is deducted from the total subsidy to arrive at the net subsidy. The net subsidy is compared with the interest income earned by PBDAC to determine the SDI.

6.27 The market rate of interest for PBDAC has been computed by adding a risk premium of 1% to the 6-month Treasury Bill rate.

SDI Analysis

6.28 PBDAC's SDI shows a declining trend over time as can be seen from the table below. The SDI declines from 54.1% in FY90 to 12.9% in FY97. The marginal increase in SDI from FY92 to FY93 is due to the decline in profits in FY93.

^{1/} For more details, see World Bank Staff Appraisal Report on 'Agricultural Modernization Project', Arab Republic of Egypt, 3 March 1994.

Subsidy Dependence Index of PBDAC

IndexActual.....		Projected.....				
	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Subsidy Dependence Index	54.1%	52.7%	42.2%	43.2%	24.9%	20.5%	17.4%	12.9%

Components of SDI

6.29 The table below shows the movement of different components of the numerator of the SDI over time.

Components of Subsidy Dependence Index
(Amounts in LE million)

ItemActual.....		Projected.....				
	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Subsidy on concessional borrowing	28.9	34.0	45.9	28.5	14.5	1.0	-5.4	-9.2
Subsidy on equity	93.5	108.4	137.7	141.4	144.1	138.7	131.3	127.6
Direct interest subsidy	112.0	109.0	63.9	46.0	23.0	0.0	0.0	0.0
Subsidy on reserve exemption	129.5	152.7	103.2	103.1	95.5	86.3	83.4	84.0
Total Subsidy:	363.9	404.1	350.7	319.0	277.1	226.0	209.3	202.4
Profit before tax (Banking)	150.6	143.5	92.8	34.3	93.2	80.7	81.9	102.0
Net Subsidy	213.3	260.6	257.9	284.7	183.9	145.3	127.4	100.4

6.30 The SDI for PBDAC is largely influenced by three factors:

- (i) the market rate of interest which affects the imputed subsidy on concessional borrowing, on equity, and on reserve exemption;
- (ii) direct interest subsidy; and
- (iii) profit earned.

6.31 The declining SDI results from declining imputed subsidies, elimination of direct interest subsidy and increased profits. Total subsidy declines from LE363.9 million in FY90 to LE202.4 million in FY97. Profit before tax initially declines from LE150.6 million in FY90 to LE34.3 million in FY93, but increases gradually to LE102.0 million in FY97. Declining imputed subsidies result from declining market rate of interest (thus resulting in lower imputed subsidy on concessional borrowings, on equity, and on reserve exemption).

CHAPTER 7. CONCLUSIONS AND RECOMMENDATIONS

7.1 The current pattern of financial analysis in the Investment Centre can be divided into two categories: (a) financial analysis during project identification, and (b) financial analysis during project preparation. In both cases, financial statements of participating banks are analysed and financial projections prepared. The present analytical framework does not however provide a common style of analysis across the Investment Centre and a wide variation exists now in practice. Several improvements are recommended.

Analysis of Financial Statements

7.2 **Improve the analytical framework:** In order for the financial analysts to diagnose the condition of participating banks through the financial statements, a better framework for the analysis should be prepared, based on the material presented in Chapters 2-7. The framework will use five different but inter-related measures of the health of the institution: earnings performance analysis, liquidity analysis, capital adequacy analysis and asset quality analysis.

7.3 **Improve and standardize the presentation:** The current presentation of financial statements used in preparation reports does not generally include a cash flow statement. By introducing the cash flow statement, it will be easier for analysts to examine liquidity issues, and deteriorating financial condition of banks in situations where the continued operation of the entity is only possible by resorting to debt financing or government financing.

7.4 **Standardize the assumption variables:** At present, there is no standardization in the assumption variables that the analyst chooses in preparing financial projections of the bank. While each bank in different sectors will be different, the quality of analysis can be improved by standardizing the list of assumptions.

7.5 **Develop common set of ratios:** To standardize the analysis, a common set of core ratios could be prepared - see Tables 5 and 6.

7.6 **Emphasize financial analysis throughout the project cycle:** The practice of financial analysis must not be terminated at project preparation or appraisal. It must be done during supervision as well. By such analysis, at least annually, and comparing actual results to the projections made at appraisal, the analyst will be able to determine the health of the bank.

Table 1. The Agbank Balance Sheet
(Rs million)

