

Chapter 1

INTRODUCTION

1.1 Background

Nepal is a small country (0.14 million sq. km in area) landlocked between India and China with a population of 18 million people. The country is divided administratively into five development regions, 14 zones and 75 districts (CBS 1992). Ecologically, it is divided into three regions, Mountain, Hill and Terai, extending from east to west. These cover, respectively, 35, 42 and 23 per cent of the area (APROSC 1990). The geographical setting of the country is so extreme that it ranges from near sea level to the snow-covered Himalayas. This extreme topography of the country creates diversity of weather as well as climate.

The Nepalese economy is predominantly agrarian in nature with agriculture accounting for about 56 per cent of GDP and 90 per cent of employment. Due to topographical constraints, only about 18 per cent of the total land area is under cultivation and the Terai accounts for 57 per cent of the total cultivated area (CBS 1992). The Hill belt has potential for horticultural development while the Mountainous zone is suitable for livestock farming. The type of food production depends upon the climate of each zone. Livestock raising plays an important role in the agricultural economy of Nepal.

Tourism is one of the main source of foreign exchange earnings (NRB 1993c). Picturesque high mountains, calm lakes, speeding rivers and evergreen national parks are the main attractions for tourists (CBS 1992).

The planning process in Nepal started in 1955 and, to date, seven five-year plans have been completed. At present, the eighth Five-Year Plan is being implemented; its major objective is to fulfil the basic needs of the people (NPC 1992).

Like many other less developed countries, Nepal confronts problems such as high population growth, unemployment, low productivity, rural-urban migration, deforestation, malnutrition, poor health and illiteracy. Being a poor nation, the Nepalese Government has a challenging role of fulfilling the basic needs (food, clothing, housing, education, drinking water etc.) of the masses (NPC 1985) on the one hand and, on the other, providing for more equitable regional development, gradually eliminating not only inter-regional disparity but also intra-regional and inter-personal differences (Shrestha 1984).

For the improvement of the economic and social conditions of the poor people and to balance economic growth with equitable income distribution, it is necessary to curtail poverty in the country by providing credit and other supporting services in integrating ways (HMG/N 1988). In this context, the Priority Sector Credit Program (PSCP) conducted by commercial banks may be one of the means to generate production, income and employment in the rural areas and it may prove helpful in eliminating disparity across the nation.

Financial institutions in Nepal, particularly commercial banks, play a vital role in economic development. Commercial banks' activities have expanded significantly and these banks are an important source of funds. Table 1.1 shows the activities, services and network of the commercial banks of Nepal as at January 1993. There was one branch per 35 000 people. Total outstanding loans were Rs. 19 178 million and deposits were about Rs. 38 115 million (NRB 1993d).

In 1974, the Nepalese Government, through the Nepal Rastra Bank (NRB) which is the central bank of Nepal, directed the commercial banks to establish more branches in the rural sector and to invest in the priority sectors, these being agriculture, cottage industry and services which are most important for Nepal's balanced economic growth.

In 1981, the central bank formulated the Intensive Banking Program (IBP) especially for two commercial banks, the Nepal Bank Ltd (NBL) and the Rastriya Banijya Bank (RBB), to help them finance the priority sector (NRB 1981). In October 1992, there were 320 commercial bank branches which were engaged in the IBP. In the same year the outstanding loans of the IBP were Rs. 871 million (NRB 1993b). In 1993, priority sector credit was 12.19 per cent of total credit (NRB 1993d).

The IBP is focussed on rural development and its main target group is the low income population (NRB 1981). The government believes that the basic needs of low income groups would be fulfilled and inter-regional and intra-regional disparity will be gradually eliminated through lending to priority sectors by commercial banks (HMG/N 1985). But there is anecdotal evidence that the reserve requirements set down by the central bank for monetary stability and economic growth can be a hindrance to the extension and expansion of the priority sector program. The main focus of this study is to examine the impact of reserve requirements on priority sector lending by those commercial banks which are directly involved in the development process through providing credit for the rural areas of Nepal.

**Table 1.1: Nepalese commercial banking activities at a glance:
January 1993**

Number of banks	7
Number of bank branches	432
Population per branch (thousands)	34.75
Total credit (Rs. million)	19 177.70
Total deposits (Rs. million)	38 115.10
Total priority sector credit (Rs. million)	2 338.00
Percentage of priority sector credit : total credit	12.19

Source: NRB (1993d)

1.2 Definition and significance of the problem

According to an estimate by the National Planning Commission, about 42 per cent of the Nepalese population fall below the poverty line. Approximately 92 per cent of these people live in rural areas (NPC 1985). Most of the rural people are unemployed and tend to migrate to urban areas to find employment which causes socio- economic problems in both urban and rural areas. Provision of credit and supporting services may be a way of fulfilling the basic needs of rural poor people and eliminating disparity between urban and rural areas. According to a survey by the central bank, only 42 per cent of the capital needed by the rural sector is supplied by organised institutions (NRB 1982) such as the Agricultural Development Bank (ADB) and commercial banks. It shows that high-interest, non-institutional credit sources still accounts for much of the rural credit in the country (Jha 1978). Commercial banks can play an important role in providing cheaper credit.

While increases in the banks' activities provide an opportunity for these banks to earn more income from the priority sector, costs to the banks have also increased (RBB 1990/91, 1991/92). According to performance indicators, lending to priority sectors is not satisfactory because it tends to be more costly and risky than other lending (World Bank 1992). In this context, priority sector lending and its cost might be affected by the reserve requirement policies of the Central Bank. It is therefore essential to find out the impact of reserve requirements on priority sector lending. This should be helpful to the government and banks in future decision making.

Earlier studies (Kaminow 1977, Laufenberg 1979, Baltensperger 1982, Romer 1985, Shanmugam 1988 and 1990, Miles 1990 and Mourmouras and Russel 1992) have been concerned with the effects of reserve requirements on commercial banks in the USA, Australia, Malaysia and other countries. In the case of Nepalese commercial banks, there has been no study on reserve requirements and their impact on priority sector lending. Some studies by APROSC (1985, 1988) have provided an evaluation of IBP in general but did not provide any information about the impact of reserve requirement policies on priority sector lending. For this reason the present study seems well justified.

The general objective in this study is to determine the impacts of reserve requirements on priority sector lending in Nepal. The specific objectives are:

- to determine the impact of reserve requirements on priority sector lending by commercial banks;

- to identify other common factors discouraging the banks from financing priority sector lending; and
- to suggest some policy measures with respect to priority sector lending in Nepal.

1.3 Scope and outline of the study

In 1993 there were 7 commercial banks (Nepal Bank Ltd, Rastriya Banijya Bank, Nepal Arab Bank Ltd, Nepal Grindlays Bank Ltd, Nepal Indosuez Bank Ltd, Nepal Himalayan Bank Ltd and Nepal Everest Bank Ltd) in Nepal. The two oldest banks, The Nepal Bank Ltd (established 1937) and the Rastriya Banijya Bank (established 1965), are playing more than a 95 per cent role in priority sector lending through the IBP (NRB 1993b). In the present study, the impact of reserve requirement policies on priority sector lending is examined only for the NBL and RBB. The reasons for excluding the other commercial banks are that they have a very minimum role in the priority sector and the data for them are not readily available.

The Nepalese banking system and the role of priority sector credit are discussed in Chapter Two. Research methods, measurement of impacts of reserve requirements on priority sector lending and the data used in this study are presented in Chapter Four. The results of the study are presented in Chapter Five. Conclusions and implications of the results will be presented in Chapter Six along with the limitations of the study and recommendations for further research.

Chapter 2

THE NEPALESE BANKING SYSTEM AND PRIORITY SECTOR CREDIT

2.1 Introduction

An overview of the Nepalese banking system and priority sector credit in Nepal is provided in this chapter as necessary background information for subsequent analysis. The first part briefly describes the Nepalese banking system. The development of the priority sector concept and the role of commercial banks are also discussed in this part. In the next part, the IBP, other specific programs and the sources and uses of funds for those programs are summarised. The components of costs in priority sector lending and the structures of commercial banks' priority sector credit units are also presented.

2.2 The Nepalese Banking System

Nepal does not have a long history of modern banking. Before World War II, many businesses and industries were developed to fulfil demand for goods and services. These development processes warranted banking services in the country. As a result, the first bank, the NBL was established in 1937 with a 51 per cent share of capital investment coming from the government and 49 per cent from the public (Shrestha 1966). From 1937 to 1964 the NBL provided banking services on a monopoly basis. Subsequently the country introduced more services and competition in this area. In 1965, a second fully-government-owned commercial bank, RBB was established according to the Rastriya Banijya Bank Act 1964. The central bank (NRB) was established in 1956.

After establishment of the second commercial bank, the central bank decided to have a single commercial bank act to control all the commercial banks. Hence, the commercial bank act was amended in 1974. At present, commercial banks operate according to the Commercial Bank Act, the NRB Act, the Company Act and their own internal regulations.

In 1968, the Agricultural Development Bank (ADB) was established to finance the agricultural sector. For financing industries, the Nepal Industrial Development Corporation was established in 1959. There were Sajha Co-operatives for small-scale financing in the villages (Jha 1978).

The 1980s were important years for the Nepalese banking industry. In this decade, three joint venture banks (the Nepal Arab Bank Ltd, the Nepal Grindlays Bank Ltd and the Nepal Indosuez Bank Ltd) were established. After establishment of these banks there was competition in the Nepalese banking system. But most of the branches of these joint-venture banks are in urban areas and are concerned with wholesale banking rather than with rural finance. In 1993, the Nepal Himalayan Bank Ltd and the Nepal Everest Bank Ltd, both privately-owned, were opened. Also, two regional-level village development banks are to be established for financing the rural sectors in the east and far-west of the country (NRB 1993b). In 1994 the State Bank of India started banking functions as a joint venture in Nepal. The Chartered Bank, American Express Bank and other banks are represented in Nepal (NRB 1992a).

