Mobilizing Small-Scale Savings
Approaches, Costs, and Benefits

Robert C. Vogel and Paul Burkett
Mobilizing Small-Scale Savings

Approaches, Costs, and Benefits
Industry and Finance Series

Volume 15

This series is produced by the Industry Department of the World Bank to disseminate ongoing work done by the department and to stimulate further discussions on the issues. The series will include reports on individual sectors in industry, as well as studies on global aspects of world industry, problems of industrial strategy and policy, and issues in industrial finance and financial development.

Already published are the following:

*Volume 1. Structural Changes in World Industry: A Quantitative Analysis of Recent Developments
*Volume 2. Energy Efficiency and Fuel Substitution in the Cement Industry with Emphasis on Developing Countries
*Volume 3. Industrial Restructuring: Issues and Experiences in Selected Developed Economies
*Volume 4. Energy Efficiency in the Steel Industry with Emphasis on Developing Countries
*Volume 5. World Sulphur Survey
*Volume 6. Industrialization in Sub-Saharan Africa: Strategies and Performance
*Volume 7. Small Enterprise Development: Economic Issues from African Experience
*Volume 8. World Refinery Industry: Need for Restructuring
*Volume 9. Guidelines for Calculating Financial and Economic Rates of Return for DFC Projects (also in French and Spanish)
Volume 10. A Framework for Export Policy and Administration: Lessons from the East Asian Experience (also in Spanish)
Volume 11. Fertilizer Producer Pricing in Developing Countries: Issues and Approaches
Volume 13. Tax Policy and Tax Reform in Semi-Industrial Countries

* Published as World Bank Technical Papers.
Mobilizing Small-Scale Savings
Approaches, Costs, and Benefits

Robert C. Vogel and Paul Burkett

The World Bank
Washington, D.C., U.S.A.
ABSTRACT

Recently there has been an upsurge of interest in programs to increase financial savings mobilization in developing countries, especially in the form of deposits held by non-wealthy and rural households. Subsidies and controls intended to promote savings mobilization by financial intermediaries (FIs), especially through the expansion of branch office networks, are being enacted in a growing number of developing countries and are on the agenda in many others. However, there has been little systematic analysis of the benefits and costs of such programs due to the prior focus of governments, international donors, and the financial development literature on credit rather than savings. The widespread failure of subsidized and heavily regulated rural credit programs to achieve the goals of increased investment and more equitable income distribution indicates the need for analysis of the benefits and costs of similar programs for savings mobilization.

Non-wealthy households benefit from improved deposit opportunities provided by safe, liquid, interest-bearing deposits that allow households to earn a positive income on their savings balances and avoid the erosion of these balances by inflation. This facilitates the accumulation and withdrawal of funds, both for lump sum investments in physical capital and for the funding of cash flows associated with consumption and the operating costs of capital goods. In addition, greater use of the financial system generates social efficiencies through the pooling of risks and through information economies in the allocation of funds for investment.

Transaction costs, as well as yields and liquidity, appear to be crucial determinants of the demand for financial assets, especially among low-income savers. This is because of the essential role of working capital management in determining the asset portfolio and income levels of these households. If transaction costs of deposits are high, then small savers will be deterred from using them and rely on either cash or real goods for working capital. Thus, successful small saver programs will have to make deposits easily accessible, cut down on paperwork and lines, etc.

The success of deposit mobilization programs aimed at small savers also depends on competition in the financial sector and the regulatory environment. Branch office expansions, or other changes in deposit services will have a low or high benefit cost ratio, depending on whether they entail: (1) inefficient regulatory avoidance in response to interest rate ceilings or other controls, where the alternative to mobilizing deposits through costly expansion of branches is simply higher deposit rates; or (2) actual decreases in the resource cost of providing deposits of reasonable yield, liquidity and risk to small savers. Although temporary subsidies and technical assistance to accelerate innovations in deposit mobilization may be justified in some cases, where specific imperfections or externalities can be identified, the most efficient means of improving deposit opportunities are the removal of regulatory constraints and the promotion of competition among FIs. Competition is also reduced by the availability of low cost funds from the government or foreign sources.
Postal savings have been an important vehicle for mobilizing financial savings. In Japan, Malawi and Singapore they represent over 20% of quasi money, and in countries like India, Kenya and Thailand they represent 5% to 10% of quasi money and over 2% of GDP. These countries have had successful programs because they have maintained respectable interest rates and service that keeps transactions costs low.

Reciprocity, that is, the practice of FIs lending to their depositors, also appears to be an important factor in the success of many of these small saver programs. The experience of postal savings banks, credit unions, and informal savings and credit associations suggests that the success of small saver programs may depend in part on whether FIs can profitably lend to the same clientele from which deposits are mobilized. The potential benefits of reciprocity include economies of scope, lower loan default rates, and increased savings mobilization. These benefits must be balanced against possible losses of specialization economies, but, in general the balance favors reciprocity.

The recent development of savings mobilization activities in India, Nigeria and Peru suggests that the cost of small saver programs need not be large. These case studies also indicate the crucial role of financial innovation and reciprocity in determining the viability of branch office expansion as a tool for improving deposit opportunities in developing countries.
# TABLE OF CONTENTS

I. **INTRODUCTION** ......................................................... 1

II. **INTEREST RATES, TRANSACTION COSTS, AND DEPOSIT MOBILIZATION** ........................................... 4

III. **INTEREST RATES, TRANSACTION COSTS, AND FINANCIAL INTERMEDIARIES** ......................................................... 8

Branch Office Expansion .................................................. 9
Interest Rate Ceilings, Branching and Other Forms of Competition for Deposits ........................................ 11

IV. **LENDING ACTIVITIES OF DEPOSIT INSTITUTIONS** ........... 13

Postal Savings Facilities .................................................. 13
Rotating Savings and Credit Associations ............................. 16
Credit Unions ............................................................. 18

V. **CASE STUDIES** .......................................................... 21

Case 1: Expansion of Bank Offices in India ............................ 21
Case 2: Potential for Savings Mobilization in Nigeria .............. 23
Case 3: Savings Mobilization by BANCOOP in Peru .................. 24

VI. **CONCLUSION** .......................................................... 28

REFERENCES .............................................................. 30
I. INTRODUCTION

1.01 There has recently been an upsurge of interest in programs in developing countries to increase financial savings, especially through the expansion of branch office networks and other services of financial intermediaries (FIs) into rural and urban areas where the poor reside. The myths that the poor have no margin over consumption for saving and, in any case, do not respond to economic incentives are increasingly being questioned. There are growing numbers of successful savings mobilization programs in developing countries, and international agencies have lately become more interested in such programs (Wirmark, 1983). Nonetheless, there has been a lack of systematic analysis of programs to improve small saver deposit opportunities, in large part because of the traditional focus of governments and international agencies on transferring resources through credit projects and a similar bias in much of the development literature toward credit at the expense of savings. Many studies that purport to focus on savings mobilization in fact deal mainly with credit (Holst, 1984), while those studies that actually focus on savings rarely provide more than a simple description of some savings mobilization project.

1.02 It is important to analyze carefully the costs and benefits of various subsidy and controls mechanisms that often have been suggested or used to promote increased deposit mobilization by FIs. It is not easy to use subsidies in the financial sector as the problems of many directed credit schemes illustrate. Moreover, the removal of regulations, especially interest rate ceilings and certain incentives that inhibit FIs from mobilizing deposits from small savers, may be far more effective and efficient in promoting small saver deposits than large and permanent subsidies or mandates to open new branch offices.

1.03 In what follows, an attempt is made to develop a framework for analyzing the benefits and costs of programs for mobilizing deposits (financial savings) from non-wealthy households. An important part of this framework is a careful distinction between two concepts of saving: (1) saving as a flow, or that part of income which is not consumed; and (2) savings as a stock of wealth (including financial assets) which has been accumulated over time. Most discussions of small saver programs focus on their positive impact on the flow of saving. However, important benefits of improved deposit opportunities stem from the reallocation of stocks of household wealth away from physical assets with low or negative social yields to financial assets and from the allocation of these resources by the financial system to more productive activities. These benefits often are ignored.

1.04 Along these lines, it is important to distinguish the benefits of improved deposit opportunities from the benefits related to the existence of currency, as Porter (1966) points out. In a primitive economy where
financial assets do not exist, saving in the flow sense can only take place through investment, that is, the accumulation of physical assets. All investment must be instantaneously self-financed by saving. Moving conceptually to a less primitive economy where currency (but no other financial assets) exists helps to distinguish the benefits of deposit facilities from the benefits of having currency. The existence of currency not only permits an economy to escape from barter and to enjoy the resulting gains in efficiency from lower transaction costs but also permits the separation of saving in the flow sense from investment, both temporally and spatially. By accumulating currency, individuals can abstain from consumption and save without investing, that is, without accumulating physical assets. Increased holdings of currency make resources available for investment to the issuer of currency (typically the government or, with free banking, banks that issue notes). Individuals that accumulate currency by saving can later reduce their currency holdings in order to invest in physical assets or to increase consumption (i.e., dissave).

1.05 Deposit facilities yield benefits that are different from those of currency by acting as safe, liquid repositories of funds that also pay reasonable yields. The lending of these deposits by the financial system generates social efficiencies in terms of savings on information about investment opportunities and pooling of risks. Distribution is improved by the benefits accruing to non-wealthy household firms, such as small farmers, particularly in the inflationary environment present in many developing countries. Such households' ability to generate income (and hence saving in the flow sense) is crucially dependent on the availability of safe, liquid deposits of reasonable yield, particularly in the inflationary environment present in many developing countries. However, the high transaction costs typically associated with deposits in these countries decrease the savings incentives and savings capacities of non-wealthy households. These points are developed in detail in Section II.