As of June 30	FY87	FY88	FY89	FY90	FY91	FY92
ASSETS						
Cash in hand and Banks	777	762	1,130	1,165	1,606	3,791
Investment in Govt. Securities	403	1,395	1,315	2,715	2,006	1,920
LOAN PORTFOLIO						
Gross Loan Portfolio	18,757	24,211	30,822	37,222	41,985	43,918
Less provision for Bad Debts	702	1,300	2,220	3,274	4,778	6,482
	18,055	22,911	28,602	33,948	37,207	37,436
Net Fixed Assets	114	144	175	163	160	163
Other Assets	1,293	1,490	1,305	1,336	1,405	1,754
Total Assets	20,642	26,702	32,527	39,327	42,384	45,064
Average Assets	18,417	23,672	29,614	35,927	40,856	43,724
LIABILITIES AND EQUITY						
Deposits and other accounts	331	1,459	2,945	6,854	3,466	1,818
Other liabilities	1,706	2,320	4,348	2,500	2,017	2,013
BORROWINGS						
From Govt. on Account:						
- IDA	1,657	1,886	1,965	1,888	1,812	1,686
- IBRD	155	910	2,099	2,566	2,824	3,269
Sub-Total (IDA + IBRD)	1,812	2,796	4,064	4,455	4,637	4,955
IFAD	649	671	678	664	636	622
SIDA	0	0	0	0	0	0
ADB	365	661	971	971	1,572	2,172
USAID	0	33	134	134	131	115
OECF Japan	0	0	0	0	0	933
Sub-Total (Foreign Borrowing)	2,828	4,163	5,349	6,225	6,978	8,798
Central Bank	13,291	15,689	16,062	19,476	25,398	27,157
	18,156	23,631	28,704	35,055	37,859	39,786
Average Deposits & Borrowings	14,584	17,986	21,882	24,806	29,039	34,164
PROVIDENT FUND	216	287	373	477	616	0
Paid up Capital	799	988	1,353	1,353	1,353	2,569
Reserves	1,081	1,472	1,796	2,098	2,442	2,557
Profit of the year	390	324	301	344	114	152
Total Equity	2,270	2,784	3,450	3,795	3,909	5,278
TOTAL EQUITY & LIABILITIES	20,642	26,702	32,527	39,327	42,384	45,064

Table 2. The Agbank - Income Statement
(Rs million)

	FY87	FY88	FY89	FY90	FY91	FY92
INCOME						
Interest Income	1,943	2,324	2,984	3,549	4,314	4,400
Investment income	19	84	79	178	120	151
Bad Debt provision/reversal of income	406	616	922	1,082	1,525	1,729
Net Operating Income	1,556	1,792	2,141	2,645	2,909	2,822
EXPENSES						
Interest on customers' deposits and on Funds Borrowed	626	787	1,117	1,495	1,721	1,539
Total Financial Expenses	626	787	1,117	1,495	1,721	1,539
Salaries and Allowances	317	457	468	548	772	811
Rent and Office Expenses	77	82	99	102	124	152
Depreciation (including expenses on repairs and renovation)	68	70	77	77	80	74
Other Expenses	78	72	79	77	98	94
Total Expenses	1,166	1,468	1,840	2,300	2,795	2,670
APPROPRIATIONS						
Net Profit	390	324	301	344	114	152
Reserves	390	324	301	344	114	152
Dividend	-	-	-	-	-	-

Table 3. The Agbank: Cash Flow Statement^{1/}

(Rs million)

	FY87	FY88	FY89	FY90	FY91	FY92
APPLICATION OF CASH						
1. Loan Disbursement	6,032	7,716	8,668	9,390	8,324	6,997
(a) Agricultural loans	5,351	6,955	8,075	8,642	7,736	6,490
(b) Project loans	681	761	593	748	588	507
2. Capital Expenditure	150	206	226	248	230	292
3. Administrative Expenditure	487	625	662	746	1,073	1,131
4. Total Interest paid	626	787	1,117	1,405	1,721	1,539
5. Repayment of Foreign Loans	61	67	151	536	555	690
6. Repayment to Central Bank (CB)	2,703	2,893	3,921	4,697	0	0
(a) Agricultural	2,681	2,845	3,839	4,697	0	0
(b) Project	22	48	82	122	148	185
7. Repayment to Bank	0	50	430	1,520	4,285	1,755
8. Return on PLS Borrowing from CB	298	424	638	851	1,024	752
Total	10,357	12,768	15,813	19,605	17,360	13,241
SOURCES OF CASH						
1. Repayment of Bank's Loans	3,780	4,697	5,211	6,580	7,809	9,438
(a) Agricultural Loans	3,623	4,512	5,077	6,409	7,533	9,219
(b) Project Loans	157	185	134	171	276	219
2. Equity	96	188	365	0	0	1,216
3. Deposits	177	699	398	-138	927	-560
4. Borrowing for Agri. Loan	5,317	6,110	7,615	6,550	6,780	3,868
(a) Loans from CB	4,526	4,992	6,177	5,758	5,670	1,750
(b) Loans from IDA/IFAD/IBRD/ ADB	791	1,118	1,438	792	1,110	2,163
5. Borrowings (Project Loans)	521	585	516	596	600	482
(a) Loans from CB	330	300	117	475	400	235
(b) Loans from ADB/USAID	191	265	399	121	200	247
6. Loans from Banks (call money)	0	430	1,520	5,585	0	455
7. Capital Receipts (receipts against advances)	15	15	31	36	45	66
8. Miscellaneous Receipts (loan application fee, etc.)	51	94	71	149	153	155
9. Miscellaneous Items	669	-66	454	283	1,487	305
Total	10,626	12,752	16,181	19,641	17,801	15,425
Surplus/(Deficit)	269	(16)	368	36	441	2,184
Opening Balance	509	778	762	1,130	1,166	1,607
Closing Balance	778	762	1,130	1,166	1,607	3,791

^{1/}Minor differences in individual items compared to the Balance Sheet and the income statement are due to rounding.

