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Is Grameen Bank Sustainable?

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Abstract

The success of Grameen Bank as a bank for the poor is its creation of a market niche as well as outreach to women among the poor. Whether its success is sustainable depends on the viability of Grameen Bank institutionally, economically and financially, and also the generation of sustainable benefits to borrowers that reduce poverty. Although the committed leadership of Dr. Muhammad Yunus is an important factor for its success and development, Grameen Bank has institutionalized a highly decentralized management structure with a cadre of dedicated professionals that is capable of operating its activity without his involvement. Similarly, although subsidized funds and grants were instrumental for institutional development, Grameen Bank has the potential capacity to operate with resources from market sources. On the other hand, Grameen Bank has a loan recovery rate consistently above 90 percent and a positive impact on rural wages; the benefits from program participation thus must be high and sustainable. The long-run sustainability of Grameen Bank, however, ultimately depends on its ability to expand lending in more growth-oriented activities and achieve cost efficiency on a sustained basis.

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Introduction

Grameen Bank is a rural bank in Bangladesh that has attracted worldwide attention with its innovative and successful group-based credit program for the rural poor. It provides credit and organizational input to the poor who are otherwise excluded from the formal credit system because of their lack of material collateral. Grameen Bank has replaced the requirement of material collateral by group responsibility where individual access to credit is determined by group repayment behavior. By organizing and training the poor in groups, Grameen Bank has created both social and financial preconditions that enable the poor to receive loans based on group performance. Grameen Bank also provides social development inputs to the poor so as to make them individually and socially accountable. While this financial-cum-social intermediation improves the productivity and income of the poor, it also improves their loan repayment behavior and hence, contributes to the financial viability of Grameen Bank. Its loan recovery rate has been consistently over 90 percent, one of the highest among development financial intermediaries (DFIs) providing credit.

Because of the failure of most DFIs to effectively reach the rural poor, Grameen Bank of Bangladesh has attracted widespread attention as one of the more successful banks catering to this target group. In addition to its phenomenal expansion in Bangladesh over the last decade, with over 1.6 million members and 1,030 branches by June 1993, the Grameen Bank model has been replicated in many other countries. The World Bank has also recognized the potential of such a model of financial intermediation for the poor and has recently provided an "exceptional" grant of $2 million to the Grameen Trust for the replication exercises.

What are the sources of success of Grameen Bank? What makes its loan recovery so high compared to the low recovery rates of many DFIs that have been long supported by many bilateral and multilateral donor agencies? Is Grameen's success as a bank for the poor sustainable? Is the Grameen Bank model replicable? Moreover, as Grameen Bank has been relying on subsidized funds (often grants and concessionary funds) for institutional development, is it possible for it to continue functioning if these cheap sources of funds are dried out? How dependent is Grameen Bank on the leadership of Dr. Muhammad Yunus, the founder and managing director? Is leadership a critical element in the successful replication of Grameen Bank or development of similar programs elsewhere?

These are some of the issues that are being investigated in an on-going World Bank research study with the active participation of the Bangladesh Institute of Development Studies.[1]

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[1]Other than the sustainability issues, the study also looks at the household and intrahousehold impacts of Grameen Bank using household surveys from 87 villages in Bangladesh. The purpose is to identify program effects on household outcomes (such as income, wealth, asset accumulation, and hence, poverty reduction) and individual-level outcomes (such as employment, education, health, and nutrition) to see whether a credit program such as Grameen Bank produces desirable impacts at the household level that help reduce poverty and increases the human capital of the rural poor. The study also looks at the participation of women and the ensuing effects on household and intrahousehold outcomes. The study also examines the success or failures of two other major programs -- Bangladesh Rural Advancement Committee (BRAC) and Rural Development (RD-12) project of the Bangladesh Rural Development Board (BRDB). The household-level impact studies and the program-level analysis of BRAC and RD-12 are in progress.

This paper discusses some of these issues based on a report on Grameen Bank prepared as part of this on-going study in the Bank.[2] The report is based on Grameen Bank data, collected from its aggregate-level records and a selected sample of its branches (118 branches) for the period of 1985 - 93. These branch- and program-level data have been used to analyze the sustainability of Grameen Bank in its dual role as an effective financial institution for the rural poor and as a poverty alleviation program. The fundamental finding of this study, based on different aspects of Grameen Bank performance, is that it is possible to reduce poverty through sustainable financial intermediation targeted towards the poor.

The Grameen Bank Model

Grameen Bank is a bank for the poor. Understanding the sources of its success (or failure) requires an evaluation of how it works as a financial institution and as program for poverty alleviation.

