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**BANK BRANCHES AND RURAL DEPOSITS:
EVIDENCE FROM BANGLADESH**

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Introduction

Three reasons explain the increasing attention given to rural deposit mobilization in developing countries. First, these countries must improve aggregate savings rates in order to substitute for reduced inflows of foreign savings. The rural sector looms large in these economies and must furnish much of these savings. Research has shown that marginal propensities to save are higher in rural than in urban areas (Alamgir; Williamson). Second, rural households benefit from secure places to hold financial assets (Adams; Vogel). Further, the average rate of return to investment can rise through increased financial intermediation (Fry). Third, the viability of rural financial institutions is linked to increased deposit mobilization (Meyer).

Many factors are expected to influence deposits in rural financial institutions. Wai's framework of ability, willingness, and opportunity to demand deposits has inspired much research. Opportunity is an important factor, over which policymakers have some control, and it deserves analysis for two reasons. First, availability of deposit services, measured by the density of deposit-taking institutions, is an important determinant of rural deposits (Srinivasan and Meyer, 1968). Policymakers influence banking density through licensing and

other regulations. Second, policy emphasis on rural loans has prompted the expansion of lending facilities into rural areas. Some institutions, such as the specialized agricultural development banks, have often been denied the opportunity to use their branch network to accept deposits, while in other cases deposit taking has simply not been aggressively pursued, because of funds easily available from the central bank and/or donors.

The rural deposit mobilization experience in Bangladesh is particularly interesting. For several years policies were employed to expand agricultural lending and, along with it, the bank branching network into the rural areas. The impact on rural deposits has been significant, because transaction costs for depositors have been thereby reduced. Smaller-size bank deposits become more attractive for households when transaction costs fall. Full-service rural branches are expensive to operate, however, even with the labor intensive technology employed in Bangladesh. There are suggestions that the rapid rural branch expansion had a negative impact on bank operations (World Bank).

As banks responded to the country's desire to expand rural lending, the distribution of branches can be expected to have been influenced by the volume of loans made at each branch. By providing both loan and deposit services, branches may be able to capitalize on economies of scale and of scope. Interestingly, when two nationalized commercial banks (NCBs) were privatized, they dropped out of the special agricultural credit programs and transferred some of their rural branches to other banks. It may not be profitable to operate rural branches solely for deposit mobilization purposes.

The purpose of this chapter is to document the deposit mobilization experience of Bangladesh and to test the relationship between deposits and branches. Most research has

assumed that increased bank density stimulates households to deposit by reducing their transaction costs. This chapter tests the simultaneous relation between bank branching and the volume of deposits. Increased branch density stimulates deposits, while the deposit potential affects the number and location of branches.

Financial Institutions and Policies in Bangladesh

The Bangladesh financial system is in its early stages of development. After independence, all domestic banks and insurance companies were nationalized in 1972. Six new commercial banks and two insurance corporations were created. Foreign banks were allowed to operate under restricted conditions. By 1981, there were 16 banks, seven of them foreign. During 1983-84, 8 private banks were chartered, including 2 denationalized commercial banks. Most banks concentrate their operations in urban areas. Rural deposit mobilization is undertaken mostly by the NCBs and the specialized agricultural development bank (Bangladesh Krishi Bank - BKB). Rural deposits in cooperatives and the postal savings system are insignificant by comparison.

Government control over the nationalized banks is pervasive, and regulation of the entire system strong. The Bangladesh Bank (central bank) formulates policies under the strong direction of the Ministry of Finance. This intervention affects bank performance and viability. Three major policies--interest rate regulation, branch licensing, and refinancing--directly influence rural deposit mobilization.

Interest rates on both deposits and loans are regulated by the Bangladesh Bank. The deposit rate structure was significantly revised in 1974, 1976, and especially in 1980 (Table

1). In the 1980s, interest rates on some classes of deposits in rural branches have been set one or two percentage points above those in urban branches to stimulate rural deposits. Changes in deposit rates have not kept pace with inflation. The real weighted rate paid on interest-bearing deposits was negative from 1976 through 1984, except in these three years.

Rural branching policy has been pursued mostly with the objective of supplying cheap credit to farmers. Historically, two factors were considered in granting licenses for new bank branches: deposit potential, as a function of income, and degree of local competitiveness. This policy created insufficient demand for rural licenses, so a "two-for-one" policy was introduced in 1977-78, whereby a bank was required to open two rural branches for each new urban branch authorized. During 1977-81, the number of rural branches almost doubled, from 857 to 1,527. This expansion slowed, following the suspension of the policy in 1981.

