Economics Division Working Papers

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Banco Solidario S.A.: microenterprise financing on a commercial scale in Bolivia

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n.a.	**Not applicable**
..	**Not available**
-	**Zero**
.	**Insignificant**

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Abstract

Banco Solidario S.A. began operations in Bolivia in 1992 as a private commercial bank established specifically to provide financial services in the form of loans and deposit facilities, to microenterprises in that country. This paper examines the bank's successful, albeit brief, experience and draws some conclusions as to how this has been achieved in a field that has been almost completely avoided by commercial banks operating in developing economies.

Microenterpirses are the small business undertakings pursued by the poor of developing economies. Operating mainly in the informal sectors, they are an important element in the generation of job opportunities and of national product. However, most official and formal development effort is directed at the formal sectors, leaving the capital requirements of the potentially very productive microenterprises to the uncertainties and high costs of informal moneylenders.

For some years now, a number of non-government organisations have been developing microenterprise financing operations, applying commercial terms to their loans. Funds for such operations have been gathered in the form of grants and subsidised loans from public subscription and a number of official national aid agencies. The more successful of these have formed banking organisations which have been able to tap into commercial sources of funds, primarily the deposit markets.

Banco Solidario S.A. is probably the most successful of such transformations.

6 Banco Solidario S.A.: microenterprise financing on a commercial scale in Bolivia[1]

Two important themes have run through development policy discussions so far in the 1990s. The first is that, despite the very considerable advances that have been made over the previous four decades, or so, in raising the productive capacities of developing economies and their people's standards of living, poverty remains a major problem in humanitarian, political, social and economic terms. The second theme is that, in the face of the growing demands on the willingness and the capacity of the industrial world's official sectors to provide concessional and grant funding to the developing world, greater reliance needs to be placed on market mechanisms and on private sectors to provide the necessary funding and technical inputs for development.[2] This holds just as true for the required vigorous attack on poverty as it does for major areas of economic infrastructure development and national institution building.

Banco Solidario S.A. (BancoSol) of Boliva is possibly the best example of a financially viable private sector venture into microenterprise financing. As a profitable commercial bank that is successfully raising funds on national and international money markets on commercial terms, for on-lending to poor microentrepreneurs, BancoSol appears to be supporting both development policy thrusts.

Background

BancoSol began operations in Bolivia on 10 February 1992, as a private commercial bank established specifically to provide financial services to microenterprises in a developing country. Two banks supplying such services predate BancoSol, the Grameen Bank in Bangladesh and Bank Rakyat Indonesia, but these are government-supported undertakings.

At the end of June 1994, BancoSol had about 57,000 client borrowers and a loan portfolio of almost US$27 million, returning over 20 per cent on equity capital and 3 per cent on total assets. BancoSol is already operating profitably. [3]

According to its Deputy General Manager,[4] BancoSol is in the final stages of transition from its NGO origins to a fully fledged commercial banking operation. Thus, enough has been achieved by BancoSol to provide a reasonable basis for judgment on its future as a self-sufficient, profitable, viable financial intermediary. The essential features of a possibly replicable model seem to be in place.

The bank's objectives are consistent with the Bolivian government's new economic policy of encouraging private sector development, including that of the informal sector. The government has recognised the considerable productive potential of the informal sector, and understands the limitations placed on its activities by the concentration of existing commercial banking services on the relatively (numerically) small formal sector economic entities.[5] The government is currently reviewing laws and regulations pertaining to the financial sector in order to enable the creation of a wider range of credit institutions capable of catering to the financial needs of individuals and small business enterprises in Bolivia. It has been very informally estimated that these reforms could double the economy's private sector credit base, currently around US$2 billion.[6]

The informal sector in Bolivia has grown very rapidly in recent years with the migration of rural population to the cities, and also because of the decline of employment opportunities in the mining industries that have been severely affected by declining commodity prices. One estimate is that 5.2 million Bolivians rely for their livelihood on the informal sector. The same source suggests that 60 per cent of the economically active urban population is employed in the informal sector, and 90 per cent in rural areas, while the informal sector generates about 30 per cent of Bolivia's GDP. [7] The potential market in which BancoSol and other microcredit providers are operating in Bolivia has been roughly estimated at between 500,000 and 750,000 enterprises.[8]

Formation of BancoSol

BancoSol was conceived by the NGO, Fundacion para la Promocion y Desarrollo de la MicroEmpresa (PRODEM). PRODEM sought to establish a commercial organisation because it had reached the limits of its capacity to grow on the basis of grant funding, and needed to be able to approach money markets direct on commercial terms, if it was to expand its activities to meet the growing demand for credit from microentrepreneurs in Bolivia.

PRODEM was created in 1986 as a specialist NGO for microenterprise development by a group of NGOs and individuals (notably the US-based ACCION International); it was strongly financially supported by the United States Agency for International Development (USAID). PRODEM's original purpose was to provide access to credit to the microentrepreneural sectors of Bolivia, thus broadening employment opportunities, encouraging investment in microbusiness, and increasing the level of income generated by this sector. The credit programs generated by PRODEM provided working capital for small scale production, trading and service activities, on commercial terms, through a solidarity group lending operation, a technique designed to overcome the target clients' inability to provide collateral in support of borrowing from the formal sector.[9] PRODEM now sees a wider role for itself: 'The purpose of PRODEM is to open new areas, to create new products, so that beneficiaries can move into higher economic levels.'[10]

The incorporation of BancoSol was a complex and lengthy process, reflecting the difficulties inherent in the novelty of the concept. On the one hand, the non-government organisations (NGOs), other entities involved in development assistance financing, and a number of influential Bolivian interests had to be persuaded to become involved in both the establishment process and the provision of the necessary initial capital. On the other hand, Bolivian authorities responsible for the supervision of the financial sector approached the proposal with an understandable degree of caution, carefully scrutinising each element of the proposal and ensuring that all statutory and regulatory requirements were met. The processes of feasibility study and design, mobilisation of financial support and incorporation in Bolivia were made the responsibility of a steering committee of interested parties, Comite Promotor del Banco para la Microempresa (COBANCO).

BancoSol was established from the outset as a full commercial bank. An alternative considered by its founders was establishment as a *Banco Departamental*, a bank with operations limited to one province. While such banks are able to make loans and provide deposit services, they are otherwise very limited in the activities they can undertake, especially in their geographic scope of operations. The founders of BancoSol therefore opted for the greater flexibility and potential for institutional growth and development provided under the commercial bank form.

Banks are established in Bolivia under regulations administered by the government's Superintendency of Banking, which is also responsible for the supervision of banking and the finance industry as a whole. BancoSol is a corporation under Bolivian law. Its articles and laws reflect comprehensively the requirements of both the banking regulations and corporate laws of Bolivia. The notes on the financial statements in the audited reports state, in respect of formation and objectives:

> The bank was founded on December 11, 1991, with the main purpose of encouraging internal savings, of helping self-employed micro-entrepreneurs and fostering the creation and development of microenterprises by financing their operations and promoting the concept of self-employed private enterprise.