1.06 The cost effectiveness of deposit mobilization programs for small savers obviously depends on the ability of FIs to innovate, that is, to overcome overly pessimistic estimates of the costs of these programs and to decrease the resource cost of providing deposits of a given yield and liquidity (accounting for risk). Savings innovations must be distinguished from those changes which FIs make in response to government regulations such as interest rate ceilings. Such changes do not represent net social benefits. These issues are further analyzed in Section III, particularly in the case of branch office expansion programs. Section III also analyzes the use of subsidies to increase deposit opportunities for small savers.

1.07 This study suggests that reciprocity, that is, whether or not FIs make loans to their depositors, is an important issue in small saver programs. This issue is overlooked in the traditional approach to analyzing the costs and benefits of financial programs, which usually compare formal FIs, such as commercial banks, with the variety of informal lenders that typically exist in developing countries and then point out that formal lenders rarely provide a significant volume of small loans or loans in rural areas (Porter, 1966). The potential benefits of reciprocity include economies of scope, lower loan default rates, and increased deposit
mobilization, but these benefits must be balanced against possible losses of specialization economies. This issue is discussed in detail in Section IV, with particular emphasis on postal savings facilities as compared to credit unions and informal rotating savings and credit associations.

1.08 As previously stated, cost-benefit studies of small saver programs are virtually non-existent in the financial development literature. However, there have been a number of studies dealing with the recent efforts to expand bank branch networks, particularly in rural areas, in India and Nigeria. Furthermore, a project in Peru with a significant savings component, and involving reduced transaction costs, has been analyzed in detail by Burkett (1984). Section V applies the analytical framework developed in previous sections of the paper to these three cases in an attempt to shed some light on the costs and benefits of particular small saver schemes. Finally, Section VI summarizes the discussion and outlines areas for further investigation.
II. INTEREST RATES, TRANSACTION COSTS, AND DEPOSIT MOBILIZATION

2.01 The potential for increased deposit mobilization through improved deposit opportunities for small savers depends on the demand for financial assets by non-wealthy households. This demand is affected not only by interest yields but also by financial transaction costs, that is, the costs of converting a portion of wealth into some financial asset together with the costs of converting the financial asset into a spendable form (i.e., money). In the case of deposits at an FI, financial transaction costs include the time and monetary costs of traveling to the office of the FI, the time spent waiting in line to make deposits or withdrawals, and the time spent on the paperwork associated with opening an account and making deposits and withdrawals from the account.

2.02 Consider the general case of a household which is also a productive enterprise, say, a small farmer. (The argument that follows also covers the simpler case of purely wage earning households.) Such a household-firm must decide how to allocate its limited wealth among income generating assets. The range of assets includes physical capital, money, other financial assets (e.g., savings deposits), and inflation hedges (real goods used as a store of value). It is well known that in many developing countries much of wealth is held in the form of hedges due to the absence of financial assets of reasonable yield (Bhatt, 1962; Chandavarkar, 1971; Vogel and Buser, 1975). The resource costs of inflation hedging can be particularly high for those household-firms, such as small farmers, that periodically make large lump-sum outlays on physical capital in order to maintain or increase production. As pointed out by McKinnon (1973), under the assumptions of limited access to credit and significant indivisibilities, this situation is likely to produce "complementarity between money and physical capital." An increased yield on noninterest-bearing money (through reduced inflation) and interest-bearing financial assets facilitates the accumulation of funds for productive investments, and thereby increases the demand for capital, as well as the supply. This is one important way in which increased deposit opportunities for small savers can accelerate the generation and mobilization of surplus funds and, ultimately, investment.

2.03 More generally, it must be recognized that household-firms engage in working capital management. In other words, they try to minimize the cost of the outflows and inflows of cash associated with consumption and investment. One possible source of working capital is formal or informal credit, but this source can be quite costly, given the rationing of formal credit and the excess demand for informal credit that characterizes the financially repressed economies of many developing countries. The alternative method of funding cash flows is to self-finance them through withdrawals from asset stocks (including the conversion of such withdrawals into cash). These assets are built up in advance of expenditure, then rundown when the expenditure is made. When aggregated across households such stocks can account for a significant portion of total wealth.

2.04 Among the assets that can be used as liquidity sources are financial assets (e.g., deposits), inflation hedges, and cash balances. The
portfolio composition of liquidity sources that is used to minimize cash flow costs will be determined by the relative yield and liquidity of these three assets. The obvious advantage of using cash balances is that no financial transaction costs are incurred when they are withdrawn or increased. The disadvantage of using cash is that it yields no interest, so that part of the household’s wealth is directly eroded by inflation. The extent to which deposits are used as liquidity sources thus will depend positively on the liquidity of these assets, their yield in real terms and the rate of inflation, and negatively on the yield and liquidity of inflation hedges. The use of the deposits, in turn, yields social benefits for the economy in terms of the pooling of risks and information economies in the allocation of investment.

2.05 Recognition of the importance of working capital management pinpoints the crucial role of financial transaction costs in determining the form in which savings are held and thus clarifies the meaning and benefits of increased deposit opportunities for small savers. Once it is recognized that even non-wealthy households must face such financial management problems in simultaneously allocating wealth and choosing liquidity source bundles, it becomes clear that both the yield and liquidity of financial assets directly determine the productive efficiency of these households (Von Plishke, 1978; Adams, 1984; Joyce, 1981). Small saver programs must focus on both deposit interest rates and transaction costs (e.g., the costs of traveling to the FI, of waiting in line, of executing paperwork) if they are to yield maximum benefits in terms of increased deposit mobilization and capital formation. The importance of transaction costs for non-wealthy households is supported by the case studies presented below and by consumer surveys in both developed and developing countries which indicate that “financial services” (including not only the quantity of services but also the quality, especially the level of transaction costs) are the prime determinant in the choice of a deposit institution (Mitchell and Still, 1980; Anderson, et al., 1976).

2.06 These arguments are strengthened by analysis of the interaction between the wealth allocation and working capital management decisions of household-firms. This interaction has received little analytical treatment in the literature on household savings in developing countries, even though the methodological tools for such an analysis are well known from the money-demand literature. In particular, analysis of the wealth allocation decision corresponds to portfolio theories of money demand (e.g., Tobin, 1958), while analysis of working capital management corresponds to inventory theories (Baumol, 1952; Tobin, 1956; Miller and Orr, 1966). A synthesis of these two views is required for rigorous study of the financial decision-making of household firms.

2.07 One such synthesis is formulated in Burkett and Vogel (forthcoming). In this model the household-firm’s cash flow requirements are endogenously generated by the household’s portfolio choice through the explicit inclusion of a cash flow constraint (due to operating costs) on physical capital. Given this constraint, it is shown that the yield to physical capital (adjusted for cash flow costs) is positively related to the yield and liquidity of financial assets, even under complete certainty.
of income flows and complete divisibility of physical capital. Thus, the "complementarity of money and physical capital" is due not only to the "lumpiness" of investment (McKinnon, 1973), but also to the working capital management problems inherently bound up with the choice of income generating assets by household-firms. The synthesis of portfolio and inventory views thus enriches the microeconomic foundations of the theory of financial development and repression by indicating the conditions under which cash and inflation hedges will be displaced by deposits as income generators and liquidity sources—in terms of interest rates and transaction costs.

2.08 Most macro-statistical studies show a positive response of financial savings to increased deposit interest rates (Sung, 1976; Fry, 1978 and 1980; Cheng, 1980; Alonso, 1981). The preceding discussion suggests that these results may indicate not only increased use of deposits as income generators but also the displacement of cash and inflation hedges as liquidity sources. Those macro studies that find little or no relation between interest rates and financial savings (e.g., Iqbal, 1982) may reflect the presence of high transaction costs that make financial savings insensitive to deposit yields, as well as problems in appropriately defining such yields.

2.09 Data on the size distribution of savings deposits (which are relatively liquid compared to other financial assets) support the contention that non-wealthy households are capable of utilizing financial assets as liquidity sources. For example, in Mauritius (September, 1982) the average size of nearly 470 thousand savings accounts was $30.48, while in Peru (December, 1982) the average size of over 5 million accounts was $87.27. These figures suggest that most savings accounts in developing countries are held by non-wealthy households.

2.10 Micro-econometric studies of household savings in developing countries have tended to focus on the flow of saving out of income and to emphasize one of two factors which tend, along with reasonable asset yields, to increase the flow of saving: (1) instability of household incomes (e.g., due to seasonal fluctuations) which, given the depressing impact of the "permanent income effect" on the short-term propensity to consume, tends to increase household savings (Ong, et al., 1976; Hyun, et al., 1979; Ro, et al., 1981); and (2) the "lumpiness" of physical capital, which, especially when combined with an increased real yield to capital, necessitates the use of a store of value preceding productive investment (Bhalla, 1978; Rahman, 1980).

2.11 These empirical results and studies are important because they show that even non-wealthy households in developing countries are capable of generating surplus funds. This is a basic prerequisite for the cost effectiveness of increased deposit opportunities for small savers. However, the studies also have an obvious weakness: they fail to introduce financial transaction costs or working capital management problems. In the rare instances when these factors are mentioned, it is in an anecdotal, non-analytical fashion (e.g., Adams, 1978). This in part reflects limitations of the available data. It is also important to note that there are
two distinct concepts of savings which are sometimes intertwined in the empirical literature on household savings in developing countries—the flow of saving (i.e., income minus consumption) and the stock of savings (either financial or non-financial). It is particularly useful to distinguish clearly between these two concepts in the present case because it is the allocation of the stock of savings among different financial and non-financial forms which is directly relevant for the benefits and costs of small saver programs. This allocation is directly conditioned by financial transaction costs and interest rates, while the flow of saving may be only indirectly related. Moreover, from the viewpoint of deposit institutions, transaction costs and interest rates are precisely the variables determining the resource costs of increasing the deposit opportunities available to small savers (see Section III below).
III. INTEREST RATES, TRANSACTION COSTS, AND FINANCIAL INTERMEDIARIES

3.01 The previous section examined the increases in deposit mobilization and the benefits for savers, especially non-wealthy households, that can arise from the availability of safe, liquid financial assets of reasonable yield. The availability of such assets depends, in turn, on the benefits to FIs from supplying them, particularly in the form of deposit opportunities attractive to small savers. The focus of the present section is on this issue, with a concentration on the question of whether the barriers that inhibit FIs from supplying attractive assets are due primarily to questionable government policies that can be adjusted or to more basic externalities and imperfections that may require large and continuing government subsidies to FIs.