**Table 4. Subsidy Dependence Index for PBDAC
(LE million)**

 Actual Projected.....				
	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Market Rate of Interest ^{a/} (%)	19.5%	19.1%	21.0%	18.3%	14.9%	12.1%	11.0%	10.4%
Avg. Cost - Concessional Funds ^{b/} (%)	4.1%	7.6%	9.2%	12.0%	12.0%	11.9%	11.8%	11.7%
Average Concessional Borrowings	188.0	295.0	389.5	449.0	499.0	562.3	642.3	742.3
Subsidy on Borrowings	28.9	34.0	45.9	28.5	14.5	1.1	-5.1	-9.4
Average Equity ^{c/}	480.5	567.0	656.0	770.9	967.3	1,145.3	1,194.9	1,221.6
Subsidy on Equity	93.5	108.5	137.6	141.4	144.1	138.6	131.4	127.5
Direct Interest Subsidies	112.0	109.0	63.9	46.0	23.0	0.0	0.0	0.0
Subsidy on Reserve Exemption ^{d/}	129.5	152.9	103.1	103.1	95.5	86.2	83.5	84.0
Total Subsidy ^{e/}	363.9	404.5	350.5	319.0	277.0	225.9	209.8	202.2
Profit before Tax ^{f/}	251.0	205.0	123.7	41.3	107.1	87.7	83.5	102.0
Percent Share of Banking Operation	60.0%	70.0%	75.0%	83.0%	87.0%	92.0%	98.0%	100.0%
Profit Attributed to Banking	150.6	143.5	92.8	34.3	93.2	80.7	81.8	102.0
Interest Income	394.0	495.0	610.5	659.8	738.0	708.5	733.8	778.6
Subsidy Dependence Index (%)	54.1%	52.7%	42.2%	43.2%	24.9%	20.5%	17.4%	12.9%
Average Total Loans	3,037.5	3,682.5	3,961.5	4,095.0	4,506.9	5,039.2	5,665.4	6,270.0
Average Lending Rate	13.0%	13.4%	15.4%	16.1%	16.4%	14.1%	13.0%	12.4%
Increase in Lending Rate Required ^{g/}	7.0%	7.1%	6.5%	7.0%	4.1%	2.9%	2.3%	1.6%
Lowest Sustainable Interest Rate	20.0%	20.5%	21.9%	23.1%	20.5%	16.9%	15.2%	14.0%

^{a/}6-month treasury bill rate is used as the base rate for short-term funds. An additional margin of 2% is added to derive the base rate for medium-term and long-term funds. An allowance of 1% towards risk premium has been added to the base rate to derive the market rate of interest. The market rate of interest is a weighted average of rates for short-term and medium and long-term funds, with weights being the proportion of short-term loans and medium and long-term loans at the beginning of the year. For FY 90, when there was no issue of treasury bills, the rate for FY 91 is used.

^{b/}Consists only of foreign loans.

^{c/}Equity includes paid up share capital, reserves and capital grants.

^{d/}Reserve requirements were 25% up to December 1991, and 15% thereafter.

^{e/}Total subsidy is a sum of concessions which PBDAC receives from access to funds at below market interest rates, foregone income on equity imputed at market rate of return, direct interest subsidies and implicit subsidy resulting from exemption of PBDAC from reserve requirements.

^{f/}Profit before tax for FY 92 includes LE29.0 million extraordinary expense (early retirement compensation) added back.

^{g/}Although dependence on subsidies can be reduced by other methods (e.g. cutting costs such as administrative costs), increasing interest income is used for convenience.

Table 5. Performance Analysis of AB Bank

	1992	1993	1994
Nominal Growth Rates			
- Loans	10	20	25
- Customer Deposits	8	22	28
- Capital	5	10	10
- Average Interest Earned	7	10	12
- Average Interest Paid	4	6	9
Consumer Price Index	120	130	150
Real Growth Rates			
- Loans	8.3	15.4	16.7
- Customer Deposits	6.7	16.9	18.7
- Capital	4.2	7.7	6.7
- Average Interest Earned	5.8	7.7	8.0
- Average Interest Paid	3.3	4.6	6.0

Table 6. Financial Performance Ratios

	1991	1992 ----->
 (%)	
1. EARNINGS PERFORMANCE		
(a) Return on assets	0.28	
(b) Return on equity	2.9	
(c) Interest spread	5.0	
(d) Interest margin	6.6	
(e) Intermediation margin	5.2	
2. STAFF PRODUCTIVITY		
(a) Net income per staff (Rs)	10,755	
(b) Net income to staff expense	14.8	
3. LIQUIDITY		
(a) Cash ratio	46.3	
(b) Loans to deposits	1,211	
4. CAPITAL ADEQUACY		
- Capital to risk-adjusted assets	N.A.	
- Earning assets to total assets	93	
5. ASSET QUALITY		
- Total Provisions to Loans Outstanding	11.4	
- Annual Provision to Loans Outstanding	3.9	