Agricultural Finance Revisited

No. 4

Sources of Funds for Agricultural Lending

Food and Agriculture Organization of the United Nations (FAO)
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)

AGRICULTURAL FINANCE REVISITED

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PREFACE

There is no lending without financial resources. Loans to agriculture can be financed by different sources of funds such as farmer household savings, capital markets, equity, budget allocations of the government, central bank refinance facilities and international borrowing. All these various funds, some of which are highly *political*, have different implications on the fund management, performance and autonomy of financial institutions. Public funds increase the vulnerability of financial institutions to government interference in their daily management and operations. Savings deposits and other short-term funds require highly sophisticated fund management when they are used for agricultural lending with its specific seasonal or long-term patterns. Capital market funds are costly to raise and only available for well performing financial institutions.

In the last decade there has been a sharp decline in the availability of public funds for agricultural lending. This prompts a fundamental question: what sources of funds can fill the gap? Moreover, what are the impacts of using other financial instruments and new funding sources?

The change of the funding sources will impact the financial institutions. On one hand, autonomy may increase and the governance structure may improve. On the other hand, costs and risks may rise. Doubtless, it is much easier to channel subsidized public resources than to obtain savers' confidence or to mobilize capital market funds.

The book describes the possibilities for financing agricultural loans. It explains the impact of using various funding sources on financial institutions. The most relevant aspects examined in the study are the following:

- What is the impact of the various sources of funds on the performance of financial institutions?
- What are the specific risks of using certain funding sources for agricultural lending?
- What is the impact of the liability structure on the governance and autonomy of financial institutions?

Suggestions are also made on how to improve the access to less explored sources and how to manage funds effectively with the goal of providing the necessary financial resources for agricultural investments.

This publication is the fourth in the series produced under the joint FAO/GTZ Initiative: Agricultural Finance Revisited. Together with No. 3 is focuses principally on financial institutions whereas No. 2 and No. 5 place emphasis upon the policy level and No. 6 on the client level.

1. Agricultural Finance Revisited: Why?
2. Agricultural Finance: Getting the Policies Right
3. Better Practices in Agricultural Lending
4. Sources of Funds for Agricultural Lending
5. Prudential Regulation and Supervision for Agricultural Finance
6. Enhancing Farmer's Financial Management Skills

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ABBREVIATIONS

AB	The Agricultural Bank of Iran
ACC	Agricultural Credit Cooperation
ADBP	Agricultural Development Bank of Pakistan
AFC	Agricultural Finance Corporation
AFRACA	African Rural and Agricultural Credit Association
ALIDE	Asociación Latinoamericana de Instituciones Financieras de Desarrollo
APRACA	Asia Pacific Rural and Agricultural Credit Association
BAAC	Bank for Agriculture and Agricultural Cooperatives
BAP	Banco Agrario del Perú
BRI	Bank Rakyat Indonesia
BPM	Bank Pertanian Malaysia
BNDA	Banque Nationale de Développement Agricole
CGAP	Consultative Group to Assist the Poorest
CNCA	Caisse Nationale de Crédit Agricole
EIB	European Investment Bank
FIRA	Fideicomisos Instituidos en Relación con la Agricultura
ICAP	Instituto de Crédito Agrícola y Pecuario
IDA	International Development Association
NABARD	National Bank for Agriculture and Rural Development
NACB	Nigerian Agricultural and Co-operative Bank
NENARACA	Near East-North Africa Regional Agricultural Credit Association
OECD	Organisation for Economic Co-operation and Development
PBDAC	Principal Bank for Development and Agricultural Credit
VBARD	Vietnam Bank for Agriculture
WOCCU	World Council of Credit Unions

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INTRODUCTION

This document changes the perspective to the factors that enable financial institutions to function. It places emphasis on the financial inputs or funds indispensable for banking activities.

Rural financial markets in developing countries consist of various intermediaries: agricultural development banks, commercial banks, rural unit banks, co-operatives, NGOs, informal financial institutions and individual moneylenders. Regardless of whether these actors are formal or informal, large-scale or only one-man businesses, they have one feature in common: they can not operate without financial inputs. Financial intermediation is their main purpose, which refers to capturing funds to transform into loans. Both sides of the financial intermediation process have their particular rules. Just as financial institutions can fail due to a bad loan portfolio, they can also fail due to a bad management of their sources of funds. In particular, financial institutions involved in agricultural lending are exposed to high risks due to the problem of mismatched conditions of funds and loans.

That is why, liability management has become an essential part of a financial institution's activities in the last three decades. However, there is still a necessity to create awareness of this task in the area of agricultural finance. Each fund available for agricultural lending is associated with some essential features. These pose advantages and disadvantages from the financial institution's point of view. It is not possible to access funds without being influenced by their particular ingredients. Some features attached to funds are negligible, some are positive but others can be highly dangerous for financial institutions depending on the situation, the type of institution using them and its special aims.

Every financial institution has to analyse the specific impacts of each fund on its aims, viability and autonomy to determine the most appropriate mix of funding sources.

Resource mobilization for agricultural lending faces a lot of challenges due to the specific nature of agricultural credit demand. Lenders have less turnover of their loan portfolio because of the particular term-structure (seasonal and long-term) of credit for agriculture. This has a direct

impact on the composition of funds needed to meet the specific requirements of agricultural producers.

This study assists in finding a sound and suitable composition of funds for agricultural lending. It attempts to give recommendations of appropriate funding sources for financial institutions. Proposals are consistent with the overall aim of providing the necessary resources for agricultural investments of farmer households, especially small-scale farmers in developing countries. The document focuses mainly on formal and semi-formal financial institutions. Only these actors are faced with a big variety of funds for on-lending.

In addition to the overall problem of managing liabilities effectively, access to formerly relevant sources of funds decreased in the last decade. As a consequence of the policy shift from the directed credit approach to the financial market approach, donor funds for agricultural development banks and apex co-operative banks declined. The World Bank portfolio for agricultural credit projects decreased from an annual average of over one billion dollars to less than US$ 250 million throughout the 1980s. Most of the traditional lending lines to agricultural banks were discontinued. Regional development banks and bilateral development agencies also adopted the new approach and reduced their portfolio correspondingly. Donor assistance currently centres more on microenterprise financing and on the promotion of non-governmental financial institutions that mainly offer services for off-farm production. Most of the widely discussed microfinance success stories and technologies do not address the specific constraints of lending to the agricultural sector. The question remains to be answered: Which funds can substitute the declining public resources and what are the specific impacts of these new combinations of funds on the financial institution's aims, viability and autonomy?

Chapter 1 categorizes the funds available for agricultural lending and gives an overview of the specific challenges of fund management for agricultural lending. *Chapter 2* describes all relevant funds, viz. government budget and donor funds, central bank credit lines, compulsory and voluntary deposits, inter-banking loans, debt instruments and equity. It classifies their main technical features, rules and procedures for using them. *Chapter 3* gives an overview of the current mix of loanable funds

of the most relevant formal and semiformal rural financial institutions based on a questionnaire sent out to approximately 80 members of Rural and Agricultural Credit Associations (APRACA, AFRACA and NENARACA). The comprehensive qualitative analysis of each fund from the financial institution's point of view is part of *Chapter 4*. This chapter identifies the advantages and disadvantages of these financial resources, i.e. the impacts on institutional viability, risk exposure and governance. The potential macroeconomic impact of using certain funds have not been examined. Case study examples support the main findings. The analysis prepares the ground for the recommendations in the last chapter on improving access to and management of funds.

1 Accessing and Managing Loanable Funds

1.1 Categories of Loanable Funds

There are different ways to categorize the various funds financial intermediaries use for lending or for other banking activities (Table 1): We can distinguish funds by sources (creditors and owners), by conditions (e.g. interest rates, maturity) and by procedures of mobilization (internal or external, deposited or borrowed).

Table 1
Dimensions of funds for on-lending

1. Sources	International development agencies, national government, central bank, depositors, shareholders etc.
2. Conditions	Commercial or concessionary, voluntary or compulsory deposited, long-term or short-term, fixed interest rate or variable rate
3. Procedures	Outside or self-financing, actively borrowed or from deposits

Each loanable fund appears on the *liabilities and equity* side of the balance sheet as a separate entry (see Figure 1). In annual reports of financial institutions they are usually amalgamated to blocks of deposits, borrowings, debt instruments and equity. *Deposits* are funds left with a financial institution for safekeeping or to earn interest. The depositor rather than the borrowing institution takes the initiative to place the fund. Similar to deposits, *trust funds* are left with a financial institution with certain purposes and procedures defined by the creditor (usually the government or an international donor agency). *Borrowings* are funds voluntarily raised by financial institutions. Unlike in the case with deposits, it is the financial institution, which takes the initiative to mobi-

lize these funds. *Debt instruments* are written documents (bills, bonds, debentures etc.) used to raise funds. Bonds for instance are usually in form of fixed interest securities and sold against public loans or mortgages. Debentures are unsecured promises to pay. *Equity*, also called net value or net worth, is total assets less total liabilities and comprises paid-in capital, retained earnings and reserves. Main output of financial intermediation is the loan portfolio. The asset side of the balance sheet provides information regarding the use of all funds.

ASSETS	**LIABILITIES AND EQUITY**
Cash	Deposits
Reserves in central bank	• Current accounts
Loan portfolio	• Savings accounts
Bills, bonds etc.	• Time deposits
Investments	• Compulsory deposits
	• Trust funds
	Borrowings
	• Commercial loans
	• Government loans
	• Central bank loans
	• Donor loans
	Debt instruments (debentures, bonds)
Land, building, equipment etc.	Equity
	• Paid-in capital
	• Reserves
	• Retained earnings
Total assets	Total liabilities and equity

Figure 1: Simplified balance sheet of financial institutions

Balance sheets, however, do not disclose full information on origin and conditions of funds. Table 2 summarizes the main creditors (first column) and the categories under which their funds may appear in the balance sheet of financial institutions (first row). The second row distinguishes them by selected conditions. In this way we obtain a comprehensive image of all possible funds various financial institutions use for agricultural lending. A detailed discussion of these different instruments (**A-R**) follows in Chapter 2.

Table 2
Funds for agricultural lending - Sources and features

Funds / Creditors	**Borrowings**		**Deposits**		**Trust funds**	**Debt instruments**	**Equity**
	commercial	concessionary	voluntary	compulsory			
Donors		A			B		C
Government		D		I	E		F
Central bank		G					
Savers			L	K		O	
Banks	M			H			
Fin. markets						N	P
Self-finance							R

A) Credit lines of development agencies
B) Donor trust funds (e.g. revolving funds)
C) Technical & financial aid (grants, risk capital)
D) Government credit lines
E) Government trust funds
F) Operational subsidies & equity grants
G) Central bank credit lines
H) Compulsory funds from other banks
I) Accounts of state-owned entities
K) Compulsory deposits from loan clients
L) Deposits from the general public
M) Inter-banking loans
N) Debentures (unsecured or bonds)
O) Negotiable Certificates of Deposits
P) Share capital
R) Retained earnings, reserves & paid-in capital

It has to be underlined that only resources that increase the total balance are considered loanable funds. Cash received by selling assets such as bills, securities or property or loan repayments do not enlarge the balance total and are therefore excluded. In practice, changes of the asset structure are common activities of managing liquidity. In this sense, central bank rediscount is not part of the analysis of the various sources of funds [1]. Rediscount is usually a means of liquefying assets but not of enlarging liabilities.

1.2 Outside and Self-Financing

1.2.1 Outside financing

Financial institutions can raise their funds *externally* (outside financing) or *internally* (self-financing). However, unlike manufacturing or commercial enterprises, financial institutions are basically financed by outside funds. On average equity amounts to only 5-10% (OECD, 1997) of total funds. Main sources of external funds are individual savers, other banks, insurance companies and large-scale enterprises, national governments, international donor agencies, central banks and local or international capital and money markets. Usually savings deposits are the most significant part of total liabilities. In some publications savers are classified as internal sources of funds. This classification might be justified in savings and credit co-operatives where savers are also shareholders/owners of the company. However, even co-operatives differentiate between savings accounts and share accounts. When computing the capital adequacy of mutually owned institutions, savings are not classified as equity.

1.2.2 Direct and indirect self-financing

Since the paid-in capital is usually limited, outside financing is the dominant instrument in practice. However, in addition to a *direct* increase of equity through new share issues or new co-operative members, retained

[1] Some institutions classify central bank credit lines as rediscount, which is a misleading.

earnings constitute a significant part of the self-financing capacity. Retained earnings are built up by the yearly net profit after taxes. Therefore, each income or subsidy financial institutions accumulate leads *indirectly* to a broader base of loanable funds. SCHREINER (1997) classifies six different forms of subsidies potentially obtainable by financial institutions (see Chapter 2.1.2). They all increase net worth - in other words they enlarge the equity basis of the company. Since, in particular, public financial institutions in many cases receive multiple subsidies, their retained earnings are inflated.

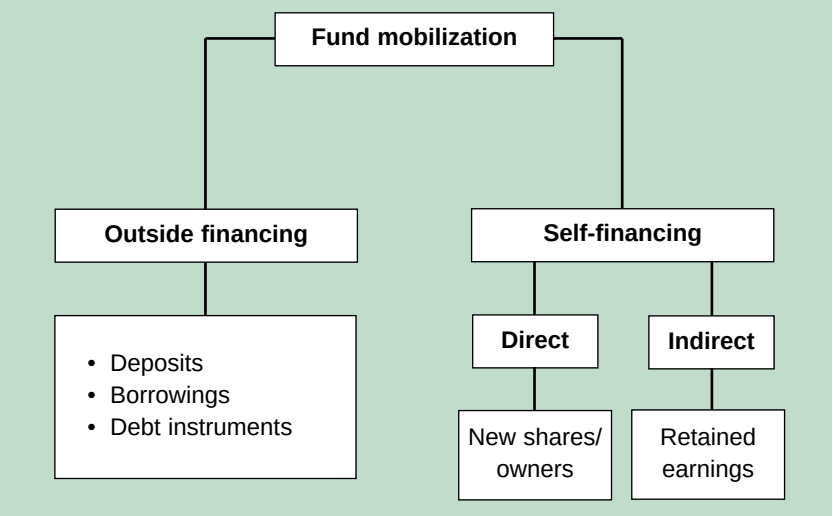

Figure 2: Financing of financial institutions

1.3 CHALLENGES OF RESOURCE MANAGEMENT

Each financial institution faces several challenges regarding its management of financial inputs and outputs. We distinguish four specific areas of *asset-liability management*:

1. Availability and composition of funds (liability structure management)
2. Interest margin/spread (interest rate risk management)
3. Foreign exchange risk management
4. Liquidity risk management

Default or credit risk management and related activities (like hedging or asset diversification) are basically output oriented management tasks already covered in AFR No. 3. However, decision making in the field of resource mobilization is strongly linked to the financial institution's output side. The liability structure of banks determines the asset allocation and vice versa. This general statement applies above all to financial institutions operating in a hostile macroeconomic environment as well as to institutions in their first stage of evolution (like most lenders in rural areas). In terms of the four generic fields of asset-liability management, emphasis will be placed on the specific problems of mobilizing and operating funds for agricultural lending [2].