3.02 Transaction costs for small savers, and those in rural areas in particular, depend on whether FIs can profitably provide expanded branch office networks and other services that keep deposits liquid. This depends, in turn, on the technology of deposit mobilization and advances in this technology, that is, financial innovation. However, in analyzing social benefits and costs, innovative technological changes must be carefully distinguished from the changes that FIs may implement in response to government regulations, especially interest rate ceilings and forced expansion of branch office networks. These latter changes may waste resources and have minimal, or even negative, impacts on small saver deposit opportunities.

3.03 Innovative deposit mobilization techniques, such as new small saver programs, decrease the resource cost of providing financial assets of a given yield and liquidity (adjusting for risk) or decrease the saver's transaction costs in using these assets. For FIs, the resource cost is the land, labor and capital required to attract and manage deposits, and for the saver it is primarily the cost of his time. The ability and willingness of FIs to undertake innovations depend on the expected profits and on the risks perceived to be associated with these innovations, that is, the FIs estimate of the balance between the cost of the resources it uses and how much additional revenue can be obtained. For example, FIs may view the risks of initiating small saver programs as being extremely high if their normal clientele consists of wealthier individuals and firms or if they can mobilize funds at lower cost through cheap rediscounts at the central bank. Such perceptions of risks can impede the widening and deepening of deposit mobilization and thus prevent a narrowing of the gap between deposit and loan interest rates—a crucial result of financial innovation (Roe, 1979).

3.04 If these risks are due to information gaps which are caused by institutional rigidities or inertia in FIs (or if the required knowledge is a collective good), there may be a case for temporary government subsidies to FIs to accelerate the innovation process (Bhatt, 1978), depending on the social opportunity cost of the funds used for these subsidies. Such subsidies can be removed as the information gaps are closed and the institutional rigidities removed through learning by doing, which will inevitably
occur if the innovations are in fact profitable for the FIs. The potential for profitable, innovative mobilization of deposits from non-wealthy households is supported by the case study of India presented below.

3.05 The extent to which decreased costs due to innovations are passed on to savers, in terms of greater yield and liquidity of financial assets, depends on the level of competition among FIs. In a competitive market for funds, cost decreases will accrue to savers because FIs that do not pass them on will risk losing deposits (Burkett, 1984). In the long run savers will be better off, while the profit margins of FIs will be driven down to their "normal" level as innovations become generalized throughout the industry (Spellman, 1982). Collusive behavior among FIs can prevent these gains to savers from occurring (Galbis, 1979), so that government measures to increase competition among FIs are potentially an important tool for increasing deposit opportunities for small savers.

3.06 It is also important to note that the ultimate use of the funds mobilized through small saver programs can affect the benefits offered to non-wealthy households and, ultimately, the success of such programs. To be specific, small savers are likely to be, on average, more risk averse than wealthier households, because small savers live closer to subsistence. Indeed, the use of savings as a hedge against low and uncertain incomes is a prime motive for non-wealthy households to accumulate assets (Vogel, 1984). Thus, if the loans to be made with mobilized funds are overly risky, then the program may not be successful, or may not yield large benefits. The success of a program and its benefits thus depend on four related factors: (1) whether savers are aware of the risks they incur when depositing at an FI; (2) the extent to which deposits are (explicitly or implicitly) insured and the extent to which such insurance leads FIs to take on riskier asset portfolios; (3) the extent to which interest yields on deposits rise with risk; and (4) the extent to which the depositors are risk averse. In the absence of explicit or implicit deposit insurance, the riskiness of the loans made with the mobilized funds can be very relevant for the savings decisions of non-wealthy households.

A. Branch Office Expansion

3.07 The benefits and costs of small saver programs can be seen more clearly by examining a specific example: the expansion of FI branch offices as a method of increasing deposit mobilization. Branch office expansion is a particularly important example for two reasons. First, it appears historically that rapid expansion of the number and spatial diffusion of bank offices was a common characteristic of now-developed countries during their earliest periods of rapid industrialization (Cameron, 1967 and 1972). Similarly, the number of branch offices has expanded rapidly in many developing countries since World War II, although the number of offices per capita varies widely among developing countries and is still generally well below the level in most developed countries (Porter, 1966; Wai, 1972). Second, as indicated by the case studies of India and Nigeria presented below, many developing country governments have implemented policies of forced expansion of the number of FI branch offices, especially in rural areas, in the belief that such expansion will accelerate financial development and, ultimately, economic growth.
It is difficult to establish the stimulative effect of branch office expansion on financial development (let alone economic development in general). This is partly because of the difficulty of formulating an adequate measure of branch office expansion which takes both the number and spatial diffusion of branches into account (Cameron, 1972). Furthermore, the number of offices is only a crude proxy for actual financial services, not only because of the non-homogeneity of offices, but also because the proximity of banking facilities is only one element in the vector of formal financial services that small savers face. Other elements include the yield and riskiness of financial assets and the time and money costs of opening an account and making deposits or withdrawals, after a saver has already stepped into a branch office.

The only study of the macroeconomic impacts of branch office expansion in developing countries (Rosas, 1972) found, after adjusting for inflation and interest rates, that there was a close relationship between the ratio of money to GDP and the number of bank offices in a cross section of five Latin American countries. The approach was based on the idea that the expansion of bank offices in developing countries reduces the time needed to carry out transactions and thus encourages "monetization". This approach also would explain the expansion of bank offices in the early stages of development; as per capita incomes grew, the demand for more offices rose in order to reduce depositors' costs of making transactions. Thus, the study emphasized only the demand for new branches and the resources saved by depositors. It did not investigate the costs of the additional branches, and therefore no judgement could be made as to the net benefit to society. Indeed, the implicit assumption was that branches were constrained by regulation to less than the market clearing number.

Any attempt to evaluate the costs and benefits of branch office expansion is further complicated by the flow of mobilized funds over space. Specifically, if an FI expands its deposit mobilization operations into a new region faster than its lending operations, the profitability of the new office may, taken by itself, appear to be low or even negative. This will occur if the deposits mobilized at the new office are transferred to other offices for lending. If profits are measured on an office-by-office basis without adequate transfer pricing of funds, then profits of the lending offices will be biased upward, and those of the new office downward (Thingalaya, 1976; Rangarajan, 1980). This is likely to occur when innovations in deposit mobilization occur faster than innovations in lending. For example, Mauri and Mottura (1979) discuss how the Sudanese Savings Bank (an innovative deposit mobilizer) was forced to transfer funds to its older offices, and even to other FIs, due to a perceived shortfall of non-risky lending opportunities at newly established offices and for non-traditional clients. Thus, even if data on the profitability of FIs offices are available (which is rarely true), care must be taken in using such data to evaluate the costs of office expansion and other small saver schemes. In addition, as discussed in detail in Section IV, there may be significant benefits from making loans available to the same small saver clientele from whom deposits have been mobilized, apart from traditional arguments against draining funds from rural areas.
B. Interest Rate Ceilings, Branching and Other Forms of Competition for Deposits

3.11 Finally, the evaluation of branching is complicated by another factor: branch office expansion may not be a financially innovative process, but rather a response to government regulations, specifically interest rate regulations. It is well known that when deposit rates are held below equilibrium by government decree FIs tend to compete for deposits by offering "implicit interest" to savers (Taggart, 1978; Spellman, 1982; Kane, 1970 and 1977). In developing countries, such implicit interest sometimes takes the form of a hyper-expansion of the number of FI branch offices (Daly, 1967; Despres, 1970). Such expansion does not necessarily entail any decrease in the resource cost of providing savings instruments of a given yield and liquidity (adjusting for risk). If the new branches represent neither an improved understanding of the true returns from small savings programs nor new techniques for mobilizing savings from non-wealthy households (techniques which increase the convenience and attractiveness of saving in financial form), then such branches move the economy below the production possibility surface that existed prior to expansion. As Daly (1967) and McKinnon (1973) have emphasized in discussing the pathological growth of the Uruguayan banking sector, marble banking palaces should not be confused with a true expansion of the financial sector. Resources cannot be costlessly transferred into the financial sector, especially given the specialized forms of skilled labor often involved. In addition, if branch office expansion later proves excessive, retrenchment may be difficult and costly to carry out. In the absence of innovative technological change, branch office expansion can potentially decrease the growth of a developing economy's non-financial sectors through a reduction in available capital (United Nations, 1981).

3.12 It is also important to separate the effects of disequilibrium deposit rate ceilings (common in developing countries) from innovative small saver programs, of which branching is just one example. (Other examples include prizes and premia for depositors.) If the resource costs of such ceilings and the responses they induce are ignored, it might even appear that a desirable method of improving small saver services would be through ceilings on deposit rates. Such ceilings would presumably cause FIs to compete for small deposits by opening more branches, thereby decreasing transaction costs for small savers, or by initiating savings campaigns.