The availability of cheap rediscount funds for agricultural loans may be a disincentive for banks to mobilize deposits, but there is little empirical research that actually tests for this negative causality (Meyer and Esguerra). The NCBs and especially BKB have been supplied with relatively abundant rediscount funds for their agricultural lending. Prior to 1983, refinancing facilities varied between 30 and 100 percent of the amount of targeted rural loans made by the bank and the interest rate charged was 6 percent, 2 percentage points below the bank rate and half the 12 percent charged to borrowers¹. This policy was

¹ The bank rate is the rate at which banks can borrow from the Bangladesh Bank for liquidity purposes.

revised in September, 1983 at the urging of USAID, to reduce bank dependency on refinancing and stimulate deposit mobilization.

The nature of the rural economy presents opportunities and challenges for developing cost-effective rural financial services. On the one hand, in a densely populated country like Bangladesh², there appears to be good potential for developing a dense banking network in the rural areas, to bring bank branches close to most rural residents. On the other hand, the market for deposit services is limited. Incomes are low (per capita income of about \$150), most farm and nonfarm enterprises operate at a low volume, many transactions are not monetized, rickshaws are the cheapest source of transportation, so travel distances are usually short, and travel is particularly difficult in the wet season, when much of the land is flooded. Transaction costs for many rural depositors with small accounts are likely to be high, in spite of whatever internal efficiencies a branch can achieve.

The loan market is also constrained. Many potential borrowers are not creditworthy. They have low and variable incomes, and have few reserves for times of adversity. Low-lying areas are subject to severe flooding, which periodically wipes out the few reserves held by farm households. Government relief and agricultural programs do not alleviate these conditions. Unless the banking system is provided with strong incentives, it is not likely to make many farm loans.

² Approximately 100 million people in an area about the size of Wisconsin.

Patterns and Trends in Bank Deposits

The patterns and trends in total and rural bank deposits are discussed in this section³.

For the period 1975-84, total bank deposits, in real terms, experienced an annual average growth exceeding 13 percent (Table 2). Interest-bearing deposits increased twice as rapidly as non-interest bearing deposits indicating a considerable response to interest rate changes. This is also reflected in the growth rates of saving and term deposits. Saving deposits grew at an annual rate of 9.2 percent, while term deposits of different maturity period grew at an annual rate of over 20 percent during the period 1975-84. Note that higher interest rates are offered on term deposits. The share of personal rather than group or corporate deposits increased from 29 percent of the total in 1975 to over 45 percent in 1984. Rural deposits contributed to this growing share of personal deposits. Historically, most deposits were held by the NCBs, because of their widespread network and their prominence in the sector. Their share significantly decreased, however, from 90 to 71 percent during the 1973-84 period, partly due to increased bank privatization.

During 1976-84, in real terms, rural deposits grew about twenty three percent and their share increased from 9 to over 17 percent of total deposits (Table 3)⁴. The "two-for-

³ Deposit data used in analyzing the patterns and trends were obtained from quarterly reports submitted to the Bangladesh Bank by each rural branch. Data were corrected for errors in computer data entry, late submission of reports by some branches, and other quality control problems. In addition, deposits in cooperative and private banks are excluded. Rural deposits are those held in branches defined as "rural" by the Bangladesh Bank.

⁴ The Consumer Price Index published in the IMF International Financial Statistics was used in the absence of a complete series for the rural areas.

one" branching policy resulted in a relatively rapid expansion of rural branches. In 1976, less than one-half of the total number of branches were rural. By 1984, about two-thirds of the total branches were rural. Average deposits per rural branch, in real terms, grew at an average annual rate of about 4 percent. During much of the 1976-84 period, growth in real deposits kept pace with growth in the number of branches. Urban deposits, during the same period, grew at an average annual rate of about 12 percent, higher than the urban branch growth rate. Though the urban deposit growth rate is lower than the rural deposit growth rate, average urban branch deposits per branch were about ten times the average rural branch level. Since the number of urban branches increased more slowly than that of rural branches, the growth in urban deposits per branch was somewhat greater. This result implies that branch expansion contributed somewhat less to urban deposit growth.

The four major NCBs (Agrani, Janata, Rupali, and Sonali) and BKB had most of the rural bank branches (84 percent in 1984) and mobilized 91 percent of total rural deposits. These data reflect rapid deposit expansion in 1983-84 (Table 4). While non-interest bearing deposits constitute about 20 percent of total rural deposits, a proportion similar to that found in urban branches, interest-bearing deposits grew faster in this period. Total rural deposits, in real terms, increased by 29 percent, while term deposits increased by about 45 percent. This change in deposit composition suggests that rural depositors treat a large portion of deposits as forms of holding wealth responsive to interest rates. An analysis of deposit growth by interest rates and classes showed that deposit categories with earnings of 12 percent and above experienced the most rapid growth. This is an indication of the interest elasticity of the demand for deposits.

Rural branches provide services to local business and government units as well as households. Over 80 percent of the deposits seem to have originated from the private sector (Table 5). Personal and service deposits constituted about three-fifths, while public-sector deposits accounted for about 16 percent of the total. It appears, therefore, that a significant amount of rural bank deposits come from households.