Firstly, *the availability of funds* and thereby the *composition of funds* within a lending institution involved in agriculture depends a lot on the type of lender. Usually the spectrum of possible funds increases with the lender's grade of formality. Chartered financial institutions ruled by banking law are able to mobilize all kinds of funds (deposits, commercial borrowings, debentures and equity), although not automatically at favourable conditions. At the bottom end are informal lenders (individual and self-help groups) who are faced with many restrictions regarding access to deposits, commercial borrowings and debt instruments (see Chapter 3). Other decisive factors regarding access to certain funds are the performance of a financial institution and the macroeconomic framework. Since many lenders in rural areas are informal or semiformal, with a non-existent or, at best, low rating on capital markets and often acting in economies with high inflation rates, their structure of liabilities is skewed rather than balanced. Liability structure management aims to reach a sound composition of funding sources to comply with basic banking rules. These rules embrace sufficient equity and a mix of different liabilities, which guarantees a certain degree of managerial

[2] Literature which deals in general terms with asset-liability management exists in abundance and can be consulted when necessary. References are given at the end of the document.

autonomy, creditworthiness and risk diversification. However, in particular rural financial institutions experience limitations affecting their ability to manage the liability structure. Creditors of agricultural credit co-operatives and unit banks often have homogeneous economic activities or are limited in number (NGOs with one or few donors, agricultural development banks relying on government funds). Hence, it is often more difficult for these institutions to diversify their risks or to maintain autonomy in governance or management decisions.

Secondly, in terms of the *interest margin* (the pricing difference between interest earning assets and interest paying liabilities) institutions lending to agriculture are faced with interest rate risks [3]. In many developing countries margins for agricultural lending are set by governments, which impose ceilings on deposit and loan rates. Agriculture is a politically sensitive sector (see Coffey, AFR No. 2). These externally defined ceilings are all too liable to inadequate adjustment under changing economic conditions. Moreover, a long-term loan portfolio has to be refinanced several times, if no long-term funds are available that match exactly the term structure of the outstanding loans. However, the interest rates of funds in future refinancing periods are unknown. Therefore, long-term loans expose financial institutions to higher risks than a loan portfolio characterized by short terms and a high turnover.

Thirdly, the *foreign exchange risk* is associated with international borrowings. Many NGOs and agricultural development banks raise offshore funds for local lending. This bears a high currency risk and may turn even concessionary loans into a heavy burden. The Nigerian NACB almost had to cease their operations because it assumed the foreign exchange risk of an African Development Bank loan. After the devaluation of the Nigerian Naira the repayment costs were several times higher than calculated a priori.

Fourthly, the *liquidity risk* management of institutions lending for agricultural purposes needs to be more sophisticated than when lending to

[3] The term interest rate risk management applies to risks associated with unforeseen changes in interest rate levels. It does not describe alleged problems of low profitability of agricultural lending. When it is clear in advance that a certain loan is not profitable (the margin is too low) then the management decision is rather easy: do not lend. In this case there is no interest rate risk.

commerce or to diversified urban economic activities. Agricultural production and investments require customized loan products with longer terms and adapted conditions. Cash flow patterns of farm households usually differ from urban or peri-urban enterprises. This does not apply to every rural household since many try to diversify their sources of income flows through off-farm activities or salary earning. Moreover, some types of livestock production realize a steady flow of income, making these ventures more flexible than crop production. However, investments in horticulture, plantations, irrigation, land purchase are long-term and cannot be financed by short-term credit. Crop production has a clear seasonal cash flow pattern and requires special loan repayment terms. Financial institutions involved in agricultural lending have to address these specific requirements. They have to arrange their liability structure or/and the internal liquidity management in order to solve the problem of unmatched maturities of funds and loans (see Chapter 4.2). Both tasks are difficult. Many financial institutions, especially unit banks and informal institutions in rural areas, are not able to mobilize sufficient long-term funds. Government or donor funding is in many cases unpredictable. Reliance on offering higher interest on term deposits may also not elicit sufficient response from savers who prefer short-term savings products. Moreover, the capabilities of managing liquidity risks are still under developed in many financial institutions, due to inadequate management information systems or weak banking skills.

The table below summarizes the challenges of fund mobilization and management of institutions which are involved or want to get involved in agricultural lending.

Table 3

Challenges of fund mobilization for agricultural lending in relation to major asset-liability management goals

Asset-liability management goals	Challenges of fund mobilization for agricultural lending
Sound liability structure (e.g. sufficient equity, appropriate mix of creditors, compliance with banking laws and standards)	• No or limited access of informal and semiformal lenders to various types of funds (e.g. savings deposits, debentures) • Dominance of one creditor or homogeneous creditors (e.g. in the case of agricultural banks, credit co-operatives) • Deposits in rural financial markets are less interest rate sensitive and costly to raise
Low exposure to interest rate risks	• State interventions in interest rate policy for deposits and agricultural loans • High refinance risks of long-term loans • Limited access to fixed interest liabilities (bonds, time deposits)
Low exposure to foreign exchange risks	• High percentage of off-shore funds, but no or only low percentage of assets in foreign currency
Low exposure to liquidity risks	• High demand for long-term credit, but limited access to long-term funds • Need for sophisticated liquidity management • Higher risks of massive deposit withdrawals after crop failure, animal diseases, etc. • Refinance risks due to withdrawal or cut of public funds

2 FUNDS FOR AGRICULTURAL LENDING AT A GLANCE

This chapter describes the various sources of funds without analysing their impact on institutions lending to agriculture. The comprehensive analysis of the impact on financial viability, risk exposure and governance will be given in Chapter 4. This chapter is divided into two parts. The first part lists the main features of concessionary funds, while the second part describes commercial funds. Equity as funding source belongs to both categories. On one hand, grants and subsidies are concessionary elements which can lead to a broader equity base. They are discussed in the section on government funds. On the other hand, shares purchased by profit seeking investors are commercial resources and listed in the second part of the chapter.

2.1 FUNDS AT CONCESSIONARY TERMS

2.1.1 International Donor Funds

Bilateral and multilateral development agencies provide agricultural financial intermediaries with various types of support: loans and capital ranging from concessionary to almost commercial terms and technical aid grants. The predominant support in the past was the provision of concessionary loans through free standing agricultural credit projects or as components of multi-purpose projects (**A & B** in Table 2 [4]). The biggest recipient, India, got approximately US$ 2.3 billion in World Bank loans for on-lending between 1969 and 1992. Besides, there are smaller contributions to cover some operational expenses such as credit guarantees backing financial institution's loan portfolio and technical assistance (**C** in Table 2). These components lead to an increase of the institution's surplus and net worth. International guarantees, for instance, enable a financial institution to spend less on insurance or loan-loss provisions, while technical assistance may take over certain expenses, such as for training, computer hardware, consultant remuneration, and other expenditures.

[4] In the following the reader will find the 16 instruments listed in Table 2 with characters from A - R in brackets.

This section places emphasis on donor lending in the form of credit projects (e.g. revolving funds etc.). Other forms of subsidies are covered in the chapters on government funds and equity.

The most significant providers of international funds for financial intermediary lending are multilateral development banks (World Bank Group, IFAD, EIB, regional development banks) as well as bilateral development agencies or banks (the German KfW, the Japanese OECF, USAID etc.). The conditions of these credit lines usually reflect the recipient country status (IDA eligibility criteria). Donors can provide funds either to retail lenders (one step lending) or through a second-tier institution (two step lending). Depending on the size of the country and its financial market, second-tier institutions are either specialized apex banks or central banks. The number of participating banks under apex lending arrangements is usually higher than in one step lending projects. Refinance facilities provided to second-tier institutions are able to create operational linkages between the wholesale lender and the front-line banks. They can contribute to improving the financial infrastructure. On the other hand, apex-lending arrangements cannot be linked as effectively to donor goals as contracts with single-participating institutions.

For donors two step lending projects are easier to implement but they lose much of their potential operational control. Normally, it is not possible to earmark donor funds in the on-lending process from the donor agency through an apex body towards the final borrower. NABARD for instance, the executing domestic apex bank for World Bank loans in India in the past, has channeled its loans through two other apex institutions of the credit co-operative system down to the final borrower.

The following paragraphs describe the evolution of the World Bank's agricultural credit portfolio as an example of the use of donor funds. The main features in the past and the recent changes are similar to other donor interventions in rural financial markets in developing countries.

The World Bank's agricultural credit portfolio has been a major part of its agricultural programme for the past 50 years. The programme embraces free standing agricultural credit projects, credit components attached to multi-purpose agricultural projects and technical co-opera-

tion projects (together about 750 projects). Free standing projects comprise 80 percent of the total volume of US$ 18 bn approved between 1948 and 1996. Altogether 102 countries have received Bank funding for agricultural credit, but only 30 countries have received about 90 percent of the total volume. The largest recipients have been India, Mexico and Brazil, each with over US$ 2 bn approved. Many projects were part of a long series of loans. After the final installment a subsequent project with similar conditions was negotiated (see Box 1).

The biggest volume was approved between 1975 and 1989. The peak was reached in 1983. After this year there was a gradual decline due to an increase in macroeconomic instability and the emergence of the structural adjustment portfolio. In 1990 the portfolio experienced a sharp decline in terms of the volume and project numbers. Figure 3 illustrates this evolution.

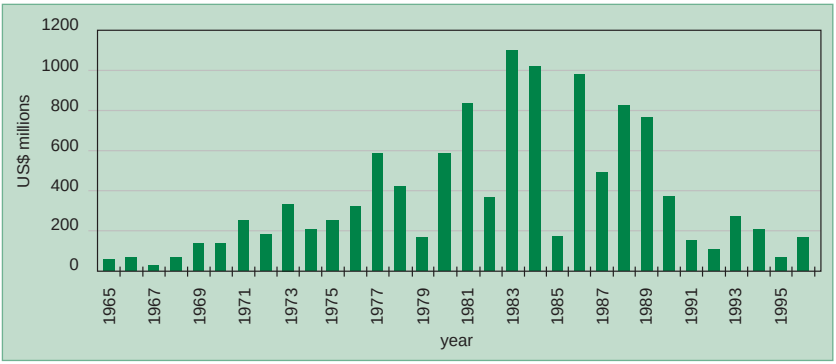

Figure 3: Volume of the World Bank's free-standing agricultural credit projects in market economies 1965-96

The reason for this shift was the issuance of a new *Operational Directive on Financial Sector Operations*. This new Directive reflected paradigm change from the traditional directed credit approach towards the financial market approach (see Coffey, AFR No. 2). It was argued that most agricultural credit projects tended to use the executing agency to channel subsidized funds towards the final borrower rather than encourage the intermediation between savers and investors. The financial intermediary was only an appendix of the real sector instead of an

independent actor. Other objections to the traditional approach were the indifference to deposit mobilization, targeting without positive effect and the use of subsidized interest rates, which undermined the self-sustainability of the lending institution. Thus, since the 1990s the donor community has adopted, by and large, the main findings of the academic debate [5] on the harmful impact of cheap credit on financial market development.

The effects of the policy change are clearly recognizable. The volume of the World Bank's on-lending for agricultural credit projects was drastically reduced from an annual average of over one billion US$ in the 1980s to less than US$ 250 million [6].

Every recipient country that applies for an agricultural credit project must now prove that its executing bank operates in accordance with the requirements of the new guidelines formulated in the Operational Directive. Up to 1998 there have been only few retail banks eligible for new World Bank funds [7]. No loan agreement was signed in Sub Saharan Africa after the release of the new guidelines. Nevertheless, donor funds still constitute a significant part of the liabilities of agricultural banks, since many loan agreements have a duration of over 15 years.

Operating within a stable macroeconomic environment the participating bank should meet the following criteria [8]:

- net income should provide a positive return on equity;
- a capital adequacy up to 20 percent;
- high collection rates of current dues to avoid capital erosion;
- public funds should not account for more than 10 percent of total liabilities and equity;
- directed credit in the overall portfolio should not exceed 10 percent;
- deposit to loan ratio should be at least 140 percent.

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5 See Adams, Dale W., Graham, Douglas H., von Pischke, J.D. 1984. *Undermining Rural Development with Cheap Credit*. Westview Press, Boulder.

6 Excluding big projects in Russia and China which were not typical agricultural credit projects.

7 E.g. the Vietnam Bank for Agriculture, BNA in Tunisia, CNCA in Morocco and the PBDAC in Egypt

8 Operational Directive 8.30, World Bank February 1992, updated as Operational Policy OP 8.30 in 1998

Box 1

Lending lines as recurring sources of funds

A significant proportion of World Bank's rural credit portfolio consisted of follow-up projects in recipient countries. Dominant features were more simplified project appraisals. In many cases support was granted, although the previous project performance has not been satisfactory.

The longest loan series have been:

1. In Mexico with FIRA (FIRA I in 1966 until FIRA IX in 1987); total amount approved: US$ 1.625 bn

FIRA X was cancelled due to the lack of accordance with the principles of the financial market approach.

2. In Peru with BAP (BAP I in 1955 until BAP VI in 1983); total amount approved: US$ 185 m

BAP collapsed in 1992.

3. In Pakistan with ADBP (ADBP I in 1965 until ADBP VI in 1986): total amount approved: US$ 375 m

No pipeline but still under discussion.

4. In Morocco with CNCA (CNCA I in 1966 and still active); total amount approved: US$ 385 m

In 1987 nineteen of the 30 most important borrowers had active lending lines. In 1996 there are only 4 lines still disbursing (Morocco, Tunisia, Philippines and Hungary). 9 lines have been cancelled and the remaining lines are under discussion.

Considering the project approvals in the last years the application of these criteria is not as strict as outlined. However, the change of paradigm was the final chapter for many agricultural banks in developing countries with a long and intensive relationship with the largest international development agency.

2.1.2 Government Budget Funds

Not only international donor agencies, but also most governments of developing countries and formerly centrally planned economies provide various types of funds and support for agricultural lending. Both the

international donor community and national governments use taxes and other budgetary funds to establish, maintain or enlarge agricultural lending activities of financial institutions. Three instruments can be distinguished:

1. Borrowings and trust fund agreements (**D & E** in Table 2)
2. Equity grants: direct grants or capital enhancement (**F/R**)
3. Profit grants: operational subsidies and guarantee schemes (**F**)

2.1.2.1 Borrowings and trust fund agreements

There are two different lending instruments available to place subsidized government budget credit lines in financial institutions: (a) governments can offer special credit facilities or (b) they create a trust fund within financial institutions. In the first case, target institutions (e.g. agricultural development banks or rural credit co-operatives) are allowed to raise these funds voluntarily and to determine the volume of borrowings they need.

Establishing one or several government trust funds within the financial institution is the second common method to push agricultural lending. The role of the lending institution is often reduced to a channel of cheap money in order to fulfil predefined purposes and procedures. Using trust funds is not similar to borrowing funds from the government, since most trust fund agreements have their own specific requirements. Their procedures differ from normal daily banking activities and in many cases banks have to keep separate trust fund accounts in the balance sheet. Some development banks had numerous trust funds, up to forty at one time in the case of the Agricultural Co-operative Development Bank of Guyana. Each of these had separate reporting requirements.

2.1.2.2 Equity grants

In most developing countries specialized agricultural development banks used to be the largest formal rural financial institution in terms of outreach and loan portfolio. They were set in motion by governments through initial capital injections. The paid-in capital deriving from the government budget represents in some cases a dominant position on the

liability side: e.g. more than 25 percent of the financial resources of the Jordanian Agricultural Credit Corporation consists of paid-in capital.

Unlike borrowings and trust funds, capital contributions have a direct impact on the autonomy of the financial institution, since the capital owners are represented on the board of directors of the institution and determine its policies as well as control its operations.

In some cases grants received from governments or international development agencies are accounted for as revenues in the profit and loss account. This is misleading, since grants are not from business operations. They should be accounted as equity contributions like capital enhancements (Schreiner, 1997). For more details about capital and equity see Chapter 2.2.3.