3.13 Aside from the question of resource costs, there are several other problems with this view. Deposit ceilings cause substantial distortions in financial markets, as well as reducing total saving. The most obvious distortion is that whatever gains accrue to small savers from increased implicit interest are an imperfect substitute for explicit interest. The welfare of small savers would be increased if they were paid interest in the form of money rather than in the form of (generally non-marketable) implicit interest. It is also important to recognize that the specific forms which implicit interest and non-price competition take under a deposit rate ceiling often involve a substitution of non-financial services for financial ones. For example, if implicit interest is paid in
the form of prizes or a hyper-expansion of branch offices, then FIs are becoming less specialized in purely financial operations. If economies exist from specialization in financial operations, then resources will be wasted if a deposit rate ceiling forces FIs to substitute implicit for explicit interest. Such a process is not innovation and is perhaps better characterized by the concept of "regulatory avoidance" (Kane, 1984).

3.14 Such distorted forms of financial overdevelopment may not even bring increased deposit opportunities for small savers and may instead have regressive redistributional effects. This will occur if, under a deposit rate ceiling, FIs pay implicit interest primarily in financial forms to wealthier savers with large accounts (through credit lines, creation of new unregulated financial instruments, etc.), while small savers are paid implicit interest in primarily non-financial forms (prizes, more branch offices, etc.) due to the high fixed costs of individual financial operations for the FI and the high cost of negotiating financial forms of implicit payments to small savers. Non-financial forms of implicit interest may be more costly than financial ones for FIs, if specialization economies exist in purely financial operations. This can cause small savers to receive less (explicit plus implicit) interest relative to wealthier savers, compared to a situation of competitively determined explicit deposit rates. In effect, deposit rate ceilings may not only reduce overall deposit mobilization but also cause FIs to ration out small savers in particular through a regressive distribution of implicit interest (e.g., transaction costs) (Friedman, 1970; Burkett, 1984). This rationing effect of deposit rate controls on savers is parallel to the "iron law" of credit rationing under loan rate ceilings, formulated by Gonzales-Vega (1984) to explain the regressive distribution of agricultural credit in many developing countries.

3.15 Interest rate regulations on loans also place an effective ceiling on what an FI can afford to pay to depositors in interest and provide in the way of services. Furthermore, an effective constraint on what FIs are willing to do for savers may be established by the availability of cheap external funds, through either central bank rediscount facilities or international donors. These and other links between saving and credit are discussed in detail in the next section and in the subsequent case studies of India, Nigeria and Peru.
IV. LENDING ACTIVITIES OF DEPOSIT INSTITUTIONS

4.01 The analysis of financial activities in developing countries has traditionally focused on lending, often comparing the advantages and disadvantages of formal FIs such as commercial banks with the informal lending activities carried on by friends and relatives, shopkeepers, professional moneylenders, and so forth. Given the focus of the present paper on deposit opportunities in developing countries, especially for small savers, it becomes useful to divide FIs (informal as well as formal) according to whether or not they offer both deposit and lending facilities to the same clientele. In particular, it is important to examine the costs and benefits to an FI of offering depositors the opportunity to borrow. Such borrowing opportunities may prove attractive to small savers and thereby increase the demand to hold deposits at the FIs offering these opportunities. From the perspective of the FI, gains from economies of scope must be compared with possible losses in economies of specialization. To the extent that economies of scope can be captured by the FIs themselves, as is likely, there is no case for large or permanent government subsidies, but there may be a case for technical assistance or temporary subsidies to FIs to accelerate innovation and encourage learning by doing. However, the main role of the government is likely to be the removal of barriers and incentives that inhibit FIs from offering borrowing opportunities to their depositors.

4.02 Comparisons have rarely been made between FIs that lend to depositors and those that do not, but there has been some analysis of lenders that accept deposits as compared to those that do not. The performance of lenders that accept deposits appears to be significantly better than those that do not in terms of transaction costs for both lenders and borrowers (Cuevas and Graham, 1982 and 1984) and also in terms of loan delinquency and default (Bourne and Graham, 1984; Vogel, 1984; Christen and Vogel, 1984).

A. Postal Savings Facilities

4.03 Postal savings facilities, which are widespread in developing countries, provide an important example of FIs that collect deposits but do not lend to depositors. The deposits collected are almost always made available to the public sector and are generally not available for loans to depositors. Historically, postal savings facilities have played a large role in transferring funds, from peasants and non-wealthy households in general, to other sectors of the economy in such diverse contexts as Russia, Japan and Italy (Cameron, 1967 and 1972). Perhaps the most successful has been the Japanese Postal Saving System, the world's largest saving institution, which currently accounts for over 20% of the financial system's assets. In developing countries today, postal savings deposits are often among the most important financial assets, especially for small savers. Newlyn and Rowan (1954) provided a useful statement of the strengths and weaknesses of these units that is still true today:
The ability of the Post Office Savings Bank, or for that matter of any savings institution, to attract deposits from the public depends on its accessibility and the rate of interest offered. Accessibility may be thought of as largely, but not wholly, a matter of branch coverage. It is, however, also influenced by the willingness of the institution concerned to accept and deal in very small sums, and by the standard of services provided...

In comparison with the savings bank departments of the expatriate banks the Post Office Savings Bank maintains a very extensive system of branches. This aspect of accessibility is probably the main reason for the much larger shares which the Post Office Savings Bank has in total savings deposits, but it is also true that the Post Office Savings Bank is more suited to the handling of very small sums...

On the other hand, the standard of service is not always high, queues are frequent at the larger offices, and in West Africa there have been rumors (which cannot be entirely discounted) that it is sometimes necessary to offer a small bribe to the clerk to obtain service. This probably accounts for the fact that both British and African bankers state that they gain deposits from the Post Office when opening offices in new towns.

The fact that small savers prefer to use commercial banks rather than postal savings offices when banks provide satisfactory deposit services is supported by Brown (1966). He presents data showing that the share of postal savings deposits in total Nigerian savings deposits fell from 65% in 1950 to 9% in 1964. This decline reflected an increased share for commercial bank savings deposits, in spite of the extreme spatial concentration of banking facilities, as discussed below in the case study of banking in Nigeria.

4.04 Table 1 presents figures that indicate the importance of postal savings in twelve developing countries. Postal savings deposits appear to account for a significant portion of financial assets in a variety of Asian and African contexts. The most successful cases have been Singapore; and Malawi, where postal savings deposits account for more than 20% of quasi money. In India, Malawi and Thailand, the postal savings deposits represent about 2% of GDP; in Singapore, they account for over 4% of GDP. These "success" stories demonstrate that small scale saving can contribute significantly to financial saving.

4.05 The other interesting aspect of Table 1 is the declining importance over time of postal savings deposits in ten of the thirteen countries surveyed. In Gambia and Sudan, the decline in postal savings relative to quasi-money has been particularly pronounced. Less rapid, but still significant decreases occurred in Thailand, Mauritius, Tanzania, Malawi, Kenya, the Republic of Korea and India.
Table 1: POSTAL SAVINGS AS A PERCENT OF QUASI-MONEY, SELECTED COUNTRIES AND YEARS

<table>
<thead>
<tr>
<th>Year</th>
<th>Thailand</th>
<th>Mauritius</th>
<th>Tanzania</th>
<th>Sudan</th>
<th>Kenya</th>
<th>Gambia</th>
<th>Singapore</th>
<th>Republic of Korea</th>
<th>South Africa</th>
<th>India</th>
<th>Malawi</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>16.07</td>
<td>11.10</td>
<td>8.66</td>
<td>53.27</td>
<td>9.20</td>
<td>23.83</td>
<td>3.73</td>
<td>2.22</td>
<td>6.42</td>
<td>24.30</td>
<td>41.53</td>
</tr>
<tr>
<td>1972</td>
<td>15.68</td>
<td>11.72</td>
<td>7.09</td>
<td>43.47</td>
<td>9.24</td>
<td>19.84</td>
<td>4.32</td>
<td>2.65</td>
<td>5.32</td>
<td>21.15</td>
<td>39.29</td>
</tr>
<tr>
<td>1973</td>
<td>16.28</td>
<td>9.86</td>
<td>7.30</td>
<td>34.80</td>
<td>8.54</td>
<td>11.32</td>
<td>4.91</td>
<td>2.56</td>
<td>4.29</td>
<td>18.70</td>
<td>40.08</td>
</tr>
<tr>
<td>1974</td>
<td>14.92</td>
<td>6.06</td>
<td>7.65</td>
<td>29.62</td>
<td>7.73</td>
<td>7.86</td>
<td>6.66</td>
<td>2.65</td>
<td>4.29</td>
<td>16.60</td>
<td>36.11</td>
</tr>
<tr>
<td>1976</td>
<td>12.08</td>
<td>8.01</td>
<td>5.82</td>
<td>19.66</td>
<td>5.86</td>
<td>5.66</td>
<td>19.14</td>
<td>2.33</td>
<td>6.50</td>
<td>13.71</td>
<td>28.39</td>
</tr>
<tr>
<td>1977</td>
<td>13.30</td>
<td>8.26</td>
<td>5.75</td>
<td>14.19</td>
<td>4.66</td>
<td>6.21</td>
<td>29.46</td>
<td>0.94</td>
<td>8.29</td>
<td>11.88</td>
<td>22.46</td>
</tr>
<tr>
<td>1978</td>
<td>12.22</td>
<td>7.57</td>
<td>6.21</td>
<td>12.57</td>
<td>4.57</td>
<td>3.43</td>
<td>34.18</td>
<td>0.57</td>
<td>8.87</td>
<td>7.84</td>
<td>27.27</td>
</tr>
<tr>
<td>1979</td>
<td>13.47</td>
<td>6.20</td>
<td>5.32</td>
<td>12.04</td>
<td>4.39</td>
<td>4.85</td>
<td>31.22</td>
<td>0.62</td>
<td>9.29</td>
<td>7.11</td>
<td>25.46</td>
</tr>
<tr>
<td>1980</td>
<td>12.45</td>
<td>5.00</td>
<td>5.11</td>
<td>10.08</td>
<td>5.48</td>
<td>3.80</td>
<td>26.96</td>
<td>0.97</td>
<td>8.98</td>
<td>6.89</td>
<td>24.17</td>
</tr>
<tr>
<td>1981</td>
<td>11.44</td>
<td>4.10</td>
<td>5.00</td>
<td>7.80</td>
<td>5.94</td>
<td>3.19</td>
<td>23.53</td>
<td>0.80</td>
<td>7.84</td>
<td>6.25</td>
<td>20.70</td>
</tr>
<tr>
<td>1982</td>
<td>10.40</td>
<td>3.81</td>
<td>n.a</td>
<td>5.10</td>
<td>6.17</td>
<td>2.55</td>
<td>24.90</td>
<td>1.00</td>
<td>6.64</td>
<td>5.47</td>
<td>22.53</td>
</tr>
<tr>
<td>1983</td>
<td>9.88</td>
<td>3.58</td>
<td>n.a</td>
<td>3.80</td>
<td>6.55</td>
<td>1.45</td>
<td>23.81</td>
<td>0.67</td>
<td>8.62</td>
<td>5.12</td>
<td>n.a</td>
</tr>
</tbody>
</table>