Although the preparatory work and the negotiations involved with officials were complex and protracted, the establishment of the bank was relatively simple. PRODEM transferred assets (loan portfolio and real assets) to BancoSol in exchange for 28.7 per cent equity.[11] When the bank opened for business on 10 February 1992, its loan portfolio was US$3,960,000 comprising some 14,300 active former PRODEM client borrowers, together with the branch establishments servicing these clients. At the same time, BancoSol also assumed liability for a PL480 USAID loan to PRODEM of about US$850,000. Other equity investors[12] provided cash, altogether mobilising an initial equity capital base of US$4.7 million.[13]

BancoSol has retained PRODEM's method of making loans and its social objective of serving the poorer sectors of the Bolivian economy. However, there is now the important objective of profitability as the essential ingredient of sustainable financial viability as a commercial undertaking. BancoSol continues a close relationship with PRODEM, acquiring progressively PRODEM branches in urban areas as they mature. These acquisitions have been made at full book value, including the costs incurred by PRODEM in developing and establishing the branches and their personnel.

In commenting on the importance of BancoSol's profitability to its shareholders, PRODEM's President, Roberto Capriles has said: 'PRODEM as a shareholder expects to get dividends in order to provide capital for its own activities.' Indeed it has been elsewhere suggested that PRODEM sees dividends from BancoSol being the major source of funds for supporting its own programs (Glosser 1993).

Organisation of BancoSol

An organisation chart and details of the major officials of the bank are provided in Appendix C.

The highest decision-making body of the institution is the Shareholders' Assembly, composed of the bank's seventeen shareholders. Their number includes representatives of Bolivian commercial banks and private individuals, foreign and local NGOs and several international agencies involved in supporting development activities. The major shareholders are PRODEM with a 33.6 per cent holding and the Inter-American Investment Corporation, with 24.8 per cent.[14]

At its annual meetings, the Assembly considers the Directors' reports on the state of BancoSol finances; the Assembly's approval is required for any changes in the bank's statutes, dissolving or prolonging the life of the institution, changes in its capital and sales of more than 10 per cent of the total value of the bank's fixed assets. Otherwise, the activities of BancoSol are under the overall supervision of a Board of ten Directors; these are appointed by the Shareholders Assembly, a number of whom are from among its members.

Day-to-day operations are conducted under the general supervision of the Gerente General, Francisco Otero.[15] There is a full complement of professional banking management and service personnel. Senior and line management positions have been filled by people with professional banking and other financial experience and qualifications gained in Bolivia and abroad. Many of the service personnel have welfare and NGO backgrounds, particularly those who were taken on with the transfer of business from PRODEM.[16] With the passage of time and the growth of the bank, the recruitment of people with relevant financial backgrounds and qualifications is being emphasised. At the end of June 1994 the bank employed 394 staff of whom 172 were field staff, working directly with borrowers.

The bank's head ('national') office is in La Paz; it is responsible for the overall policy and administration of the bank, and carries sole responsibility for funding the bank. As well as the head office, there are currently four regional branches (La Paz, Santa Cruz, Cochabamba and Oruro) and 22 agencies—the shop-front establishments, directly responsible for client services. Regional branches are responsible for the coordination and oversight of the agencies within their jurisdiction.

All units of the bank operate as profit centres, head office and regional branches being required to break even, with the responsibility for profitability in effect resting on the individual agencies. Agencies are required to cover their administrative costs as well as their individual shares of national and regional office administrative costs, allocated across agencies pro rata to loans.

Head office 'lends' funds to regional branches which, in turn, lend them to agencies for on-lending to clients; the internal interest rate is 'around 10 per cent' on funds. Cash management for day-to-day operations is the joint responsibility of regional branches and agencies; agencies retain only funds known to be required for operations the following day, returning surpluses to regional branches, or they are supplemented for any shortfall in cash requirements by regional branches. Once an agency generates about 800 group loans, and the potential demand for loans is judged adequate to support such expansion, a new agency is created within the region.

Over the past two years the bank has developed comprehensive management and financial control systems, manuals and procedures. Some of these have been designed by technical assistance provided by donor agencies and others have been commissioned directly by the bank. The bank's management anticipates early implementation of those systems, etc which are not yet in place.

Banking services provided

BancoSol provides both loans and deposit facilities to its clients. Both are available in US dollar and in Bolivianos. As indicated above, loans are administered by the bank's agencies, which also administer the passbook and fixed term deposits of clients. Other deposit services (through negotiable certificates of deposit) are managed through the head offices. Head office is also responsible for interbank and institutional loans.

Loans

At the end of June 1994, the bank's loan portfolio stood at US$27,228,310, compared with US$8,814,269 at the end of December 1992. Client borrower numbers had risen over the period from 14,300 taken over from PRODEM in 1991 to almost 57,000 at the end of June 1994.

BancoSol lends to individuals on the basis of group guarantees. Technically, under Bolivian banking regulations, such loans are loans made under personal guarantee. The regulations limit the amount of these made by commercial banks to twice the value of the institution's equity capital, except for loans of less than US$2,000.[17] The rules require loans of over US$20,000 to be reviewed twice each year, and smaller loand annually; in practice, BancoSol reviews its loans monthly.

The average size loan to individuals is currently almost US$500. Loans are administered as group loans, and these range from the base or minimum initial group loan of US$300 to US$20,000. Loan periods vary according to the needs of each client group and their record of performance; loans extend from two months initially to one year, and the average term of loans is currently 6-7 months. Repayments are arranged on weekly, two-weekly or four-weekly basis, and the administration of the debt on behalf of the borrowing group is made the responsibility of a nominated member of each group. Repayments are closely monitored and field officers visit borrowers who are delinquent by as little as one day. Partly because of the intensive monitoring of loans, and partly because it is believed that the 'poor' are more punctual in honouring their obligations, loan losses are a fraction of one per cent.

Current interest rates on loans are 4 per cent per month on loans denominated in Bolivianos and 2.5 per cent per month on loans denominated in US dollars. New borrowers are required to borrow in Bolivianos, but most clients quickly graduate to US dollar loans.[18] Interest is charged on reducing balances. The bank charges 2.5 and 1.0 per cent commission on each Bolivianos and dollar loan, respectively, deductible from the amount disbursed.

The effective interest rate on US dollar loans is about 30 per cent per annum, compared with rates of 18 per cent on personal loans secured by guarantee charged by conventional commercial banks in Bolivia.[19] The BancoSol rate is half and less of rates charged to its client group for unsecured loans from moneylenders. Adverse comments have been made on the spread between BancoSol loan interest rates and the bank's average deposit interest rate on US dollar deposits of about 11 per cent per annum. However, the spread appears to be justified in terms of the relatively high labour costs of lending (and borrowing) small amounts. The management of BancoSol is keeping the issue under review in the hope that efficiencies arising out of economies of scale and a growing base of experience will enable them to reduce lending interest rates in a manner that is consistent with maintaining profitability.