Unfortunately, the characteristics of personal depositors are unknown and the amounts deposited by farm households or by low-income groups cannot be identified. Some inferences can be obtained, however, by analyzing the size distribution of the accounts (Table 6). The rural branches of these five banks had about 4 million accounts in 1983 and almost 5 million in 1984. About 95 percent of these accounts were of less than 5,000 taka and represented about half of the total volume of rural deposits. Low and medium income households thus seem to make significant use of these financial instruments. Furthermore, the growth rate of the amount and number of small-sized accounts was greater than for many of the large-size categories.

The econometric analysis reported in the next section used district level data⁵. The volume and growth in deposits varied widely across districts (Table 7). Deposits grew less rapidly in the three most commercially developed districts of Chittagong, Dhaka and Sylhet than in many less developed districts. Banking and monetization of the economy expanded more quickly in the hinterland than in regions already more developed.

⁵ Districts are intermediate administrative units between division and Upa-zilla.

Determinants of Deposit Behavior

This section reports on the empirical results of a model tested to explain voluntary rural savings deposits in five banks. The model was specified to capture the behavior of households. A subset of district-level interest-bearing deposits was obtained for the five banks from the Bangladesh Bank Data Tape in order to test the model.

Earlier studies of demand for rural deposits used single-equation models, based on the implicit assumption of independence of supply of and demand for deposit services. This approach failed to recognize, however, that the number and distribution of deposit-taking institutions is influenced in part by deposit potential. Although the primary objective of the banks during much of this period may have been to obtain urban branch licenses, the decision to seek a license for a rural branch in a particular location may have been determined by the possibility of tapping deposit potential, either because no branch existed in that market area or because the deposit potential is still great relative to the number of existing branches. Competition among branches should expand aggregate deposits. A simultaneous equation model was developed therefore, to explain deposits and bank branches at the district level.

Five major factors are found in the literature on deposit determination functions-- income, interest rates, access to banking facilities, transaction costs, and yields on competing non-financial assets. Some important but difficult to measure factors, such as the quality of services provided to depositors, awareness of banking services, and perceptions about the safety of deposits have been largely ignored in empirical research.

Income is expected to have a positive effect on deposits. Because of the variability of rural income, the permanent-income hypothesis may better explain the influence of income. Households use financial savings to even out consumption expenditures under variable income situations. The elasticity of deposits with respect to transitory income is, therefore, expected to be higher than the elasticity with respect to permanent income. Although the empirical validity of the permanent-income hypothesis for savings is well established (Canh; Friend and Taubman; Williamson), data limitations have forced deposit mobilization studies to utilize absolute income (Srinivasan and Meyer, 1986; Vasquez).

A widely debated issue in rural finance has been the relationship between interest rates and financial savings. McKinnon and Shaw argued that low real interest rates contribute to inefficient investment decisions and a limited mobilization of household savings. Research suggests that low nominal interest rates coupled with high inflation rates discourage deposits, while positive real interest rates stimulate them (Fry; Lanyi and Saracoglu; Srinivasan and Meyer, 1986; Vasquez). Wai argued, however, that in developing countries financial savings may not necessarily be responsive to interest rates, when such rates are below equilibrium levels, and because depositors may be insensitive to too small changes in rates. Some studies have indeed shown a weak relationship between interest rates and deposits (Iqbal; Tanchoco-Subido).

Burkett and Vogel, as well as Ortmeyer underscored the significant role of transaction costs in the portfolio decisions of households. The transaction costs of making and withdrawing deposits reduce the net returns earned. Most of the literature, however, considers only the impact of borrower and lender transaction costs on credit rationing

(Ahmed; Gonzalez-Vega), and few studies directly test for the effects of depositor transaction costs (Guerrero).

Most studies rely on indirect estimates of transaction cost effects (Burkett and Vogel; Srinivasan and Meyer, 1986). Depositor transaction costs can be proxied by the number of banking facilities and the availability of roads and vehicles. Several studies have found a positive and significant relationship between demand for deposits and expansion of bank branches (Rana; Srinivasan and Meyer, 1986; Vasquez; Wai).

The demand for deposits may be influenced by education which, among other effects, may increase the awareness of rural agents about banking services (Mauri; Von Pischke), but literacy or awareness are among the least emphasized factors in rural deposit studies. The limited empirical evidence available is inconclusive; Vasquez found a negative elasticity of bank deposits with respect to education in the Dominican Republic as more educated agents held more sophisticated assets, while Koropecky found a positive relationship in Bangladesh. In general, it may be expected that as rural agents become more knowledgeable about banking services, either because of education or the effect of having a nearby branch, they will develop confidence in banking institutions, leading to increased demand for deposits.