2.1.2.3 Profit grants

It is difficult to identify each constituent of the vast spectrum of operational subsidies and grants provided by governments and donors. Subsidies may cover staff costs, training, purchase of equipment, office rent, insurance, administration of loan guarantee schemes, responsibility for foreign exchange rate risks of international loans, etc. They are not funds for on-lending in a narrow sense, but they increase the net profit or decrease the net losses of financial institutions. Thus, they augment their retained earnings and reserves (the main component of equity) and enlarge the balance sheet total. In order to demonstrate the real performance of agricultural development banks and other financial institutions, it is necessary to make explicit all subsidies that are received to keep the institution afloat. In fact, many of these subsidies are not reflected in conventional accounting reports. YARON proposes to calculate a so-called *Subsidy Dependence Index* (SDI). This measure aggregates all subsidies received, compares them with the earned interest rate income of the lending institution and indicates the percentage by which the institution's average on-lending interest rate should be increased to make the institution independent from outside subsidies.

Government guarantees backing bond issues or international borrowings of banks result in a specific liability composition as well. Guarantee

schemes are indirect subsidies of financial costs the financial institution would have to pay at market terms. Without these government guarantees many financial institutions would not be able to mobilize funds by bond issues or could not access commercial resources. Therefore, the fact that a development bank raises its funds for on-lending from commercial sources at market rates can be misleading, if these borrowings are backed by government guarantees. In many if not most cases, without government intervention a development bank would not have been able to access these funds, due to an unfavourable rating as borrower. Guarantees may enlarge the mix of funds available and the financial institution's loan portfolio [9].

This leads to the general problem of liability distortions due to public interventions in banking operations. If governments subsidize the costs associated with particular funds (regardless of whether these are transaction costs or repayments of the loan principal or interest) the list of (commercial) liabilities used by lending institutions becomes meaningless. It is not possible to separate the costs of raising funds from the funds (loan principal) themselves. Commercial funds are characterized by interest rates at commercial terms. Once the government pays a share of these costs, the fund is not a commercial one anymore. However, it appears as a commercial fund on the liability side of the balance sheet. Therefore a study on the sources of funds must comprise an analysis of the financial conditions of these funds and the various sources of subsidies.

2.1.3 Central Bank Funds

In numerous cases world-wide, central banks or central bank affiliated institutions are significant creditors of agricultural financial institutions. The Indian rural credit co-operative sector, for instance, relies heavily on central bank money, which is channeled through the apex body NABARD (see Box 2). Other examples are the Agricultural Development Bank of Pakistan, the Agricultural Cooperative Bank of Syria and to lesser extent the Jordanian Agricultural Credit Corporation.

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[9] For deeper analysis of guarantees backing the loan portfolio of financial institutions see: FAO. 1998. *Credit Guarantees*, by Gudger, M. FAO Agricultural Services Bulletin No. 129, Rome.

Central banks are important actors in market economies. They control the supply of money, hold the country's reserve of gold and foreign currency, are involved in banking regulation and supervision and implement macroeconomic monetary policy ideally as an independent entity. As lender of last resort they influence the interest rate structure by setting the rediscount rate for eligible papers like bills or securities. Rediscount facilities are one of the most important source of liquidity for banks. Therefore, the conditions using this facility (interest rate, amount and spectrum of eligible papers) are relevant parameters to define the ability of financial institutions to on-lend funds to the final borrower.

In OECD countries central banks usually do not offer credit lines. They do not provide banks with additional funds, but they change assets with a low grade of liquidity (e.g. bills or securities) into assets with a high grade of liquidity. Commercial banks supply already discounted bills or securities (which have a contra entry on the liability side) accepted from the general public in order to get cash. In accounting terms it is just a change of the asset structure (less bills and more cash). Rediscounting facilities are not considered sources of funds because they do not increase the liabilities (and the balance sheet total) of banks using them. They are sources of liquidity.

However, in many developing countries central banks offer various instruments to stimulate and finance agricultural lending:

1. Central bank *refinance schemes* at special conditions: Usually the scope of eligible paper for rediscount is narrow and clearly defined. However, in order to support agricultural lending institutions, central bank authorities may establish special refinancing schemes. Within these schemes substantial parts of the loan portfolio (even unsecured loans) are classified as being eligible for refinance. Central bank refinance schemes are not rediscount windows, but concessionary credit lines since they enlarge the balance sheet total. The interest rates of these credit lines are typically lower than the rates that lenders pay for alternative sources of funds.

2. *Special reserve requirements*: for institutions involved in agricultural lending the reserve requirements are either lower or these institutions are exempted. Thereby the agricultural financial institution is able to on-lend theoretically up to the whole amount deposited by savers without freezing a certain percentage.

After the Structural Adjustment Programmes many central banks, in particular in Latin America, have changed their character. Nowadays, many of them are implementing monetary policy by setting rediscount rates, but they do not support certain sectors anymore.

Central banks that support agricultural lending act usually on behalf of their governments. They are not independent macroeconomic actors, but government agencies carrying out political programmes. Unlike governments, many of them are not faced with budget constraints. This is the rationale why many ambitious programmes in developing countries are financed by central banks instead of the treasury.

2.1.4 Compulsory Deposits

In many countries governments have tried to increase the amount of money available for investment in agriculture by introducing regulations affecting urban-based commercial banks. In these cases, banks that are normally not involved in agricultural lending are required by law to lend a fixed quota of their total lending to the agricultural sector. Either they have to allocate this fixed share of their portfolio directly in the sector or indirectly through specialized banks which on-lend these compulsory funds to the final borrower. In some cases shortfalls of commercial banks, which were not able to lend the whole required amount directly to the final borrower, constitute a considerable part of agricultural development banks resources (e.g. the Agricultural Bank of Iran and the Bank for Agriculture and Agricultural Co-operatives, BAAC, in Thailand in the past).

In this section we place emphasis on the rules, procedures and effects of using compulsory deposits, but no analysis is made of the impact of loan portfolio requirements on private urban-based banks. The effects of

Box 2

Central bank as funding source: The Indian case

The formal rural financial sector in India consists of three main actors, supplying more than 60 percent of loans to agriculture: state-owned commercial banks with approximately 30 000 rural and semi-urban branches, Regional Rural Banks with 15 000 and the co-operative banking sector with 100 000 branches. A significant share of their resources derives from the Reserve Bank of India (RBI) channelled through the specialized apex body NABARD (National Bank for Agriculture and Rural Development). NABARD was established in 1982 in order to assume RBI's agricultural refinance activities. Its main sources of funds are borrowings from the Reserve Bank either directly (General Line of Credit) or indirectly through the National Rural Credit Fund which was established by RBI. NABARD's equity is also mainly financed by RBI. To a lesser extent NABARD uses compulsory deposits from commercial banks (Rural Infrastructure Development Fund), and issues bonds.

NABARD's refinance support (US$ 6.2bn loan balance outstanding in 1999) is extended for short-term purposes to the co-operative banking sector and to the Regional Rural Banks and for long-term purposes also to the commercial banking sector. About one third of total institutional credit to agriculture consists of refinance loans from NABARD (i.e. RBI). In terms of the Primary Co-operative Banks with approximately 85m members the share of central bank refinance is even higher. They depend heavily on borrowings from higher financing agencies, like their own apex bodies and NABARD. The same applies to the Regional Rural Banks (approx. 50 percent of their resources comes from NABARD). The exact figures are not easy to indicate since central bank funds are channelled through various wholesale institutions. Through this massive supply, a substantial part of the investments for the Indian Green Revolution was funded.

Access to and conditions of refinance loans depend on the performance of the co-operative banks. Minimum loan recovery of 40 percent is required and certain criteria in terms of operational efficiency have to be met. The interest rate charged by NABARD on refinance loans is linked to deposit mobilization. Rebates are allowed if deposits reach a certain percentage of total liabilities. However, in any case the interest rate is less than the market rate for borrowings or costs involved with deposit mobilization. This is probably the most crucial disincentive for recipient institutions to undertake serious efforts to diversify their liability structure.

mandatory lending on risk management, interest rates of savings and profits are already widely discussed [10].

Two different sources of compulsory funds for agricultural lending can be distinguished:

1. The first source is urban-based banks that place their agricultural credit quota shortfalls into specialized agricultural development banks (**H** in Table 2). Many Asian countries established portfolio allocation targets for commercial banks. In Iran and the Philippines the target of credit allocations in the agricultural sector was set at 25 percent, in Thailand at 20 percent and in India at 18 percent. The Rural Infrastructure Development Fund administrated by NABARD is completely financed by shortfalls of Indian banks, while Thailand's BAAC in the eighties was funded to one third by compulsory deposits. A particular kind of asset portfolio intervention was established in Morocco in 1981 in order to deal with the effects of a drought. Urban-based banks were required to buy bonds of the Caisse Nationale de Crédit Agricole (CNCA) at fixed low interest rates of 3 percent. Today, bond issues still constitute a significant part of CNCA's resources.

2. The second source comprises short-term funds from government entities (e.g. state-owned enterprises) paid into checking accounts of agricultural development banks (**I**). Most of the deposits of the Agricultural Bank of China are mobilized from government-owned enterprises and not from individual savers. BAAC is partly financed by deposits from government entities and state-owned enterprises. The mandatory loan portfolio allocations of urban banks are no longer a relevant source of funds for BAAC since the actual commercial bank lending to the agricultural sector exceeds the target set by Bank of Thailand (Fitchett, 1999).

Enlarging the total balance of agricultural lending institutions without affecting the government budget is the main objective of loan portfolio requirements or interventions in the cash management of state enterprises. Mostly, it is an essential part of a supply-led credit approach,

[10] During the last two years the email network DFN has been a rich source of information and arguments.

which aims to augment the flow of funds to the agricultural sector. Government budgets are in most cases too limited to endow agricultural banks with the necessary resources for this purpose.

Both types of compulsory funds are result of government interventions. Compulsory savings deposited by clients in order to qualify for credit might also be classified as compulsory funds (**K**). Many NGOs are using this instrument as a collateral substitute for small-scale borrowers. Nevertheless, unlike the other two cases these requirements are not result of government interventions, but form part of new microcredit technologies.

Financial institutions requiring compulsory savings do not aim at broadening their loan portfolio in the first place. They use these funds both as collateral substitutes and in order to gain an insight into the financial discipline of the prospective borrower. A survey on microfinance institutions revealed that about two-thirds of NGO deposits are compulsory (Sustainable Banking with the Poor, 1998).

Compulsory deposits fall under the category of concessionary funds, since the interest rate, which the recipient bank has to pay, is either under the market rate (by government directive) or it does not reflect the performance of the institution, i.e. that under market conditions the recipient institution would have paid a much higher interest rate reflecting the risk of providing the institution with such amount of outside funds. In all cases the recipient banks gain an extra profit.

2.2 Funds at Commercial Terms

2.2.1 Savings and Deposits

Most of the agricultural development banks were established in order to channel public funds to target groups financing predefined purposes. Unlike rural savings and credit co-operatives, only a few were allowed to mobilize deposits or savings from the general public (**L**). Savings products were regarded as unnecessary by many banks. This was evidenced by strong objections to FAO's positive position on savings at the

1975 World Conference on Credit for Farmers (FAO and CARIPLO 1975) [11]. Later it was observed that savings were the *"forgotten half"* of rural financial intermediation (Vogel, 1984). Loans were and still are the main product of agricultural development banks. Few have enlarged their spectrum by savings products, though it is now generally acknowledged that rural households can save and require this kind of service. Moreover, many farmers would not apply for a loan to cope with urgent or unforeseen cases if they had easy and reliable access to appropriate savings facilities or insurance.

Bank Rakyat Indonesia is one of the few examples of a successfully reformed agricultural development bank (see Box 3) in terms of their funding side along with the BAAC in Thailand and Bank Pertanian Malaysia. These agricultural banks, in which deposit mobilization now plays a major role, started in the 1960s relying completely on borrowings from the government and compulsory inter-banking loans. The correlation between the performance of a banking institution and its spectrum of services merits closer examination. In Chapter 4, these interactions analysing the advantages and disadvantages of individual deposits and savings as resource for agricultural lending will be discussed.

The main attribute, which distinguishes deposits from other liabilities, is the question of who takes the initiative of establishing the debtor-creditor relationship. Borrowings and debt instruments are funds voluntarily raised by financial institutions. The institution itself takes the initiative to raise these funds and defines the amount. Unlike borrowings, deposits are funds left with a financial institution on the initiative of the saver (creditor), although savings mobilization campaigns can play an important role in promoting the habit of rural people to save in banks. However, it is not the bank but the client who places savings in a financial institution and defines the amount he chooses to lend (deposit).

[11] At the 1975 Conference, in responding to an FAO paper of Richard Roberts, advocating savings mobilization, a delegate stated that the bank of which he was Managing Director did not mobilize deposits for the following reasons: (i) branches would have to be opened in high rent, high pedestrian traffic parts of towns, (ii) audit fees would increase due to tighter audit requirements on deposit-takers, (iii) staff numbers would have to be increased and special training given in handling deposits, (iv) costs of funds would rise compared with concessionary funds attracted from the Asian Development Bank.

Box 3

Individual deposits as principal source of funds: BRI

Bank Rakyat Indonesia (BRI), a century-old government-owned agricultural development bank in Indonesia, was reorganized in 1968 in order to channel subsidized government funds (BIMAS credit scheme) to large numbers of small farmers for the purpose of attaining rice self-sufficiency. The newly established delivery structure consisted of a sub-branch network of over 2 000 (now around 4 000) *unit desa*: so-called village units established at subdistrict (*kecamatan*) level.

Due to high default rates (around 50%) and declining government revenues in the early 1980s, the government was not longer able to maintain the BIMAS programme. With the onset of financial deregulation in June 1983, BRI was given the alternative of closing its *unit desa* network, or standing on its own feet. In 1984 BRI introduced two financial innovations: KUPEDES, a non-targeted rural credit product with market rates of interest and a powerful built-in incentive for timely repayment; and SIMPEDES, a savings product with positive real returns and an immensely attractive lottery component. These two products made BRI one of the most successful financial intermediaries in the developing world: basically mobilizing funds at commercial terms, covering its costs from the interest rate margin, and financing its expansion from net profits.

By Dec. 31, 1996, the BRI units held 16.2 million deposit accounts and 2.5 million credit accounts, amounting to US$ 2.97 billion in savings balances and US$ 1.91 billion in loans outstanding, respectively. In the context of the Asian financial crisis, the number of savings deposit accounts at BRI units unexpectedly increased to 20.9 million, while the number of credit accounts remained constant at 2.5 million accounts (August 1998 data). Factors that have contributed to the massive mobilization of deposits by BRI units include:

1. Financial policy framework: no interest rate control; low reserve requirements; liberal licensing of new banks and branches;
2. Macroeconomic stability: low inflation rates (until mid-1997);
3. Interventions: phasing out of most subsidized credit schemes;
4. Attractive savings products with positive real returns;
5. Extensive rural branch network;
6. Internal BRI incentive system which encourages deposit mobilization and discourages outside borrowing;
7. Government deposit guarantees remained effective during the Asian financial crisis in 1997/98 despite high inflation rates and negative real returns.

Consequently, banks have to satisfy various conditions and to provide demanded services in order to attract depositors. Otherwise, nobody will be keen to leave savings with a financial institution. Banks must respond to the depositors' requests for safety, efficiency and stability. They have to win the confidence of depositors in order to mobilize savings as funds for on-lending activities. In addition, contrary to borrowings as loanable funds, banks have to provide various services to its deposit creditors. Other commercial creditors are not expecting any special service other than financial returns.