A degree of controversy surrounds the loan interest rate issue. There is, of course, world-wide a strongly critical attitude on the part of many in the NGO community who see microenterprise financing on 'commercial' terms as a form of 'exploitation' of the poor, believing that the poor should be provided with subsidised credit or even grants in order to help them with their microenterprise. Such a position is tenable only if the providing institutions are able to rely on a continued (and almost limitless) flow of concessional or donor funds for transmission to microentrepreneurs, which they clearly cannot expect. BancoSol is performing a useful function by channelling private sector funds, raised by it in the market on commercial terms, into this sector. The costs of borrowing, plus the high administrative cost of lending to microenterprises, need to be covered if the lending institution is to remain viable. There is every evidence that, given the opportunity, the 'poor' can and are willing to borrow at what a basically commercial rates, with considerable profit to themselves. There appears to be no lack of demand for microenterprise development loans at commercial rates, only a lack of the facilities capable of undertaking the necessary financial intermediation.

BancoSol does not have any empirical information on the impact of its activities on the living standards of its clients. The anecdotal evidence is impressive, with many examples of side-walk vendors, and back-yard factories progressing with the bank's financial assistance to become substantial enterprises with permanent establishments and large numbers of employees. The evidence provided by clients' performance as borrowers strongly supports the view that, on the whole, they prosper. Indicators are

- Default rates on loans are almost negligible, less than one percentage point of outstandings
- Retention rates of borrowers are high; there were 11,140 pre-1992 clients on the books at the end of December 1992, with loan averages of US$484, and by the end of 1993, 10,229 of these clients remained active, with average loans of US$824
- In 1992, the retention rates of clients was 70 per cent and 85 per cent in 1993
- The average size of loan is growing (in real terms); during 1992, 14,530 new clients took up loans averaging US$238; by the end of 1993, 12,660 of these same clients carried loans averaging US$649; in 1993, 21,943 new clients were lent an average of US$341.

Whether there is any more than an academic reason for attempting to undertake socioeconomic studies to prove the benefit of this form of intermediation, is doubtful. The facts that the queues are growing and the bank is profitable, speak for themselves.

Deposits

At the end of June 1994, clients' deposits[20] with BancoSol stood at US$25,970,526, about 80 per cent of which are denominated in US dollars. At the end of December 1992 clients' deposits had stood at US$1,865,280, comprising mainly forced savings off borrowers.[21]

An important reason for establishing BancoSol as a commercial bank was to take advantage of the ability of a commercial bank to attract funds from the public in a variety of forms. NGOs are not permitted to offer deposit facilities under Bolivian law, while the ability of *Banco Departamental* (credit institutions limited to operations in one province) to do so is limited. Important in the bank's philosophical approach to its business is that it provides a secure and accessible service to relatively poor people, not available to them previously and elsewhere in the Bolivian financial system.

There are two forms of what amount to passbook deposit facilities provided, available in both Bolivianos and US dollars

CuentaLibre, accessible on demand, currently offering 6 per cent per annum on a minimum balance of US$100 and 15 per cent on a minimum balance of Bs500

CuentaCapital, accessible twice monthly, currently offering 4 per cent per annum on balances below US$100 and 8 per cent on balances over US$100, and 14 per cent and 18 per cent on corresponding holdings around Bs500.

At the end of June 1994, client borrowers' voluntary savings deposits (including an unspecified amount of NCDs, described below) amounted to Bs 5,407,000 (US$1.2 million) in both US dollars and Bolivianos; about 96 per cent were in US dollars. There were 7,196 accounts; the average size of the 2,262 Bolivianos accounts was Bs91, while the average size of the US dollar accounts was US$225.

The third deposit facility is the negotiable certificate of deposit (NCDs), negotiable in the Bolivian money market, called *DepositoSol a Plazo Fijo*. These are available in US dollars only for minimum amounts of US$200, offering 9.5 per cent per annum for one month and ranging up to 11.5 per cent for 12 months. Deposits of over US$10,000 attract higher rates on request. BancoSol offers marginally higher interest rates on these than do the ordinary commercial banks.

On the basis of available information, it is not possible to isolate accurately the proportion of clients' deposits in NCDs being taken up by small savers. The most that can be said is that small savers accounted for about US$3.7 million[22] or 14 per cent of total clients' deposits at the end of June 1994. The balance comprises mainly NCDs of formal sector investors, both domestic and international.

The remarkable growth in clients' deposits, suggests a very strong untapped demand for the savings facilities being offered by the bank. In this light, BancoSol's projected deposit growth to US$50 million by the end of 1997 appears modest. The senior Bolivian banker referred to earlier said that the industry did not fear competition in this regard from BancoSol, as it was tapping a market in which other commercial banks were not interested as the costs of administering such deposit facilities were too high. However, given the apparent growing popularity from formal sector clients of the bank's negotiable certificates of deposit (NCDs), this confidence might be misplaced.

Assessment of financial performance

Audited financial statements are available for fiscal years ending December 1992 and 1993. BancoSol also provided access to detailed financial records as at June 1994. The form and content of these financial statements are conventional and comprehensive. Summaries of balance sheets and statements of income for these periods are presented in Appendices D and E.[23]

The bank's growth has so far been extraordinary; total assets have increased from US$11.8 million at the end of 1992 to US$34.3 million at the end of 1993, and US$44.1 million by end-June 1994. In short, the bank has quadrupled in size in two and one-half years, from a significant base.

This growth has been driven mainly by the growth in demand for its loans from the informal sector, US$27.2 million at end-June 1994, compared with US$8.8 million at the end of 1992. To some extent, the bank has been fortunate in that it has been able to take advantage of a period of very high liquidity in Bolivia to achieved a situation where it is mobilising, or is on the verge of mobilising, the funds required to meet the credit needs of its clients from the deposit market.[24] It is difficult to determine how volatile the current monetary situation in Bolivia is. If the capital inflows supporting the current high level of liquidity in the economy as a whole diminishes, the bank will need to consider alternative sources of funding and/or increasing interest rates, in order to support continued growth.

Other sources of funding have also grown during 1993, notably institutional borrowing, which peaked at the end of 1993 at US$12.5 million and have since declined to US$10.8 million, reflecting the strong inflow of funds from NCDs. Except for an outstanding USAID PL480 loan of US$1 million, which attracts an interest rate of 8 per cent per annum, institutional borrowing is at fully commercial rates.[25] A significant feature of the growth of NCDs is the apparent confidence in BancoSol shown by local banks in providing BancoSol with interbank financing facilities. Foreign institutional loans are also a significant demonstration of confidence in the bank by these lenders.