The factors that explain rural bank branching are less well understood. No study has been found which explicitly accounted for the impact of deposits on the number and location of deposit-taking facilities in developing countries. Yet, it should be expected that the decisions to expand such facilities depend on deposit potential, regional income, the local level of competition, and the transportation and communications facilities available. The

supply-leading approach to rural finance suggests that the volume of rural loans contributes positively to the expansion of banking facilities (Patrick; Rana), but no study has been found that empirically tested for this relationship.

The limited empirical evidence available on bank branching suggests that the level of competition and deposit potential influence the location of bank branches (Doyle et al.; Spong and Hoenig). In the Bangladesh case, the central bank considers deposit potential and the level of competition when evaluating requests for licenses to open new branches. Banks evaluate, as well, several factors influencing branch viability such as permanent income in the region, actual or potential volume of loans, the availability of transportation, and the volume of deposits generated by other banks. Doyle et al. used the number of retail shops as an indicator of deposit potential. One policy objective in Bangladesh was to expand rural branches as a way to expand rural lending. Thus, it is expected that the greater the volume of rural loans, the larger the branch network. Inflation adversely affects bank expansion because of its negative impact on the demand for deposits. On the other hand, improvements in rural transportation should encourage banks to expand their facilities in the rural areas.

Empirical Model

A two-way causality between deposits and bank branches implies a simultaneous equations model. A power function based on a Cobb-Douglas specification was selected. To account for differences in district size, a per capita specification of the variables was

used. As in earlier studies, linearity was imposed and the model was expressed in the log-log form as follows:

$$\ln(\text{DINT}/\text{POP}) = A + \alpha_1 \ln \text{PYP} + \alpha_2 \ln \text{PYT} + \alpha_3 \ln \text{BF} + \alpha_4 \ln \text{RDV} + \alpha_5 \ln L + \alpha_6 \ln P + U_1 \quad (1)$$

$$\ln \text{BF} = B + \beta_1 \ln \text{PYP} + \beta_2 \ln \text{RDV} + \beta_3 \ln P + \beta_4 \ln \text{PCR} + \beta_5 \ln \left(\frac{\text{DINT}}{\text{POP}} \right) + U_2 \quad (2)$$

where,

DINT/POP = District per capita volume of interest-bearing deposits;

PYP = District per capita permanent income;

PYT = District per capita transitory income;

BF = Number of district rural bank branches
per capita;

RDV = District per capita index of roads and vehicles;

L = District literacy rate;

P = District rural inflation;

PCR = District per capita volume of rural loans
outstanding;

U_1, U_2 = error terms

Equation (1) represents the demand for deposits while equation (2) represents the supply of deposit services through an expansion of bank branches. The conceptual discussion above which yields equations (1) and (2) excludes PCR from equation (1) and

L and PYT from equation (2) which satisfies the order conditions. Two-stage least squares (2SLS) were used to estimate the parameters of the structural equations. The F-ratio was used to estimate the validity of the model and the conventional t-test was used for the significance of the estimated parameters.

The model was fitted to pooled data for 20 districts for 1983 and 1984. Data on deposits, number of bank branches, and volume of rural loans outstanding were obtained from the Bangladesh Bank Data Tape. Data on literacy rates, inflation rates, income, and roads and vehicles were obtained from the Statistical Year Book, 1985, and District Statistics, 1983.

Data on district agricultural GDP for the 1976-84 period were used as a proxy for district rural income and to estimate permanent and transitory income in a trend equation. Trend values were considered permanent income, while the residuals were treated as transitory income. Literacy was used as a proxy for awareness of banking, and was defined as the percentage of persons 5 years of age or above who can read and write. Since nominal interest rates offered by banks are the same across districts, differences in real interest rates were captured through district inflation rates measured by changes in the cost of living index. Data on rural inflation were available only for six regions representing the four administrative divisions. Because of the small geographical size of divisions, these inflation data were used to represent all twenty districts.

The district roads and vehicles index was measured as:

$$RDV_j = \left(\frac{RD_j / TA_j}{POP_j / TV_j} \right) \times 100$$

where,

RDV_j = Weighted index of roads and vehicles in jth district;

RD_j = Mileage of roads in jth district;

TA_j = Total geographical area of jth district;

POP_j = Size of population in thousands of jth district.

TV_j = Total number of vehicles in jth district. Vehicles were defined to include buses, cars, and rickshaws.

Districts with a large number of vehicles and mileage of roads per 1,000 people have a high index.

Analysis of Empirical Results

The empirical results are presented in Tables 8 and 9. The second-stage statistics report the direct effects of the explanatory variables on deposits (Table 8) and on bank branches (Table 9). The reduced-form coefficients show the total effects (direct and indirect) of the variables on deposits and on bank branches. The coefficients can be interpreted as elasticities.