The Nepalese banking system is branch banking in nature. Among the different types of financial institutions in Nepal, the oldest two commercial banks (NBL and RBB) have played the most important role for a long time (see Table 2.1). In July 1990, the percentage share of total credit of those two banks was 84.5 per cent and, of total deposits, it was 87.4 per cent (excluding the ADB). The total branches and employees of those two banks were 434 (98 per cent of commercial bank total) and 15 450 (97 per cent of commercial bank total), respectively. These two banks also owned 298 of the 300 commercial bank branches operating in rural areas as of July 1990.

The ADB has been playing an important role in agricultural finance in Nepal. The total outstanding loans of ADB in October 1992 were about Rs. 3732 million (NRB 1992b). In 1975, ADB implemented the Small Farmers Development Program (SFDP), especially for those people who have little collateral. The basic objective of the program is to enable the rural target group to increase their income and welfare in a self-reliant manner through expansion and diversification of their economic activities (Rokaya 1979). By 1990, SFDP served all the 75 districts of the country and covered 574 Village Development Committees (Khadka 1992). There are 692 Sajha Co-operatives which are also sources of rural credit (APROSC 1990). However, the impact of Sajha Co-operatives tends to be minimal because of mis-management of the programs (Shrestha 1984, APROSC 1990).

The IBP has an important role in the rural development of Nepal. It is explained in detail in a separate section.

Table 2.1: Role of the Nepal Bank Ltd (NBL) and the Rastriya Banijya Bank (RBB) (1990)

Activities/Structures	Share of the NBL and RBB (%)
Total credit	84.50
Total deposits	87.40
Total branches	98.00
Total rural branches	99.33
Total employees	97.00

Source: NRB (1990a).

2.3 Development of the priority sector credit concept and the role of commercial banks

By the end of the 1960s it was apparent that the 'trickle down' concept of economic development was not working in the sense of helping the poor (Blaikie, Cameron and Seddon 1979). Planners and policy makers began to think that the direct involvement or mass participation of the poor people in various development programs was necessary in order to raise their living standards (Lele 1975, World Bank 1975, ADB 1977). As a result, many of the developing countries (e.g. India, Bangladesh, Sri Lanka, Philippines, Thailand and African countries) started to provide funds directly to poor people in the rural areas. In Nepal, the Government introduced the Land Reform Program (1964) and the Sajha Sahakari Program (1971) to assist rural development. Unfortunately, these programs did not last long because of political problems and mis-management (Bhooshan 1979, Blaikie, Cameron and Seddon 1979, Pokharel 1980).

Nepal had a huge demand for credit which could be fulfilled only by a special credit program for low income groups. According to a survey by the central bank in 1977, only 42 per cent of the capital needed was provided by the organised credit sector with the remainder being supplied by village money lenders at high interest rates (NRB 1982). Hence, the government prioritised certain areas containing low income groups and, in 1974, the central bank introduced the priority sector credit scheme providing commercial bank credit for the small-scale agricultural, cottage industry and service enterprises. The central bank had scope to re-define priority sectors according to the needs of the nation.

In 1974, when the priority sector credit scheme was first launched, the central bank directed all commercial banks to lend 5 per cent of their total deposits to this sector. In 1976 it became 7 per cent (NRB 1981) and in 1982 it reached 10 per cent (HMG/N 1982). Since 1985, the percentage has been calculated with respect to the total credit of all the commercial banks. According to the banking act, commercial banks are required to lend a minimum of 12 per cent of their total credit to the priority sector, or else they are required to pay a certain amount of interest to the Central bank as a penalty (NRB 1992a).

Since 1985, when the government accepted and declared the priority sector credit program as a national program to eradicate poverty and disparity, the credit program has figured prominently in the national development plans (HMG/N 1985). To achieve the minimum lending target, commercial banks are involving themselves in many programs and projects (e.g. Credit for Unemployed Graduates) for low income groups in rural areas (NRB 1993b). Many national and international agencies are directly or indirectly involved in these programs (e.g. International Fund for Agricultural Development

(IFAD), FAO, Peace Corps, Save the Children Fund, Asian Development Bank, World Bank, UNDP and GTZ).

According to the Priority Sector Credit Manual 1981, the Central bank has much influence over the pattern of lending under the program. In the case of small farmers the credit limit is Rs 2.5 million in cottage industry and Rs. 2.0 million in agriculture and service areas, both for the single borrower or for a single project (NRB 1993b). Loans may be obtained on an individual basis or a group guarantee basis. For individual loans, banks need collateral from customers. However, low income families having skill and ability but not having sufficient collateral to submit to the banks, can obtain a loan on a group guarantee basis. The group can be formulated with 4 to 10 member from the same geographical area and same income level.

Table 2.2 shows the contributions of commercial banks in different areas of the priority sector.

2.4 The Intensive Banking Program (IBP)

When the priority sector credit scheme was first launched in 1974, its aim was to make credit readily available to agriculture, cottage industry and services, the three sectors deemed most important to Nepal's balanced economic growth. At that time, however, extending loans to the priority sector was an entirely new task for commercial banks and they were faced with numerous obstacles. As a result, the investment and recovery targets of the priority sector were not achieved. Since the loan collection rate was so low, the commercial banks began to invest only in less risky activities. This practice, together with the traditional emphasis on collateral rather than project viability, created an environment where rich and influential persons benefited more than the low income families (NRB 1981).

It became increasingly clear that low income families would continue to be neglected unless the commercial banks undertook a substantial investment program putting greater emphasis on improving the socio-economic conditions of the weaker sections of the society. Therefore, it was decided that a major credit program aimed at both the economic and social development of the country had to be devised to ensure that low income families got their share of benefits. Accordingly, the objectives and the policies of the priority sector credit scheme were revised and a program, the IBP, based on area development, project viability and regular supervision, was formulated in October 1981 (NRB 1983).

**Table 2.2: Statement of deposits, credit and priority sector credit of
Nepalese commercial banks**

(Rs. million)

	Total deposit	Total credit	Priority Sector Credit (PSC)				PSC as % of total credit
			Agriculture	Cottage Ind.	Service	Total	
July 1989	19 009	10 357	211	581	111	903	8.72
July 1990	21 943	11 799	322	869	122	1 313	11.13
July 1991	26 805	14 009	433	1157	133	1 723	12.30
July 1992	33 686	18 824	544	1445	144	2 133	11.33

Source: NRB(1990a, 1992b)

Estimated according to performance in 1989 and 1990.

According to Priority Sector Credit Manual 1983, the main objectives of the IBP are:

- to make the families aware of the types of development work they can undertake;
- to motivate and inspire those operating agricultural/cottage industry and services in traditional ways to gradually adopt new practices;
- to make available the facilities and services required for up-lifting the economic and social status of target groups; and
- to gradually make target groups bank-oriented by emancipating them from the exploitation of local money lenders.

To achieve the above objectives of the IBP the following policies were listed for adoption (NRB 1983):

- In the beginning, only a few commercial bank branches shall be engaged and others shall be brought in gradually.
- An area development approach shall be adopted and the lending activity shall be concentrated in a specified and separate geographic area.
- The participating banks will inform, help and motivate people to adopt new production techniques and provide them with necessary credit and technical advice. The supply of inputs, raw materials and other supporting services shall be carried out through other line agencies on a co-ordinated basis.
- Loan approval shall be based on economic and technical feasibility rather than on security.
- At least 60 per cent of total priority sector credit should be provided to low income families, with a portion of loans in kind.
- Arrangements shall be made to fund, on a group guarantee basis, those low income families who have skill and ability but do not have sufficient collateral.

In view of limited manpower, financial and physical resources, only 46 branches (30 rural and 16 urban) of the two commercial banks (NBL and RBB) were engaged during the first year (i.e. in 1981) (NRB 1981). In June 1993, there were 320 branches of the commercial banks (NBL-175, RBB-143 and Nabil-2) involved in the IBP. The total projects financed in the priority sector through the IBP were 146 400, total loan disbursement was Rs. 1 711.4 million, total repayments was Rs. 840.1 million and outstanding loans were Rs. 871.3 million (NRB 1993b). There were approximately 650 bank staff members who were directly involved in the IBP (World Bank 1992).

Table 2.3 shows the contribution of IBP in the development process of the rural areas of Nepal.

Table 2.3: Commercial bank lending to the priority sector under the IBP, July 1992 (Rs. million)

	Disbursement	Repayment	Outstanding	Overdue
NBL	1011	524	487	172
RBB	685	311	374	83
Total	1696	835	861	255

Source: NRB (1993b)

2.5 Other programs under priority sector lending

2.5.1 Production Credit for Rural Women (PCRW)

The PCRW program was initiated in 1982 with the aim of enhancing the status of women by increasing their income through bank credit and supporting services. The principal strategies adopted for the purpose included developing a delivery system capable of providing services to rural women and establishing a self-reliant women's group. This program was initiated and is being implemented by the Women's Development Section of the Ministry of Local Development (NRB 1993b). Under the IBP, credit through the PCRW program is available to rural poor women without collateral and it has a very strong community development component. By mid-February, 1992, PCRW reached 54 sites, while the number of PCRW groups stood at 3 364 and total membership was 15 137, of which 10 605 received credit. About 480 people were engaged in implementing the program. The PCRW program is supported by various institutions. For example, IFAD funds are made available at a much lower rate than the market rate to commercial banks while investing in priority sector through the PCRW program. The amount lent through the PCRW was approximately Rs. 12 million in 1992 (Khadka 1992).

2.5.2 Credit for unemployed graduates

This program was initiated in 1984 for those educated people who were unemployed. According to this program, an unemployed graduate is eligible to receive up to Rs. 50 thousand from commercial banks to establish his/her business (NRB 1984). However, the performance of this program has not been satisfactory for a variety of reasons.