At the end of 1993, the bank's exposure in US dollars appeared to be reasonably well covered. Total assets denominated in US dollars were US$18.1 million while corresponding liabilities amounted to US$18.9 million. 60 per cent of the bank's loan portfolio was denominated in US dollars, compared with 80 per cent of client deposits. On the possibly most volatile element of its balance sheet, therefore, BancoSol appears to be a little exposed, but this should not be a problem as long as the authorities maintain the 'open economy' policy in Bolivia.

Profitability

As already mentioned, the founders of the bank intended it to be operated profitably, both because this will ensure its sustainability as a financial institution and because PRODEM, in particular, sees BancoSol profits strongly supporting its own welfare-oriented programs. Two measures of profitability are used by the bank: the ratio of net income to total assets and the ratio to total equity. BancoSol appears to be rapidly approaching viability on both bases. The bank is currently one of the more profitable banks in Bolivia.[26]

The summary of income statements in Appendix E shows the strong and rapid upward trend in profitability quite clearly. In 1993, the bank recorded net income of US$231,000, after adjustment for inflation and currency revaluation of assets was provided. The outcome for 1993 is thus a real return of 0.67% on total assets and 4.33 per cent return on total equity. By June 1994, it appears that net income will have more than doubled in half a year, suggesting returns of, respectively, 3.0 per cent and 20 per cent. That would probably make the bank one of the most profitable in Bolivia and certainly return to the bank's shareholders well in excess of opportunity cost of capital.[27]

Future prospects

Given a continued favourable economic climate, these levels of performance are likely to be maintained over the next few years at least, as the bank gains experience in its operations, as productivity improves, as the client base widens, and as the average loan size gradually grows, while the bank continues to service its traditional market. The bank is currently reviewing its business strategies for the medium term, so only preliminary projections to 1997 were available at the time of review.

Growth in lending is, at this stage, projected to reach US$128 million in 1997, compared with the loan portfolio of US$24.5 million at the end of 1993. Supporting the prospective growth in loans are growth in client borrower deposits from US$3.2 million at the end of 1992 to US$50 million at the end of 1997. The bank's negotiable certificates of deposit on issue are expected to increase from US$12.5 million at the end of 1993 to US$44 million at the end of 1997. Foreign and local sources of institutional financing, on commercial terms, will make up the balance. On this basis, BancoSol management believes it can maintain profitability of 20 per cent return to equity, and a 2 per cent return on assets.

The potential large size of the market being serviced with loans and the deposit market being tapped, together with the absence of any directly competing institutions,[28] suggests that the above projections, tentative as they might be at this stage, are not unrealistic. The projections on clients' deposits seem to reflect experience and the nature of the unmet demand in the small saver sectors, to say nothing of the strong demand for the bank's NCDs. Most, if not all, the people interviewed commented on the suspected very large savings accumulated by the Bolivian informal sector in the form of cash and valuables, to a large extent because there had been no financial savings facilities open to small savers, or in which small savers could have confidence. BancoSol is certainly filling a gap, and the initial evidence is that the facilities provided are proving very popular.

In the face of the bank's strong growth, one of the important issues that will face the governors of the bank in looking to the future is how to respond to the seemingly inevitable strong growth and diversification of its client base. The mix of bank business will change, as the proportion of large borrowers serviced (and relatively large depositors) grows, as existing clients graduate to higher levels of business activity, and as the bank attracts new clients from the informal business sector who are not 'poor' but who are unable to obtain financial accommodation from traditional commercial banks. Such growth will almost certainly occur on top of the continued service the bank is committed to providing to its traditional poor.

There seem to be two alternatives. One is to split the bank and create a BancoSol/2 to take on the middle level commercial banking which is also under-serviced in Bolivia. The other is to departmentalise the existing bank, creating specialist capacity for handling relatively large commercial accounts, while continuing with the servicing of traditional clients.

The consideration of these alternatives should not be coloured by any sensitivity to losing the identity of a 'bank for the poor'; the exercise of sound commercial judgement does not mean denial of the very worthy principles on which the bank was established. One quite common feature among multi-faceted corporations is that strong departments take the pressure off areas considered for various reasons to be worthy of maintaining at lower returns to profitability, without damaging the overall performance of the organisation. Banks all over the world individually operate at many levels of corporate, consumer and other forms of financing within a single corporate structure; banks tend to establish subsidiaries as separate institutions to conduct activities that would not be permitted for banks under local banking regulations, or that are so distinctly different from the central business of the bank that, for prudential reasons, might be better conducted separately.

Subsidisation of the bank

While BancoSol does not subsidies its clients,[29] there is a widely held belief that BancoSol is subsidised by its shareholders and development-oriented organisations. That is not so, at least, no longer so to any significant extent. There are four ways in which BancoSol might be subsidised

- through the provision of loans at below commercial interest rates
- through the transfer by PRODEM of client borrowers
- through the provision of 'free' technical assistance
- by shareholders accepting nil or negligible returns.

In transferring its business to BancoSol, PRODEM also transferred some low interest loans it had received in support of its activities. However, there is currently only one source of possibly concessional financing: a USAID PL480 loan of US$1 million, commanding an interest rate of 8 per cent per annum.[30] This loan represents less than 3 per cent of the bank's total liabilities; the PL480 interest rate is well within the scale of US commercial interest rates at this time. The subsidisation effect is, therefore, negligible.

There is little doubt that BancoSol received a head start by taking over a necessary critical mass of 'conditioned' client borrowers from PRODEM. Had BancoSol started its business from scratch, current levels of profitability might never have been reached or reached much later. In transferring assets (initially and subsequently) to BancoSol, PRODEM has received

- full book value for transferred loans to clients
- current market value of real estate of all transferred establishments (higher than book value)
- adjusted (upwards) values of all other real assets.

In effect, PRODEM and BancoSol negotiated a premium into the value of the transferred business through the revalued real assets in order to compensate PRODEM for past costs of developing clients. This has effectively removed, or at least very substantially reduced, any subsidisation effect of the transfer of clients and agencies from PRODEM to BancoSol. The two institutions have now agreed to adopt a somewhat more sophisticated method for evaluating such transfers in the future, which has been worked out for them by Toronto Dominion Securities.

Two instances of technical assistance have been provided to BancoSol by others. These are

- technical assistance to the value of about US$15,000 provided by USAID in developing BancoSol's deposit facilities
- the method for evaluating asset transfers developed by Toronto Dominion and financed by Calmeadow, referred to above; the amount involved is not known, but it would not be significant in the context of the bank's total operating costs.

In short, subsidisation through technical assistance has been negligible. There is a board policy decision that the bank will in future pay for any such technical services.

The point has already been strongly made that PRODEM, the major shareholder, has no intention of allowing its capital to be undervalued, and expects dividends in the future to be substantial and to be distributed. It is not unusual for shareholders in a new venture to refrain from taking earnings out of a developing corporation. To that very limited and temporary extent, shareholders are 'subsidising' BancoSol. Management advises that dividends will begin to be distributed in three or four years time.