All structural coefficients for the deposit equation had the expected signs and, except for the inflation rate and permanent income, were statistically significant. The model

explained about 69 percent of the variance in interest bearing deposits. The bank branch equation, significant at the 0.0001 level, explained about 80 percent of the variance. Except for roads and vehicles, all structural variables in the bank branch equation were statistically significant.

The significant cross coefficients for the bank branch and interest-bearing deposits variables in the structural equations support the hypothesis of a two-way casualty between deposits and bank branches. The elasticity of interest-bearing deposits with respect to bank branches, estimated at 0.985, was significant at the 0.10 level, and the elasticity of bank branches with respect to interest-bearing deposits, estimated at 0.158, was significant at the 0.10 level.

Measures of both absolute and permanent income were used in the test. No statistically significant direct effect was found between deposits and permanent and absolute income, but both variables were significant in the reduced-form deposit equation. Transitory income was significant in both deposit equations. These results imply that the permanent income hypothesis explains better the influence of income than does absolute income.

Neither permanent income nor inflation were significant in the structural equation for deposits, but both were significant in the bank branch equations, implying that they influence the decision to expand banking facilities. High inflation rates reduce the real value of nominal deposits and discourage branch expansion. Because of the relationship between permanent income, inflation, bank branch expansion and deposits, it can be inferred that permanent income and inflation influence deposits indirectly through bank branches.

The roads and vehicles index had a direct effect on deposits, but not on the expansion of bank branches. The reduced-form coefficients for roads and vehicles were statistically significant in both the deposit and bank branch equations. This implies that roads and vehicles influence bank branching indirectly through their effects on deposits, perhaps because branch transaction are more dependent on population and average deposit size than on the direct effect of roads and vehicles.

Income, roads and vehicles, inflation, and literacy were all significant in the deposit equation. Zero-coefficients were assumed for the volume of outstanding rural credit in the deposit equation⁶, and for the literacy and transitory income variables in the bank branch equation. The reduced form coefficients show the validity of these assumptions. The volume of rural loans outstanding had a positive effect on the expansion of banking facilities, although the coefficient was relatively small. The coefficients for the other two variables were significant.

The elasticity of deposits with respect to the explanatory variables suggest that transaction costs, proxied by the expansion of bank branches and roads and vehicles, have an important impact on the demand for deposits. Transaction costs and transitory income are the two major factors explaining interest-bearing deposits. The expansion of bank branches is largely explained, apart from deposits, by permanent income and inflation.

⁶ This approach does not damage the argument that deposits are made because of an expectation of getting a loan in the future.

Implications for Rural Deposit Mobilization

There are important reasons for placing greater emphasis on deposit mobilization in the promotion of rural financial markets in the developing countries. In spite of low rural income, Bangladesh has made important strides in this respect. The most important single source of rural deposit growth has been the expansion of the bank branch network. Government policies, including the two-for-one policy of branch licensing, influenced this process, but the actual number and location of branches have been motivated by the economic factors discussed.

An expansion of the banking network reduces transaction costs for depositors. Smaller-size deposits become more attractive for households. Bank branches are expensive to operate, on the other hand, although the capital invested in them is extremely low in Bangladesh. There have been suggestions that the rapid expansion of the bank network has had a negative impact on bank operations because banks have been encouraged to expand their branching network without regard to branch viability (World Bank). From the bank's perspective, the distribution of branches is affected by the volume of rural loans to be made, in addition to the deposits mobilized. By providing both loan and deposit services in the rural branches, banks may be able to capitalize on economies of scope. It is interesting to note that when two of the NCBs were privatized and no longer participated in agricultural credit programs, they transferred some of their branches to the remaining banks. This may imply that they believed that it would not be cost effective to mobilize deposits in rural branches if they were not also making loans. Thus, the supply-leading agricultural credit

policy followed by the country may have been an important complementary incentive for rural branch expansion.

Interest rate policy is important in determining the spread that banks earn in rural operations. A low ceiling on lending rates implies low rates paid to depositors. The transaction costs of depositors are likely to be more important than interest rates, on the other hand, in influencing deposits at low levels of economic development. Opening branches where none previously existed will likely attract many deposits because of the decline in transaction costs for households and firms. Once this initial level of deposits has been mobilized by the banks, subsequent increases will depend on factors other than transaction costs, unless additional reductions in depositor transaction costs can be achieved through streamlined bank practices. Bankers and decision makers in Bangladesh have paid little attention to these factors. This may explain why growth in real deposits per branch has been modest. It is likely that the easy part of deposit mobilization has been completed in Bangladesh through branch expansion. What remains to be done is to pay more attention to customer service, more aggressive marketing, and the development of financial instruments especially attractive to rural households.