Note: Quasi money is defined as time and saving deposits at commercial banks (viz., line 35 in International Financial Statistics). n.a. = not available

Source: Central Bank Authorities and IMF, International Financial Statistics (various years).
4.06 In some cases, the relative decline of postal savings reflects the impact of liberalized interest rates everywhere in the market, e.g., Thailand. In other cases, the decline of postal savings deposits cannot be explained by differential interest rates because rates are similar, if not equal across FIs. In addition, postal savings facilities would appear to have an advantage over most other FIs in terms of deposit security and in the widespread location of offices. However, as pointed out above, the deteriorating performance of postal savings offices in terms of other aspects of transaction costs for depositors may not be as good as the potential might suggest.

4.07 Aside from the deteriorating quality of post office deposit services (i.e., higher transaction costs for savers), another cause of the declining trend may be the fact that postal savings systems generally do not make loans to depositors. Prior to decolonization, most of the funds mobilized by these systems were sent overseas to the "mother country" (Newlyn and Rowan, 1954). Today, the main use of postal savings deposits is often to purchase government bonds that fund public sector deficits (Masini, 1977; Mottura, 1972). The fact that postal savings deposits are used for purposes which, from the viewpoint of savers, are "non-local" may help to explain why innovative FIs like the Sudanese Savings Bank have found postal savings deposits to be easy pickings in the market for funds (Mauri and Mottura, 1979).

4.08 In contrast, in the successful cases such as Japan and Singapore, where postal savings deposits did grow significantly relative to savings deposits at other FIs, service for depositors is excellent and interest paid is exempt from taxes. In addition, postal savings offices make loans to individuals. The fact that commercial banks and other FIs offer some possibility of access to credit from that institution may be an important motivation for depositors to switch from postal savings to accounts at other FIs.

4.09 This brief survey of postal savings in developing countries indicates that postal savings deposits may be an important source of savings in developing countries, even though individual deposits are small. In the early stages of development, when currency or inflation hedges are the main alternatives for small savers, especially in rural areas, postal savings deposits often grow rapidly and become a substantial portion of financial assets. However, in the later stages of development, depositors may switch to other FIs unless postal savings facilities compete effectively. This involves not only competitive interest rates, but competitive service. Moreover an often overlooked feature that reduces the competitiveness of postal savings facilities is their lack of reciprocity, in comparison to the possibility that a depositor has of receiving a loan at other, more innovative FIs.

B. Rotating Savings and Credit Associations

4.10 In Asia and Africa the widespread existence of rotating savings and credit associations (ROSCAs) provides significant competition for postal savings. In Latin America, where commercial banks and credit unions are much more widespread, postal savings facilities typically do not exist
and ROSCAs appear to have much less importance. In the following discussion of lending activities of deposit institutions, the primary focus is on credit unions and ROSCAs because the main feature of these FIs is that they link savings with the availability of credit. Furthermore, credit unions provide an example of a more formal type of FI, but one which nonetheless emphasizes dealing with small savers, while ROSCAs provide an example of an informal financial arrangement which not only makes loans but also mobilizes savings.

4.11 Although there are reports of moneylenders in developing countries who receive deposits from savers, ROSCAs appear to be the only informal financial arrangement that gives as much emphasis to deposit collection as to making loans. The fact that ROSCAs are widespread in some developing countries suggests that they provide significant financial services to individuals who are not adequately served by formal FIs. Furthermore, the fact that ROSCAs involve saving as well as lending suggests that there is a demand for savings services and not just for loans by non-wealthy households in developing countries.

4.12 The operations of ROSCAs have been examined in detail by Bouman (1977, 1979, and 1984) in a number of developing countries. A number of individuals (usually between 10 and 40) each contributes a fixed sum (usually in money but occasionally in goods or services) periodically, and this sum is given to one of the individuals at each turn until all the individuals have had a turn. The order of the individuals' turns is decided by auction, by lottery or sometimes by socioeconomic status. The amount to be contributed and the period between turns is usually decided by the participants according to their preferences; given this, the amount received at each turn and the total duration of the ROSCA is determined by the number of participants. Alternatively, there may be a dominant organizer or manager who has the main role in deciding about amounts, periods and numbers of participants. This individual is often responsible for seeing that each participant makes the appropriate contribution or covering any missing contribution and usually receives the first turn or some other form of compensation. The main risk to the participants is that an early recipient will subsequently fail to contribute. The main protection against this is having a relatively small homogenous group of participants, putting less credit-worthy members at the end of the rotation, or having a strong organizer who can either collect or cover for non-contributors.

4.13 Although ROSCAs are often viewed as gambling and discouraged by governments, their widespread existence suggests that they provide some significant services. In addition to Bouman's surveys, they have been described by Anderson (1966) in India, Begashaw (1978) in Ethiopia, and Miracle et al. (1980) in various African countries, to give only a few examples. ROSCAs seem to be less evident in Latin America where they appear mainly to serve as an alternative to installment credit in financing the purchase of consumer durables, but they have been reported as quite important in Jamaica (Katzen, 1959; Manhertz and Marston, 1979). In a study of informal finance in the Cameroons, Haggeblade (1978) has shown that ROSCAs can evolve into formal FIs of considerable importance. Perhaps
the most interesting feature of ROSCAs is their diversity and flexibility (ability to adapt to the circumstances of participants), while at the same time maintaining their essential role as an outlet for savings and a source of credit.

4.14 Bouman, in particular, has emphasized the combination of credit and savings opportunities provided by ROSCAs. Participants not only have a convenient outlet for their savings, but they also receive (at one point during the cycle) access to a large pool of savings which may provide enough resources to achieve important economies of scale in some investment project. Unfortunately, no studies seem to have been undertaken on the costs of providing these services, but this is not surprising considering that the costs are almost entirely in terms of the time contributed by the organizer and the other participants. Most studies suggest that default is not a significant problem, but this may be due to the fact that most such studies deal with ROSCAs that continue in existence by forming themselves again rather than with those that have disappeared after a single or partial cycle. Although there are no cost comparisons with FIs such as postal savings offices that provide only deposit services, it nonetheless appears that ROSCAs have competed successfully with postal savings offices and that this must be due in large part to the provision of credit along with savings services.

C. Credit Unions

4.15 Credit unions are a more formal type of FI for which the link between savings and credit is also a crucial feature. Before analyzing the operation of credit unions, primarily in the Latin American context, it is useful to point out that other cooperative-type FIs linking savings and credit also exist and that, in Asia and Africa, some of these have evolved from ROSCAs. In addition to those noted by Haggeblade (1978) in the Cameroons, Oludimu (1982 and 1983) describes systems of cooperatives in Nigeria that link savings with credit for agriculture (and which are discussed further in the case study of Nigeria below). In Kenya, Von Pischke (1983) examines credit cooperatives for coffee producers where savings have become more important than credit, while Mbaru (1977) describes the savings services provided by a variety of informal financial arrangements. Von Pischke and Rouse (1983) examine a variety of institutions in Africa that have successfully mobilized savings, often linked to the provision of credit. Kahagalle and Sunderatre (1977) and Wirasinghe (1980) describe savings and cooperative banks in Sri Lanka that provide credit to depositors, as well as mobilizing deposits, and which have competed very successfully with established postal savings facilities not providing credit to depositors.

4.16 Credit unions and credit union federations were established in many Latin American countries during the 1960s, often with the help of the Peace Corps and church groups, in an effort to extend financial services to the poor, especially in rural areas, who did not have adequate access to formal FIs and who were thought to be exploited by moneylenders and other forms of informal finance. The basic idea behind these credit unions, like
those in Europe and the United States, was to provide an outlet for savings that would be made available as credit to the same group and to rely on voluntary contributions of labor and a "cooperative spirit" rather than on the profit motive.

4.17 It is widely believed that non-profit institutions, typically using some voluntary labor, should have lower costs than for-profit institutions, but studies of the health and education sectors in the United States have indicated that this is often not the case. Careful studies of credit union costs, or of transaction costs for credit union depositors and borrowers, are largely unknown in developing countries, with one exception. Cuevas and Graham (1982) have shown in Honduras that borrower transaction costs are lower when dealing with credit unions than with commercial banks or the agricultural development bank. Studies of credit unions in Peru and Honduras (Vogel, 1984; Poyo, 1983) and the case study of BANCOOP presented below suggest that depositor transaction costs may also be quite low, since savings mobilization efforts have been very effective when adequate rates of interest were paid. The possibility of a future loan appears to be another important incentive that encourages individuals to place their savings with credit unions. This hypothesis is also supported by the case study of BANCOOP (Peru) presented below. On the other hand, most of the credit unions studied reported operating losses in spite of possible contributions of voluntary labor, and these operating losses would have generally been greater if adequate accounting had been made for delinquent loans.