The World Bank has developed a method of measuring the degree of subsidy dependence of development finance institutions (Yaron 1992). Application of this method to BancoSol suggests that there is effectively no subsidisation remaining (see Appendix F).

Conclusions

This examination of BancoSol strongly suggests the conclusion that the bank is a success in its field and that there is every prospect that it will continue to improve its performance and achieve sustainability, if it has not done so already. What has contributed to this success?

The first and most obvious reason is that there is an effective demand for its services, both in terms of market size and of social attitudes. The informal sector is large and active. As already indicated, it is estimated that some 5.2 million Bolivians out of a population of 6.4 million rely on the informal sector for their survival. Sixty per cent of the urban work force and 90 per cent of the rural labour force are employed in the informal sector. Microentrepreneurs are willing and able to take the necessary investment decisions to maintain and even develop their small enterprises. Such a venture might not succeed where markets are very small and very dispersed, or where social attitudes to commerce are not well developed.

The second reason is that official policies are at least permissive of such undertakings. In Bolivia's case, there is every indication that the authorities now recognise the need for the services being provided, are willing to make the necessary adjustments to regulations to accommodate the process, and are even considering encouraging the development of a wider range of financial institutions catering for small and micro business enterprises. The criticism that bureaucratic intervention and delays make it difficult to establish new institutions is often well taken; at the same time, regard needs to be had for processes that ensure financial prudence and client security. An associated factor in BancoSol's success is the very politically influential nature of the members of the Board of Directors.

The third reason for the success of BancoSol in Bolivia is that the government has adopted a set of macroeconomic policies which facilitate the process. The reforms of

1985[31] and the subsequent move to an 'open economy', including notably the freeing of foreign exchange markets, have made it possible, first for the private sector—even the informal one—to move ahead confidently in developing business undertakings and, second, have given foreign investors (which includes NGOs interested in fostering small business) freedom and confidence to move capital into the country in pursuit of their legitimate business activities. It is doubtful that PRODEM would have experienced the success that it had in the formative stages before BancoSol, let alone BancoSol recently, had macroeconomic policies been inimical to the free flow of capital into and out of Bolivia. The open economy enabled PRODEM—and currently makes it possible for BancoSol—to lend and borrow freely in US dollars, thereby considerably reducing the problems of managing for the effects of domestic inflation.

The fourth reason is that the bank has uncompromisingly adopted and applied sound commercial standards to its activities. BancoSol, and PRODEM before it, have not succumbed to the temptation of feeding the poor for short-term relief; rather, they have enabled the poor in a disciplined and commercially fair way to help themselves. Of course, the target group is not the absolutely poor, but those who have already demonstrated a minimum capacity for attempting to help themselves; nor does the bank devote any effort to the kind of costly 'technical assistance' and 'training' of its borrowers that is provided by the traditional NGO approach.

A fifth reason is that the bank had a head start by being able to acquire a ready-made, established portfolio of loans from PRODEM. PRODEM had, over five years of pioneering effort, developed lending practices appropriate to the market it served, and conditioned borrowers to the solidarity group lending arrangements. A BancoSol might have been able to start from scratch, but shareholders would have had to wait for any returns on their investment considerably longer than they will have to now.

Finally, the bank is succeeding because it is completely professional in its approach to the business of banking. It has high professional standards of management, and an obviously highly motivated staff, the members of which are recruited on merit and trained in the conduct of the business of the bank. There is about the institution no sense of the well-meaning amateurism that is sometimes seen in non-banks undertaking similar activities in other places; even at the shop-front agencies, business is conducted briskly and efficiently. Nevertheless, there is no lack of vision and ideals among staff members, supported no doubt by the obvious success with which the institution is pursuing its goals in a new, receptive and challenging market.

There seems to be no reason why, in developing countries where such conditions are found, or substantially found, similar institutions should not establish and thrive. To improve chances of success, however, it might be necessary to build, where possible, on an established NGO base of activity which has effectively mobilised a critical mass of client borrowers and already introduced the market to the concept of disciplined borrowing on commercial terms.

1 This paper is based on field work undertaken in July 1994 as part of a study funded by the World Bank on developing financial instruments to support poverty-oriented financial institutions. The information in this paper is largely based on interviews and discussions with BancoSol personnel and others in La Paz, Bolivia. BancoSol provided liberal access to its financial records. The author thanks Dan Wilkins of Opportuntiy International, Gautemala, for his invaluable assistance in Bolivia.

2 The poverty issues are well canvassed in World Bank, *World Development Report 1990,* and United Nations Development Programme, *Human Development Report* (1993 and 1994). The issue of mobilising the private sector to support development has been a regular them in World Bank publications in recent years.

3 Currently (July 1994), the exchange rate stands at 4.66 Bolivianos to US$1. Bolivia is an 'open economy' and, because of the savings habits developed during former years of hyperinflation, about 85 per cent of deposits in the banking system are denominated in US dollars.

4 Hermann Krutzfeldt, Sub-Gerente General, a professional Bolivian banker, recently recruited to the position, with many years of experience in North American and Bolivian commercial banking.

5 About 57 per cent of commercial bank deposits are held in 6,800 accounts (owned by about 3,500 individuals), while 29 per cent of commercial bank lending is concentrated in 300 loans and a further 24 per cent in 830 loans. This information is from Central Bank data, interpreted for the reviews by Ing. Herbert Muller Costas, Economic Consultant, La Paz.

6 This paragraph is based on discussions with Fernando Paz, Intendente de Bancos y Entidades Financieras, except for the information in footnote 5, above.

7 *PRODEM - Document of Introduction,* PRODEM, La Paz, Bolivia, 1993; Bolivian GDP for 1993 is estimated at US$6.7 billion and the 1992 census estimated population at approximately 6.4 million.

8 This is the range of guesses made by them during discussions with senior banking, economic and NGO people.

9 Loans are granted to individuals as members of a small group of like entrepreneurs who act as guarantors for each other's debts to the lending organization. See Appendix A for a more detailed description.

10 Roberto Capriles, President, PRODEM.

11 Subsequent transfers of assets from PRODEM to the bank have increased its equity position to about 34 per cent.

12 See the list of shareholders in Appendix B.

13 Bolivian banking laws required a minimum US$3 million equity capital for the creation of a new commercial bank.

14 Appendix B lists the shareholders and their individual percentage equity holdings. There is a very strong, indeed dominant, NGO element in the bank's shareholding; however, it appears that their influence and intervention in bank policy is limited to their roles as shareholders and their influence is balanced by the clearly commercial shareholders. The shareholders' commitment to pursuing the commercial orientation of the bank appears to be unequivocal. ACCION and Calmeadow Foundation, two other shareholders, are 'partners' of PRODEM.