2.5.3 Cottage and small industries project (CSIP)

This project was started in 1982 to provide easy credit for cottage and small industries through commercial banks. Some parts of this project were assisted by IDA, NRB and the Nepal Government. In the initial stage, the project was launched in 9 districts in the Central and Western regions and reached a level of 27 districts in 1985. In mid-July 1990, the outstanding credit of commercial banks under the CSIP was Rs. 191 million. After 8 years the CSIP was stopped by IDA (NRB 1993b).

Commercial bank branches which are not involved in the above programs are also eligible to lend their funds to the priority sector within the rules and regulations of the Priority Sector Credit Manual and under the supervision of the central bank (NRB 1983). This

type of lending is also counted to achieve the target of commercial banks in funding to the priority sector.

2.6 Sources, uses and interest rates of priority sector funds

The main sources of the priority sector funds are deposits (NRB 1990a). The other significant sources include borrowings from the IFAD, especially for the PCRW Program, at a subsidised rate of interest. When commercial banks feel a scarcity of funds to lend to the priority sector, there is provision to borrow from the central bank at rates which are less than the market rate. Interest rates on IFAD loans are only three per cent which is cheaper than other loans (NRB 1993b).

Commercial banks have three types of deposit accounts: current accounts, savings accounts and fixed accounts. Since 1990, the rate of interest on savings accounts has been 8.5 per cent while on fixed accounts it has been 3 per cent to 13.5 per cent depending upon the time limit (NRB 1990a). There is no provision for interest on current accounts in Nepal. The weighted interest rate on deposits of commercial banks is about 8.16 per cent (World Bank 1992) which can be changed according to the volume of the current account. If the volume of the current account is high, the cost of funds of commercial banks will be less and vice versa. Table 2.4 shows the commercial banks deposit component and interest rates.

Commercial banks allocate more funds to lending than to investments in securities and the like. The reason might be the relative higher yields for lending than the yields on securities. Moreover, lending helps commercial banks to maintain a good relationship with bank customers which probably leads to some benefit to the commercial banks in the long run (Visedmongkol 1990).

2.7 Components of priority sector credit costs

As financial intermediaries, the basic product of banks is a service involving the transformation of financial assets, suited to the needs of savers, into a different set of financial assets, suited to the needs of borrowers (Nelson 1985). According to Wilson (1986), the business of banking consists of borrowing and lending. The borrowing leads to interest paid on borrowed money while the lending leads to interest earned from loan money. However, both activities of the banking business give rise to operating expenses such as wages and salaries, fees and services, taxes and duties, and so on (Visedmongkol 1990).

Table 2.4: Deposit and interest rate structure of Nepalese commercial banks: April 1993

	Current	Saving	Fixed
Annual interest rate %	0	8.5	12 – 13.5
Deposits (Rs million)	7 425	11 214	20 105
% of total deposits	19.16	28.94	51.90

Source: NRB(1990a, 1993d)

The costs of Nepalese commercial banks depend mainly on interest paid on deposits and borrowings, salaries and wages of employees, fees and services, taxes and duties, equipment expenses and bad debt expenses. Likewise, it is necessary to consider the reserve requirements cost when calculating the costs of commercial bank lending. Lending in the priority sector is a part of the total lending functions of the commercial banks and there is no separate heading for it in the profit and loss account. The main items that influence the costs of the priority sector lending are interest on funds (deposits), salaries, fees, rent, capital equipment, material costs (RBB 1990/91 and 1991/92) and the opportunity cost of reserve requirement (Revell 1980, Fry 1988). The items involved in the total costs of the priority sector can be identified as follows.

- *Interest paid on deposits.* According to the recent banking act, all commercial banks have to lend at least 12 per cent of their total credit to the priority sector (NRB 1992a). Hence only this amount is needed to calculate the interest paid on deposits.
- *Salaries, wages and travel allowances/daily allowances (TA/DA).* This includes salaries and wages of those employees who are directly involved in priority sector credit works in different branches or regional and head offices of the commercial banks. TA/DA are mainly given in the event of inspection and supervision of the project areas of banks.
- *Interest on borrowed money.* This covers interest paid for funds borrowed from the central bank and institutions such as IFAD.
- *Fees and services.* This covers fees and service costs which banks incur for priority sector lending (training expenses, advertising costs etc.).
- *Credit guarantee fee.* This is the fee which commercial banks pay to the Credit Guarantee Corporation to guarantee the loans while financing the priority sector. At present, it is one per cent of the credit (CGC 1992).
- *Taxes and duties.* This covers various taxes and duties which are related to priority sector lending.
- *Occupancy expenses.* Expenses for depreciation, rent, maintenance, repair, insurance fees, water supply, electricity etc. relevant to priority sector units and departments.
- *Equipment expenses.* Expenses relating to equipment used in banks' priority sector credit units and departments such as calculator machines, stationery, vehicles etc.
- *Bad debt expenses:* This is an expense item which is reserved for priority sector loans not repaid in due time according to banking rules.
- *Cost for reserve requirement and liquidity.* Opportunity costs of funds tied up in reserves etc. At present, such reserves imposed by the central bank are 12 per

cent of total deposit liabilities of commercial banks with a minimum of 8 per cent of reserves to be maintained as deposits with the NRB (NRB 1992a). Likewise it is compulsory for all commercial banks to invest at least 22 per cent of the total deposit liabilities in HMG bonds, treasury bills and NRB Bonds as a liquidity requirement (NRB 1993c). Reserve requirements are explained in more detail in the next chapter.

2.8 Administrative structure of priority sector lending in Nepal

When the priority sector credit was launched in 1974 to offer loans to agriculture, cottage industry and services, it used to function from the credit departments of all commercial banks. But when the priority sector credit scheme was revised and the central bank placed more emphasis on the program for national development in 1981, a separate department was established in the central and regional offices of the central bank and a unit was established in the case of commercial bank branches (NRB 1981). The priority sector credit scheme involves different types of lending than other general traditional lending programs within the banks. Commercial banks have realised the need to hire some technical manpower such as Agricultural Officers, Industrial Officers and Junior Technicians for the priority sector credit departments and units.

According to the Priority Sector Credit Manual 1983, the priority sector credit department of commercial banks have been given the power to finalise and implement the annual plan and to inspect the functioning of the regional and branch offices. It has authority to sanction large amount of loans which are above the authority of regional and branch offices. It has a co-ordination role between banks and ministries and other line agencies at the central level. The priority sector credit department at the regional level has the power to make a regional level annual plan and to control, inspect, assist and co-ordinate the branches within the region. At the branch level, a Junior Technician manages the program in the first year and, after extension of the program, other man power is added according to the loan item, loan amount and geographical areas covered by the branches. The manager as the head of the branch is responsible for lending and collecting the loans.

The duties of the Junior Technicians and Field Assistants include household surveys, collection of loan application forms, appraisal of projects, recommending on loan amounts, informing and reminding the customer about the repayment date and submitting quarterly progress reports to regional and head offices as well as to the central bank (NRB 1983).

The branch offices develop the annual credit plan with the help of different line agencies and then they submit it to the regional and the head offices. The head office finalises the annual plan.

The NRB has a Priority Sector Credit Unit under the Development Finance Department in the Central Office, and a Banking Development and Credit Unit in the regional office to assist, inspect and supervise the priority sector credit of the commercial banks. Though the commercial banks have their own training centre, the Bankers' Training Centre of the NRB conducts the major training programs for the man power involved with priority sector credit.

To make and implement policy according to national needs, there is a Priority Sector Co-ordination Committee at the national level chaired by the Governor of the NRB. Members of this committee include the secretaries and general managers of different ministries and banks. To assist the National Level Committee, there are two sub-committees, the Agricultural Sector Sub-committee and the Industrial Sector Sub-committee, both of which are chaired by the Deputy-Governor of the NRB. At the district level, the Priority Sector Credit Co-ordination Committee chaired by the Chief District Officer or Local Development Officer, is authorised to lend credit on an integrated basis between banks and different line agencies. At the field level, a Local Level Priority Sector Credit Co-ordination Committee, chaired by the Bank Branch Manager, is authorised to lend the funds and other supporting services to the needy people of the bank areas (HMG/N 1988).

District and local level committees meet at least twice a year (in the winter and summer seasons) to formulate and evaluate the annual plan and program at the district and local level of the bank branches. They can suggest and recommend ideas, policies and programs so that the Central Level Co-ordination Committee and Sub-Committees can revise or modify their policies and programs (HMG/N 1988).

2.9 Overview

Despite the short history of commercial banking in Nepal, the NRB has introduced economic and social programs designed to assist the rural poor. Some international agencies are involved in these programs. Commercial banks are required to direct a certain proportion of total credit to the so-called 'priority sector'. Co-ordination of this lending takes place through various co-ordination committees and government departments.

Chapter 3

RESERVE REQUIREMENTS AND THEIR IMPACT ON PRIORITY SECTOR LENDING

3.1 Introduction

This chapter provides a general overview of reserve requirements and their impacts prior to addressing the effects of reserve requirements in Nepal which is the subject of the next chapter. First some theoretical aspects of central banking and reserve requirements with particular reference to developing countries are described in brief. In the next part the reserve requirement policies pursued by the NRB and their impact on priority sector lending are presented. Finally, some previous studies are discussed.

3.2 The central bank and reserve requirements

3.2.1 *The central bank*

The NRB, established in 1956, is the central bank of Nepal. Thanos (1958) defines a central bank as a banking institution whose aim is to control the quantity and use of money in such a way as to facilitate the implementation of certain monetary policies. These policies may be developed by the bank itself or, more often, imposed on the bank by the state. According to Day (1960), a central bank is an institution which helps to control and stabilise the monetary and banking system. According to Sayer (1967), the central bank 'is an organ of the government that undertakes the major financial operations of the government and, by conducting these operations, influences the behaviour of financial institution so as to support the economic policy of the Government.' All these definitions are narrow since they refer only to one particular function of the central bank (Jhingan 1989).