The Bangladesh case reflects the challenge that many countries face in providing cost-effective rural financial services. This challenge springs from the nature of the rural economy. The structure of the financial system and the technology used in producing financial services must be consistent with the rural environment. Bank branches must be small, and must utilize labor-intensive technology to handle many small savings and loan accounts. To reduce costs, the expenses of operating a branch must be spread over as large

a volume of transactions as possible. It becomes critical that each branch serve both farm and non-farm households, with both deposit and loan services. There may be other opportunities to provide additional financial services, such as life insurance. This environment also implies that decision making must be decentralized and bank managers must respond to local situations. Because of the difficulty of transporting cash among branches, each branch must try to mobilize and allocate as much as possible of its own funds. Efficient interbranch transfer mechanisms are required, however, to help branches cope with seasonal surpluses and deficits and to take fuller advantage of financial intermediation. Banks will need to go "where the money is." This may require door-to-door deposit collection and mobile banks serving local market days.

A branch banking system offers some advantages over unit banks. The cost of designing products and services can be spread over a potentially larger volume. The possibility of intrabank transfers of funds can ease the management of liquidity for individual branches, by facilitating the transfer of temporary surpluses, while borrowing from other branches in deficit periods. The risk of a concentrated loan portfolio of one branch in one geographic area can be balanced by the lending of other branches in other areas. The branching system has disadvantages, as well. Employee compensation levels may be higher and more rigid than in unit banks. If staff are recruited nationally as in Bangladesh, their chief objective may be to get transferred as quickly as possible from a rural branch to a major urban center. A human capital problem can develop, since those staff that continue in branches for the largest time may be the least innovative and those least likely to be granted much autonomy.

The high transaction costs of banking can be reduced by a dense banking network that locates branches in close proximity to rural residents. The challenge of reducing depositor and borrower transaction costs is greater in more sparsely settled regions, where it is difficult to achieve economies of scale in banking. The social benefits may be high through improved resource allocation via financial intermediation. If some of these benefits cannot be captured by the financial institutions because the total volume and average size of transactions is low, there may be an opportunity to subsidize the financial institution for some of the costs of expanding the financial network. Using subsidies in this form may be more efficient and less distorting than trying to channel them directly to households through subsidized loans, the strategy followed by many developing countries in the past two decades.

Table 1

Interest Rate Structure of Rural Bank Deposits, 1971 to Present

Type of Deposit	Dec 1971 to June 1974	July 1 1974 to March 31, 1976	April 1, 1976 to April 30, 1977	May 1, 1977 to Oct. 15, 1980	Oct. 16, 1980 to Dec. 1, 1982	Dec. 2, 1982 to Dec. 31, 1984	Jan. 1, 1985 to Present
Call Deposits	none	none	none	none	4 ½	none	none
Special account	3 - 3 ¼	4 - 4 ¼	5 - 5 ¼	4 - 4 ¼	4 ½	4 ½	4 ½
Savings with checking	4.00	5.00	6.00	6.00 ^a	8 ½	8 ½ ^b	10 ½
Savings without checking	4 ½	6.00	7.00	7 ¾	10.00	10.00	11.00
Term Deposits:							
1) 3 months and over, less than 1 year	4 ½	6.00	7.00	8 ½	12.00	12.00	12.00
2) 6 months and over, less than 1 year	4 ¾	6 ½	7 ½	9.00	13.00	13.00	13.00
3) 1 year and over, less than 2	5.00	7 ¼	8 ¼	9 ¼	14.00	14.00	14.00
4) 2 years and over, less than 3	5 ½	8 ¼	9 ¼	9 ¼	14 ½	14 ½	14 ½
5) For 3 years and over	6.00	9 ¼	10 ¼	10 ¼	15.00	15.00	15.00

^a Reduced to 4 ½ percent in effect from August 1, 1977.

^b In the rural areas, the rate was 9 ½ percent in effect from July 1, 1984.

Source: Economic Trends, December, 1985, Bangladesh Bank.

Table 2
 Total Bank Deposits in Real Term
 By Type of Deposit, 1976-84, Year Ending June 30
 (Base 1976=100)

Year	TYPE										TOTAL
	Current deposits	Call deposits	special account deposits	SAVING DEPOSITS		TERM DEPOSITS (months)					
				checking	Non-checking	3-<6	6-<12	12-<24	24-<36	36+	
(Million Taka)											
1976	3,383	74	2,773	2,410	396	396	234	655	150	1,121	11,594
1977	3,578	94	3,243	2,630	443	474	248	712	211	1,552	13,187
1978	3,562	216	3,370	2,851	552	308	333	659	223	1,996	14,072
1979	4,181	295	3,925	3,212	776	227	505	688	264	2,436	16,510
1980	4,703	117	5,210	3,209	863	240	364	656	252	2,680	17,664
1981	4,286	163	5,078	3,825	1,178	505	522	836	310	3,138	19,829
1982	4,137	389	4,661	3,488	1,161	686	471	1,133	295	3,472	19,897
1983	5,156	491	5,260	4,043	1,338	1,116	709	1,859	372	4,083	24,323
1984	6,064	200	4,737	4,737	1,663	1,596	1,346	2,995	384	5,183	30,552
Average Growth Rate (Percent)	8.2	27.5	7.8	9.2	20.4	24.6	29.1	23.2	13.5	21.4	13.2

Source: Bangladesh Bank Bulletin, February, 1985.