The following types of deposits can be distinguished:

Deposits
- 1. Current account deposits (also checkable or demand deposits)
- 2. Savings deposits (also passbook savings)
- 3. Time deposits (also term deposits or certificates of deposit)

Current account deposits are normally non-interest bearing funds. The deposits are payable on demand, i.e. withdrawals will be paid to the depositors immediately. The current account is the main instrument for depositors' financial transactions. Therefore, maintaining current accounts is a labour intensive business for financial institutions. Although the accounts are not interest bearing, there are high costs incurred in servicing clients and high competition between financial institutions by offering particular services to attract more clients.

To *savings accounts* funds can be added or withdrawn any time. Transactions and interest payments are recorded in passbooks held by the owner. In the past they were the most important liability of commercial banks. Many financial institutions are still specialized in mobilizing and stimulating savings (mutual savings banks, savings and loan associations, credit unions and postal banks).

Time deposits are not withdrawable unless the stated time (ranging from several months to over five years) is met. Since they are less volatile than passbook savings, depositors expect higher interest. The fact that long-

term deposits are stable funds makes them often negotiable as certificates of deposits (CDs) on a secondary market (see also Chapter 2.2.2).

Volatility and reserve requirements
Due to the fact that depositors take the decision to deposit and withdraw from the financial institution, these funds tend to be more volatile than other resources. The volatility of funds can cause liquidity problems if big withdrawals occur at the same time. Thus, special liquidity management of funds is required. This will be addressed in Section 4.2 together with other impacts of deposits on bank management. Mention should be made of the fact, that the grade of volatility depends on the type of deposit and the objectives of depositing. Time deposits are usually left with financial institutions to earn interest. There is evidence that they are more interest rate sensitive than savings deposits. Therefore, under conditions of fluctuating interest rates, savings might build up a more stable basis than time deposits. Moreover, statistically there is always a reliable average balance of core deposits. The different features of deposit types are also reflected in different reserve requirement ratios.

Reserve requirements in their role of monetary policy instrument, force financial institutions to freeze a certain share of their deposit liabilities to protect of depositors' money. The deposit-taking institutions are required to hold the minimum balance in cash on a central bank account or in some cases on an apex bank account. Reserve requirements act as a tax on bank deposits (i.e. on savers) because the financial institutions cannot lend out the whole amount and the minimum reserve usually does not earn interest. As mentioned above, the ratio of required reserves to deposits depends on the type of deposit and its conditions. Each country has established its own rules. In Germany for instance, the ratio of required reserves ranges from maximum 10 percent in the case of savings deposits, up to 20 percent for time deposits, and up to 30 percent for current account deposits.

2.2.2 Other Commercial Liabilities

Other commercial liabilities fall into two kind of funds: *commercial borrowings* and *debt instruments*. World-wide, one third of banks' total liabilities are in the form of borrowings and debt instruments. This share

has increased from decade to decade (OECD, 1997). In the 1960s they comprised less than 5 percent of the total liabilities.

Unlike commercial and urban financial institutions, agricultural development banks, rural banks or co-operatives use fewer commercial borrowings and debt instruments. This is may be due to the fact that they have access to concessionary funds or that their rating on the capital market is too low to attract commercial creditors.

2.2.2.1 Commercial borrowings

The main sources of *commercial borrowings* (**M**) are banks (inter-banking loans), insurance companies and large-scale enterprises. In contrast to deposit-taking activities, the borrowing institution takes the initiative to raise market funds and determines the amount it needs. Borrowing costs and conditions are by definition at market-related terms and depend on the financial institution's credit rating on the money or capital market.

Borrowings appear usually as separate entries in the balance sheet. In the case of inter-banking loans between an apex bank and its client banks, borrowings are often in form of deposit overdrafts. Most retail lenders establish a current account at their apex institution or correspondent bank in order to access and deposit funds as part of their liquidity management. Nevertheless, these fund-raising activities are driven by the same market principles as other borrowings.

2.2.2.2 Debt instruments

A great variety of *debt instruments* are used to mobilize funds. *Bonds* (**N**) are the most common form. They are usually sold against loans to public entities (municipal bonds) or mortgages (mortgage bonds). Specialized mortgage banks raise their funds basically through bond issues. They are able to provide long-term credit to farmers who have appropriate collateral that guarantees loan repayment. Small-scale farmers without land titles do not have access to physically secured loans. The process of converting loans into marketable securities for sale to investors is called *securitization*. On developed capital markets more and more types of loans are repackaged as bonds collateralized by pools

of mortgages, auto loans, credit card receivables, leases, and other types of credit obligations.

Unlike shares, bonds do not give right to a share of property of the issuing organization. Bonds pay a fixed rate of interest at a specific time and this interest must be paid before dividends are distributed to shareholders. Contrary to share dividends, interest payments on bonds form therefore part of the institution's expenses.

In some countries, supervisory authorities decide which kind of financial institution is eligible to issue bonds and which kind of assets they can use to back those debentures. In Germany for instance, only specialized mortgage banks and a few public banks are allowed to issue bonds (*Pfandbriefe*). Pfandbriefe guarantee a senior claim and have to be backed by highly secured loans. Their rating on the capital market is one of the highest (AAA or Aaa respectively according to rating agencies).

Negotiable *certificates of deposits* (CDs) are another form of debt instruments (**O**). They are not issued against assets, but in return for large denomination long-term deposits. In Germany they are subject to reserve requirements. The line between debt instruments and deposits is also not always easy to draw. It depends on the financial institution's accounting system, whether CDs appear as deposits or debt instruments. BancoSol in Bolivia raises a notable part of its funds through negotiable CDs.

One money market instrument, which is worth mentioning, is the *Repurchase Agreement* (Repo). Unlike bonds or CDs, Repos are short-term funds for lending institutions (usually with a maturity of less than two weeks) raised in order to manage the mix of liquid assets. The borrowing institution sells securities (assets) usually to big enterprises and agrees to repurchase them later at a price slightly above the selling price. The funds obtained by this transaction appear on the liability side of the financial institution enlarging the balance sheet total. This is a special case of how asset structure changes (short-term sale of securities) can lead to an increase of liabilities.

Some agricultural development banks are raising notable volumes of funds through these various market-related instruments. For instance,

the Land Bank of South Africa is basically financed by debentures and Thailand's BAAC issues special bonds which comprise approximately 15 percent of their liabilities and equity. However, public owned banks like the BAAC or the AFC in Zimbabwe are privileged since the government backs their bond issues. In this case one can say that it is not a commercial liability but a concessionary instrument (see the section on profit grants). In developing countries money and capital markets are still relatively unequipped to raise sufficient funds for agricultural lending.

2.2.3 Equity and Self-Financing

Liabilities are usually well defined and easy to identify in an institution's balance sheet. However, the same does not apply to the various ways financial institutions publish their components of equity due to the lack of a generally accepted accounting regime world-wide.

Apart from the net worth (total assets less total liabilities) published in the balance sheet, financial institutions have other hidden reserves like undisclosed or revaluation reserves, which normally do not appear in their annual reports. THE BASLE COMMITTEE ON BANKING AND SUPERVISORY PRACTICES (1988) has standardized the numerous constituents defining two different tiers of capital (see Box 4).

However, in developing countries there is no generally accepted system of measurement. And even if national supervisory authorities have adopted the Basle Agreement, this does not apply automatically to agricultural financial institutions, since in many countries they do not fall under the banking law (see Fiebig, AFR No. 5). The following section concentrates on paid-in capital and retained earnings (*tier one capital*), since this is usually the most relevant part.

Capital is the amount paid by shareholders to permit a financial institution to function as such. It reflects the ownership of the institution. Agricultural development banks are commonly public owned. Their authorized capital belongs to the government, government entities like the ministry of finance or agriculture, in some cases to central banks or other government banks. Shares of private commercial banks involved in agricultural finance are usually held by the general public and traded on the stock exchange. Both public and private banks have a fixed num-

Box 4

Seeking international convergence regarding the measurement of equity: The Basle Capital Accord

As outcome of the work of the Basle Committee on Banking Supervision the so-called *Basle Capital Accord* [12] was presented in 1988. It standardizes the definition of equity within the G-10 countries and specifies how the minimum capital requirements (capital adequacy) should be computed [13]. The Committee defined two tiers of capital:

Tier one: the core element comprising paid-in capital and disclosed reserves from post-tax retained earnings or other surplus, e.g. share premiums, retained profit, general reserves and legal reserves.

Tier two: supplementary capital comprising undisclosed, revaluation and loan-loss reserves which have been created against unidentified losses.

The *Basle Capital Accord* includes rules for the inclusion of loan loss reserves in capital, details for asset risk weighting and a target standard capital adequacy of 8 percent.

ber of shares outstanding and they can increase this amount by share reissues or by capital appreciation. However, the more common way to increase the financial institution's equity is by augmenting retained earnings, the second component of tier one capital.

Depending on the type of institution, paid-in capital is a more or less important component of total equity. For many NGOs or financial institutions at the infancy of their evolution, capital has a dominant position

12 International Convergence of Capital Measurements and Capital Standards (July 1988, updated April 1997)

13 The Basle Committee uses the term *capital* (tier one & two) referring to *equity* (total balance minus liabilities) and *equity capital* referring to paid-in *capital*. In general, the use of the term *capital* for accounting purposes is not standardized. Even more confusing is its use in other contexts, e.g. social capital, human capital and other inventions.

not only in terms of total equity but also in terms of all liabilities and equity. Initial capital originates in some cases from venture capital funds or from institutional or private investors. For *agricultural development banks* or public owned development banks in general, paid-in capital is the biggest constituent of total equity. Since channelling subsidized public resources towards special target groups is the main objective of most development banks, their retained earnings and reserves are relatively small. For *private commercial banks* the amount of paid-in capital within total equity is secondary. Their equity consists mainly of retained earnings and share premiums (capital reserve) due to share reissues. *Mutual savings banks* are banking institutions without paid-in capital. Their equity consists only of retained earnings. *Savings and credit cooperatives* are non-stock entities and member shares are usually considered as fixed deposits rather than equity. Defining whether member shares are deposits or not influences the calculation of the widely discussed *capital adequacy*. To limit arbitrary reporting, the World Council of Credit Unions released guidelines that exclude member shares from capital when computing the capital to asset ratio [14].

In addition, tier one capital embraces disclosed reserves built up by retained earnings in current and previous periods. Reserves are the connecting link between the profit and loss account and the balance sheet. Profits after taxes lead to an increase of the reserves and losses to a decrease. This simple interaction shows the relevance of proper accounting methods in order to gain a good insight into the real equity base of financial institutions. Inadequate loan loss provisions or depreciation enlarges reserves and therefore total equity. This interaction implies that the profit and loss account and each operational subsidy must be analysed, in order to assess the role of equity as a bank resource for onlending.

In agricultural development banks the amount of equity is in most cases heavily overstated or misleading. Many banks do not account loan loss provisions in a proper way [15] or disclose only a few of their implicit or

[14] Surprisingly, even in developed countries there is some confusion about the classification of member shares. The United Nations Federal Credit Union for example accounts them as equity.

[15] Some regulatory authorities require that all loan loss reserves are accounted for liabilities, which causes that both assets and liabilities are overstated (Barltrop, C.J. & McNaughton, D., 1992).

explicit subsidies. In cases when the retained earnings are bolstered by profit grants, it would be more accurate to disclose this part of equity as a concessionary fund.

The Basle Committee has defined some possible constituents of supplementary capital, which do not appear in the balance of assets, liabilities and equity but may be included in the capital base as *tier two capital* (Basle Committee on Banking Regulations and Supervisory Practices, 1988). Above all, undisclosed reserves can enlarge banks' equity endowment. Since these hidden reserves are unpublished, financial institutions can not leverage them for their daily business. Hidden reserves have to be first activated in order to become a source of funds e.g. by selling written-off assets, etc.

Capital adequacy

Regulatory authorities determine the amount of equity necessary for a financial institution to start, maintain and expand operations. In Germany for instance, banks are legally required to cover at least their physical infrastructure by equity. In addition, national authorities and international agencies define particular capital standards in order to harmonize capital measurement and to achieve internationally comparable equity and asset ratios (*capital adequacy*). These figures should help to assess the strength of banks and to calculate the risk for creditors. Unlike other types of business, only the banking sector is regulated for the use of specific sources of funds.

The Basle Committee on Banking and Supervisory Practices released in 1988 the Basle Capital Accord defining a target standard ratio of capital to risk weighted assets [16] at eight percent. This means that each dollar equity can back up a (unsecured) loan of up to 12.5 dollar. This standard is meant for banks undertaking international business, but suggestions for target ratios were also formulated for microfinance institutions in developing countries. The capital adequacy of 20 percent fixed in the World Bank's Operational Directive and also formulated by participants of a conference on regulation and supervision of microfinance institutions in Latin America organized by ACCION (CGAP, 1996) are exam-

[16] E.g. risk weight for cash: 0%, risk weight for guaranteed loans: 20%, weight for loans for the private sector: 100%. The sum of risk weighted assets is less than total assets since there is no risk weight over 100%.

ples. Conversely, WOCCU has suggested a ratio of minimum 10 percent for savings and credit co-operatives (WOCCU, 1997).

It should be emphasized that the capital adequacy can be used only as a rough figure to describe the capability of banks to buffer risks of their loan portfolio. More important than the equity base is appropriate loan loss provisions (recorded in the profit and loss account as an expense). These anticipated write-offs of bad loans should be deducted from the outstanding loan balance. If loan loss provisions are accurate and sufficient high, then equity capital or reserves are just an additional cushion against doubtful loans and other risks. Supervisory authorities should place more emphasis on proper accounting methods, adequate loan loss provisions and risk management rather than forcing the increase of equity and determining the composition of funds for lending activities.

3.1 NGOs AND INFORMAL FINANCIAL INSTITUTIONS

Some types of funds are only accessible to formally regulated and supervised financial institutions ruled by banking or co-operative laws. Without a banking license, deposits usually cannot be mobilized, debt instruments cannot be used and capital markets remain inaccessible. Hence, it is obvious that the range of funding sources for semiformal and informal financial intermediaries is narrower than that of formal financial institutions.

NGOs are usually not eligible for concessionary government or central bank credit lines. The Indian refinancing scheme, for instance, is only extended to co-operatives and Regional Rural Banks, while long-term credit facilities are also extended to rural branches of commercial banks. NGOs have no access to these central bank schemes. In addition, most NGOs are not allowed to mobilize savings from the general public and usually do not have access to money or capital markets. Evidence is shown in the analysis of SUSTAINABLE BANKING WITH THE POOR (1998). Here, 150 surveyed NGOs (with 1.4m deposit accounts and US$ 280m outstanding loan balance) reported that 69 percent of their total funding comes from donors and only 15 percent from commercial sources. Most NGOs, like many agricultural development banks in the past, are incomplete financial intermediaries. They only offer credit, but no other demanded financial services such as savings facilities, insurance or money transfers. They depend heavily on donor funding, reflecting the recent fashion of supporting *Microfinance Institutions (MFI)*. However, donors' policies are changing and today only NGOs with proper management and sound lending technologies are able to access donor funds. Loan repayment is one of the crucial factors. As described in AFR No. 3, microcredit is characterized by short loan duration, small loan sizes, strict supervision and direct or indirect client screening. This reduces default risks and leads to an overall improved performance. As a consequence of these MFI technologies, only a few are active in agricultural lending, although they access relatively stable outside donor funds.