4.18 Credit unions may not have lower operating costs because voluntary labor is an illusion, that is, members do not in fact provide services to credit unions unless they think that they will receive something in return. For example, members of credit union boards and committees are often found to have a disproportionate share of credit union loans, especially when interest rates are held below equilibrium and credit is rationed. Nonetheless, credit unions do seem to benefit from a club or group effect. This is quite straightforward in the United States where credit union membership is usually limited to the employees of a particular organization, so that it is relatively inexpensive to obtain information about potential borrowers and to collect overdue loans. In Latin America many credit unions have open membership, but information within the group and pressure from other members can be still an important factor in maintaining good loan repayment. On the other hand, there are some very large and successful credit unions in countries such as Ecuador and some small homogenous credit unions with high rates of loan delinquency.

4.19 The main difficulty encountered by credit unions in Latin America seems to be that the link between savings and credit is often undermined. Governments and international donors have often seen credit unions as a means to achieve objectives beyond pooling savings and providing credit, such as promoting increased agricultural output or improving incomes of the rural poor. Studies by Youngjohns (1980) and Robert (1979) on credit unions and other types of cooperatives outside of Latin America indicate how these institutions can be undermined when they are used as instruments
to reach objectives beyond their basic functions, and this is also supported by the case study of Nigeria presented below. In the case of credit unions in Latin America, resources have often been provided by international donors through credit union federations to increase production by small farmers who are credit union members. In addition to the fact that such projects may have specific defects in implementation, they have a general tendency to undermine incentives for savings mobilization (Vogel, 1983). In particular, credit unions have been discouraged from raising interest rates when such interest rate reforms are clearly necessary to maintain financial viability (Gadway, 1979; Vogel, 1984).

4.20 The main problem with credit unions in providing deposit opportunities for small savers is not that they are inappropriate forms of organization, but rather that they have been diverted to other purposes that are inconsistent with focusing on providing good service for depositors. They appear to have the ability to provide deposit services at low costs both to themselves and to depositors. In addition, economies of scope and various group or club effects should make them competitive providers of credit to these same depositors. What has often happened instead is that credit unions have been pushed into a role similar to that of agricultural development banks. This has tended to break down their advantage as lenders and to subject them to the same loan delinquency problems as those faced by development banks (Christen and Vogel, 1984).
V. CASE STUDIES

5.01 The preceding sections have argued that the evaluation of small savers schemes (including branch office expansion) must take into account several factors: (1) the institutional and regulatory context of the scheme; (2) the effect of the scheme on the yield and liquidity (accounting for risk) of small savers' instruments; (3) the extent to which the scheme decreases the resource cost of providing financial assets of a given yield, liquidity, and risk to small savers; and (4) the extent to which the FIs involved in the scheme lend to the households from which deposits are mobilized. The importance of these factors is apparent from the case studies that are presented in this section.

Case 1: Expansion of Bank Offices in India

5.02 The 1970s saw a significant transformation of the financial system of India. Following nationalization of the major commercial banks in 1969, the Government's banking policy has been to promote expansion in the number of branch offices, particularly in rural areas. Indeed, the number of offices tripled from 8,300 in 1969 to 25,000 in 1977, while the spatial diffusion of these offices also increased. If a "rural center" is defined as a center with 10,000 or fewer inhabitants, then the percentage of offices located in rural areas grew from 22% to 38% over the same period (Rangarajan, 1980). The main purpose of this expansion, from the Government's viewpoint, was to increase the flow of credit to the agricultural sector. This is clear from descriptions of the programs under which the expansion was enacted. For example, under the Lead Bank Scheme (introduced by the Reserve Bank in 1969):

... the various districts of the country came to be apportioned among all the public sector banks and three banks in the private sector. This scheme, by introducing commercial banks to rural areas, involved them in financing agriculture.... More than 11,000 rural offices of these banks are operating at present, as against barely 1,832 offices in June 1969. (Mukherjee, 1978) (See also Bhatt, 1972.)

Under this scheme, the percentage of commercial bank credit going to agriculture grew from 1.4% in 1969 to 8.2% in 1977, while the share of commercial banks in total formal agricultural credit grew from 1.8% in 1973 to 26.4% in 1977 (Reddy and Dakshinamurthy, 1978; Mukherjee, 1978). Similarly, the establishment of Regional Rural Banks, beginning in 1975, was mainly for the purpose of increasing the flow of credit to small farmers and other non-wealthy rural households, under the belief that these households were being exploited by informal moneylenders (Wadhva, 1979; Gupta, 1975; Kumar, 1983).

5.03 In spite of the stated purpose of branch office expansion, the most impressive result of the expansion has been increased deposit mobilization. This is indicated in two ways. First, the ratio of bank deposits to national income grew from roughly 15% in 1969 to 30% in 1979, while the growth rate of bank offices was significantly correlated with the
growth rate of bank deposits (not taking interest rates or inflation into account) during the period from 1951-52 through 1974-75 (Rangarajan, 1980). Second, it appears that most of the new bank offices in rural areas operated "as deposit centres rather than advance centres" (Pal, 1976) at least in the initial years after their establishment. The credit/deposit ratio for metropolitan offices (those in cities with more than 1 million people) was 88.9% in 1966 and 88.2% in 1975, while the corresponding ratios for rural offices were 41% and 52% (Bhole, 1978; Sinha, 1979). In other words, rural branches mainly stimulated deposits that were largely transferred to urban centers. Reddy and Dakshinamurthy (1978) thus speak of "the simultaneous operation of spread and backwash effects" on rural development caused by diffusion of bank offices.

5.04 Among the factors blamed for the relatively low credit/deposit ratios in rural areas are: (1) inadequate planning for the location of new offices, often due to lack of coordination among bank, national government, and state officials (Wadhva, 1979); (2) higher costs of lending to an agricultural clientele, as compared to the traditional clientele of banks, especially given shortages of skilled labor (Bhole, 1978; Pal, 1976); and (3) unfamiliarity of bank employees with local culture and social structure in rural areas (Kumar, et al., 1975). Whether credit rationing devices (increased paperwork and time costs for non-wealthy borrowers) caused by the subsidized nature of agricultural credit have contributed to low rural credit/deposit ratios is a question that has not been analyzed in the literature on Indian financial development. The lag of rural lending behind rural deposit mobilization undoubtedly prevented mobilization from being even more successful than it was. This is not only because of the directly depressing impact of lack of access to formal credit on the incomes of small savers, but also because the lack of formal credit in rural areas increases the profitability of informal lending at the expense of the demand for formal savings instruments (Bhattacharya, 1978).

5.05 Nevertheless, during the 1970s, FIs used a variety of innovative devices to accelerate deposit mobilization in both the urban and rural areas of India. Among the innovative savings instruments were: (1) contractual deposits, in which the maintenance of scheduled deposits over a certain period is rewarded with access to credit at the end of the period; (2) deposits linked with crop insurance; and (3) what are called "pygmy" deposits, in which banks hire outside employees to collect deposits at the homes of small savers on a regular, periodic schedule. Instruments (1) and (2) indicate the link between the access to credit and the motivation to deposit, while (3) shows the importance of lower transaction costs for small savers. Although economy-wide data are lacking, it appears from sample data from several banks that these and other innovative savings instruments accounted for a significant and increasing share of bank deposits during the 1970s (Rangarajan, 1980).

5.06 Data on the costs of these innovative instruments are available only for the Syndicate Bank, and then only for pygmy deposits (Thingalaya, 1976). These figures indicate that in 1975 the per unit cost of pygmy deposits (including interest) was lower than for regular savings and time deposits. The generality of this lower relative cost may be questionable
for other banks, however, as the Syndicate Bank has long been one of the most innovative FIs in India. This is reflected in its loan portfolio (a greater percentage of loans to small farmers than for other banks), as well as in its efforts to lower transaction costs for small savers. Nonetheless, the ability of the Syndicate Bank to implement such changes and still be the second most profitable bank in India (Thingalaya, 1976) shows the feasibility of innovative savings mobilization in developing countries.

Case 2: Potential for Savings Mobilization in Nigeria

In Nigeria, concentration of bank offices in the largest cities, especially Lagos, is quite severe. Brown (1966) cites data indicating that, in 1962, Lagos accounted for nearly one quarter of all offices, and roughly half of all offices were located in the four largest cities. At the same time, 20 cities with populations of over 20,000 had no bank offices. By 1977, there were 1,126 communities without banking facilities, of which 222 had populations in excess of 20,000 (Chike, 1983; Okonjo-Iweala, 1982). In this context, the Banking Decree of 1969 was designed to force banks (by government order) to expand into rural areas. Between 1977 and 1980, the 20 existing commercial banks were to open 200 additional branches, primarily in rural areas. The banks did indeed open 188 new offices by June, 1980, but the quality of financial services at these new offices has not yet been documented. In spite of capital subsidies by the government, Mbat (1982) observes that this office expansion does nothing, by itself, to decrease the lending risks which banks perceived in rural areas outside of their traditional urban centers. He also notes that "higher costs will be incurred by banks in recruiting, training and retention of bank personnel" (Mbat, 1982). In any case, even if these new offices feature low transaction costs for small savers, rural areas in Nigeria will continue to have relatively few bank offices for the foreseeable future.