15 Mr Otero has strong background in NGO-supported rural credit work in Bolivia. He was appointed in 1986 to head up PRODEM and is considered to be an important driving force behind the creation and establishment of BancoSol.

16 As the bank expands, the proportion of welfare-oriented staff will diminish, which will require the strengthening of specialist training aimed at maintaining the quality of highly personalized service required for the majority of the bank's clients.

17 The latter was one of the modifications of the rules (which apply to all banks) negotiated by BancoSol with the Superintendency of Banking.

18 Over 60 per cent of loans are denominated in US dollars.

19 These, however, are very scarce and appear to be available to a very limited bank clientele. Comparable commercial loans from conventional banks in Bolivia to business enterprises require collateral of up to three times the value of loans.

20 The term 'clients' deposits' applies to all forms of depositors; it is not restricted to client borrowers or small passbook savers but includes investors in negotiable certificates of deposit.

[21] Under most approaches to microlending, borrowers are required to deposit a fraction of the loan amount with the lending institution (it is sometimes argued this is necessary to instil habits of thrift). BancoSol discontinued this practice late in 1993, so all client borrower deposits are now voluntary; the total value of forced savings remaining on the books at the end of June 1994 was about Bs 12 million (US$2.6 million).

[22] Including accumulated pre-1994 forced savings.

[23] Values have been converted from Bolivianos in which these accounts are presented to US dollars, using current rates in all cases.

[24] Superintendency of Banking regulations require commercial banks to hold the following reserve deposits with the Central Bank: 4 per cent minimum against NCDs on issue, on which no interest is paid, and 6 per cent 'additional' on which 2 per cent is paid. Other regulatory requirements are that interbank loans or fixed assets cannot exceed the value of a bank's equity. The ratio of equity to total assets may not fall below 8 per cent.

[25] Even the PL480 rate cannot be said to be particularly concessional, as it is the rate generally applied by USAID for such loans and is well within current US commercial interest rate ranges.

[26] A claim made by the Bancosol's General Manager. There are 21 commercial banks in Bolivia, four of which are foreign.

[27] It is difficult to put a precise number on the rate of interest to apply. Recently introduced 90-day dollar-denominated Bolivian Treasury Bills are yielding 7 per cent. 'Average interest rates of the Banking system' as published by the Banco Santa Cruz (Bolivia's leading commercial bank) for 1993 averaged about 18 per cent on US$ loans and about 11.25 per cent on deposits. Both these rates would be marginally lower in 1994. Because of its predominantly US$ asset structure, equity investment in the bank could be regarded as substantially a US$ investment, and returns compared with returns on other US$ investments. At the prospective return of 20 per cent to equity, investment in the bank should be attractive even to its foreign shareholders.

[28] There are currently seven microcredit NGOs operating in Bolivia, but none of these is of a size that could challenge BancoSol, even if they were to achieve bank status. Some are negotiating to achieve *Banco Departamental* status; even so, their impact could not be very great by 1997.

[29] It does not even provide clients with technical assistance or training in business matters, as do many NGO microenterprise credit organisations. The only 'training' new clients get is very straight-forward instruction in the conditions on which loans are made and deposits taken.

[30] An earlier SIDI Francia 'development' loan of about US$145,000 has now been renewed at commercial rates.

[31] The first President of BancoSol, Fernando Romero Moreno, is credited with the design of these reforms, as the then Minister for Planning and Coordination.

Appendix A

BancoSol lending arrangements

The lending arrangements applied by BancoSol (and developed by PRODEM) is simply the granting of loans to individuals as members of small groups of like entrepreneurs who act as joint guarantors of each other's debts to the lender. This arrangement overcomes the problem of a lack of collateral to support borrowing from a commercial bank. The loans are, in effect, personal loans supported by guarantees.

Group formation

All borrowers, including relatively large borrowers, borrow as group members. Groups must meet the following requirements

- composed of 4-8 members willing to guarantee each other, are not related and are over 21 years of age;
- each member must have an already established business, no matter how rudimentary, that has been in existence for at least one year;
- all the business undertakings in the group must be located within a few blocks of each other (this facilitates group internal management and bank monitoring).

Loan application and approval

Each group member first fills out a basic personal particulars form, *Ficha de Datos,*; this is personally confirmed in detail by a loan officer.

This is then followed up by a more detailed form, *Informacion Personal* in interview with the potential client; this form goes into detail on the amount required and the capacity of the individual to service the debt.

After all members of the group have conformed with the above, and are found to be in principle acceptable risks, the group information is consolidated in a third form, *Solicitud de Prestamo,* and this is submitted with the recommendation by the loan officer responsible for the formation of the group to the Branch Manager for consideration and approval. Following approval, a credit committee, composed of all branch loan officers, chaired by the Supervising Loan Officer, consider and, if they agree, endorse the Manager's approval. Repayment schedules are determined at this stage.

Informacion Personal is reviewed with each new loan cycle.

Loan disbursement

Prior to loan disbursement, the group is required to attend an orientation session at the issuing branch. This provides them with clear, direct information on their obligations as a group of joint guarantors for the loan. Groups are also informed of the bank's deposit facilities and the advantages of these.

(This session is the only 'training' that the bank provides to borrowers.)

Initial **group** loans are the Bolivianos equivalent of a minimum of $300 and a maximum of $500, currently commanding an interest rate of 4 per cent per month on reducing balances. Subsequent loans can be taken up in US dollars at a current interest rate of 2.5 per cent per month on reducing balances.

Loans are made for periods of two months to one year.

Second round loans may be increased by 50 to 100 per cent; third round loans may be increased by a maximum of 80 per cent, although 50 per cent is more usual.

Subsequent increases in both value of loans and terms are subject to performance and requirements. Group members take out loans on similar terms.

A commission of 2.5 per cent is charged on each loan Boliviano loan and 1.0 per cent on each dollar loan, and is deducted from the capital sum at disbursement. This is applied at each new loan cycle.

BancoSol no longer requires borrowers to establish fractional counterpart savings accounts. All deposits are now voluntary.

Loan management

Each group elects a 'group leader' who is responsible for collecting loan repayments from individual members and appear personally at the lending branch on due date to make loan repayments for the group.

Group members must make up any shortfall in repayments if an individual cannot or does not make his/her repayment, for whatever reason.

Loan officers personally visit individuals or groups that are as little as one day late in repayment.

Penalty rates apply to loans for delinquency at a rate of 3 per cent per annum up to 60 days and 5 per cent thereafter.

Basic data on lending activity is presented on the following page.