The same applies to other informal loan providers. Both self-help groups and moneylenders usually do not lend for direct productive purposes but for unforeseen emergencies or consumption needs, due to the absence of appropriate savings facilities. Regarding the funding sources of informal lenders, the answer is rather obvious. ROSCAs depend principally on savings, whereas moneylenders rarely collect savings. In most cases, their loan portfolio is funded by profits (equity) or other formal financial institutions (commercial borrowings).

3.2 Rural Unit Banks

Unit banks (savings, rural, village, community banks) are faced with a lot of limitations regarding their fund raising strategies. Their main funding sources are savings mobilized locally and to a lesser extent share capital. The scope for long-term lending is usually determined by their amount of equity [17]. Since these banks do not have branches or apex organizations, the possibilities to diversify their loan portfolio beyond the limits of their communities are rather restricted. These limitations are reflected on the asset side of unit banks. The box below illustrates the case of the Nigerian Community Banks, which are quite active in lending to farmers and farmers' associations. Even so, such loans represent a small proportion of their total assets. Without accessing sufficient long-term funds, the provision of long-term and seasonal loans requires a very sophisticated asset and liability management. Regarding the special features of agricultural lending mentioned in 1.3, it becomes clear that most rural unit banks are only marginally involved in agricultural lending. Those operating in rural areas offer credit basically for short-term activities. Though borrowers might be farmers, it is unlikely that credit is used for agricultural purposes. However, unit banks are crucial actors in providing savings facilities and therefore help households in their cash management. This might reduce the credit demand for consumption and contingency needs.

[17] See also the case study on the MC2 network in Cameroon (Bomda, J.,Kacyem, B. & Heidhues, F. 1998)

Box 5

Unit banks and agricultural lending: The case of the Community Banks in Nigeria

As unit banks without branches and owned by Community Development Associations, Co-operative Societies and individuals within the community, the Nigerian Community Bank (CB) movement started in 1990 pursuing ambitious economic and social goals. With government support, a nationwide structure of zonal offices and a National Board of Community Banks with supervisory functions were created. The national government promised to provide financial support through *matching loans* with subsidized interest rates. In fact, only few banks received government funds. CBs are basically financed by their share capital and short-term deposits mobilized within the community. Only few term deposits are available. The 600 reporting CBs are mobilizing approximately 3.5 billion Naira (equivalent to US$ 40 million) nationwide in addition to their shareholders' funds of about US$ 15 million. Approximately 25 percent of their loan portfolio is allocated to the agricultural sector. This is doubtless a much higher share in comparison to loans and advances of Nigerian commercial banks. However, the average CB's loan portfolio amounts to only one third of their total assets. Many banks are active in commerce or other investments and hold an average of one third of their assets as cash or short-term commitments in other financial institutions. Some Community Banks have almost no lending activities and deposit their mobilized funds into other commercial banks to earn interest. In this sense, many CBs are more cash-centres than financial intermediaries. On the other hand, this kind of risk-hedging enables many of them to be active in agricultural lending (e.g. the Hamdala CB in the North of Nigeria).

The relatively small loan portfolio is also reflected in their client structure. Although many CBs have more than 20 000 depositors they have only few loan clients. The requirements for getting loans are similar to those of the commercial banks. Collateral or guarantors are needed. In addition, the biggest borrowers are usually shareholders or board members. However, unlike commercial banks, CBs are active in mobilizing small-scale savings by designing target group specific savings products (see also Box 6 on financial engineering), e.g. the Ogba CB nearby Lagos. Moreover, many initiatives help to establish a savings culture within the communities. Therefore, the lending technology is rather conservative but fund mobilization strategies are already sophisticated.

3.3 SAVINGS AND CREDIT CO-OPERATIVES

Although often used or misused in the past to channel donor funds in Latin America and other regions, credit co-operatives are basically financed by savings and member shares. Their liability structure is similar to that of rural unit banks. However, co-operative banks and rural banks might have different objectives.

Rural unit banks and other small commercial banks are profit-oriented institutions. The management tries to achieve a loan portfolio size where the surplus is at its maximum. In the case of mutually owned institutions, where the owners are both suppliers and users of the available funds, the maximum surplus position is not a stable one. Depositors of co-operative banks demand the highest possible interest rate for deposits, while borrowers demand the largest volume of loans at the lowest possible interest rate. Thus the management is forced to shift from the position of surplus maximization toward size maximization. This position is reached when the co-operative's average revenues just cover its average costs. Size maximization satisfies the two-way objectives of encouraging savings and of providing low cost funds to borrowers. Whether this is a stable equilibrium position, however, depends upon the objectives of all three parties involved: the borrowers, the savers and the management. A lot of co-operatives are borrower-dominated, not least as a consequence of strong financial support given by international donors who use (or have used) them as conduit for channelling cheap funds to various target groups. In India and China the huge number of credit co-operatives organized in a multi-tiered structure is utilized as a vehicle for channelling government and central bank funds to farmer co-operatives and individuals. In fact, a crucial advantage of the co-operative movement is its ability to build up nation-wide networks for fund transfer and risk diversification. In many countries central co-operative banks were established which refinance a significant number of their member co-operatives. These central co-operative banks are similar to state-owned agricultural development banks, since they mobilize or pool not only deposits, like retail co-operatives, but also concessionary national and international funds [18]. In summary,

[18] Some examples are the Federal Bank for Co-operatives in Pakistan, the Co-operative Central Bank of Cyprus and the Co-operative Bank of Kenya Ltd.

rural co-operatives play a much more important role in agricultural lending than unit banks, since their apex bodies provide them with a broader spectrum of possible funding sources and at retail level, a borrower domination leads often to a maximization of lending for agricultural purposes.

3.4 AGRICULTURAL DEVELOPMENT BANKS

Even though many agricultural development banks have ceased or cut down their operations during the last decade, they are still the most significant formal providers of loans to agriculture in many developing countries. Some figures may illustrate this: the Principal Bank for Development and Agricultural Credit in Egypt has approximately 3.5 million borrowers, Bank Rakyat Indonesia serves around 2.5 million loan clients (plus 10 times more depositors), the Agricultural Bank of Iran has 600 000 borrowers, the Agricultural Development Bank of Pakistan 700 000 loan clients, the Agricultural Development Bank of Nepal approximately 400 000 and BAAC, Thailand, provides lending services to 5 million loan clients covering 80 percent of all Thai farm households.

The funding sources of these institutions differ from country to country and it is difficult to identify specific patterns of resource mobilization strategies. However, in some regions there is a tendency toward certain types of funding (see Table 4). Agricultural development banks in South Asia (and in Central America in the past) rely on central bank credit lines (refinance). In South America many central banks have been directly involved in agricultural lending without using agricultural development banks to channel earmarked funds (ALIDE and FIRA, 1996). Savings deposits are the dominant liability of many agricultural banks in South East Asia. Donor funding plays still an important role in some African banks. Commercial bond issues play a minor role and are only relevant in countries with developed capital markets. Lending quotas (compulsory deposits) are an instrument used world-wide to encourage agricultural lending.

Table 4
Geographical patterns of funding agricultural banks

Instrument	Region/countries
Central Bank Refinance	South Asia (India, Pakistan, Bangladesh), Iran, Syria
Savings Deposits	South East Asia (Indonesia, Malaysia, Vietnam)
Donor Funds	North and West Africa (Morocco, Tunisia, Mali, Nigeria)
Debt Instruments	Thailand, Vietnam, South Africa, Zimbabwe
Compulsory Funds, Government funding (equity or credit lines)	World-wide

More details on funding sources of selected agricultural development banks are presented in Table 5.

3.5 Commercial Banks

Market-oriented and large-scale agriculture is basically financed by commercial banks. The reasons why these banks do not get voluntarily involved with small farmers have been widely discussed in the past. Attempts to force them stopped in most countries with the implementation of Structural Adjustment Programmes. The overall experience was rather bad. Banks forced to lend a certain quota to the agricultural sector, usually misreport the amount of loans or just rename the economic activities of existing borrowers. Voluntary government programmes (special credit lines or guarantees for agricultural loans) were mostly not used or misused. Rural branches of commercial banks were used to siphon off rural savings to urban areas rather than they provided loans to agriculture. Commercial bank branches in rural areas that use the same lending technologies as in urban areas are reluctant to extend their business to a risky and costly clientele. Only a few commercial banks

have started to readjust their lending operations in order to broaden the spectrum of loan clients. In particular, commercial banks in Sri Lanka (Hatton National Bank, People's Bank) entered with government support into finance for small-scale farmers through a reasonably wide network of rural branches. However, the agricultural loan portfolio is still limited (below 10 percent). In economies with a developed capital market long-term credit is usually provided by specialized, in some cases, public-owned mortgage banks (e.g. Hypothekenbanken in Germany, Istituti di Credito Fondiario in Italy). Their main sources of funds are debentures and bonds or they get refinanced on a secondary mortgage market where second-tier institutions (e.g. Fannie Mae, the Federal National Mortgage Association in the USA) purchase mortgages and issue mortgage-backed securities. Commercial banks including mortgage banks, are definitely the most significant lenders to agriculture and agroindustry in terms of total resources provided. However, in terms of client outreach their present contribution is still negligible.

3.6 SUMMARY

Since it is difficult to generalize which sources of funds are used worldwide, Table 5 shows the relative importance of different instruments expressed as proportion of the balance sheet total in selected agricultural development banks. They are compared with other types of financial institutions involved in agricultural lending, such as co-operatives, unit banks, commercial banks and NGOs. The presented data summarize the replies to a questionnaire sent out to approximately 80 members of three Rural and Agricultural Credit Associations - AFRACA, APRACA and NENARACA. In addition, selective annual reports and data of the FAO inventory on rural financial institutions, *AgriBank-Stat* [19], have been used.

[19] FAO. 1999. *AgriBank-Stat*. www.fao.org/ag/ags/agsm/banks/invent.htm

Table 5

Relevance of different funding sources (1996)

	Government loans	Donor loans	Central bank loans	Compulsory deposits	Voluntary sav. deposits	Commercial borrowings	Bond issues	Equity
1. Agricultural Banks								
AB, Iran			●	●●	●			
BRI, Indonesia					●●			
NABARD, India			●					
BAAC, Thailand				●	●●		●	
VBARD, Vietnam					●●		●	
ADBP, Pakistan		●	●					●
BPM, Malaysia	●				●●			
CNCA, Morocco		●●			●			●
PBDAC, Egypt					●			●
ACC, Jordan		●						●●
AFC, Zimbabwe	●	●					●●	
BNDA, Mali		●			●●			●●
ICAP, Venezuela	●●							
2. Co-operatives (gen.)					●●			
Primary Co-ops, India			●		●			
3. Unit Banks (in general)					●●			
4. Commercial Banks					●	●		
5. NGOs (in general)		●				●		

Source: Annual reports and FAO AgriBank-Stat inventory, Sustainable Banking with the Poor (1998), questionnaires

●● more than 75% of total liabilities and equity

● more than 50%, but less than 75% of total liabilities and equity

●● more than 30%, but less than 50% of total liabilities and equity

● more than 15%, but less than 30% of total liabilities and equity

These data reveal that the composition of funding sources for agricultural lending is quite uneven and differs substantially from the dominant resources structure (60: 30: 10 - deposits: commercial borrowings: equity) of developed commercial banks.

4 Pros and Cons of Funding Sources

4.1 Impact on the Costs of Financial Institutions

Mobilization and use of resources entails advantages and disadvantages and the benefits should outweigh the costs for each funding source. In comparing different sources of funds it is crucial to analyse the total costs of the resources and their impact on the performance of the financial institution. Although concessionary funds have low interest rate costs, the administration and risk management costs may be rather expensive. A comprehensive analysis is required to compare the total costs of the different sources of funds. The high costs associated with the administration of directed credit schemes have become evident over time. Many of these credit schemes could only be sustained by operational subsidies and/or new capital injections from government or donors.

Table 6 presents the range of the two cost components, *financial* and *administrative costs*, as they apply to each source of fund. *Financial costs* refer to interest costs in the case of liabilities and to opportunity costs for equity. *Administrative costs* refer to the costs of raising and handling funds including fixed and variable operational costs, risk-management costs, etc. Depending on their particular characteristics, the costs of funds may vary from low (left-hand side of the column) to high (right-hand side).

The interest rates to be paid on liabilities depend on the government interest rate policy or on the rating of the financial institution in the money and capital markets. Administrative costs are closely associated with specific targeting of loans and reporting requirements that are imposed by the providers of loanable funds on the recipient on-lending institutions. Furthermore, depositors demand quality services which, in all likelihood, increase both fixed and variable administrative costs of the deposit-taking financial institutions.

Table 6
Cost range of raising and operating different funds

	financial cost range low → high	admin. cost range low → high
Government loans	↔	↔
International loans	↔	↔
Central bank loans	↔	↔
Compulsory funds	↔	↔
Savings deposits	↔	↔
Commercial borrowings	↔	↔
Debt instruments	↔	↔
Equity	↔	↔

4.1.1 Concessionary funds

Whilst interest costs of concessionary funds are, by definition, subsidized, the costs of managing them within the intermediation process are higher on average than the administration cost of commercial funds. This is because subsidies are granted for a specific target or purpose. Directed credit has to be supervised to prove the proper use of public funds and requires special monitoring and evaluation. These requirements lead to an increase in administration costs. Few, if any, subsidized funds do not cause incremental administrative costs.

In terms of interest costs *government loans* and *central bank credit lines* or refinance facilities are usually the cheapest funds available. In some cases these funds are raised from governments without any direct financial costs. However, a more common practice is to fix often real negative interest rates below market terms. Although interest rates are below the market rate of mobilizing similar resources, hidden administrative costs associated with these resources can make the refinance support

expensive. High transaction costs of channelling outside funds through various tiers to farm level plus administrative reporting and control requirements are the main factors of high administrative costs. Negligible or even negative profit margins for the financial institution are the consequence when interest rate ceilings prevent adequate compensation for high administrative costs incurred.

The issue of high administrative costs due to special reporting and controlling requirements applies also to *international donor loans*. In some cases donors require separate balances for their lending lines and additional information on the impact of loans on the beneficiary borrowers. The Agricultural Co-operative Development Bank of Guyana had at one time to produce different reports for more than 40 international credit lines. Moreover, each donor required different analysis and presentation. Despite the fact that these requirements might lead to improved management information, they increase administrative costs.

Unlike subsidized government or central bank credit facilities, interest costs of donor credit lines can vary widely depending on two major factors: a) the recipient country status (IDA fund eligible or not) and b) the sub-loan conditions.

Countries which are eligible for IDA conditions (loans of 40 years, with a 10-year grace period and an interest rate of 0.75 percent) receive official development funds at low financial costs [20]. Whether these conditions are passed on to the on-lending financial intermediary depends on the contract between the development agency and the recipient country. Details on the coverage of the foreign exchange risk, on guarantees and on the interest costs payable by the financial intermediary, are fixed in the sub-loan agreements. Usually the government assumes the foreign exchange risk and on-lends donor funds to the executing financial institution in local currency. The Agricultural Bank of Sudan for instance repays loans from international development agencies to the Ministry of Finance in local currency. In some cases, favourable IDA conditions are not passed on and the intermediary bears high real interest costs. The benefits of getting cheap foreign currency are in these cases absorbed by the government (evidently some credit projects in the past were designed

[20] In fact, IDA loans have a grant element of approx. 80 percent; in other words, these loans are actually more grants than liabilities (even though not in accounting terms).

for this purpose). In other cases (NACB in Nigeria and BNDA in Mali) financial intermediaries have to assume the foreign exchange risk even though they might not be allowed to on-lend in foreign currency. The equity of both institutions has been wiped out during the course of just one year after the devaluation of the local currency.