5.08 Even in Nigeria's largest cities, services for small savers tend to be of low quality. Elagalam (1978) measured the length of time taken by simple transactions at commercial banks in Lagos and found that deposits and withdrawals often required upwards of an hour to complete, with an average 8 to 10 times longer than in the U.S., the U.K., or Germany. Elagalam also found that such wasting of time was only partially due to the inadequate quantity and training of bank staff. He makes several suggestions which, if implemented, might speed up small saver transactions at fairly low resource cost:

1. postpone clerical work as much as possible until the bank is closed to the public;

2. properly label counters so as to avoid confusion in bank queues;

3. maintain strict control of rowdy customers who disrupt bank queues; and

4. simplify the procedures for depositing and withdrawing money (e.g., by using thumb prints or I.D. photos instead of paper forms) especially for illiterate customers.
Elagalam does not explain why such simple innovations have not been implemented by the banks. Whether this is due to government regulations, collusive behavior of banks, or both, is not clear from his analysis.

5.09 In spite of the spatial concentration and low quality of bank services, there are several indications that innovative deposit mobilization is feasible in the Nigerian context. Adesimi (1982), for example, found average propensities to save in excess of 10% among small farmers in Ogun State. Oludimu (1982, 1983) analyzed data on deposit mobilization and credit allocation by cooperatives in Southwest Nigeria and found not only that these cooperatives mobilized substantial deposits but also that their financial viability was significantly correlated with the fraction of funds internally mobilized. The efficacy of linking deposits with credit for promoting the development of rural FIs is also indicated by the rapid growth of "pre-cooperative" organizations in Southwest Nigeria (Osuntogun and Adeyemo, 1981). The development of such deposit-credit links has undoubtedly been impeded in Nigeria by subsidized, government-funded rural credit programs. The specialized credit institutions participating in these programs typically de-emphasize deposit mobilization and are characterized by extremely high lending costs and skyrocketing default rates on loans (Osuntogun and Oludimu, 1981). In Nigeria, it thus appears that implementation of cost-effective deposit opportunities for small savers has been impeded by: (1) the lack of government action to promote innovative competition among FIs; (2) the institutional inertia of urban-oriented banks; and (3) the distortion of rural financial development by subsidized and externally funded credit.

Case 3: Savings Mobilization by BANCOOP in Peru

5.10 In Peru, commercial bank services are highly concentrated in the Lima area. As of June, 1980, metropolitan Lima accounted for 480 of the 825 bank offices in the country (roughly 58%). By December, 1982, the number of offices in Lima was 555 out of a total of 942 for all Peru (about 59%). Thus, in the period between June, 1980, and December, 1982, Lima accounted for 75 of the 117 new bank offices established in Peru (roughly 64%). Clearly the spatial distribution of bank offices in Peru is highly and increasingly concentrated.

5.11 Commercial bank deposits are also highly concentrated in Lima, though less so over time. As of December, 1978, roughly 58% of total bank deposits were at Lima offices. By March, 1982, this figure had decreased to about 46%. It appears that Peruvian banks attempted to increase deposit mobilization in cities other than Lima, possibly from small savers, during the period under consideration. This is also reflected in the growth of (relatively liquid) savings deposits compared to other bank liabilities. From December, 1978, through March, 1982, the share of savings deposits in total commercial bank deposits grew from 17.6% to 23.7% for all of Peru. This percentage was generally higher in areas outside of Lima—the areas where bank deposits grew fastest in the period under consideration.

5.12 Along with the concentration of commercial bank deposits in Lima, there has been a drain of funds from other areas to Lima. For example, in
December, 1978, the credit/deposit ratio for Lima offices was 81.5%, but for all of Peru, it was only 63.9%. By December, 1982, the situation had improved, as the credit/deposit ratio for Lima had fallen to 62.2%, while the ratio for all Peru was 59.2%. This narrowing gap may, however, reflect the growth of lending in large cities other than Lima, rather than in rural areas, as the credit/deposit ratio for Aucayaco-Tingo Maria (a rural area) was only 21.1% in December, 1982.

5.13 This centralized banking system was one feature of the situation facing the Banco Nacional para las Cooperativas (BANCOOP) when, in January, 1979, it undertook to expand its deposit and lending operations under a USAID project. The main goal of this project was to determine if BANCOOP's services could be extended to a more rural, non-traditional clientele. A particular concern was to accelerate deposit mobilization, especially in the project's target areas of Huancayo and Aucayaco-Tingo Maria.

5.14 Two other features of the situation facing BANCOOP are worth noting. First, deposit interest rates in Peru are subject to government control and were negative in real terms during the period of the project (1979-82). However, dollar denominated deposit facilities were available at banks after 1978, and these attracted most of the increase in commercial bank deposits. In addition, a large increase in the ceiling rate on domestic currency deposits occurred in January, 1981 (from 30.5% to 50.5% for savings deposits). Although this increase was insufficient to make the real yield on savings deposits positive, it was still a significant improvement, especially since BANCOOP and the commercial banks generally paid the legal maxima on their liabilities and were able to raise effective yields further through more rapid compounding of interest. The significance of this interest rate increase can be gauged from a comparison of BANCOOP's deposit mobilization success (see below) with the fate of the credit unions that failed to raise their interest rates as inflation accelerated in the late 1970s and early 1980s and consequently experienced decapitalization and decreased viability as institutions (Gadway, 1979; Vogel, 1984). Second, the transaction costs incurred by small savers at commercial banks in Peru are reportedly quite high. Not only are long lines typical, but banks are generally open to the public only from 9 a.m. to 1 p.m., Monday through Friday. BANCOOP's hours were more adequate, from 3 p.m. to 5 p.m., in addition to the above hours, and also on Saturdays. BANCOOP also offered incentives to employees during its savings campaigns in order to decrease paperwork and shorten the lines facing savers. These campaigns also featured prizes and raffle tickets for depositors and were well publicized via all available media.

5.15 The deposit mobilization aspects of the USAID/BANCOOP project have been extensively analyzed by Burkett (1984). In this analysis, statistics for individual savings accounts at the project offices indicate that the bulk of these deposits were held by non-wealthy households. Calculations for accounts opened during BANCOOP's savings campaigns indicate that these campaigns caused mobilization to accelerate. Furthermore, substantial amounts of deposits were mobilized from household-firms (small farmers, shopkeepers, etc.) as well as from children and housewives at these target offices. Regression analysis for the period January, 1979,
through March, 1982, shows that both nominal deposit rates and the rate of inflation were significant determinants of the demand to hold savings deposits at BANCOOP. The crucial role of transaction costs in BANCOOP's deposit mobilization success is highlighted by the fact that BANCOOP made significant gains in the market for savings deposits relative to competing commercial banks even though the interest rates paid on savings deposits were the same and even though most of the increase in commercial bank deposits was in dollar denominated deposits which were not offered by BANCOOP. In addition, BANCOOP mobilized relatively more deposits outside of Lima compared to commercial banks. BANCOOP's innovative stress on lowering transaction costs for depositors appears to have given it a competitive advantage in the market for funds, particularly from rural household-firms and other small savers.

5.16 The USAID/BANCOOP project demonstrates that even a small, urban-based FI can successfully expand its deposit operations into rural areas if it cuts transaction costs and offers maximum interest yields on financial assets, especially on savings deposits which are most attractive to non-wealthy households. The project was not, however, without its negative aspects. First, the prizes offered to depositors during some of BANCOOP's savings campaigns were inappropriate for non-wealthy, and especially rural, households, and analysis of the savings campaigns indicates the relative lack of success of these campaigns. Household welfare would be greater if premia were paid in the form of cash rather than commodities. Second, the credit side of BANCOOP's operations was less successful than the deposit side in reaching rural and non-wealthy households. Indeed, a project memo states the following:

BANCOOP is an urban institution. The vast majority of its credit operations are discounted documents, with terms of 30 to 90 days and interest deducted in advance, rather than loans ... Almost none of its workers feels comfortable with agricultural loans, citing the high risk associated with any agricultural endeavor without any backing facts or experience. This attitude was examined in detail at one of the branches formed with AID support in a more rural area - Tingo-Maria in the high jungle of Peru. A clear double standard existed whereby urban discount operations were carried on with a minimum of analysis and red tape, while small farmers for all intents and purposes could not obtain loans due to the branch's felt needs for vast quantities of information, much of which they believe could only be obtained by on-site inspection, plus the demand for real guarantees other than crop liens. (Wohanka, 1980).

5.17 It is interesting to speculate whether the failure to lend more to non-wealthy, rural households was a contributing factor in the later shrinkage in the real value of BANCOOP's savings deposits (Burkett, 1984). It may be that an FI which mobilizes funds from non-wealthy, rural households and funnels them to wealthier, urban borrowers becomes significantly less attractive to its rural depositor clientele. As discussed above, a two-way relationship with this rural, non-wealthy clientele, involving both deposits and credit, may be necessary for households to maintain a
permanent relationship with the FI. Furthermore, questionable loans after the project ended contributed to a liquidity crisis at BANCOOP, thereby indicating the importance of appropriate asset management for FIs, in addition to innovative deposit mobilization techniques. There may be significant negative externalities if such experiences lead to an enduring suspicion of formal FIs on the part of rural, non-wealthy households with savings potential.
VI. CONCLUSION

6.01 Transaction costs, as well as security, yields and liquidity, appear to be crucial determinants of the demand for financial assets, especially among low income savers. This is because of the essential role of working capital management in determining the asset portfolios and income levels of these households. If transaction costs of deposits are high, then small savers will be deterred from using them and rely on either cash or real goods for working capital. Thus, successful small saver programs will have to make deposits easily accessible, cut down on paperwork and lines, etc.