Grameen Bank operates in a credit market that is characterized by imperfect information and imperfect enforcement; two common sources of the failure of many DFIs in many countries. Lending entails high risk of loan default. The viability of lenders, therefore, depends on the selection of borrowers, their incentive to repay loans, and the ability of lenders to enforce the loan contract (Hoff and Stiglitz 1990). But formal lenders are not part of the community and hence, do not have ability as well as means to collect information about the borrowers and their activities. Thus, the formal lenders often lend based on asymmetric information and are handicapped in their ability to enforce contracts in the absence of an effective legal system for contract enforcement.

Grameen Bank has developed ways of tackling both problems of asymmetric information and imperfect enforcement. It offers group-based credit where an individual's access to credit is tied to group responsibility and repayment behavior. Grameen Bank's lending process starts with five self-selected persons who own less than 50 decimals of land and who agree to form a group where they guarantee and monitor each other. Each group is organized and trained by Grameen Bank workers in weekly group meetings about the Grameen rules and regulations and how to keep individual, financial and social discipline. Advantages of the group-lending approach are that it satisfies the self-fulfilling expectations of like-minded groups of people, and makes borrowers' activities transparent to bank workers. Group lending essentially uses peer pressure to monitor and enforce contracts, provides an incentive structure for the borrowers to repay, and helps screen good borrowers from bad ones, all of which would be costly for the bank to accomplish otherwise.

Also, unlike many other DFIs, Grameen Bank adheres to savings mobilization as an integral part of lending. While this provides an internal source of funds for on-lending, Grameen's savings mobilization scheme is also designed to address both production risk as well

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[2]See Khandker, Khalily and Khan (1993), "Grameen Bank: What Do We Know?"

as market imperfections that exist in credit and other markets. Each member is required to save Taka 1 each week which is deposited at the weekly group meeting. Moreover, 5 percent of the loan amount is levied for the "group fund," while Taka 5 for every 1,000 Takas above loan size greater than 1,000 is charged for the "emergency fund" contribution. The group fund is managed by the group and provides an additional source of loanable funds for the poor when mutual agreement is obtained. The emergency fund is managed by Grameen Bank and is used as an insurance against default owing to death or disability or natural disaster.

In addition, each member purchases one Grameen Bank share worth Taka 100. These shares provide a stake in the ownership of Grameen Bank for the membership as well as their representation in its board of directors; over time, both the proportion of members' shares in total capital and in the representation have increased.

Transparency in credit transactions is a unique feature of Grameen Bank lending. The loan selection and applications are discussed by all group members at the mandatory weekly meetings of the centers.[3] All credit transactions and related discussions for each group are publicly administered at the weekly meetings, and decisions are made on a consensual basis. These open banking procedures severely mitigate any entrenchment of vested interests in the system such as have been the source of corruption and embezzlement of funds in many DFIs (Braverman and Guasch 1986).

With poverty alleviation as its prime objective, Grameen Bank has developed targeting and input delivery mechanisms to focus on the causes of poverty. Grameen Bank believes that lack of access to credit is the biggest constraint for the rural poor. It argues that rural poor, with too little land to support themselves as farmers, can make productive use of small loans, borrowed without collateral, that they would repay on time. Thus, with appropriate credit support, the poor can be productively employed in familiar processing and manufacturing trades, transport services, storage and marketing of agricultural produce, and livestock among other income-generating activities. Grameen Bank also maintains that if the rural poor are provided credit on reasonable terms, they can themselves best judge how to increase their incomes and need no more outside inputs except what they can purchase themselves. These principles are used to mobilize the poor in such a way that poor men and women can receive credit by identifying a source of self-employment and by agreeing to guarantee and monitor others in the group.

Grameen Bank targets the poor based on landholding of less than 50 decimals. The land-based targeting may not be an effective mechanism for the identification of the poor because landholding and asset information can be concealed. Grameen Bank's targeting is effective, however, because its credit delivery is group-based and allows only those people with equal or

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[3]A center is typically comprised of five to eight groups, and it is headed by a center chairperson and a center secretary elected from the group leaders. Each center meeting is attended by a Grameen Bank worker, who visits several centers on a weekly schedule.

similar bargaining power to form groups.[4]

Although membership is free, Grameen Bank's group-based lending taxes those who have high opportunity cost of time as it involves weekly meetings and other activities that are time consuming. As the opportunity costs vary from person to person and is usually high for the landed households, program participation is highly self-selective and limited only to those who have very low opportunity costs. As the landless poor have low opportunity costs due to limited income earning opportunities, they usually participate in the program.[5] The lower loan size (which is usually limited to Taka 2,500, equivalent to US$65, for a first time loanee and a maximum of Taka 10,000, or US$250, for older members) also acts as a deterrent against the inclusion of richer individuals in the groups.[6] This self-targeting is effective for those who are willing to bear the costs of group formation, training and monitoring each other's activities, and who are satisfied with the relatively small sums they can borrow.