Samuelson's (1976) definition of a central bank is broader. According to him, a central bank is a bank for bankers. Its duty is to control the monetary base and, through control of this 'high-powered money', to control the community's supply of money. The broadest definition has been given by De Kock (1954). According to him a central bank is one which constitutes the apex of the monetary and banking structure and which performs, as best as it can, in the national economic interest.

Central banks normally have the basic purpose of facilitating economic stability and growth in the country. They do this by contributing to the health of the financial sector and by maintaining the stability of the value of money (Coats 1983).

Most central bank perform the following functions:

- issuance of currency;
- performance of general banking services for the government;
- management of the country's reserves;
- ensuring stability of the nation's financial system;
- controlling liquidity and credit in the country;
- lender of the last resort to other financial institutions; and
- providing central facilities for inter-bank transfer of funds (clearance).

The above functions of central banks are traditional in the sense that they apply in most modern economies. But the central banks in the LDCs have important roles to play in promoting economic development. Sometimes the central banks in LDCs produce the guidelines to be followed in implementing economic policies. In many cases the central banks have also taken steps to promote the integration of the dual money market (Ghatak 1981).

One of the aims of a central bank in an underdeveloped country is to improve its currency and credit system. An expanding financial sector is required to provide credit facilities and to divert voluntary savings into productive channels. Financial institutions are often localised in urban areas in underdeveloped countries and provide credit facilities to big businesses and commerce. Other parts of the country often face a lack of banking facilities. Credit facilities in rural areas are mostly non-existent save for village money lenders who usually charge exorbitant interest rates. In order to remedy this, central banks try to extend banking facilities to rural areas so as to make credit available to small farmers, small businessmen and traders. The hold of the village money lender in rural areas can be slackened as new institutional arrangements and credit programs are made available by the central bank. In this context, priority sector credit programs may be helpful in solving the problems of the rural poor.

Central banks also play an important role in bringing about a proper adjustment between money demand and supply in the country. An imbalance between the two is reflected in the price level. A shortage of money supply will inhibit growth while an excess of it will lead to inflation. As the economy develops, the demand for money is likely to increase due to gradual monetisation of the non-monetised sector and increases in agricultural and

industrial production and prices. The demand for money for transactions and speculative motives will also rise. In an underdeveloped economy, the central bank should control the supply of money in such a way that the price level is prevented from rising without affecting investment and production adversely.

Likewise, the central bank should also aim to control credit in order to influence the patterns of investment and production in a developing economy. For this the central bank uses quantitative and qualitative methods of credit control. In the way of quantitative control the central bank generally uses the reserve requirements for credit control by varying the compulsory reserve ratio of commercial banks. Qualitative methods include margin requirements and credit rationing.

3.2.2 Reserve requirements

In order to promote monetary stability, central banks resort to a number of traditional monetary instruments. Reserve requirements, as a method of credit control, were first suggested by Keynes in his *Treatise on Money (1930)* and were adopted by the Federal Reserve System of the United States in 1935 (Jhingan 1989). Every commercial bank is required by law to maintain a minimum percentage of its total deposits with the central bank and that may be either a percentage of its time and demand deposits separately, or a percentage of total deposits. Required reserves may be kept as vault cash and specific financial instruments and /or as deposits with the central bank. The central bank has the power to change reserve requirements on bank deposits within legislatively-set boundaries.

Required reserves on the deposits of financial institutions have two major economic aspects. First, reserves may be regarded as a tax on bank liabilities if the rate of return on reserves is less than the market rate of interest. Secondly, reserves may be considered as an important monetary instrument for controlling the value of monetary aggregates and, ultimately, variables such as prices, interest rates, and income (Siegel 1981). According to Baltensperger (1982), reserve requirements are comparable to a tax on a particular economic activity, namely, the production of deposit accounts. As such, they have efficiency effects similar to those of a tax on other types of activities. Although this has always been accepted in general terms, reserve requirements have typically been considered not on efficiency grounds but, rather, in connection with monetary and economic stability.

Reserve requirements held as deposits at the central bank allow the central bank to control the money supply and related monetary conditions. For example, if the central

banks were to reduce reserve requirements, excess reserves would be available to banks. These excess reserves will be allocated to lending by the banks placing downward pressure on interest rates and stimulating the level of economic activity. If the central bank increased reserve requirements, banks would be forced to increase their deposits at the central bank. To satisfy the reserve requirements, banks would tend to reduce their lending, thereby raising interest rates and decreasing the level of economic activity. Miles (1990) has suggested lower reserve requirements as a means of stimulating economic activity in developing countries.

Fry (1988) argued that higher reserve requirements raise bank operating costs. He added that, ignoring bank capital and excess reserves, earning assets equal deposit liabilities when required reserves are zero. With a required reserve ratio of 50 per cent, however, the same deposit base sustains only half the volume of earning assets. The calculated operating cost ratio against earning assets is doubled, even before the negative effect of a higher reserve requirement on deposit volume is considered. Ignoring resource costs, a 50 per cent required reserve ratio ensures that the average deposit rate of interest can be no more than half the average return on earning assets. Therefore some economists (Hall 1984, Suzuki and Yomo 1986, Tobin 1958) have suggested the payment of interest on bank reserves or a portion of those reserves.

The reserve requirement is mostly imposed on deposits. But the question can arise as to how to choose the deposit type. Commercial bank deposits are most commonly classified as either demand deposits or savings and time deposits. Laufenberg (1979) suggested required reserves be held against both types of deposits with a lower requirement for the latter.

Poole and Lieberman (1972) have argued that required reserve ratios against bank deposits, if set appropriately, could improve the central bank's control of monetary aggregates. They suggest that if the central bank attempts to control the level of narrowly-defined money, which includes bank demand deposits and currency (M_1), the optimal reserve requirement ratio against time deposits should be zero, whereas if the central bank's intermediate objective is to control M_1 plus time deposits (M_2), then the reserve requirement ratio against time deposits should be identical to the ratio against demand deposits .

The question of effectiveness of reserve requirement ratios on the control of money supply and economic growth is a common debating subject amongst economists. Some have argued that if the commercial banks have large excess reserves that would make the

policy of reserve requirements ineffective. This is because when banks keep excessive reserves, an increase in the reserve ratio will not affect their lending operations.

The same percentage reserve ratio for different banks will not affect those banks which have large excess reserves. On the other hand, it will adversely affect banks with little or no excess reserves. Non-banking financial intermediaries like co-operative societies, building societies, insurance companies and development banks are not affected by variations in reserve requirements, though they compete with commercial banks for lending purposes.

Generally, the central bank fixes the same minimum reserve requirement ratio for all commercial banks in all regions of the country. However, regional differences in credit needs can arise. Raising the reserve ratio for all banks may not be appropriate depending on the geographical spread of their business. Changing reserve requirement ratios appropriately is a delicate task. It does create uncertainty for banks and it can adversely affect their liquidity and profitability.

Coats (1983) has suggested some reserve requirement principles which a central bank can impose on commercial banks according to time, situation and needs of the country. These are summarised below.

- *Bank liabilities.* This is the most common type of reserve requirement base. According to this base, commercial banks need to maintain reserves in response to changes in the level of deposits.
- *Bank assets.* Another base for reserve requirement is bank assets. This has the same implications for money supply control as the more traditional use of deposit liabilities.
- *Differential and marginal reserve requirements.* The reserve requirement may be differentiated by types of deposits (for example, different rates may be applied to demand, time and saving deposits), bank size (measured by the value of their deposits), geographical location, or any number of other distinguishing characteristics.

Marginal reserve requirements involve imposing a different rate against any change in the requirement base from its level at a particular point in time, and may or may not be differential. This creates a difference between the average and marginal requirement ratios.

The principal advantages and disadvantages of differential and marginal reserve requirements relate to their implications for money supply control and resource allocation. However, their use does have implications for liquidity in as much as the level of the reserve requirement affects bank liquidity when based on deposit liabilities. Demand deposits, for example, invariably have higher turnover rates than time deposits and therefore require greater liquidity.

- *Lagged reserve accounting.* This requirement is based on magnitudes of some earlier period, rather than on the current period. An example is found in the United States where required reserves are based on the level of deposits that existed two weeks earlier than the reserve settlement period. This, and any other lagged base reserve requirement type, reduces the liquidity of a given quantity of reserves by eliminating the tendency for actual and required reserves to move in the same direction. They have the advantage of simplifying bank reserves management by informing banks of the exact quantity of reserves they will be required to hold in advance of each succeeding settlement period.

3.3 Reserve Requirement Ratios in Selected Countries

3.3.1 Australia

Reserve requirements in Australia are maintained via the Prime Assets Ratio (PAR) and Non-Callable Deposits (NCD). As part of the prudential management of bank liquidity all banks have to hold at all times a portion of high quality liquid assets (e.g. notes and coins, balances with the Reserve Bank, treasury notes and other commonwealth government securities, and loans to authorised money market dealers secured against commonwealth government securities). The minimum PAR (the ratio of each bank's prime assets to each bank's total liabilities) is currently 6 per cent. In addition, all the banks are required to hold an amount equal to one per cent of their liabilities (excluding shareholder's funds) as a non-callable deposit with the Reserve Bank (Baumol, Blinder, Gunther and Hicks 1992).

3.3.2 United States

The Depository Institutions Deregulation and Monetary Control Act of 1980 provides a simple scheme for setting up reserve requirements in the United States. All depository institutions including commercial banks, savings and loan associations, mutual savings banks and credit unions are subject to the reserve requirements (Smith 1991) as follows:

- three per cent on the first \$ 25 million of transaction-account balances (with that initial \$ 25 million figure indexed to change annually by 80 per cent of the percentage change in aggregate transaction balances);
- twelve per cent on an institution's transaction-account balances above \$ 25 million (this can be adjusted within the range 8 per cent to 14 per cent);
- three per cent on non-personal time deposits (this can be adjusted within the range of zero per cent to 9 per cent); and
- three per cent on Euro-currency liabilities.