Due to all these varying conditions it is not possible to generalize about the level of costs involved with donor loans. The ACC in Jordan raises funds from international development agencies at interest rates ranging from 0.75 percent up to almost 9 percent. The repayment of these funds is due in local currency. However, under normal circumstances donor loans are similar to government and central bank credit facilities: i.e. low real interest rates associated with relatively high administrative costs.

To complete the picture one must also remember the national or international public contributions to *equity* in form of profit and equity grants (e.g. technical aid or capital injections). Obviously, grants do not involve any financial costs. Capital contributions do involve them only, when investors expect dividends; this is often not the case. Administrative costs are rather low or even directly financed by the public entity (donor, central bank or government). In this sense, granted equity is the cheapest resource available.

Compulsory funds are at low real interest rates and often available with lower administrative requirements than government funds. Creditors of compulsory funds are private enterprises (usually commercial banks) which are not allowed to require evidence of the proper use of their funds. Administrative costs are mostly limited to depository services of large amounts and common transaction costs of raising outside funds. Exceptions are special trust funds established from mandatory funds, that can be used only for limited purposes and for predefined target groups (e.g. the Rural Infrastructure Development Fund managed by NABARD).

4.1.2 Commercial funds

Voluntary *deposits* (demand, savings and time deposits), as a source of loanable funds, can have considerable advantages over concessionary

funds. Interest costs are usually low, and reflect the duration and amount of deposits left with a financial institution. For example, Bank Rakyat Indonesia divides its major savings product SIMPEDES in four size categories. No interest is paid on very small amounts while interest rates gradually increase for larger accounts. Deposit rates of interest correspond to the administrative costs incurred by the same deposits. Transformation of small and short-term deposits into larger and longer-term loans is costly. Therefore they earn low deposit interest. Moreover, the information gathered from depositors might facilitate the loan appraisal procedures of the same clients, and lower costs on this side as well.

On the other hand, deposit taking causes incremental costs. The problem of matching terms and amount of assets and liabilities is made more difficult when deposit mobilization is an important field of activity. Addressing the liquidity and interest rate risks of funding agricultural loans might be rather expensive, depending on the type of risk management strategy employed. Direct financial costs are caused by guarantees or insurance against those risks. But even when an institution tries to avoid running risks, it has to pay the indirect costs of lost opportunities. Low risk strategies are usually associated with a lower level of profitability (see Chapter 4.2).

Depositors expect various depository services which cause additional expenses. However, most of the administrative costs of deposit-taking are fixed costs (establishing branches, computer systems, increased auditing costs, etc.). By increasing the number of savers fixed costs are spread out. This explains the wide range of administrative costs in Table 6.

Additional cost factors are reserve requirements which impede on-lending of the whole volume of deposits mobilized. Usually, there are different reserve requirements depending on the term of the deposits. Demand deposits are associated with higher reserve requirements than time or savings deposits.

All these factors explain the relatively high administrative costs of deposits in comparison with borrowings. The crucial question is whether it is possible to pass on these costs to the clients. Many finan-

cial institutions in rural areas are in a favourable position since they are not confronted with strong competition. Moreover, the demand for rural savings facilities seems to be less interest rate driven than in urban areas. Many factors influence the decision of savers to deposit funds (Fiebig *et al.*, 1999). There is evidence that savers accept real negative interest rates on their deposits. They are even willing to pay directly for depository services (Rutherford, 1998). Therefore, the scope for setting interest rates is greater than in a competitive environment.

Raising *commercial borrowings* and using *debt instruments* (e.g. bonds) imply in general lower administrative costs, since there are no depository services or detailed report requirements for each credit. One may suppose also that costs for external auditing and disclosure of information required by potential creditors are lower than the report requirements of subsidized lending lines. However, the market-based interest rate costs of these funds are usually high. Factors that determine the level of the interest rate costs are the overall macroeconomic situation of the country and the degree of the financial sector development. These influences are beyond the control of the financial institution. Costs will also be affected by the rating of the institution on the financial market. The latter reflects by and large the overall performance of the institution.

Equity can be a commercial or a concessionary funding source. The opportunity costs might be the yardstick of which category it belongs. Providers of equity are residual claimants of income and have to assume the profit risk. Therefore, market oriented shareholders can only be attracted in the long run by providing higher return than to other creditors. However, an exceptional advantage of equity is the fact, that in the short run there is no fixed cost. The cost of equity depends on the economic performance of the institution. If no profit is realized in one year, no return on equity has to be paid.

Equity can be a rather expensive source in the long run. However, positive effects on the fund composition have to be considered. A broad equity basis strengthens confidence of creditors and investors and may lead to better conditions of other liabilities. Furthermore, it can be leveraged by more debt such as cheap deposits (see 2.2.3). In this sense, the high financial costs of equity can be spread out.

4.2 Impact on the Risk Exposure

In the previous section direct financial and administrative costs have been described and discussed. In this section another crucial factor of fund management will be introduced. Each funding source is associated with specific risks and requires specific action as described in 1.3: interest and foreign exchange rate risk, liquidity risk and compliance with banking rules and laws. All these risks have to be addressed by an adequate asset-liability manager - in banks usually by the treasury department.

Managing risks always implies additional administrative costs in form of insurance, provisions, hedging, etc., which could not be determined in section 4.1. Unlike financial costs, it is not possible to separate risk costs of certain funds from their use on the asset side. The interest rate and liquidity risk of funding sources depends on the conditions and maturity profile of the loan portfolio. An example may illustrate this general statement. Deposits on current or savings accounts are rather volatile and cause difficulties in estimating the amount of financial resources available for on-lending in the future. Nevertheless, the liquidity risks of using deposits as loanable funds are rather low if the banking institution only provides short-term loans of a few days. If the institution provides long-term loans the same funding source might turn into a liability associated with exorbitant liquidity risks and might even lead to insolvency in case of massive withdrawal of deposits.

Therefore, whether a funding source exposes a financial institution to high or low risks depends principally on the conditions of the loan portfolio. In fact, this relationship between risks of funds and use of funds causes important difficulties with regard to agricultural lending. Assuming that the loan portfolio of an agricultural bank contains seasonal, medium (2-5 years) and long-term loans (more than 5 years), at fixed interest rates, there are potentially high liquidity and interest rate risks. The liquidity risks of banks mainly financed by short-term funds are high when they lend long. The same applies to interest rate risks. Long-term loans with fixed interest rates are often financed by short-term funds with variable interest rates. This implies that each time when

a bank has to refinance its long-term outstanding loans (this might happen multiple times) it is exposed to possible changes of market interest rates for funds. Under conditions of increasing inflation, this may reduce the interest margin to zero or below zero. The same happens when the rating of the financial institution falls causing it to pay higher interest rates to attract new creditors.

Addressing interest rate and exchange risks means principally to reduce open positions (short or long positions [21]) or commitments in terms of duration (or better repricing term), of interest rate fixing and foreign currency. Traditionally it was advised to close out open positions especially with regard to liquidity. Nowadays, different methods of addressing risks are utilized. Risks should be analysed, assessed and controlled. Avoiding open positions is just one possibility of addressing risks. Once risks are assessed it might be worthwhile to run risky activities to seek for higher profits. There is nothing wrong with exposure to risk, provided that there is a risk management mechanism in place.

Table 7 shows the three major areas (interest rates, duration and amount of funds received and provided) in which open positions, i.e. a mismatch between asset types and funding sources may cause liquidity or refinance problems. The last two columns are like a balance sheet. The entries on the assets side and liability side should be compared and balanced. If the lender is able to balance each entry no interest or liquidity risk can occur. This would happen if all terms, loan amounts and interest rate conditions on the asset side perfectly coincided with terms, amounts and interest rates on the liability side. Cash on hand would be funded by current account deposits, a two-year fixed interest loan would be funded by a two-year fixed interest time deposit, an eight-year housing loan funded by an eight-year bond, fixed assets by equity and so on.

A strict application of the *Golden Bank Rule* (matching asset terms with liability terms) is neither feasible nor necessary. Nor is it an objective, since time (and amount) transformation is what leads to profit. Financial institutions are not required to balance each loan with a similar fund. But they are required to assess and control the risks associated

[21] Having more long-term loans than long-term liabilities is defined as *short position*; having more long-term liabilities than long-term loans is defined as *long-position*; the same applies to foreign currency or fixed interest commitments.

Table 7
Sources of mismatching of assets and liabilities

Conditions		Assets	Funding Sources
Interest rate	fixed	• Usually all loans	• Time deposits • Bonds • Government loans [22]
	variable	• Investments • Variable-rate loans	• Savings • Equity
Duration	long-term	• Agricultural loans • Housing loans • Fixed assets	• Equity • Bonds • Time deposits • Government loans
	short-term	• Consumption loans • Loans for commerce • Cash on hand • Bills	• Savings • C/A deposits • Commercial Borrowings
	known	• Loans • Fixed assets • Investments	• Bonds • Time deposits • Government loans
	unknown	• Overdrafts • Overdue loans	• Savings • C/A deposits
Amount	controlled	• Face value of assets	• Bonds • Borrowings • Paid-in capital
	uncontrolled	• Real value of assets	• Deposits • Government loans • Retained earnings

with short or long positions. Certainly, financial institutions involved in agriculture are faced with liquidity and interest rate risks due to open positions within their balance sheet structure. Since government and donor funds have declined over the last decade and bonds and time

[22] Including national government loans, international donor loans and central bank loans

deposits are difficult to raise, there is a mismatch between fixed interest loans and fixed interest funds. This might cause high interest rate risks above all under unstable macroeconomic conditions and a declining rating of many agricultural development banks. The same applies to the liquidity risk due to the long-term loan demand of the agricultural sector. Only few long-term funds are available. Unit banks and co-operatives have principally only equity at their disposal for relatively riskless long-term advances. Institutions financed by savings may run into both high liquidity and high interest rate risks when they get involved into long-term lending. Long-term loans are at fixed interest rates: savings are at variable rates. Long-term loans are of known long-term periods: savings are usually of unknown duration, but mostly short-term. Long-term loans are fixed committed amounts: the amount of savings available cannot be controlled. In all three aspects open positions were created and it would require sophisticated asset-liability management to liquidate them. Nevertheless, it is possible to use savings deposits for agricultural seasonal and long-term loans.

For all types of funds discussed in Chapter 2, the impact on the risk exposure of financial institutions lending on a long-term basis to agriculture differs considerably. Assume an eight-year fixed interest loan in local currency funded exclusively by one source [23] in order to finance renewal of a coffee plantation. The effects on interest rate and liquidity risks (and implicitly also on the foreign exchange rate risks) might be as given in Table 8.

4.2.1 Concessionary funds

High effective interest rate risks are associated with *donor funds* when the recipient financial institution has to assume the foreign currency risk without being allowed to on-lend in foreign currency [24]. When granted in local currency, the risk profile of international donor loans is similar

[23] This is a theoretical case since most institutions were not allowed to do so. At least a certain amount of equity is required; see section on capital adequacy. However, the example helps illustrate specific risks better than it would have been possible by using mixes of funds.

[24] Moreover, risks are not only limited to the interest costs, but also to the repayment costs of the principle which may cause liquidity problems as well. In the example, interest rate and liquidity risks of international borrowing are high, because of the high foreign exchange risk behind these transactions.

Table 8

Example of interest rate and liquidity risks of funding a long-term loan for plantation renewal

	Interest rate risk low → high	**Liquidity risk** low → high
Gov./ Central Bank loans (8 years)		
Gov./ Central Bank loans (short-term)		
Donor loans (8 years)		
Compulsory funds (short-term)		
Short-term sav. deposits		
Time deposits (< 2 years)		
Commercial borrowings		
Bond issues (8 years)		
Equity		

to long-term national *government funds*. Government funds involve only low interest rate and liquidity risks when they are provided on a long-term basis (in the example for 8 years). Short-term funds have a medium interest rate risk and liquidity risk, since it remains unknown as to whether refinancing in the future will enjoy the same (favourable) conditions as before. The same applies to *compulsory funds*. In the chart a slightly higher liquidity risk compared with government funds is assumed. Commercial banks try to undermine or change a funding policy based on lending quotas. Governments are therefore less autonomous in their decision taking and might be forced to apply new regulations. In contrast, it looks as though central bank facilities are

more stable. Most countries which still provide significant subsidized public funds to the agricultural sector use central banks as originators (e.g. India, Pakistan, Iran). It looks as if *created money* (expression used in India) can be easier allocated than government budget funds. Nevertheless, since government, central bank and compulsory funds are politically sensitive funds they always expose financial institutions relying on those funds to certain risks of future interest rate changes. Moreover, governments may decide to discontinue certain credit lines what leads to liquidity risks afterwards. Above all, institutions which are not allowed to mobilize savings from the general public (e.g. ACC Jordan, Development Bank of Ethiopia, AFC Zimbabwe, NACB Nigeria, ICAP Venezuela) can get hit drastically by those policy changes. Consider for example the change of World Bank policy after 1989 or the effects of the Structural Adjustment Programmes in Latin America on central bank credit facilities.

4.2.2 Commercial funds

To on-lend *savings deposits* on a long-term basis is relatively risky as mentioned before. Interest paid may have to be increased in order to attract necessary funds, and there is always the danger of massive withdrawals. Nevertheless, it has to be stressed, that this depends on the particular circumstances in a given context. There is evidence that interest rate sensitivity increases when competition arises. If not, savings might be a relatively stable financial resource for banks. This is valid even if they do not adapt the interest rate to market fluctuations.

There are two reasons why depositors in rural areas expose financial institutions to higher liquidity risks than in urban areas. Firstly, the economic activities of rural depositors are similar or interlinked. Thus, production risks tend to be covariant in a given community and might be passed on to the deposit-taking institution. Secondly, in many cases only few savers deposit most of the funds left with rural financial institutions (e.g. in the case of the Nigerian Community Banks). Moreover, in some cases these depositors are the major shareholders as well. As consequence, many rural banks rely heavily on only few creditors and their economic performance. In order to limit the risks due to these typical features of rural financial markets, thresholds and liquidity risk ratios should be formulated and applied.

Time deposits are usually raised for longer periods and are therefore, within the stated period, less interest rate risk sensitive than deposits on current and savings accounts. However, many rural financial institutions are faced with the problem that their clients are reluctant to commit their funds for long periods.

Commercial borrowings are mostly short-term and reflect exactly interest rate changes. Therefore, their conditions are fluctuating regularly and their supply is rather unstable. Creditors of commercial borrowings observe market opportunities and lend usually short-term seeking highest profit. The supply of these market means is therefore rather volatile [25]. It would not be recommendable to rely only on these kinds of funds.

Bonds are low risk instruments, since they are at fixed interest and for a given duration. During the life of the obligation there is no risk of changing interest costs or withdrawal. That is the reason why commonly in economies with a developed capital market long-term housing loans or loans for land purchase are financed by bond and debenture issuing institutions.

Equity is a special case. At first glance, it implies no interest rate risk. Quite the reverse, it is a cushion against risks, withdrawal of funds and losses. Nevertheless, commercial providers of equity expect in the long run at least compensation for the opportunity costs, which change in line with the overall business climate. Otherwise, it is most likely that investors will leave the institution or shares (if tradable) cannot be placed on the stock exchange. To what extent poor performing financial institutions experience losses of equity depend also on the type of institution. In shareholder companies equity is usually more stable than in co-operatives that are based on redeemable shares (Fama and Jensen, 1983).