BancoSol - Basic lending data

(as at 30 June 1994)

Loans outstanding	
US dollar	$18,088,000
Bolivianos	$ 9,140,000
Total, Value	$27,228,000
Total number of loans (by group)	14,225
Average loan value (by individual)	$499
Largest group loan ($US)	$20,000
Largest individual loan ($US)	$ 5,000
Amount lent to date	$110,003,657
Average term of loan	6-7 months
Number of clients	56,997
Percentage women participants (6 month ave)	70%
Average No. of first time participants (6 months)	2,610
Number of groups	14,255
All microenterprise projects financed to date	218,569
Number of agencies	22
Average number of group loans per branch	648
Range over branches	1,617 - 220
Number of loan officers	172
Average number of group loans per officer	84
Average value of loans per officer ($US)	169,201
Number of other agency employees	104
Cost of lending - monthly average, last 6 months	
Per average loan	$85
Per dollar lent	$0.16

Overdue loans, per cent of total		Number	Value
1 - 5	days	44.8	50.1
6 - 30	"	24.8	22.4
31 - 60	"	9.1	9.0
61 - 90	"	6.7	10.0
91 - 180	"	5.8	4.8
181 - 360	"	4.7	2.3
361 plus	"	4.2	1.4
	Totals	**1,215**	**$9,665**

Appendix B

BancoSol - Shareholders

Accion International (NGO)[1]	4.54%
Banco Boliviano americano S.A.	4.47%
Banco Industrial S.A.	4.47%
BHN Multibanco S.A.	2.68%
Calmeadow Foundation (NGO)	7.29%
Roberto Capriles (President PRODEM)	0.95%
Compania Minera del Sur S.A.	4.47%
Ecos Holding Ltd.[2]	4.47%
PRODEM (NGO)[3]	33.64%
Inversiones Bolivianas S.A.	2.23%
Inter-American Investment Corporation (DFC)[4]	24.79%
Julio Leon Prada	0.01%
Rockefeller Foundation	3.70%
Fernando Romero Moreno (Chairman of Board)	0.01%
Gonzalo Sanchez de Lozada	0.01%
Luis Eduardo Siles (Sucesion, an NGO)	0.01%
Societe D'Investissenment et de Developpement International[5]	2.27%

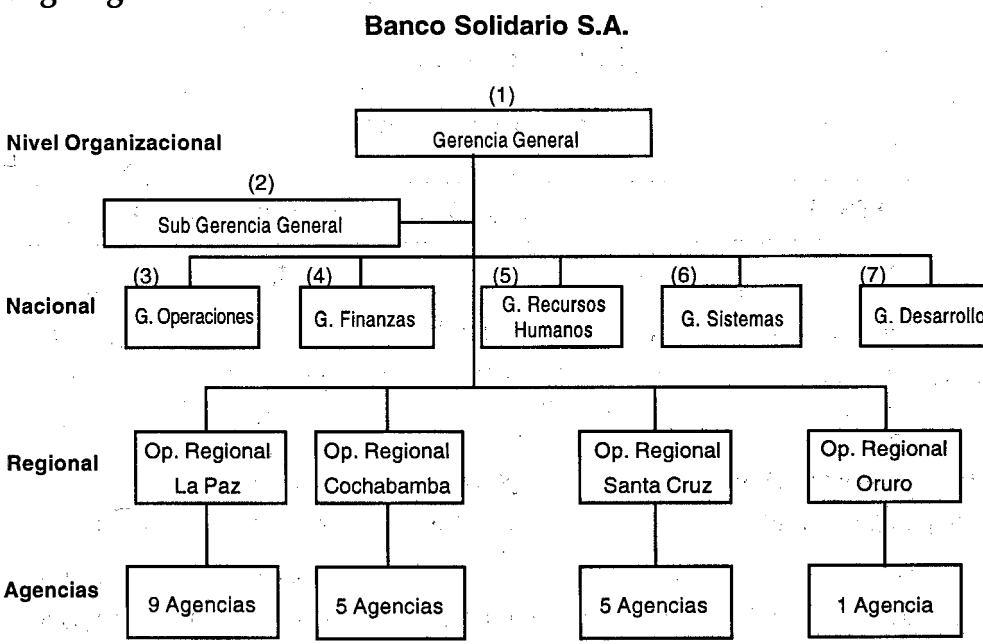
Paid in Capital amounts to Bs 19,311,364, issued as Bs 100 per share. At the end of 1993, stockholders' equity was Bs 24,294,861 ($US 5,213,489), suggesting an unrealised capital gain to shareholders of over Bs 4 per share.

Attached is information on major office holders.

1 A US-based non-government organization involved in aid.
2 A Swiss development agency.
3 Fundacion para la Promocion y Desarrollo de la Microempressa.
4 The Inter-American Development Bank's private sector development subsidiary.
5 A French development agency.

Appendix C

Organigrama



(1) Overall direction and management, liaison with shareholders, international relations.

(2) Business Plan, coordination of National Committee, funding (large depositors), policies, redefining Organiasation Chart, support to (1).

(3) Operation, treasury, budget control, capacitation (financing).

(4) Domestic fund raising, secretary of the board.

(5) Training seminars, promotions, salaries.

(6) Reorganisation of systems area, implementation of new system in the network of branches.

(7) Implementation of savings program in the network.

Appendix D

Banco Solidario S.A.

Balance Sheets[1]

ASSETS	Dec 1992	Dec 1993	June 1994
	$US	**$US**	**$US**
Cash and Banks[2]	561,825	3,285,581	2,188,941
Short-Term Investments[3]	403,262	2,378,543	9,767,715
Loan Portfolio[4]	8,814,269	24,758,905	27,228,310
Other Accounts Receivable[5]	357,070	399,017	558,309
Long-Term Investments[6]	123,558	299,852	445,632
Fixed Assets[7]	1,118,651	2,830,389	3,129,998
Other Assets[8]	451,041	376,870	736,860
TOTAL ASSETS	**11,829,676**	**34,329,157**	**44,055,766**
LIABILITIES			
Clients Deposits[9]	1,865,280 [14]	15,764,957 [16]	25,970,526
Liabilities to Banks and			
Financial Institutions[10]	4,699,866 [15]	12,520,998 [17]	10,771,805
Other Accounts Payable[11]	382,220	608,111	1,079,744
TOTAL LIABILITIES	**6,947,365**	**28,894,065**	**37,822,074**
EQUITY			
Paid-In Capital[12]	4,756,951	4,943,471	5,381,936
Reserves[13] 12,536	260,099	271,702	
Retained Earnings	112,823	231,522	508,053
TOTAL EQUITY	**4,882,311**	**5,435,092**	**6,233,692**
TOTAL LIABILITIES and EQUITY	**11,829,676**	**34,329,157**	**44,055,766**