In addition, the Federal Reserve can require interest-earning supplemental reserves of up to four per cent of transaction- account balances. The interest rate paid on these supplemental reserves can be no higher than the Federal Reserve's rate of return on its asset portfolio. An approximation is that, except for some exemptions for small institutions, there is essentially a 12 per cent reserve requirement on transaction accounts and virtually no reserve requirements on other accounts.

3.4 The use of reserve requirements in LDCs

Less developed countries do not have all of the alternatives open to developed countries in conducting their monetary policy. In LDCs money markets are non-existent or poorly developed, while open market operations are difficult or impossible.

Coats (1983) suggests that reserve requirements must be judged by their effects on resource allocation and equity. Equity requires that one bank be offered the same competitive advantages as another, and that the banking system as a whole be afforded the same competitive advantages as other financial intermediaries or other industries. The imposition of reserve requirements on banks but not on the other financial intermediaries may violate equity, as may the imposition of differential or marginal reserve requirements. This may lead to smaller allocations of resources to the banking

industry thereby thwarting its development relative to other industries and possibly hampering the flow of savings to investors.

In LDCs, allocation and equity problems arise when banks are forced to hold a large fraction of their asset portfolio in non-interest yielding reserves. In most of the LDCs, the central bank does not pay interest on reserve requirements. When required reserves do not earn interest, they reduce the average yield on the bank's portfolio and may be thought of as a tax on banking business. As a result, funds are diverted to other sectors. Likewise, reduced earnings on the bank's asset portfolio when interest is not paid will be passed on to depositors in the form of lower interest payments on deposits or higher service charges.

3.5 The Nepal Rastra Bank's Reserve Requirements

After World War II, many countries realised the need to establish a central bank in order to restructure and develop their economic activities. Nepal also realised this and, as a result, the NRB was established according to the NRB Act 1955. The NRB functions like central banks do in other parts of the world. But, being a central bank in a developing country, it is engaged in building and improving the financial infra-structure for the development of the country as well as in traditional currency and credit regulation. To provide central banking facilities throughout the country, there are eight branches/sub-branches of the NRB at the regional level (Ilam, Biratnagar, Janakpur, Birgunj, Pokhara, Siddharthanagar, Nepalgunj and Kailali). In the Central Office, there are 16 departments (Banking Operations, Development Finance, Research, Personnel Administration, Accounting and Expenditure, Legal, Internal Audit and Inspection, Foreign Exchange, General Service, Issue, Mint, Inspection and Supervision, Public Department, Banker's Training Centre, Kathmandu Banking Office and the Office of the Governor) (NRB 1992b).

The NRB has been given the authority according to the NRB Act to fix the ratio of reserves required from commercial banks which can be changed from time to time according to monetary policy. The commercial bank reserves, which are the aggregates of the cash in vault and balances with the central bank, are classified into required and excess reserves.

In 1989, NRB directed all banks and financial institutions conducting banking business to maintain a minimum of nine per cent of their total deposit liabilities in the form of balances with the NRB or in vault cash or both. Previously, they were required to maintain a minimum of five per cent of their total deposit liabilities or cash reserves with

the NRB and four per cent of total deposit liabilities as vault cash, separately. The statutory cash reserve ratio was calculated after working out the weekly average of deposits in the preceding eight weeks and the weekly average of current reserves. If the minimum nine per cent reserve requirement was not maintained by the banks and financial institutions, they were subject to penal action under the NRB Act. Since the NRB can change this ratio depending upon the prevailing monetary situation, the ratio was revised upwards from nine per cent to 12 per cent of total deposit liabilities with effect from September 24, 1989. With effect from April 15, 1990, the NRB issued directives to commercial banks and other financial institutions conducting banking business to maintain a minimum of eight per cent of total deposit liabilities as cash reserves with the NRB out of a total of 12 per cent statutory reserve requirements. If this requirement was not met commercial banks were liable to pay a penalty on this shortfall amount on a weekly basis. No change has been made in the procedure of computing the level of reserves. These measures are intended to stabilise the money supply and also to allow commercial banks more time for planning their liquidity. Until now this ratio has not changed (NRB 1993a).

Likewise, a second form of reserve holding that is known as the minimum liquidity requirement was introduced and commercial banks had to hold 22-24 per cent of total deposit liabilities in government bonds, treasury bills and NRB bonds in different periods. Since November 1992, the minimum liquidity requirements has been reduced from 24 to 22 per cent of total deposit liabilities and the total liquidity requirement (statutory reserve requirements plus minimum liquidity ratios) is 34 per cent of total deposit liabilities. If the commercial banks fail to meet this requirement the central bank imposes a penalty (NRB 1993c). Table 3.1 shows the reserve requirement ratios in Nepal.

3.6 Impact of reserve requirements on priority sector lending

Reserve requirements raise the costs of funds which, in turn, affects the commercial banks' profits unless the costs can be shifted to borrowers through higher interest rates. In the first case, commercial banks want to shift their funds to higher earning sectors, especially to large commercial loans, and away from the priority sector for which there is a fixed lending rate. In the latter case, the rural poor cannot afford the higher interest. In short, reserve requirements affect the priority sector lending program negatively.

Hence, the policies adopted by the NRB must be balanced. On to one hand the Central bank must control the money supply to check inflation and, on the other, it must be helpful to extension and expansion of priority sector lending for the socio-economic

Table 3.1: Reserve requirement ratios in Nepal

Year	Statutory reserves (%)	Liquid reserves (%)	Total (%)
1981-1989	9	22	31
1990-1992	12	24-22	36-34

Source: NRB (1992a, 1993c)

development of the rural poor. For this, the NRB can use a tight monetary policy for big businesses and commerce and a liberal monetary policy for agriculture, cottage industry and service sectors where the rural poor are engaged.

According to the Mckinnon- Shaw (1973) model and the neo-structuralists (Fry 1988, pp.108) higher reserve requirements reduce the funds available for investment by reducing the demand for deposits, or they reduce the fraction of a given volume of deposits that are available for investment. Kapur (1976) also suggests in his model that reducing the required reserve ratio raises the deposit rate that can be offered for any given loan rate. Fry (1988) summarises the views of the above economists and argues that higher reserve ratios against deposits reduce the volume of loans supplied by commercial banks. From the above arguments, the reserve requirements imposed (including the priority sector credit) by the NRB increase the cost of funds, decrease the volume of loans supplied by the commercial banks, increase the interest rate on loans and decrease the welfare of the rural poor people. Both Kapur (1976) and Mckinnon (1981) advocate reduction in the reserve requirement ratio or the payment of the market clearing loan rate on required reserves.

3.8 Some Previous Studies

This section reviews previous empirical research which is relevant to the present study. Most of the previous studies on the effects of reserve requirements have been done for banking in developed countries, specially the United States. Some work has been done for banking in the United Kingdom, Australia, Japan and Malaysia. No studies have been conducted in the case of Nepal. The review relating to the work done previously is based on the purpose of the present study as outlined in Chapter 1.

Some literature on the reserve requirements of the banking industry analyses the relationships between reserve requirements and bank costs, deposits and money supply. The models developed by some economists to measure these effects are discussed in brief along with some theoretical issues.

Siegel (1981) used a stochastic financial model which derives the reserve levels on financial assets which minimises price-level fluctuations. Applications of the model to currency and demand deposits in the United States suggest that the price-stabilising reserve ratio on demand deposits is approximately one half of the 12 per cent mandated by the Monetary Control Act of 1980.

Baltensperger (1982) examined the effects of various types of stochastic disturbances on the economy and the dependence of these effects on the level of the reserve requirement using a simple aggregate model of the economy which included an output market, a market for government money, a deposit (bank money) market and a credit (bond) market. He concluded that it is difficult and probably not advisable to choose between a low and a high reserve requirement in terms of their effect on economic stability.

Romer (1985) developed a general equilibrium model in which increases in reserve requirements raise loan rates and reduce lending, but the impact on deposit rates is ambiguous so that depositors do not necessarily bear the tax intrinsic in reserve requirements. He investigated the positive and welfare effects of reserve requirements, the effects of changes in other parameters in the economy (such as the rate of money growth) in the presence of reserve requirements, and a variety of qualitative issues raised by reserve requirements, such as differences between zero, fractional and 100 per cent reserve requirements and the relation between reserve requirements and taxation. The model was an overlapping generations model in which agents have both financial and non-financial means of transferring wealth from the first period of life to the second. The assumptions of heterogeneous endowments and of a private storage technology with diminishing returns were used to introduce diverse investment opportunities and, hence, a supply of and demand for loans, into the model. The use of a general equilibrium model, of course, has the advantages of ensuring that the equilibrium equations are based in utility maximisation and profit maximisation and that all interactions are accounted for. According to Romer, an increase in the reserve requirement forces banks to hold a larger fraction of their portfolio in an asset that pays no interest, and the equilibrium interest rate on deposits does not necessarily fall. The higher reserve requirement reduces the supply of loans at a given interest rate; in effect, it causes depositors to act as a monopolist. When reserve requirements are 100 per cent, inside money cannot be created at all; when they are zero and there is no private demand for currency, inside money can be created freely (that is, any currency that banks provide to borrowers is re-deposited and is therefore available to be loaned out again). When reserve requirements fall between zero and one, banks are willing to pay interest on deposits of currency because they allow the creation of a scarce resource (i. e. inside money). In the multi-intermediary economy an increase in the interest rate paid on deposits is equivalent to a decrease in the reserve requirement and an increase in the stock of bonds. In the pure banking economy, since there is no private demand for currency, the payment of interest on required reserves is simply equivalent to a reduction in the rate of money growth.