The erosion of equity due to poor loan asset performance may lead to liquidity problems in a similar way. Thus, a profit for the owner has to be calculated reflecting other investment opportunities outside the insti-

[25] The Asian Crisis has shown how fast international interbanking loans are withdrawn creating immense problems not only for the direct debtors but also for the whole economy.

tution. The inability to meet the minimum requirements of *capital adequacy* is an additional risk with which banks are faced. They might lose their bank license if they disregard these external rules.

4.3 Impact on Governance and Autonomy

Governance, autonomy and objectives of financial institutions are influenced by four different sources of power. Besides the owners and the internal control mechanisms set up by them, creditors form a considerable influence on decision-making. In addition, external regulation defines the pathway on which a financial institution can operate, and directly impacts on the conduct of its business. Also, self-regulatory mechanisms through apex bodies (e.g. the Nigerian National Board of Community Banks) may limit the scope of autonomy as a self-bonding arrangement. We will concentrate here only on the first two influences, as they represent funding sources (see Fiebig, AFR No. 5 for a comprehensive picture of the regulatory forces influencing the decision-making of a financial institution involved in agricultural lending).

There is no doubt that equity is the most crucial funding source as far as direct impact on governance, vision and management of financial institutions is concerned. Equity is not a simple financial resource, as it provides always a right of disposal. This right might be executed in the board of directors or in a meeting of shareholders. It is not the aim of this study to analyse in detail the relationship between governance structure and performance of financial institutions. Nevertheless, it has to be emphasized that board members and shareholders define the fund raising policy and that in many cases, where savings mobilization is hampered, it is the result of the overall strategy set by the board and not just a management decision [26].

Not only the owners create corporate identity and exert control on institutions, major creditors also have this power. This general statement applies above all to financial institutions which are unlike other firms

[26] E.g. in the case of the Nigerian NACB a creative and well skilled management is not allowed to develop a savings mobilization strategy due to board decisions.

principally financed by debt [27]. An institution relying basically on just one creditor may well have to adhere to its conditions. Otherwise it could lose this funding source. Many agricultural development banks are principally financed by just one creditor and regardless of whether this creditor is part of the board or not it might be decisive in setting an overall policy. For instance, the Indian Primary Credit Societies are formally independent co-operatives but since they are funded basically by the refinance scheme of NABARD, they have to adopt its lending procedures and overall strategy. These effects might even undermine the identity and equality principles of co-operatives (ILO, 1995). Even though we rarely find institutions whose biggest creditors are not represented in the board, the example illustrates that it is not only equity that gives decision power, but also other funding sources.

Apart from the direct decision power of the board and management, indirect influences have to be considered as well. Indirect influence refers to the impact of market forces on the management of banks. Even institutions with no government intervention in strategic decisions are not necessarily acting autonomously. They have to comply with market rules, attain high profits and achieve a good rating on the financial markets, which is crucial for bond issuing institutions. Commercial funds are only accessible for well-performing financial institutions. In other words, exposure to market forces leads indirectly to a specific management approach that is conducive to building up the image of the institution and enhancing the confidence of the general public including depositors, other creditors as well as borrowers.

The discussion of direct and indirect influence of funding sources highlights the extent of managerial autonomy. Concessionary funds usually involve a high degree of external intervention in the financial institution's management. In particular, in directed credit schemes, pre-defined decisions on targeting of beneficiaries, lending purposes, lending terms (regulated interest rates and margins, loan duration, collateral requirements, loan repayments, etc.), lending procedures and reporting requirements limit the scope of managerial autonomy. Both donor and govern-

[27] See also the discussion on firms and property rights which is beyond the boundaries of this work (Lange, O. 1936. *On the Economic Theory of Socialism*; Demsetz, H. 1967. *Toward a Theory of Property Rights*; Jensen, M.C. & Meckling, W.H. 1976. *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure.*)

ment funds are associated with many regulations which often cut the financial institution down to an executing agency. Success is defined as complying with rules and externally set conditions.

Only in the case of compulsory deposits (e.g. shortfalls from lending quotas) might it be slightly different. Even though these are concessionary funds, the degree of external intervention is often lower than in the case of direct government or central bank funding. The government sets a certain lending quota for the banking sector but is usually not directly involved in defining the procedures of on-lending these funds to the final borrower. This might be one of the reasons why the performance of BAAC in Thailand is rather good even though the bank still makes extensive use of non-commercial resources.

On the other hand, financial institutions that mobilize commercial funds are more autonomous in their lending decisions and operations, provided they comply with the market rules and maintain the value of their mobilized resources. There is no ministry or donor defining detailed plans of action.

The last part of the chapter focuses on the impact of sources of funding on the overall management approach and financial institutions' objectives. This does not summarize all impacts discussed in 4.1 and 4.2. Therefore it is not an effort to figure out the correlation between funding sources and the overall performance of a financial institution. This would be a rather academic exercise. In fact, the performance depends on the structure of financial resources but also on lending technologies (see AFR No. 3) and staff skills, as well as on the macroeconomic situation and the policy environment (AFR No. 2), and on the regulatory framework (AFR No. 5).

Generally speaking, some funding sources discipline financial institutions more than others. There is evidence that the lending performance of deposit-taking financial institutions is superior to that of specialized lending institutions, that rely exclusively on concessionary loanable funds from donors or governments. In fact, availability of information and management skills, as well as institutional efficiency are closely related with deposit taking. It has a positive impact on loan portfolio

management and lending performance. *"When financial institutions deal with clients only as borrowers, they forgo useful information about the savings behaviour of these clients that could help to refine estimations of their creditworthiness. Furthermore, borrowers are more likely to repay promptly and lenders to take responsibility for loan recovery when they know that the resources come from neighbours rather than from some distant government agency or international donor."* (Vogel, 1984). Similarly, mobilizing commercial borrowings or issuing debentures will have a positive impact on loan portfolio quality. The financial institution has to comply with market efficiency criteria and get monitored by agents in primary or secondary capital markets. This implies a governance structure that aims at maximizing profits.

When financial institutions raise concessionary funds there is always the likelihood of objectives other than maximize profits and growth. Creditors usually grant subsidized funds in order to attain certain development goals. The process of formulating, setting, implementing and supervising these goals always implies interventions into the financial institution's governance and management. Donors and governments require reports which prove the proper use of the funds granted. Apart from the costs involved and the reduced managerial autonomy, these requirements have an impact on the organizational structure and skills of an institution. Instead of developing treasury skills, staff will be trained in producing reports of goals fulfilled. Instead of assessing risks and opportunities, and taking decisions within a market environment, management skills are reduced to show compliance with external rules. Instead of dealing with clients on the creditor side, liability management becomes little more than the administration of a given budget. Moreover, once subsidized funds are accessible there is no need to raise other funds. Deposit mobilization is discouraged and financial services might be limited to credit, even though some of this credit would be unnecessary if farm households had access to savings facilities.

However, this general and rather gloomy judgement does not apply to all cases. Depending on the creditor goals the effects of concessionary funds on financial institutions might vary. During the last decade donor policy has changed quite substantially. Many lending lines with agricultural development banks were discontinued when their performance

was not satisfactory. The release of the World Bank's new Operational Directive reflects this different approach. This type of intervention may help to reform these banks. It gives the management additional support in cases where the board opposes new strategies or goals.

5 Better Practices in Resource Mobilization

Today, much less concessionary funding from donors and governments is available for agricultural lending than in the past. In view of this trend, only those financial institutions in developing countries that are able to substitute these traditional sources of funds will be able to survive and to continue operating in the future. Moreover, banks are not only faced with funding problems, but also with certain management problems when they on-lend funds for agricultural purposes. In Chapter 4.2 these challenges have already been discussed. However, the different actors (agricultural development banks, co-operatives, rural unit banks, NGOs etc.) are not affected in the same way. Basically agricultural development banks have experienced a sharp decline in their available financial resources. This applies to lesser extent to deposit-taking institutions like unit banks or co-operatives. NGOs have rather good access to concessionary funds, but most of them do not finance on-farm activities. However, co-operatives and unit banks are faced with high interest rate and liquidity risks when they lend to the agricultural sector. Unlike agricultural banks, their spectrum of different sources of funds is rather narrow and therefore they have fewer options to minimize or diversify their risks.

Two questions remain to be answered. What measures should be taken to substitute declining government and donor funds? This is of particular interest to agricultural development banks. Next, how can financial institutions address the specific challenges of fund management for agricultural lending? This applies to deposit-taking institutions which have a narrow spectrum of loanable funds, such as rural unit banks and savings and credit co-operatives. The following sections suggest an approach to mobilize sufficient funds for agricultural lending in a sustainable manner. Some measures depend on the willingness of the financial institution and its decision makers. Others are beyond the control of financial institutions and require action by governments, supervisory authorities and international development agencies. Table 9 at the end of the chapter summarizes the main findings of Chapter 4 and highlights some of the following recommendations.

5.1 Savings Mobilization for Agricultural Lending

5.1.1 Improving the Access to Deposits

The proponents of deposit mobilization faced strong criticism, especially in the 1960s and 1970s. Now, the positive impact of savings deposit facilities on rural households and financial institutions are commonly acknowledged. During the second half of the nineties, attention has been drawn as to how to promote savings in microfinance institutions. Key issues for successful mobilization of small deposits have been identified and disseminated. The CGAP Working Group on Savings Mobilization focuses especially on developing good practices and guidelines both for financial institutions and donors. Thanks to this empirical and conceptual work the crucial factors that enable efficient savings mobilization have been identified. On macro level beyond the control of financial institutions, a sound financial sector environment is essential for savings mobilization plus a supportive policy framework:

- low inflation rates, stable macroeconomic environment;
- no excessive government intervention in interest rate regime, prices, exchange rates;
- reasonable minimum reserve requirements;
- appropriate regulatory framework and supervision for deposit-taking;
- self-sustaining deposit insurance schemes to inspire confidence of savers (FAO, 1995);
- agricultural banks falling under banking acts without limitations in terms of deposit mobilization;
- national savings-education strategy including all relevant actors (families, schools, communities, enterprises, NGOs, media) in order to create a saving mentality.

On an institutional level several factors that are relevant for successful savings mobilization in rural areas have been identified. The most essential factor is the client's perception of the financial institution. Only viable institutions with a sound governance and management structure are able to create confidence and attract savings deposits. Once again unlike the case of borrowings, deposits have to be attracted by provid-

ing more than favourable interest rates. Savings accounts are services and not just sources of funds. In addition to the aspect of trustworthiness and confidence, banks have to consider other determinants of savers decision. These comprise liquidity of their savings, safety of savings, the real rate of return, the divisibility of savings and the possibility of using savings to gain access to other financial services (Fiebig *et al.*, 1999, p. 4-5). Therefore it is necessary to design appropriate financial products addressing the specific demand of the rural clientele (financial engineering). See Box 6 for details. Active promotion, advertising, expanded office hours, mobile units or savings collectors, wide network of branches are other crucial features of successful savings mobilization programmes (FAO, 1995).

Box 6

Financial engineering attracts deposits

Bank Pertanian Malaysia (BPM) and the People's Bank (PB) in Sri Lanka are two examples of successful financial engineering. Both offer a wide range of different savings products and are quite successful in attracting new depositors. Both institutions rely principally on savings deposits. They follow a similar strategy of dividing the heterogeneous clientele into more homogeneous segments of different categories with analogous behaviour. The most prominent group criteria and savings products were as follows:

- Purpose Accounts: for religious pilgrimage (PB's *VADANA GINUM* and BPM's *PATRIOT UMMAH*);
- Target group accounts: in the People's Bank: *GURU SETHA* for teachers, *VANITA VASANA* for women, *SUWA SEVANA* for health sector employees; in Bank Pertanian: *PATRIOT MUDA* for children, *PATRIOT REMAJA* for adolescents and *PATRIOT UMMAH* for Muslims;
- Time deposit accounts in different denominations;
- Accounts with regular deposits: standing orders from current accounts or regular monthly cash deposits (BPM's *PATRIOT 2020*);
- Accounts with additional benefit: insurance (BPM's *PATRIOT TANI*), credit, lottery or prizes (BMP's *PATRIOT MUDA*).

Once different groups of depositors are created, the liability management becomes easier and risk exposures more predictable.

Other issues which have to be considered are the relatively high administrative costs of deposit taking and the treasury risks as pointed out in the previous chapter. Regarding the first component, GTZ analysed the various measures taken to reduce administrative costs based on examples of seven institutions representing different institutional types and regions world-wide including rural financial institutions [28]. Some better practice lessons can be drawn from the experience of these institutions (Elser *et al.*, 1999, p. 288):

- Lean structures (small offices, use of ATMs);
- Incentives to increase operational efficiency;
- Computerized teller operations;
- Outsourcing and networking;
- Voluntary staff (in cases of member-based organizations).

5.1.2 Using Short-term Funds for Agricultural Lending

Let us now turn to the risks of using deposits for seasonal, medium, and long-term lending. What has to be done in order to use short-term funds without jeopardizing the viability and liquidity of financial institutions? Capturing and analysing data of the major asset and liability categories is at the heart of risk management. The management should have real time data available, giving information on the liquidity status and forthcoming refinance requirements of long-term commitments. The necessary reports are difficult to generate from a manual accounting system. Therefore, computerization and adequate software programmes are prerequisites of effective liability management. However, generating reports is one thing; analysing them is another. A risk profile analysis enables financial institutions to define thresholds for their different activities. Moreover it also enables supervisory authorities to enforce rules set in the overall regulatory framework (see Fiebig, AFR No. 5). Therefore supervisory and management tools like CAMEL or PEARLS [29] include

[28] As a contribution to the CGAP Working Group on Savings Mobilization the strategies of following institutions were analysed by GTZ: BAAC, BRI, Rural Bank of Panabo in the Philippines, the Fédération des Caisses d'Epargne et de Crédit Agricole Mutuel in Benin, village banks in Mali, the Centenary Rural Development Bank in Uganda and the Banco Caja Social in Colombia.

[29] Each letter both in CAMEL and PEARLS refers to key areas of internal or external supervision: **C**apital adequacy, **A**sset quality, **M**anagement, **E**arnings, **L**iquidity and **P**rotection, **E**ffective financial structure, **A**sset quality, **R**ates of return, **L**iquidity, **S**igns of growth.

Box 7

Risk analysis of financial institutions

1. Liquidity risk analysis

A) *Maturity profile (ladder)* of loans and liabilities - lists all asset and liability categories by maturity ranges (e.g. 0-90 days, >90 days, >180 days and so on) and generates a gap ratio (maturing assets divided by maturing liabilities) for each range.

$$\frac{\text{Maturing Assets 0-90 days x 100\%}}{\text{Maturing Liabilities 0-90 days}}$$

B) *List of top users and sources of funds* - provides information on the performance of the major debtors and requirements of the major creditors. Allows generation of indicative liquidity risk ratios (10 largest funders as % of total funds).

C) *Account variability analysis* - classifies assets into liquid and nonliquid categories and liabilities into volatile and reliable funds based on estimations and experience. Provides basic liquidity ratios (liquid assets divided by volatile funds or *quick ratio*).

$$\frac{\text{Liquid Assets x 100\%}}{\text{Volatile Liabilities}}$$

D) *Cash flow forecast* - shows net cash inflows and outflows by months or quarters.