Table 3

Total Real Bank Deposits by Rural and Urban Branches, 1976-1984
Year Ending June 30

Year	RURAL				URBAN			
	Numer of Branches	Total Deposits	Average Deposits per Branch	Percent of Total Deposits	Number of Branches	Total Deposits	Average Deposits per Branch	Percent of Total Deposits
	(Million Taka)				(Million Taka)			
1976	826	1,063	1.28	9.2	922	10,531	11.42	90.8
1977	1,056	1,416	1.34	10.7	1,009	11,771	11.67	89.3
1978	1,634	1,865	1.14	13.3	1,125	12,207	10.85	86.7
1979	2,001	2,549	1.27	15.4	1,247	13,960	11.19	84.6
1980	2,467	3,172	1.31	17.3	1,342	15,121	11.28	82.7
1981	2,796	3,151	1.13	16.2	1,493	16,650	11.15	83.8
1982	2,932	3,069	1.05	15.4	1,538	16,828	10.94	84.6
1983	3,050	4,076	1.34	16.8	1,565	20,247	12.94	83.2
1984	3,301	5,213	1.58	17.1	1,684	25,339	16.05	82.9
Average Growth Rate (Percent)	19.8	22.9	3.7		7.9	11.9	3.8	

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Source: Bangladesh Bank Bulletin, February, 1985.
Scheduled Bank Statistics, 1976-84, Bangladesh Bank.

Table 4

Rural Deposits of Five Banks by Type of Deposit, 1983-84
Year Ending June 30

TYPE	1983		1984		Growth Rate Percent
	Deposit	Percent	Deposits	Percent	
	(Million Taka)				
Current Deposits	1,588	20.7	2,112	19.0	33.0
Call Deposits	67	0.9	70	0.6	4.9
Special Account Deposits	624	8.1	920	8.3	47.5
Savings (Checking) Deposits	2,671	34.8	3,715	33.4	39.1
Savings (Non-checking) Deposits	946	12.3	1,405	12.6	48.5
Fixed Deposits (Term):					
3 - < 6 months	54	0.7	96	0.9	78.3
6 - < 12 months	67	0.9	156	1.4	132.8
12 - < 24 months	251	3.3	413	3.7	64.7
24 - < 36 months	75	1.0	122	1.1	61.9
36 + months	1,343	17.5	2,113	19.0	57.3
TOTAL	7,686	100	11,122	100	44.7

Source: Bangladesh Bank Data Tape

Table 5

Rural Deposits of Five Banks by Category of Depositors, 1983-84,
Year Ending June 30

Category	1983		1984		Growth Rate Percent
	Deposits	Percent	Deposit	Percent	
	(Million Taka)				
FOREIGN	42	0.5	73	0.7	75.8
PUBLIC SECTOR:	1,390	16.8	1,745	15.6	25.5
Government	219	2.8	347	3.1	58.8
Public enterprises	536	7.0	691	6.2	29.0
Autonomous, semi-auto and local authorities	417	5.4	537	4.8	28.9
Other	119	1.6	169	1.5	42.5
PRIVATE SECTOR:	6,354	82.7	9,304	83.6	46.4
Agri, fishing, etc.	98	1.3	158	1.4	60.0
Personal and service	4,423	57.5	6,699	60.2	51.4
Manufacturing, business org. & others	574	7.5	735	6.6	28.1
Others	1,258	16.4	1,712	15.4	36.1
Total^a	7,686	100	11,122	99.9	44.7

^a Totals may not agree because of rounding.

Source: Bangladesh Bank Data Tape

Table 6

Size Distribution of Rural Deposit Accounts of Five Banks, 1983-84
Year Ending June 30

Size of Account	1983				1984				Growth Rate Percent	
	Deposits	Percent	Number of Accounts	Percent	Deposits	Percent	Number of Accounts	Percent	Deposits	Number of Accounts
(Thousand)	(Million Taka)									
0 - < 5	3097	50.8	3,812,936	95.3	5,375	48.3	4,687,213	94.0	37.6	22.9
5 - < 10	720	9.4	102,556	2.6	1,093	9.8	156,811	3.2	51.8	52.9
10 - < 25	926	12.0	61,042	1.5	1,333	13.8	101,148	2.0	65.6	65.7
25 - < 50	54	7.1	16,042	0.4	875	7.9	25,877	0.5	60.6	61.3
50 - < 100	372	4.8	5,412	0.2	628	5.7	9,377	0.2	68.8	73.3
100 - < 200	310	4.0	2,317	0.1	675	6.1	2,992	0.1	118.0	29.1
200 - < 300	112	1.5	466	^a	152	1.4	635	^a	36.5	36.3
300 - < 400	69	0.9	204	^a	86	0.8	249	^a	25.2	22.1
400 - < 500	68	0.9	152	^a	53	0.5	118	^a	-21.4	-22.4
500 - < 1000	138	1.8	212	^a	232	2.1	339	^a	69.2	59.9
1000 +	521	6.8	202	^a	684	6.2	268	^a	31.3	32.7
TOTAL	7686		4,001,504		11,122		4,985,027		44.7	24.6