Fama (1985) developed a model in which the reserve tax on marketable deposits (such as certificates of deposit) is borne by bank borrowers. In this framework, the viability of

bank lending is based upon the existence of special advantages that accrue to bank borrowers in terms of the processing of private information that is associated with bank debt. Moreover, these aspects of bank debt are significantly unique to prevent borrowers from fully shifting out of bank loans into other forms of financing that avoid the reserve tax.

The study done by Coats (1983) reflects various suggestions on the uses of reserve requirements as an instrument of central bank policy in developing countries. In short, his ideas reflect that basic reserve requirements on bank liabilities contribute most to the bank liquidity and money stock control by automatically varying required reserves in the same direction as deposits and actual reserves, and by minimising the reserve requirement-induced effects of deposit shifts on the money supply aggregate chosen. The allocative and equity distortion associated with reserve requirements imposed against any base as a result of their tax-like nature can be eliminated by the payment of interest on required reserves. Where financial market imperfections and other over-riding social objectives are important, use of bank assets as the reserve base is helpful. Lagged reserve accounting will reduce bank liquidity by preventing adjustments in required reserves as deposits change and complicate money supply control. A high level of required reserves is particularly helpful for countries that, due to their openness, find it difficult to control or neutralise exogenous changes in reserves. Coats considered Poole's (1976) proposed reserve requirement scheme, which was developed for the United States, to be applicable to LDCs.

Courakis (1984, 1986) showed that under some circumstances higher reserve requirements actually generate a larger volume of deposits. This can occur if the demand for loans is sufficiently interest inelastic relative to the demand for deposits and the deposit rate of interest rises with an increase in the reserve requirement. If the funds obtained from required reserves are channelled to specialised development finance institutions for lending that would not be undertaken by the commercial banks, the total volume of loanable funds can be increased. He used a partial equilibrium model in which there can exist a positive deposit-maximising required reserve ratio. Courakis (1986) formulated loan demand (L_d) and deposit demand (D_d) functions and the bank's balance sheet identity:

$$L_d = a_o + a_1 l \quad (3.1)$$

$$D_d = b_o + b_1 d \quad (3.2)$$

$$L = qD \quad (3.3)$$

where, l is the loan rate, d is the deposit rate, $1 - q$ is the required reserve ratio, L is the total loan amount and D represents deposits. In the zero-cost banking case, competition ensures that d equals ql . Hence the required reserve ratio drives a wedge between d and l .

Courakis added that if banks hold some other asset (in addition to bank loans), such as treasury bills, that are in inelastic supply to the banking system, any increase in the required reserve ratio will lower the deposit rate of interest, the volume of deposits, and bank holdings of such bills. Broad treasury bill markets of the kind needed for a perfectly elastic supply of bills to the entire banking industry are characteristic of industrial rather than developing countries. Hence, the traditional negative relationship between deposit volume and the required reserve ratio is more likely to be observed in industrial than in developing countries.

Kapur (1974), Mathieson (1980), and Mckinnon (1981) implied that the growth-inhibiting feature of bank reserves can be alleviated only by reducing the required reserve ratio or inflation rate. Another solution in the tradition of Keynes (1930) and Gurley and Shaw (1960) is to pay interest on required reserves.

Fry (1988) studied the deposit-maximising required reserve ratio and differential reserve requirement. He analysed the different views of past modellers and developed his own partial equilibrium model. At first he found that the change in the required reserve ratio needed to maximise the deposit volume as inflation changes does not restore neutrality (Mckinnon and Mathieson 1981 produced similar results while analysing the inflation-minimising required reserve ratio). A lower inflation rate reduces the burden of required reserves because it decreases the gap between the zero return on reserves and the nominal loan rate of interest. As the inflation rate rises, deposit maximisation requires that some interest-earning loans be held in order to raise the nominal deposit rate of interest above zero.

Smith (1991) studied the effect of reserve requirements on bank profit and concluded that reserve requirements reduce the bank income by preventing banks from profitably investing these idle reserves. He used the following model to calculate the effective cost of funds:

$$\text{Effective cost of funds} = R / (1 - k) \quad (3.4)$$

where R is the deposit rate and k is the reserve requirement. He used the deposit-multiplier model to estimate the impact of reserve requirements on aggregate deposits:

$$D = B / (\alpha + \beta) \quad (3.5)$$

where D represents deposits, B is the monetary base, α is the ratio of bank reserves to deposits (determined by reserve requirements and bank decisions to hold excess reserves), and β is the ratio of currency held outside banks to deposits. What he proved was that a seemingly slight reduction in reserve requirements can have a substantial effect on bank deposits and bank loans and other instruments financed by these deposits. An increase in reserve requirements is an equally-strong depressant.

Shanmugam (1990) developed a simple model which reflects the actual cost of funds to the banks. The finding is that the cost of funds to banks are raised due to the need to maintain reserves. According to him, banks operate in a market where there is a barrier to entry, which effectively restricts competition. Reserve requirements should, therefore, be viewed as a 'price' paid by banks to operate in a secure environment. Using the interest paid on six month fixed deposits as the proxy for the cost of deposits and the yield on 13 week Treasury notes to be the proxy for returns on PAR, the effective cost of funds was found to be 0.63 percentage points or 5.04 per cent more than the interest paid on deposits in the Australian case.

On the reserve requirement and cost of credit, the work done by Shanmugam (1988) for the Malaysian central bank (or Bank Negara Malaysia) is important. He studied the variation in the cost of credit due to changes in the levels of statutory and liquidity reserve requirements of Malaysian banks using time series data from 1959 to 1984. His models will be outlined in the next chapter. Shanmugam's results indicated that in 25 out of the 26 years in his sample period, changes in reserve requirements resulted in a cost of funds to banks being greater than the rate of interest paid to depositors.

3.9 Summary

The NRB uses quantitative and qualitative methods to control the supply of credit in Nepal. The first method entails varying the compulsory reserve ratios of commercial banks. Battensperger (1982), Fry (1988), Hall (1984), Suzuki and Yomo (1986) and Tobin (1958) advanced the view that reserve requirements raise bank costs and suggested that they should receive interest payments on these reserves. Coates (1983) suggested that reserve requirements in LDCs should be judged on their resource allocation and equity effects.. Higher reserve requirements reduce the funds available for

lending (Fry 1988). In the case of Nepal the reserve requirements have the potential to adversely affect lending to the rural poor.

Various studies have been undertaken on the relationship between reserve requirements and variables such as bank costs, deposits and money supply. For example, Siegel (1981) studied these relationships for the USA using a stochastic financial model. Shanmugam (1988, 1990) studied the variation in the cost of credit due to changes in the levels of reserve requirements and found that changes in reserve requirements resulted in the cost of funds to banks being greater than the rate of interest paid to depositors.

Chapter 4

RESEARCH METHODS AND DATA

4.1 Introduction

In the previous chapter, several studies of reserve requirements and their impacts on bank deposits, bank profitability, interest rates, inflation, credit creation and development finance were reviewed. The studies varied in their findings. This chapter presents a discussion of the effect of reserve requirements on priority sector lending. A specific reserve requirements model is employed to determine the cost implications of implementing reserve requirements in Nepal.

4.2 The conceptual framework

Bank authorities and policy makers have long wrestled with the question of which financial institutions and which liabilities should be subject to reserve requirements. Smith (1991) summarised the situation as follows:

- high reserve requirements tend to increase the central bank's control over bank- deposit multiplication;
- required reserves are a pool of funds that can be tapped in a liquidity crisis; and
- required reserves reduce the profits of institutions.

In general, reserve requirements are viewed as a burden on commercial banks because they tend to reduce income. To determine the impacts of reserve requirements on the economy, most of the earlier studies related reserve requirements to deposits, investment, real interest rates, inflation, demand for bank loans, economic growth and development. This study seeks to determine the impact of reserve requirements on priority sector lending using concepts such as the opportunity cost of reserve requirements to commercial banks and net bank profits.

Before presenting the model some definitions are outlined.

4.2.1 *Income*

Commercial banks' incomes can be classified into (i) interest from loans and investments; (ii) yields on reserve requirements; and (iii) non-interest income such as returns from a Credit Guarantee Corporation or capital goods.

In this study, income of the commercial banks is measured as the yield on reserve requirements and interest from priority sector loans, thereby omitting non-interest income. Cost refers to interest paid on deposits or borrowed money and operating expenses.

4.2.2 *Reserve requirement ratios*

The required reserves to be held by banks can be categorised into the statutory reserve ratio and the liquidity requirement ratio. In general, commercial banks are required by law to maintain some proportion of their total deposits as a reserve in the form of vault cash and /or deposits with the central bank. This proportion is known as the statutory reserve ratio. The central bank does not pay any interest on statutory reserves.

The second type of reserves, the minimum liquidity ratios, can be grouped into primary liquid reserves and secondary liquid reserves. The major difference between statutory reserve and liquidity reserve requirements is that, unlike statutory reserves, where the amount has to be deposited with the central bank, the liquidity reserve requirements impose the need on bankers to (themselves) hold certain 'eligible liquid assets' as a proportion of total deposit liabilities. For example, in Nepal the minimum liquidity requirement was 22 per cent of total deposit liabilities from 1981 to 1989 and from 1990 to 1992 it was increased to 24 per cent. Commercial banks have to invest in 'eligible liquid assets' such as Government bonds, treasury bills and NRB bonds and interest is paid on these investments. Interest rates have varied on these bonds and bills in different periods. For the purposes of this study the weighted annual interest rate on primary and secondary reserves is used. The difference between primary and secondary liquid reserves is that those eligible liquid assets which have a maturity in excess of one year are considered to be secondary liquid reserves while those with a maturity of less than a year are considered to be primary liquid reserves.