E) *Loan-to-deposit ratio* - often used, but less meaningful than the account variability analysis. The ratio does not indicate anything about future loan demands or expected withdrawals nor anything about the liquidity of the remaining assets or the nature of other liabilities.

$$\frac{\text{Loans x 100\%}}{\text{Deposits}}$$

2. Interest and foreign exchange risk analysis

A) *Interest rate sensitivity analysis* (gap analysis) - is similar to the maturity profile, but lists assets and liabilities by repricing periods and not by maturities. However, in many cases interest rate repricing is only possible after maturity. Interest rate risk arises primarily from mismatches of repricing terms, and only partly from mismatches of maturities (Lewis and Morton, 1996). Part of the gap analysis is the *gap ratio* (rate-sensitive assets divided by rate-sensitive liabilities).

$$\frac{\text{Rate-sensitive Assets 0-90 days x 100\%}}{\text{Rate-sensitive Liabilities 0-90 days}}$$

B) *Currency gap analysis* - lists foreign currency commitments and assets. The *currency gap ratio* is computed by dividing assets in each currency by liabilities denominated in foreign currencies.

$$\frac{\text{Assets in X Currency x 100\%}}{\text{Liabilities in X Currency}}$$

the analysis of the balance sheet structure and liquidity risks. The most crucial and common reports to be generated and analysed by critical ratios are listed in Box 7.

Information drawn out of these reports constitutes a solid base to select certain risk management strategies (risk avoidance, diversification, retention, transfer or loss prevention). Enhancing the ability to generate and analyse these reports might lead not only to higher profitability but also to a lending policy designed for the special requirements of the agricultural sector. An appropriate management information system allows determination of the possible level of long-term commitments even under circumstances of a high degree of short-term funds on the liability side.

The matching problem of short-term deposits with long-term agricultural loans exposes agricultural lenders with high interest and liquidity risks. Applying the *Golden Bank Rule* (financing short-term loans with short-term funds and long-term loans with long-term funds) is therefore the most common measure to cope with these risks. As a consequence, there is a lack of medium- and long-term credit and many on-farm investments cannot be financed with loans. The experience shows that most rural unit banks are just marginally involved in agricultural lending due to their dependence on short-term deposits. However, also conservative management practices contribute to the neglect of farm households and their specific credit demand.

Institutions with weak internal control or management capacity have to rely on conservative banking practices. If the management is not capable to analyse risks and opportunities, strengths and weaknesses than it should apply risk-avoiding strategies. The *Golden Bank Rule* is one of them. However, institutions of this type do not have a good perspective of increasing their outreach and profitability. Risk avoiding strategies have a clear impact on the profit side of the business. An enterprise insured against every possible risk cannot realize more than the average profit, which is equal to the overall opportunity costs. Note that running risks is not the problem. Rather it is the inability to manage risks. In the following section, measures are discussed which facilitate the use of short-term funds for longer-term lending.

Firstly, even short-term funds such as current or savings account deposits build up a permanent stable average balance called core deposits. Although deposits and withdrawals of all clients occur unpredictably, statistically there is usually no point in time at which all deposits are withdrawn or all possible funds are deposited. Therefore, financial institutions can rely on this minimum balance in order to grant longer-term loans. This general rule applies also to areas dominated by agricultural activities because unlike the seasonal patterns of agricultural loan demand, deposits are balanced. Deposits of input providers are high when deposits of farmers are low and vice versa. An analysis of all in- and outflows of deposits on a yearly basis should give some indications as to the amount of the permanent average balance of all deposits.

Secondly, more crucial than matching loan maturities with fund maturities, is the ability to liquefy assets in case of need or the access to additional funds (e.g. *deep pockets of owners*). Liquidity risks are low when the institution has access to central bank rediscount facilities or is able to cash certain assets like bonds or other types of investments. A diversified asset structure usually allows a higher risk exposure regarding lending activities. Multipurpose co-operatives are therefore in a privileged position since they balance the risks of long-term loans with different kinds of commercial activities. If an institution is not able to diversify its activities it should seek an institutional upgrading to become eligible for central bank rediscount facilities. In any event, each financial institution has to be aware of its borrowing power from various sources as part of its liquidity management.

Another measure is the creation of *liquidity pools* through interbanking linkages. This mechanism enlarges the permanent deposit balance and makes it more reliable. This is definitely the big advantage of BRI with its wide branch network, and partly explains its success in mobilizing savings. Most unit banks on the other hand still act alone regarding fund management, thus explaining their low involvement in agricultural lending. The example of the National Board of Community Banks in Nigeria has shown that co-operation between unit banks is feasible, and external assistance could help to facilitate such mechanisms.

Thirdly, financial engineering (as shown in Box 6) enhances not only the access to new depositors but may reduce also liquidity and interest rate

risks of medium and long-term loans. The provision of different savings products makes withdrawals more predictable and it eases the estimation of the amount of volatile funds as part of total liabilities.

Fourthly, another tool in liquidity management is slowing disbursements and speeding collections. Accounts payable should not be paid until they are due. Incentives not to withdraw deposits at a certain time should be given, if possible, but one should be aware that there is a trade-off between these measures and the requirements of depositors. Mobile collectors should approach potential depositors in order to speed collections. Approaching the respective bank can also shorten the days of having cash on hands from cheques collected.

Fifthly, financial institutions should try to transfer interest rate risks to borrowers. Specially deposit-taking institutions are faced with interest rate risks since they are in a short position regarding the maturity profile and interest rate variability. Savings deposits are interest rate sensitive liabilities but loans are usually not. If acceptable, financial institutions should offer *variable-rate loans*. This would enable the bank to adapt the interest rate of outstanding loans in the case of increasing refinancing costs. Variable rate lending schemes base changes in loan rates on external or internal indices. The institution has to decide what is the most appropriate index reflecting its costs of funds. External indices (central bank rediscount rates, government bond rates) might not be applicable when the financial market is politically regulated and the official rates do not reflect real costs. Yet the use of internal indices might be difficult to explain to potential borrowers. It has to be underlined that variable-rate loans are more complicated than common loans. Repayment procedures are more difficult both for the borrower and the bank staff. In order to be attractive, variable-rate loans must have lower rates than fixed interest loans. These loans can be a valuable tool to deal with interest rate risks within a well-managed loan programme (WOCCU/USAID, 1992).

5.2 Accessing Capital Markets

Capital markets will play an increasing role in financing future agricultural lending. This is due to scarce resources of governments and donors and the disadvantages of short-term deposits for long-term lending. Of particular importance are debt instruments as complementary financial resource to deposits. Certificates of Deposits (CDs), bonds and unsecured debentures have considerable advantages in terms of their asset-liability management requirements. Open positions can be avoided by matching long-term loans with long-term liabilities. As discussed in Chapter 4 both the administrative costs and the interest rate and liquidity risks of these instruments are rather low. However, financial costs for smaller or recently established institutions tend to be quite high.

The rationale of high costs lies not only in the commercial character of these instruments but also in the fact that rural financial institutions usually have no or only a low rating on capital markets due to their generally poor performance and weak appearance. This problem can be solved by engaging auditors and by training staff to disclose financial statements in a proper way (see e.g. CGAP, 1999). Public support is needed to help newcomers to clear the hurdle of placing debt instruments on the capital market. This can be arranged in different ways. International donors can get involved directly by funding part of the equity and becoming an active member of the board. This kind of involvement might create confidence on the capital market and raise the rating of bonds or CDs issued.

Another type of intervention is a guarantee mechanism for financial institutions backing partly bonds or other instruments as well as commercial borrowings. A good example is the Latin America Bridge Fund created with donor support by ACCION in 1984. BancoSol in Bolivia, though rarely involved in agricultural finance, is an outstanding example of a relatively new financial institution that provides credit to small-scale enterprises and is financed to a large extent by negotiable CDs. This was principally fostered by the good performance of the institution together with the support of the guarantee fund. After creating links between the bank and other financial institutions or the capital market,

guarantee funds can withdraw their support, fulfilling the role of graduating their beneficiaries. Similarly, banks can purchase bond guarantees from private insurers to upgrade their rating and to secure complete placement of their bonds (FAO, Gudger, 1998).

Small financial institutions (co-operatives, unit banks or NGOs) are usually not able to access capital markets. In order to make the use of debt instruments possible, a mediator is needed for linking these small-scale or semiformal and informal institutions with the capital market. The mediator could be a specialized entity (e.g. an apex organization) created to buy the loan portfolio of financial institutions which have proved to be viable. This entity would capitalize itself by issuing debentures (Chu, in Microfinance Network, 1996, p. 11; Gonzales-Vega, 1998). The equity of this kind of mediator should be provided by participating banks, donors or by the government.

Apart from this direct involvement, a policy framework should be established which allows effective use of debt instruments. This refers to rules and regulations of issuing debentures and to standards for their quality assessment. In order to create confidence in debenture-issuing institutions, local independent rating agencies have to be created. Regulatory authorities have to define what happens in the case of insolvency of issuing institutions. Regulations as in the case of the *German Pfandbrief*, might boost selling debentures. The *Pfandbrief* has highest priority or a senior claim of its owner if it comes to the liquidation of the issuing institution.

In addition, the necessary policy framework refers to a well-structured land tenure regime which removes tenure security constraints as a prerequisite for mortgages and the securitization of loans.

The question of how to reform agricultural development banks will be a crucial issue in the future. In many countries agricultural development banks are in a privileged situation among those lending to agriculture. The development banks have the necessary size to be able to access the market for long-term commercial funds. This is a strong argument in favour of undertaking efforts to reform these mostly poor performing institutions. Some of them are already involved in issuing bonds on the

Table 9

Sources of funds for agricultural lending: Pros & cons and recommendations

SoF	Advantages	Disadvantages
Government loans	• Low financial costs • Low interest rate risk	• High administrative costs • Unpredictable and limited supply • Limit autonomy • Negative effects on repayment discipline
International loans	• Low financial costs • Long-term funds	• High administrative costs • High foreign exchange risk • Unpredictable and limited supply • Negative effects on repayment discipline
Central bank loans	• Low financial costs • Stable supply	• High administrative costs • Negative effects on repayment discipline
Compulsory deposits	• Low financial costs • Low degree of direct external intervention	• Unpredictable supply and conditions • Negative effects on repayment discipline
Savings deposits	• Low financial costs • Permanent minimum core balance • Improve information on loan clients • Unlimited source • Incentives for good governance and management	• High fixed operational costs • High liquidity risks due to volatility • High interest rate risk • Reserve requirements • Have to be mobilized actively

national capital market (e.g. Land Bank of South Africa or VBARD in Vietnam). Others might be capable of doing the same.

Further research is still needed in order to identify additional supporting measures and fields of donor assistance. The goal is to uncover ways to allow securitization of assets and the use of debt instruments to a greater extent.

5.3 Public Funds for Agricultural Lending

In many developing countries and economies in transition capital markets are still rudimentary and risk management skills within rural financial institutions are rather weak. Institution and capacity building are the two major challenges for financial systems development in general and also for improved access to partly unexplored funding sources. Both tasks will take time and many countries are still at the beginning or have been forced to apply radical changes in their banking supervision, as in South East Asia after the turmoil of the recent past. Nevertheless, the real sector needs financial intermediation in order to produce goods in demand. This applies above all to the agricultural sector, since much of its output contributes to the basic needs of human beings.

In the last decade a lot of attention has been given to the emerging microfinance institutions (already called *microfinance industry*) and their technologies. Still, rural areas have experienced a decline in financial services offered. Most NGOs that are funded basically by donors are urban-biased, since many lending practices are principally designed for commercial activities. In sum, there might have been an overall expansion of financial services over the last ten years, but rural areas have been first affected by the withdrawal of public resources. For many countries this expansion is not yet empirically proved. After the collapse of many agricultural development banks, farmers have resorted to informal financial options or they have gone without any credit (e.g. in Zambia and Venezuela, amongst other countries). It will take time until other lenders close the gap. In the meantime there is a lack above all of long-term funds. All measures proposed to solve the term lending resource problem of rural financial intermediaries require time. There is

Table 9 (Cont.)
Sources of funds for agricultural lending: Pros & cons and recommendations

SoF	Advantages	Disadvantages
Commercial borrowings	• Fast supply • Fixed amount of known duration • Incentives for good governance and management	• High financial costs • Costly disclosure of information • High interest rate risk • High liquidity risks
Debt instruments	• Long-term funds of known duration • Low interest and liquidity risk • Incentives for good governance and management	• High financial costs • Costly disclosure of information • High asset quality required
Equity	• Flexible costs • Long-term funds • Leverage effect • Risk cushion	• Limited supply • Difficult to raise • Expensive in the long run (if it is not a donation) • Additional decision-makers

Recommendations

Lending institutions:

To enhance deposit mobilization, e.g. by:
- financial engineering
- computerized teller operations

To enhance asset-liability management by:
- tools for liquidity, interest rate and foreign exchange risk management
- creation of liquidity pools
- variable-rate loans

Table 9 (Cont.)
Sources of funds for agricultural lending: Pros & cons and recommendations

Recommendations
To enhance access to capital markets: • proper disclosure of financial statements *Development agencies and governments [30]:* To assist lenders in accessing capital markets • to ensure land tenure security • to create standards of securitization (rules, rating agencies etc.) • to establish viable guarantee mechanisms for creditors • to create mediators which buy loan portfolio of small financial institutions To stabilize autonomy of financial institutions • to grant technical assistance rather than subsidized loans • to join or create venture capital funds To create conducive environment for savings mobilization • to refrain from intervening in interest rate regime • to implement appropriate supervision • to establish self-sustaining schemes of deposit insurance • to place agricultural banks under banking acts To provide long-term resources for essential basic social and economic infrastructure

enough empirical evidence that savings mobilization and short-term loan provision in rural areas is feasible and profitable. In this sense, the retreat of public funds has indirectly encouraged savings mobilization efforts, and has enlarged the supply of financial products.

However, in some areas public intervention to provide long-term resources might be still justified. Firstly, during transition periods of

30 See also AFR No. 1, pp. 49-50

establishing efficient capital markets or periods of political and economic instability public involvement is needed. This involvement might be in form of long-term credit lines, lending quotas or additional capital injections to rural financial institutions. However, it should be emphasized that, as the experience with public short-term finance in the past has shown, the private and voluntary mobilization of appropriate funding sources must not be discouraged or undermined.

Secondly, rural development finance activities in a narrow sense undertaken to some extent by agricultural development banks require external support. This refers to financing medium and large-scale projects of rural social or economic infrastructure, irrigation schemes or watershed management. These are traditionally the types of investments funded not only by national development banks but also by international development agencies. As a matter of fact only few agricultural development banks have been involved in this kind of business, although most of them are called development banks. One example is the Indian NABARD providing development finance out of the Rural Infrastructure Development Fund. The establishment of separate development banks is debatable and new financial instruments of governments like Build-Operate-Transfer Schemes may be taken into consideration. Nevertheless, the importance of development banking as a complement to direct government finance is widely acknowledged.

Thirdly, due to the lack of commercial risk capital, the establishment of venture capital funds capitalized by donors and other sources may help financial institutions during their initial stages of development. The advantages of providing equity over debt are twofold. Firstly, equity contributions can be leveraged several times (e.g. 12.5 times by unsecured loans according to the Basle agreement) and play therefore a catalytic role. Secondly, financial costs of equity are rather flexible since providers of equity are residual claimants and only get dividends in a surplus situation. Thus, donors would assume part of the profit risk of the institution without distorting internal price signals and financial management. In addition, donors attain direct decision making power within the institution and are able to influence management and governance of the institution. Only a few examples of venture capital funds are working. Most of them are still in an experimental stage, e.g. ACCION's Gateway Fund or ProFund. Their impact should be assessed

in a later stage. A common aim of all government intervention should be that it does not encourage ongoing financial dependence (see Coffey, AFR No. 2, p. 45). Technical assistance for financial institutions is therefore the most appropriate instrument of financial systems development. Any direct financial input should be performance-linked and be implemented with careful phasing. With this built-in mechanism distortions of financial markets can be minimized, and the financial independence of lenders brought a little closer to achievement.

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