Grameen Bank creates a market niche for the low income groups who do not have alternative source of credit at the rate of interest charged (Von Pischke 1992). Grameen's creation of market niche is also due to its implicit targeting of women among the poor. Given the sociocultural environment in Bangladesh, women among the rural poor are predisposed to be poorer than men. Because of exclusion from market activities, a woman's opportunity cost of time directly depends on a household's landholding. Thus, for poorer households owning less than 50 decimals of land, women's opportunity cost of joining Grameen Bank is minimal.

Grameen's membership mobilization has worked to both women's and Grameen Bank's advantage. It is advantageous for the bank because women usually do not borrow from formal or informal sources (due to lack of collateral) and hence, Grameen's money does not go for past loan repayment. In addition, women are more risk averse than men in project selection and extra careful in maintaining good standing as a borrower. Grameen membership works to poor women's advantage, because for the first time many get a rare chance of operating their own independent income-earning activities which in most cases help improve their status in the household.

Parallel to its group-based credit and savings process, Grameen Bank has developed a comprehensive social development program. This program is disseminated as the "sixteen decisions," which are guidelines for codes of conduct and activities aimed at improving the social and financial conditions of the rural poor. A comprehensive training program has also

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[4]Otherwise, when member's active participation in the lending process becomes an important constraint for lending, unequal bargaining power only promotes the vested interests [illegible] would undermine the viability of groups as well as the bank.

[5]Hossain's (1988) study found that some 98 percent of the program participants actually meet the landholding criterion of program participation.

[6]Note that even if five richer households form a group and approach a Grameen Bank worker for a loan, monitoring at the center meeting of 6-8 such groups would make such effort difficult for the group.

been developed for women in maternal health, nutrition, and chil..re. The outcome of this program is that greater demand for basic services provided by government and others have been created and the nutritional status of women and children has improved (Quanine 1989).

Grameen Bank responds to the needs of the poor. In addition to the one-year general loans for self-employment, longer-term house-building loans are also provided at lower interest rates for members to improve their living conditions by building better quality, low-cost housing. In some areas where the repayment capabilities of its members were affected by natural disasters, the bank provided special loans, food storage loans, capital recovery loans (including goats as loan) and destitute loans. Since 1992, new avenues of credit, such as short-term seasonal loans and family enterprise loans, were also introduced to help members augment their income.

Grameen Bank's Achievements

Since its inception as a bank for the poor in 1983, Grameen Bank has evolved as a large organization employing 10,531 men and women in 1992. As of June 1993, there were 1,030 Grameen Bank branches covering members in 32,529 villages (about half of the villages in Bangladesh).

Membership growth

The phenomenal expansion of Grameen Bank is evident in the 840 percent increase in its membership in eight years, as it grew from 171,622 in 1985 to 1,614,673 in mid-1993. About 94 percent of the membership is women and over the eight year period, growth in female membership was always higher than the growth in male membership.[7]

For Grameen Bank, membership means access to credit. This is indicated by the overwhelming proportion of members who are borrowers: by June 1993, as much as 98.2 percent of all members had taken loans, compared to 83.9 percent in 1985. The emphasis on female membership and group expansion is also evident in the growth of borrowers: the proportion of male borrowers among all borrowers declined progressively (from 34.9 percent in 1985 to 6 percent in mid-1993). The number of female borrowers increased by 1,205.3 percent in the 1985-92 period compared to 67.1 percent growth in the number of male borrowers.

Lending volume and portfolio mix

The disbursement pattern of Grameen Bank loans reflects its expansion as well as emphasis on providing credit to poor women. In 1985, of the total cumulative loan disbursement of Taka 948.5 million, a little more than half (Taka 492.4 million or 51.9 percent) had been

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[7]For details on the achievements discussed in this section, see the main report, "Grameen Bank: What Do We Know?" by Khandker, Khalily and Khan (1993).

distributed to female borrowers. By 1992, women received 79.8 percent of total loans disbursed.

The disaggregation of cumulative disbursement up to 1992 by loan-types, as classified by Grameen Bank, shows that 81.6 percent of all disbursement has been for general loans, 0.79 percent for collective loans, 8.9 percent for house building loans, and 8.7 percent for technology loans.[8] The phenomenal expansion in overall lending was also reflected in average lending per branch which grew from an average of Taka 1.86 million in 1986 to Taka 6.27 million in 1992.