Economists have used algebraic techniques to determine the effects of reserve requirements on commercial banks. Examples include Poole (1976), Coats (1983), Mishkin (1989) and Shanmugam (1988, 1990). This study also uses algebraic

techniques to determine the impacts of reserve requirements on priority sector lending by Nepalese commercial banks.

4.3 Measurement of bank cost and income

To understand the effect of reserve requirements on priority sector lending one needs to define bank cost and income. Fortunately, the measurement of bank costs usually is not as complicated as in other industries. The costs are classified into three categories: (i) interest paid on deposits; (ii) interest paid on borrowed money; and (iii) operating expenses.

Reserve requirements are funds which could be invested in priority sectors and non-priority sectors were it not for the fact that they have to be kept in the bank's vault or as deposits with the central bank. To find out the effect of reserve requirements on costs associated with priority sector lending, only interest paid on deposits will be considered in this study.

The measurement of bank income (output) is more complicated. The studies that have been carried out on this topic have differed with respect to the definitions of bank income. Bank 'products' are unlike physical products which are readily measured in physical units. The product provided by banks is a service which is difficult to measure in terms of units (Visedmongkol 1990). Greenbaum (1964), Schweitzer (1972) and Kalish and Gilbert (1973) use total revenue from interest-earning assets as a measure of income. In this study, the income of commercial banks from priority sector lending is classified into: (i) interest from loans; and (ii) receipts from minimum liquid (primary and secondary) reserves.

4.4 Reserve requirement model

A decision was made to adapt algebraic models used previously by Shanmugam (1988 and 1990). The model is described below.

Let:

A = the loan amount;

D = the amount of deposit required to make a loan of size A while maintaining the statutory and liquidity reserve requirements;

e_1 = the proportion of deposits that must be maintained by banks as statutory reserves ;

e_2 = the proportion of deposits that must be maintained by banks as primary liquid reserves; and

e_3 = the proportion of deposits that must be maintained by banks as secondary liquid reserves.

It follows that D , which has to be the sum of the loan amount and reserve requirements, can be written as:

$$D = A + De_1 + De_2 + De_3. \quad (4.1)$$

In terms of the size of the loan, it follows that:

$$\begin{aligned} A &= D - De_1 - De_2 - De_3 \\ &= D(1 - e_1 - e_2 - e_3) \end{aligned} \quad (4.2)$$

and

$$D = A / (1 - e_1 - e_2 - e_3) \quad (4.3)$$

For example, assuming that the statutory reserve requirements are five per cent of the total deposit liabilities and that the primary and secondary liquid reserve requirements are each 10 per cent of the total deposit liabilities, the amount of loans that a bank can make out of a deposit of Rs1 000 000 would be Rs750 000. Conversely, with the same reserve requirements, the amount of deposits needed to make a loan of Rs1 000 000 would be Rs1 333 333.

To introduce costs, let:

r = the annual proportionate rate of interest paid on bank deposits;

y_1 = the annual proportionate yield on statutory reserves;

y_2 = the annual proportionate yield on primary liquid reserves; and

y_3 = the annual proportionate yield on secondary liquid reserves.

The effective annual cost (C) of the deposit to the bank will be the rate of interest paid on deposits less the receipts from reserves:

$$C = Dr - [(De_1y_1) + (De_2y_2) + (De_3y_3)] \quad (4.4)$$

which simplifies to:

$$C = D(r - e_1y_1 - e_2y_2 - e_3y_3) \quad (4.5)$$

To express the relationship in terms of the cost incurred by the bank for a specified amount of loan (A), equation (4.3) is substituted into equation (4.5):

$$C = A(r - e_1y_1 - e_2y_2 - e_3y_3) / (1 - e_1 - e_2 - e_3) \quad (4.6)$$

It can be seen that the effective cost of funds to the bank depends on the yields and sizes of the statutory and liquidity reserve requirements as well as the rate of interest paid to depositors.

The effective annual cost of funds can be expressed as a proportion of deposits or as a proportion of loans. That is:

$$C / D = r - e_1y_1 - e_2y_2 - e_3y_3 \quad (4.7)$$

and

$$C / A = (r - e_1y_1 - e_2y_2 - e_3y_3) / (1 - e_1 - e_2 - e_3). \quad (4.8)$$

In a very simplistic manner, of course, one could argue that, since priority sector lending is pegged at 12 per cent of total credit and also since total credit is approximately equal to total assets less reserve requirements, a reserve requirement of 34 per cent reduces priority sector lending by around 4 per cent. While the above argument presents a very logical proposition about the impact of reserve requirements on priority sector lending, the model presented in this chapter computes the effective cost of maintaining such reserve requirements.

4.5 The data used in the study

According to the NRB Act, all Nepalese financial institutions are required to submit reports on a weekly, bi-monthly, monthly, quarterly, half-yearly and yearly basis. The data on priority sector credit (IBP) are to be submitted only on a quarterly and yearly basis to the NRB. The NRB compiles the reports from the commercial banks and publishes them for general information. The Development Finance Department of NRB collects the priority sector credit data from 320 IBP branches of commercial banks on a quarterly basis and publishes the data in a Priority Sector News Bulletin. Policy matters are published in various publications such as the NRB Quarterly Economic Bulletin, Commercial Banking Statistics, Quarterly Economic Review and NRB News.

The empirical analysis in this study is based partly on secondary data obtained from different publications of the NRB. Some data have been obtained from commercial bank and Government publications. In particular: (i) the data for priority sector loans for the period from 1981 to 1992 were obtained from the Priority Sector News Bulletin; (ii) the data for priority sector deposits are not available directly so this amount is calculated using equation (4.1) since the reserve requirement ratios and loan amounts are known; and (iii) interest rates from 1981 to 1992 on fixed and saving deposits were obtained from the various issues of Commercial Bank Statistics Bulletin (interest rates on savings and fixed deposits were calculated on a yearly weighted basis since most Nepalese savers prefer to deposit their money on a one-year maturity); and (iv) the statutory reserve ratio and minimum liquidity requirement ratio of total deposit liabilities and interest rates on Government Bonds, treasury bills and NRB Bonds were obtained from various issues of NRB News Bulletin.

Chapter 5

RESULTS

5.1 Introduction

This chapter is divided into two parts. In the first part, the methods and data described in Chapter 4 are used to estimate the effects of reserve requirements on priority sector lending. In the second part, some factors discouraging the banks from financing priority sector lending are presented.

The data used in this study are comprised of the consolidated figures for the two commercial banks (NBL and RBB). Following Smith (1991), the hypothesis is that reserve requirements reduce the profits of commercial banks. Deposits, loans and costs are calculated on a yearly basis over 12 years.

5.2 Effect of reserve requirements on priority sector lending

The time series data presented in Table 5.1 highlight the impact of reserve requirements on the cost of funds to the banks. Banks are involved in deposit taking for which they pay an interest and then make loans out of these deposits for which they receive interest. The difference or margin between these payments and receipts is their profit. However, in view of the imposition of reserve requirements by the central bank, the cost of funds increase. Table 5.1 illustrates the extent of the increase (i.e., C-r).

5.2.1 *Reserve requirements and deposits*

The amount of deposit needed to provide loans to the priority sector and at the same time maintain reserves can be quantified using equation (4.1) which was explained in Chapter 4:

$$D = A + De_1 + De_2 + De_3$$

Substituting the figures given in Table 5.1 for 1992, for example:

$$\begin{aligned} D &= 875.3 + (1326.211)(0.12) + (1326.211)(0.12) + (1326.211)(0.10) \\ &= 1326.211 \end{aligned}$$

Table 5.1 The effective cost of funds used in priority sector lending

Item		1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Amount of loan (A) (Rs million)		4.4	14.2	43.2	99.3	201.5	326.1	390.9	525.4	694.2	807.9	860.3	875.3
Reserve requirement proportion of deposit (%)	e1	9	9	9	9	9	9	9	9	9	12	12	12
	e2	12	12	12	12	12	12	12	12	12	12	12	12
	e3	10	10	10	10	10	10	10	10	10	10	10	10
Total deposit (Rs million) (D)		6.377	20.580	62.609	143.913	292.029	472.609	566.522	761.449	1006.087	1224.091	1303.485	1326.211
Yield on reserves (%)	y1	0	0	0	0	0	0	0	0	0	0	0	0
	y2	6	6	6.25	6.25	6.50	6.50	6.50	6.60	8.80	9.70	9.25	9.25
	y3	6	6.50	6.50	6.75	6.75	7.00	7.25	7.25	7.50	8.00	9.00	9.60
Interest on deposit (%) (r)		9.1	9.0	8.77	8.95	9.0	8.67	7.90	8.68	8.76	8.76	8.94	8.70
Effective cost of funds (%) (C)		11.273	11.056	10.681	10.906	10.935	10.420	9.268	10.381	10.078	10.297	10.500	10.045
Diff. between interest on deposit and effective cost of funds (% points) (C-r)		2.173	2.056	1.911	1.956	1.935	1.750	1.368	1.701	1.318	1.537	1.560	1.345
Additional costs incurred by banks as % of the interest on deposit (%) (C-y)		23.88	22.84	21.79	21.85	21.50	20.18	17.32	19.60	15.05	17.55	17.45	15.46

Source: Primary data from NRB (1990a, 1993b, 1993d).

The results indicate that to make loans to the value of Rs 875.3 million the banks must have deposits amounting to Rs 1326.2 million, which is more than 50 per cent of total loans. As mentioned by Siegel (1981), and Baltensperger (1982), this certainly is a heavy burden on the banks. Needless to say, this also raises their operating costs (Fry 1988).

To further examine the impact of reserve requirements on deposit size one can compare the deposit to loan ratio. In 1989 the deposit to loan ratio was 131 per cent. In 1990 the NRB raised the statutory reserve ratio from 10 per cent to 12 per cent of total deposits. Consequently, the deposit to loan ratio increased to 134. This example clearly highlights the extent to which reserve requirements affect deposit amounts.