6.02 The success of programs aimed at small scale savings also depends on the level of competition among financial intermediaries and the institutional and regulatory environment for such competition. Branch office expansions, or other changes in the quality of deposit services, will have a low benefit-cost ratio if they largely reflect inefficient regulatory avoidance in response to interest rate ceilings or other controls. In this case the alternative to mobilizing deposits through the use of real resources in branch networks is simply to raise interest rates. In contrast, programs to expand deposits will have a high benefit-cost ratio if they largely represent innovations, that is, actual decreases in the resource cost of providing financial assets of reasonable yield, liquidity and risk to small savers. Technical assistance and temporary subsidies to financial intermediaries to accelerate such innovations in deposit mobilization may be justified in some cases, where specific imperfections or externalities can be identified. However, the most efficient means of improving deposit opportunities generally involve the removal of regulatory constraints, including interest rate ceilings, and the promotion of competition among financial intermediaries. There appear to be no convincing economic arguments for substantial subsidies on a continuing basis to promote deposit mobilization or for regulations requiring rapid and continuing increases in rural branch office networks of financial intermediaries. It is also worth noting that competition for deposits and innovation in deposit taking will be hindered to the extent that intermediaries have access to low cost funds from the government or foreign sources.

6.03 Reciprocity, that is the ability to get a loan as well as make a deposit, also appears to be an important factor in the success of programs aimed at mobilizing savings from low income households. A comparison of the experience of postal savings banks, credit unions, informal savings and credit associations, and other institutions suggests that access to credit and confidence in the viability of financial intermediaries are important determinants of the decision to save in financial forms. Thus, the extent to which financial intermediaries lend to the same general clientele from which deposits are mobilized affects the success of small saver schemes implemented by these financial intermediaries. Institutions that provide both deposit and lending facilities to the same clientele also can enjoy significant cost advantages compared to those that do not. These advantages must be balanced against possible losses of specialization.
economies. The net benefits from reciprocity also depend on the degree to which the extension of deposit-only facilities does generate some savings which can be transferred to other uses versus the possible benefits from investing such flows in the areas where they were generated. On balance, reciprocity is likely to have a positive impact on social welfare.

6.04 Innovations in deposit mobilization in India and Peru suggest that the costs of small saver programs need not be prohibitive. However, schemes that involve heavy commitments of scarce resources such as investment capital or trained manpower are probably not feasible and should be avoided. The services provided to small savers by informal financial intermediaries, such as rotating savings and credit associations, indicate that projects that attempt to forge linkages between formal and informal FIs can yield significant benefits. It would be useful to try some experimental programs oriented toward exploring the costs of such linkages and other specific innovations in financial technology in the light of the specific resource bottlenecks (e.g., skilled labor) faced by most developing countries.

6.05 In the short run, the potential contribution of small savers to aggregate savings may not seem worth the cost of increasing their deposit opportunities. Similarly, deposit mobilization programs, even if successful, cannot be expected to obviate the usefulness of further attempts to increase the flow of resources to non-wealthy household production units such as small farmers. Nonetheless, the crucial role of safe, liquid financial assets of reasonable yield in the income-generating decisions of household-firms and the long-run effects of compounded rates of income growth imply that the benefits of improved deposit opportunities can be much greater than those indicated by a static macro perspective. Moreover, successful programs in some Asian and African countries indicate that well-run small scale saving programs can generate financial stocks equivalent to 2 to 4% of GDP, a substantial sum.

6.06 Programs aimed at improving the opportunities of small savers also have favorable distributional aspects. Financial intermediaries almost inevitably deal with a larger number of savers than borrowers. It follows that innovative small saver schemes can directly increase the welfare of more non-wealthy households than credit programs can. Unfortunately, the theoretical and empirical literature on financial markets in developing countries, as well as the efforts of governments and international agencies to improve financial services, has tended to concentrate on the credit side of these markets. This concentration represents a significant "bias against savings" (Burkett, 1984) in which deposit mobilization has almost become a "forgotten half of rural finance" (Vogel, 1984). This bias is partly due to the notion that the vast majority of the population in developing countries is incapable of saving - a notion which is being rapidly discredited by theoretical and empirical work on household savings in these countries (Adams, 1978 and 1984; Von Pischke, 1978).

Governments and international donors must seek to supplement the resources available in non-wealthy areas of developing countries, without reinforcing the bias toward a credit focus, and transfer resources in ways that encourage rather than retard effective deposit mobilization, especially from small savers.
References


Cuevas, Carlos, and Douglas Graham. 1982. "Interest Rate Policies and Borrowing Costs in Rural Financial Markets." Department of Agricultural Economics and Rural Sociology, Ohio State University, Columbus, Ohio. Processed.


Iqbal, Farrukh. 1982. "Rural Savings, Investment, and Interest Rates in Developing Countries: Evidence from India." Rand Corporation, Santa Monica, California.


DISTRIBUTORS OF WORLD BANK PUBLICATIONS

ALGERIA
Office des Publications Universitaires
1, place centrale de Ben-Aknoun
Alger

ARGENTINA
Carlos Hirsch, SRL
Galera Guemes
Florida 165, 4th Floor-Oic. 453/465
1333 Buenos Aires

AUSTRALIA, PAPUA NEW GUINEA, FIJI, SOLOMON ISLANDS, AND VANUATU
Overseas Document Delivery
Box 506, GPO
Sydney, NSW 2001

AUSTRIA
Gerold & Co.
A-1011 Wien
Graben 31

BAHRAIN
MEMRB
P.O. Box 22103
Manama Town 317

BANGLADESH
Micro Industries Development Corporation
C-46/12, BBD Bagh
Dhaka

BELGIUM
Publications des Nations Unies
B-1000 Brussels

BRAZIL
Publicacoes Tecnicas Internacionais Ltda.
Rua Peixoto Gomide, 209
01409 Sao Paulo, SP

BRAZIL (AMERICAS)
Rua Peixoto Gomide, 209
01409 Sao Paulo, SP

BRAZIL (EUROPE)
Desapalvada 15
146 Prince Edward Road, W
Casablanca 5104

BRAZIL (AFRICA)
Apartado Aereo 4430
165-4th Floor-Ok.
4531465 75116 Pans

BRAZIL (ASIA)
560009

BRAZIL (PACIFIC)
Avenida do Roi 202
Praia de Itaipu
Paranagua

BRAZIL (SAMOA)
5 Avenue de Carthage
Tunis

BRAZIL (SOUTH AFRICA)
1060 Brussels

BRAZIL (REPUBLIC OF KOREA)
Pan Korea Book Corporation
P.O. Box 101, Kwangwhamun
Seoul

KOREA, REPUBLIC OF
Pan Korea Book Corporation
P.O. Box 101, Kwangwhamun
Seoul

KOREA, REPUBLIC OF
Pan Korea Book Corporation
P.O. Box 101, Kwangwhamun
Seoul

KUWAIT
MEMRB
P.O. Box 5465

MALAYSIA
University of Malaya Cooperative Bookshop, Limited
P.O. Box 1127, Jalan Pantai Baru
Kuala Lumpur

MEXICO
INFOTEC
Av. del Valle 153-11, Col. del Valle Deleg. Benito Juarez
03100 Mexico City

MOROCCO
MEMRB
2 Rue Mouiere Racine
Casablanca

NETHERLANDS
Medical Books Europe. BV (MBE)
Noorderwal 38.
7241 RL Lochem

NEW ZEALAND
R. Hill and Son, Ltd.
Private Bag
New Mark
Auckland

NIGERIA
University Press Limited
Three Crowns Building Jencho
Private Mail Bag 6095
Ibadan

NORWAY
Tunam Karl Johan, A.S.
P.O. Box 1177 Sentrum
Oslo 1

PAKISTAN
Mirza Book Agency
65, Shahrah-e-Quaid-e-Aram
P.O. Box No. 729
Lahore 3

PANAMA
Ediciones Libreria Cultural
Panamena, S. A.
Av. 7, Esquina 14
Panama Zone 1

PERU
Editorial Desarrollo S.A
Apartado 3824
Lima

PHILIPPINES
National Book Store
701 Rizal Avenue
Metro Manila

PORTUGAL
Livraria Portugal
Rua do Carmo 70-74
1200 Lisbon

SAUDI ARABIA
Jarir Book Store
P.O. Box 3196
Riyad 11471

SINGAPORE, TAIWAN, BURMA
Information Publications Private, Ltd.
02-06 1st Fl., Pei-Fu Industrial Bldg., 24 New Industrial Road
Singapore

SOUTH AFRICA
Oxford University Press
Southern Africa
P.O. Box 1141
Cape Town 8000

SPAIN
Mundi-Prensa Libros. S. A.
Castello 37
28001 Madrid

SRI LANKA AND THE MALDIVES
Lake House Bookshop
P.O. Box 244
Sir Chittampalam A. Gardiner Mawatha
Colombo 2

SWEDEN
For single titles:
ABCE Fritznes Kungl. Hovkopfhandel
Attn: Mr. Eide Segerback
Regeringsgatan 12, Box 16356
ST-103 27 Stockholm
For Subscription orders:
Wennergren-Williams AB
Box 30004
S-104 25 Stockholm

SWITZERLAND
Librairie Payot
6 Rue Grenus
Case postal 381
CH-1211 Geneva 11

TANZANIA
Oxford University Press
P.O. Box 5299
Dar es Salam

THAILAND
Central Department Store
306 Silom Road
Bangkok

TRINIDAD & TOBAGO
Systematics Studies Unit
55 Eastern Main Road
Curieuse
Trinidad, West Indies

TUNISIA
Societe Tunasiwna de Diffusion
5 Avenue de Carthage
Tunis

TURKEY
Haset Kitapci A. S.
469, Isisli Caddeesi
Beysolu-Istanbul

UGANDA
Uganda Bookshop
P.O. Box 7145
Kampala

UNITED ARAB EMIRATES
MEMRB
P.O. Box 6907
Sharjah

UNITED KINGDOM
Northern Ireland
Micoinfo Ltd.
P.O. Box 3
Alton, Hampshire GU3 4PG

VENEZUELA
Libreria del Este
Apartdo, 60.337
Caracon 1060-A

WESTERN SAMOA
Wesley Bookshop
P.O. Box 237
Apia

ZIMBABWE
Textbook Sales Pvt. Ltd.
Box 3799
Harare