The growth of Grameen Bank operations is also indicated by the increase in the amount of its loans outstanding, from Taka 244.2 million in 1985 to Taka 7,029.6 million in June 1993. Between 1986 and 1991, this proportion was declining as the shares of house-building and technology loans outstanding rose from 6.7 percent in 1986 to 40 percent in 1991. The average loan outstanding for a branch increased from Taka 1.09 million in 1986 to Taka 6.82 million in June 1993, an increase of 525.7 percent over this period.

Savings mobilization

Grameen Bank experienced an enormous growth in savings mobilization between 1985 and 1992. Total savings mobilized increased by 2,920 percent during this period, from Taka 114.9 million in 1985 to Taka 3,478.8 million in 1992. In the first six months of 1993, total savings had increased by 30.9 percent to Taka 4,553.3 million.

If the amount of loans outstanding is an indicator of its lending volume, the savings and deposits mobilized in recent years is more than adequate for Grameen Bank to continue lending operations without any funds from external sources. In fact, given its savings and lending performance, Grameen Bank had attained the savings-lending equality in 1989, which was partly due to increases in members' savings and deposits. For comparison, it is interesting to note that the total savings mobilized by Grameen Bank was four times larger than the combined savings recorded for five major commercial banks in Bangladesh (Chen 1992).

Social development

Along with its financial services, Grameen Bank has implemented several programs aimed at promoting social development. It encourages its members to practice the "sixteen decisions" on a daily basis and trains them on the modus operandi of Grameen Bank as well as on improving their health, nutrition and productivity. It also encourages its members to operate nursery schools at the centers (six to eight groups), which also double as day-care centers, and distributes seeds and seedlings to promote kitchen gardens and tree planting.

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[8]Technology loans are generally used to fund large scale projects. The share of technology loans in total lending has decreased due to the creation of the Grameen Krishi Foundation, which promotes agricultural productivity and has picked up many of the technology projects funded by Grameen Bank.

As of June 1993, there were 16,169 center-operated schools, up by 386 percent from 3,326 such schools in 1985. Enrollment at these schools had increased by 543 percent over the same period, from 71,467 in 1985 to 459,405 in mid-1993. Grameen Bank had distributed 5,445,309 seeds and 1,998,324 seedlings between July 1992 and June 1993, compared to 781,628 seeds and 373,190 seedlings in January-December 1985. The implementation of the "sixteen decisions" have induced the number of marriages without dowries to increase - by June 1993, 18,616 such marriages had taken place compared to 2,738 in 1985.

Grameen Bank also organizes workshops in order to train members on various topics, including its operational rules and procedures, livestock and poultry care, health and nutrition, and other social issues. The total number of participants in these workshops have increased by 655 percent over the 1985-92 period.

Administrative structure

Serving 1.6 million members with credit, organizational help and other social development inputs is a big and challenging task. To serve the poor in an orderly fashion, Grameen Bank has expanded in a decentralized fashion. Its administrative structure consists of four tiers - the head office at its apex, the zonal offices, the area offices and the branches - with a distinctive set of functions for each. The head office, located in Dhaka, is the central unit and is headed by the Managing Director (Dr.Yunus), a Deputy Managing Director, a General Manager and about 240 other staff. The zonal offices, the area offices and the branches comprise the field-level units.

An important feature of Grameen's management structure is the high level of autonomy given to the field offices. The zonal office acts as a mini-head office regarding administrative decisions, while the head office is involved more in mobilizing resources from external sources and in providing training and major policy decisions. Each zonal office supervises about 5-10 area offices, each of which oversees 10-15 branches and is responsible for the formal loan approvals, based on the recommendation of branch managers.

The branch is the most important unit in Grameen Bank operations, as it is the field-level office with the most contact with its member-borrowers and the basic profit-making unit. A typical branch supervises 50-60 centers located in villages within walking distances of the branch, and is responsible for group formation, member training and loan supervision. A center consists of six to eight groups and each group, the lowest level in the management structure, is made up of five people.

As of June 1993, there were 1,030 Grameen Bank branches covering members in 32,529 villages. Between 1985 and June 1993, the number of branches increased by 355 percent and the number of centers expanded by 660 percent. Given the major role of its branches in the organizational structure and credit operations, 85 percent of the employees were assigned to the branches in 1992 (compared to 79 percent in 1985), with an average of 9 employees per branch. In addition to the branches, there were 110 area offices and 12 zonal offices by June 1993.