5.2.2 *Reserve requirements and loans*

The above discussion (5.2.1) was presented from the point of view of deposits; that is, how much deposit was needed for a given amount of loans. A similar argument can be presented from the point of view of loans; that is, for a given amount of deposits how much in loans can be made. This amount can be determined by using equation (4.2) explained in Chapter 4. For 1992,

$$\begin{aligned}
 A &= D - De_1 - De_2 - De_3 \\
 &= D(1 - e_1 - e_2 - e_3) \\
 &= 1326.211(1 - 0.12 - 0.12 - 0.10) \\
 &= 879.3
 \end{aligned}$$

Similarly for 1981, $A = 4.4$ when $D = 6.4$.

This converse argument shows that, as the reserve requirement level increases, the amount of loans available to the priority sector will decrease for a given amount of deposits.

5.2.3 *Reserve requirements and the effective cost of funds*

While the earlier discussions highlighted the additional amounts of deposits that is needed due to the imposition of reserve requirements, the current discussion will focus on the cost involved in holding the additional deposit.

The effective cost of funds is the rate of interest paid on deposits less the interest obtained from holding reserves (see equation (4.4) in Chapter 4). To determine the effective cost for a given amount of loan we use equation (4.6) discussed in Chapter 4.

$$C = A(r - e_1y_1 - e_2y_2 - e_3y_3) / (1 - e_1 - e_2 - e_3)$$

As shown in Table 5.1 the effective cost of funds (C) tends to be much higher than the amount paid on deposits (r) and this effective cost is a function of the yields and sizes of the various reserve requirements imposed by the central bank. This figure illustrates quantitatively the burden on the banks for given levels of priority sector loans. For instance, in 1981 when the reserve requirements were 9, 12 and 10 per cent of total deposits and the yield on these reserves were 0, 6 and 6 per cent, respectively, the effective cost of funds was 2.17 percentage points more than the interest paid on deposits. However, in 1992 when the reserve requirement proportions were similar to 1981 but the yields received on these reserves were relatively higher, the effective cost of funds was only 1.345 percentage points higher than the interest paid on deposits.

5.3 Factors discouraging the banks from financing priority sector lending

In this section, some factors which discourage the banks from financing priority sector lending are discussed. The discussion is based on various publications since no single publication provides all the appropriate information about the problems.

When the priority sector credit scheme was first launched in 1974, the extending of loans to the priority sector was entirely a new task for commercial banks and they were faced with numerous obstacles. Since 1981, when the IBP began, some problems which were faced in the beginning of the priority sector credit scheme (such as training, technical man power, establishment of separate departments and units, formulation of co-ordination committees, supervision and inspection procedures and annual credit plan preparation) have been solved to some extent (NRB 1983). But other problems are still affecting the program adversely.

The commercial banks, by definition, are commercial and their main objective is to maximise profit by providing banking services. The priority sector is comprised of poor rural people who need financial help and other supporting services to fulfil the basic needs of life. As a principle, the priority sector credit program is more concerned with the socio-economic status of the rural people and commercial banks not only have to provide finance but they also have to engage themselves in social activities in order to

operate the program effectively. Other agencies (e.g. the Ministry of Agriculture) are supposed to co-ordinate with the banks in these activities. But the main problem with the other agencies is that they are not committed in the way banks are committed. These agencies have given less importance to the priority sector in their annual plans. As a result, banks have difficulty in launching and handling the responsibility of the program.

Banks are required to extend at least 60 per cent of priority sector credit to low income families (NRB 1983). Other agencies who provide supporting services to the priority sector have only general targets and not specific targets to support low income families. Their targets can be reached by providing assistance to high income families. Hence, banks who have to target low income families cannot achieve their target because of the lack of supporting services from the other agencies. There is a serious problem in co-ordination between banks and other agencies in providing assistance to the priority sector.

The main lending area for the commercial banks is commerce and industry from which banks earn higher profits than they earn from priority sector lending (they earn higher interest and incur less administrative costs in making loans to commerce and industry compared with loans to the priority sector). Priority sector lending is only a small part of the total credit extended by banks (about 12 per cent) and it is costly, risky and time consuming (World Bank 1992). If the commercial banks increase lending to the priority sector and lend less to the commercial sector they could face the danger of bankruptcy. If they fail to achieve the target lending to the priority sector they have to pay only a small amount of interest as a penalty to the central bank. They might well choose the penalty instead of lending to the priority sector.

In lending to the priority sector commercial banks have to undertake much 'field work' in the away of inspecting projects and organising group activity. Lending to the commercial sector, on the other hand, involves mainly 'desk work' which is much more attractive to bank managers. This is another factor which works against the attainment of priority sector lending targets. Likewise, field staff involved with priority sector lending expect incentives to compensate them for their efforts. However, because of relatively low profit margins involved in priority sector lending, banks are reluctant to pay these incentives. In other words, priority sector lending activity is less attractive than other forms of lending for both the banks and their personnel.

The lending procedures of the priority sector credit scheme are lengthy, impractical and time consuming. An un-educated farmer cannot obtain a loan from the banks easily. This kind of situation raises the cost of borrowing for the farmers as well as for the

banks. If this situation continues to prevail in the future, rural farmers will avoid banks and go to village money lenders even though the interest rates are higher. A simpler borrowing procedure would be beneficial to both the banks and the customers.

The NB has a training centre which provides training to bank employees who are engaged in priority sector lending. The commercial banks also have their training centre at the central level. But the training provided by these institutions is not sufficient in quality and quantity for the priority sector program. Moreover, the personnel selection criteria of the banks are not scientific nor practicable bearing in mind the needs of the program and the trainees. Sometimes the trained personnel are transferred into the general services areas of the banks which is unfavourable for the program as well as the employees. As well, there is a lack of refresher training for employees.

The credit given to the priority sector is guaranteed by the Credit Guarantee Corporation (CGC). The annual fee or premium to guarantee the loan is one per cent of the total credit financed. If the credit is not repaid in due time, commercial banks can claim from the CGC and 75 per cent of the credit will be made available as compensation to the banks. But the performance of the CGC has not been satisfactory. The process of claiming is very difficult and the payment of claimed money is not done on time.

Farm animals which are purchased from bank loans should be insured with the CGC. The annual premium to insure the animals is 10 per cent of the credit, of which 50 per cent is borne by the Government and 50 per cent by the customers. Though 50 per cent of the premium is borne by the Government, the remaining 50 per cent is expensive for the customers. Also, the procedures to insure the animal are lengthy and cumbersome. Therefore the banks and customers do not like to insure the animals and this discourages banks from financing the priority sector.

Chapter 6

OVERVIEW AND RECOMMENDATIONS

This study has provided empirical evidence on the effect of reserve requirements on priority sector lending of commercial banks in Nepal. Studies carried out in relation to other countries have used various techniques to measure the relationship between reserve requirements and bank deposits, lending, costs, money multipliers and inflation. In this study, an algebraic model was employed to examine the effect of reserve requirements on the rural development financing program (i.e. the priority sector credit program) of commercial banks in Nepal. The major finding was that the reserve requirement definitely increased the cost of lending to the priority sector. This cost was a function of the proportion of reserve requirements and the yield on these reserves. For example, in 1992, the additional cost incurred due to reserve requirements was 1.345 per cent.

Another objective of the study was to describe the factors which were discouraging the commercial banks from priority sector lending. Problems identified included, among several, lack of incentives for participation and lack of co-ordination between banks and other agencies.

In the light of these findings the following suggestions are offered in relation to priority-sector lending policy.

Commercial banks are not much interested in involving themselves directly in the priority sector credit scheme. This has been proven by performances to date. But banks have to finance the development needs of the priority sector. It is suggested that Village Development Banks should be established in five different development regions of the country and commercial banks should contribute towards the establishment of these development banks. Commercial banks would play the rural financing role indirectly with the help of Village Development Banks. In such a situation, the role of the commercial banks could be as follows.

- If the Village Development Banks need credit to finance the rural people, commercial banks could provide loans at subsidised rates of interest.
- If the commercial banks do not wish to finance the priority sector in some rural areas where their branches are functioning at present, they should be ready to hand over some of these branches to the Village Development Banks.

Likewise the technical manpower could be transferred to the Village Development Banks.

It would be beneficial for commercial banks and for Village Development Banks if the central bank withdrew reserve requirements for funds loaned to the priority sector. If this is not acceptable, at least the market-clearing interest rate should be paid on reserve requirements.

If the conditions are not favourable to withdrawal of commercial banks from direct lending to the priority sector then the following suggestions are offered.

- The government could subsidise commercial banks in their lending to the priority sector.
- Withdrawal of the reserve requirements, at least for priority sector lending, or alternatively the NRB should pay a market clearing interest rate on reserve requirements for funds loaned to the priority sector.
- The government should provide incentives for proper employee training and participation in priority sector lending.
- The priority sector credit program should be monitored regularly and carefully so that policies can be updated and difficulties removed as soon as possible.
- Activate the Priority Sector Co-ordination Committees at the central, district and local level so that the annual plans between banks and other agencies are consistent. Other agencies could be given performance targets consistent with those given to banks.

The above suggestions would be beneficial to the NRB in making future policies for reserve requirements as well as rural financing. The findings suggest that the effective cost of funds is always higher than the interest on loan funds. If the NRB has the compulsion to control money supply through reserve requirement it should pay the market clearing interest rate to the commercial banks or it should at least remove the reserve requirement with respect to funds used for rural financing.

Regarding recommendations for further research, this study used interest on total deposits as a measure of cost and ignored operating costs. Also, the results of the study

are based on the data available from the IBP for just two banks (NBL and RBB). Both these deficiencies could be addressed in future research efforts.

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