1. 1992 and 1993 figures are taken from audited statements. 1994 is based upon an internal unaudited financial statement. All figures have been converted to dollars from bolivianos. The rates of exchange for each year, based upon the US dollar are: 1992–4.09, 1993–4.47, and 1994–4.66.
2. Includes legal reserves with the Central Bank of $US1.570 million at December 1993.
3. Domestic and foreign currency held in instruments with one year or less maturity.
4. Client loan balances as of year end, including current, overdue, and protested loans, and accrued interest to date.
5. Advance payments to suppliers, advance commissions paid, advance insurance policy premiums paid, and collectable accounts.
6. Time deposits in other banks, both domestic and foreign, with maturities in excess of one year, and shares held in other institutions.
7. Net book value of real estate, furniture, equipment, vehicles, works of art, and construction in progress.
8. Office supplies, deferred organizational expenses, and pending items. The expenses incurred in the creation of BancoSol have been capitalized and are written off over a five year period, as required by Bolivian law.
9. Deposits held in savings and term accounts, both in domestic and foreign currency, with inflation adjustments made in local currency values at year end. Typically, 95–97 per cent of client borrowers' funds are held in short term savings accounts, while the funds of others are invested in negotiable certificates of deposit.
10. The majority of funds are negotiable certificates of deposit from both foreign and domestic financial institutions. In addition, PL-480 loans are included in this account. The PL-480 program is a U.S. government commodity program, in which commodities are given to the government of Bolivia, then sold for local currency. The proceeds of the sale are use to finance development grants and loans, carrying an interest rate of 8 per cent and is payable over 5 years.
11. Includes taxes withheld from third parties, social security contributions due, outstanding debt for the purchase of goods and services, and miscellaneous others.
12. The bank is authorized to issue 230,502 shares with a par value of Bs 100, each with the right to one vote per share.
13. In accordance with current Bolivian law, an amount of not less than 10 per cent of the net income of each year must be transferred to a legal reserve until the balance in the account is equal to 25 per cent of the paid-in capital.
14. $US1,727,892 in dollars, earning 8 per cent interest, and the equivalent of $US137,388 in bolivianos, earning 18 per cent interest.

15. PL-480 balance is $US849,740 at 8 per cent interest, with the balance in both foreign and domestic certificates of deposit with a weighted average interest rate of 13 per cent.

16. Includes savings deposits of $US1,874,211 in local currency at 18 per cent interest, and $US1,270, 804 in dollars earning 8 per cent interest; term deposits in of $US12,530,962, primarily in dollars, earning an average 11.5 per cent interest; interest payable of $US88,980.

17. PL-480 loan balance of $US1,000,000,at 8 per cent interest, plus various internal and external certificates of deposit with a weighted average interest rate of 11.5 per cent.

Appendix E

Banco Solidario S.A.

Summary of Income Statements

	Dec 1992 US$'000 Bs 4.09 = US$ 1	Dec 1993 US$'000 Bs 4.47 = US$ 1	Jun 1994[1] US$'000 Bs 4.66 = US$ 1
Financial income[2]	2,099	7,537	5,461
less Financial expenses	(397)	(3,299)	(1,975)
less Provision for uncollectible loans[3]	(41)	(217)	(229)
Net financial income	1,661	4,021	3,257
Net other operating income before administrative expenses	65	24	6
less Administrative expenses	(1,600)	(3,544)	(2,599)
less Extraordinary expenses[4]	(12)	(249)	-
Income for the year	113	251	664
less Net prior year's exp	-	(20)	(84)
Net income for the year	113	231	580
Net income expressed as:			
percentage of assets	0.95%	0.67%	2.6%[5]
percentage of equity	2.31%	4.33%	18.6%

1. For 6 months ending June 1994.

2. Both financial income and financial expenses include revaluation of foreign currency assets and liabilities.

3. These provisions for doubtful debts appear to be generous in the light of the bank's actual experience with client loans.

4. This is largely the restatement of asset and liability revaluation not covered under the adjustments described in end-note 1, above.

5. Based on annualized net income, by simply doubling the first half year's result; in reality, the second half year should show higher net income, resulting probably in about 3 per cent and 20 per cent returns on assets and equity, respectively.

Appendix F

Application of World Bank Subsidy Dependence Index (SDI)

The World Bank's Subsidy Dependence Index (SDI) is here applied to the activities of BancoSol in order to determine whether, and the degree to which, the bank is benefiting from subsidies to its operations. These subsidies might arise as a result of:

- cost-free services provided by others (shareholders, development agencies and governments),
- the transfer of assets at below cost to the transferor.
- the provision of concessional funds to support the bank's operations, or
- the shareholders being prepared to tolerate a nil or very small return on capital.

> The SDI is a ratio that measures the percentage increase in the average on-lending interest rate required to compensate [a financial institution] for the elimination of subsidies in a given year while keeping its return on equity equal to the approximate nonconcessional borrowing cost. (Yaron, p.5)

The formula used is:

$$S = A(m-c) + [(E^*m) - P] + K$$

where: S = annual subsidy received by the institution

A = concessional borrowed funds outstanding (annual average)

m = interest rate the institution would be assumed to pay for borrowed funds if access to borrowed concessional funds were eliminated

c = weighted average annual concessional rate of interest actually paid on the institution's average annual concessional borrowed funds outstanding

E = average annual equity

P = Reported annual profit (before tax) (adjusted, when necessary, for loan loss provisions, inflation, etc.)

K = the sum of all other annual subsidies received by the institution

The financial ratio that is suggested as a subsidy dependence index (SDI) is:

$$SDI = \frac{S}{LP * i}$$

where: SDI = index of subsidy dependence of the institution

S = annual subsidy received by the institution (as above)

LP = average annual outstanding loan portfolio of the institution

i = weighted average on-lending interest paid on the loan portfolio of the institution

It is doubtful that an SDI analysis is relevant to BancoSol currently as, based on the points in the first paragraph above, there is only one element of subsidisation currently (1994) remaining a $1 million PL480 loan at 8 per cent per annum interest. All other possibilities have been excluded—see main text. Nevertheless, applying the formula to financial information provided for June 1994 (see Appendices D and E):

A = $1.000 million (USAID PL480 loan)

m = average interest rate paid by BancoSol on NCDs = 11 per cent per annum

c = actual interest paid on PL480 loan = 8 per cent per annum

E = average annual equity = $6.234 million (the actual 30 June figure is used)

P = adjusted annual profit = $1.160 million (the half-year profit is doubled to give an annual figure that probably will understate the result for 1994 as a whole

K = there are no other subsidies in 1994

LP = 30 June loan portfolio figure of $27.228 is used

i = the on-lending interest rate of 30 per cent per annum, as advised by the bank, is used.

$$
\begin{aligned}
S &= 1.000\,(11\% - 8\%) + [(6.234 * 11\%) - 1.160] + 0 \\
&= 0.030 + 0.686 - 1.160 + 0 \\
&= -0.444
\end{aligned}
$$

$$
SDI = \frac{-0.444}{27.228 * 30\%} = -5.4\%
$$

The negative SDI demonstrates that BancoSol has not only fully achieved self-sustainability, but that its annual profits, minus its capital (equity) charged at the approximate market interest rate of 11 per cent per annum, currently (obviously) exceed the total annual value of subsidies. It also implies that Bancosol could lower its average on-lending interest rate.

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