^a Less than 0.1 percent.

Source: Bangladesh Bank Data Tape

Table 7

Rural Deposits for Five Banks by District, 1983-84
Year Ending June 30

DISTRICT	Year		Growth Rate Percent
	1983	1984	
	(Million Taka)		
Chittagong	1,091	1,449	32.8
Chittagong H.T.	124	184	47.7
Comilla	589	905	53.7
Noakhali	368	518	41.0
Sylhet	913	1,252	37.1
Dhaka	992	1,407	41.8
Faridpur	238	341	43.3
Mymensing	252	326	29.2
Tangail	194	275	41.5
Jamalpur	117	158	35.3
Barisal	251	381	51.8
Jessore	372	560	50.4
Khulna	290	532	83.3
Kushtia	214	208	44.0
Putuakhali	75	128	71.5
Bogra	248	359	44.6
Dinajpur	226	348	71.5
Pabna	307	443	44.6
Rajshahi	482	787	63.3
Rangpur	342	562	64.5
TOTAL^a	7,686	11,122	44.7

^a Totals may not agree because of rounding.

Source: Bangladesh Bank Data Tape

Table 8

Estimated Parameters of the Double Log Interest Bearing Deposit Function

Parameter (Variable)	Permanent Income Hypothesis			Absolute Income Hypothesis	
	Reduced Form Equation (T-Ratio)	Second Stage Statistics (T-Ratio)	Indirect Effect ^a	Reduced Form Equation (T-Ratio)	Second Stage Statistics (T-Ratio)
Intercept	-1.686*** (-.932)	6.06*** (.884)		-2.243** (-1.328)	10.992** (1.428)
(PYP)	.595* (3.571)	.057 (.083)	.538		
(PYT)	2.783** (1.225)	2.40** (1.260)	.383		
(L)	.216 (.595)	.185** (.849)	.031	.286*** (.811)	.169 (.758)
(P)	-.104 (-.560)	.058 (.230)	-.162	.009 (.061)	.287* (1.760)
(BF)		.985* (1.785)			1.626** (1.586)
(RDV)	.278* (4.138)	.219* (2.333)	.059	.263 (3.948)	.167* (2.194)
(PCR)	.119 (.623)			.194*** (1.134)	
(PY)				.565* (3.386)	-.341 (-.590)
F-Ratio	7.1 ^b	11.91 ^b		8.15 ^b	16.35 ^b
R-Square		.684	---		.706

* Significant at .05 level.

** Significant at .10 level.

*** Significant at .20 level.

^a Indirect effects are estimated as the difference between the reduced form and the second stage coefficients.

^b Significant at .0001 level.

Table 9

Estimated Parameters of the Double Log Bank Branch Function

Parameter (Variable)	Permanent Income Hypothesis			Absolute Income Hypothesis	
	Reduced Form Equation (T-Ratio)	Second Stage Statistics (T-Ratio)	Indirect Effect ^a	Reduced Form Equation (T-Ratio)	Second Stage Statistics (T-Ratio)
Intercept	-8.166* (11.06)	-7.893* (-12.762)		-8.14* (-11.762)	-7.577* (-10.959)
(PYP)	.568* (8.351)	.478* (3.096)	.09		
(PYT)	.402 (.381)				
(PY)				.557* (8.145)	.415* (1.864)
(L)	.038 (.254)			.072 (.483)	
(P)	-.17* (-2.254)	-.155* (-3.591)	-.015	-.171* (-2.936)	-.173* (-4.208)
(RDV)	.063* (2.309)	.022* (.294)	.041	.059* (2.178)	-.007* (-.061)
(PCR)	.126* (1.617)	.107* (1.487)	.019	.119* (1.702)	.071*** (.864)
(DINT/POP)		.158** (1.624)			.252** (1.679)
F-Ratio	12.94 ^b	26.20 ^b		14.74 ^b	29.15 ^b
R-Square		.794			.811

* Significant at .05 level.

** Significant at .10 level.

*** Significant at .20 level.

^a Indirect effects are estimated as the difference between the reduced form and the second stage coefficients.

^b Significant at .0001 level.

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