Sources of funds

Grameen Bank, since its inception, has been able to finance its activities through resources made available at concessionary rates by various external and internal sources. As of June 1993, the proportion of foreign funds amounted to 74.54 percent of total resources available for Grameen Bank; 43.2 percent of total funds (Taka 2714.6 million) were provided in the form of grants, both for on-lending and revenue.

Initially, Bangladesh Bank, which is the central bank of the country, and the International Fund for Agricultural Development (IFAD) provided funds at 3 percent rate of interest. Various donor agencies from other countries became important sources of Grameen Bank funding by the mid-1980s. By mid-1993, the suppliers of funding to Grameen Bank included the Dutch, Norwegian, and Swedish aid agencies and the Ford Foundation.[9]

Grameen's Sustainability

The sustainability of Grameen Bank, given its role as a credit program with the objective of poverty alleviation, can be seen as the ability of the organization to sustain its credit operations and other activities as a viable financial institution. Grameen Bank utilizes resources mainly from subsidized sources to finance productive activities for the poor. It cannot, however, continue to operate based on such sources for ever. In order to be sustainable, the bank must (a) promote its organizational development within given costs for its institutional viability; (b) operate efficiently, given the program design and institutional framework, to attain financial and economic viability; and (c) help generate sustainable benefits for its members to reduce their poverty and achieve borrower viability.

To be defined as financially viable, Grameen Bank must, at a minimum, equalize the cost of each Taka disbursed with the price (that is, interest rate) it charges for lending to its borrowers. On the other hand, it is economically viable if the economic cost of funds (measured at the opportunity costs of these resources) used for credit and other operations can be met with the income generated from on-lending.

Financial and economic viabilities are necessary but not sufficient for the viability of Grameen Bank as a credit institution. Its management and decision-making system is also important to its sustainability. Management cannot be dependent on a single individual; there must be an institutionalized system. Staff development and productivity are important measures of internal efficiency.

But these aspects of sustainability cannot be attained unless the benefits generated for its target group are also viable, given the close link between the viability of the borrowers and the viability of the lender which both depend on similar environment and production risks. If the

[9]Funds were also borrowed occasionally from commercial banks in Bangladesh at the market rate of interest.

returns generated from the activities financed by the program cannot meet the borrowers' costs and if the borrowers do not have an incentive to repay the loan, the program will not be viable. Grameen Bank relies on the group-based organization of members to screen, monitor and provide incentives to the borrowers to repay their loans. Thus, Grameen's sustainability depends in part on the viability of groups and its members.

Institutional viability

The sustainability of Grameen Bank depends to a large extent on its institutional development and viability, and the vital role of Professor Muhammad Yunus in the growth of the organization. With the institutionalization of its management style, a high element of decentralization and its emphasis on monitoring, evaluation and adaptability in decision-making, innovative processes have been replicated at all levels of the bank's administrative structure. Combined with the extensive training at the field-level for new recruits and older staff based on problem-solving activity, Grameen Bank has created a cadre of dedicated professionals, who are as much motivated by the objective of helping the rural poor as by their pay and incentive structures.

The rapid expansion of Grameen Bank has been based on the institutionalization of its decentralized management process. With the expansion of branches and creation of area and zonal offices, more decision-making authority was delegated to these intermediate administrative units as the head office could no longer deal effectively with the volume and variety of issues involves. But, unlike most hierarchical bureaucracies, Grameen Bank did not have to initiate a deliberate decentralization exercise because it evolved into a decentralized organization as part of its growth process.

With the devolution of many decision-making roles to the field offices, the head office can focus on the broader issues of policy and development. At the top of the organization, the Board of Directors is responsible for guidance and as the members own share in the stock, their representatives are also on the Board. Most of the central decision-making functions, in turn, are based on field-level information, which is systematically collected, analyzed and disseminated by the monitoring and evaluation unit.

Monitoring and evaluation plays a crucial role in operations and expansion, providing continuous feedback from different operational and financial reports. Information on flow of funds, disbursement, repayment and default records of the branches is monitored from daily statements prepared by the branch managers for the head office. These reports, which are analyzed by the monitoring and evaluation unit, make it possible to keep track of each branch performance and compare with the aggregate data. Such comprehensive information and reporting forms the basis for the in-built process of learning and innovation that is reflected in the decision-making and policies of Grameen Bank.

The management style has evolved out of Grameen Bank's experience in trying to effectively provide a whole range of innovative programs to the rural poor. The evolved management structure has an in-built adaptability that has been refined through field-level experience and an innovative approach to training, which was [illegible] developed by Grameen Bank. It is a structured learning process based on trial and error with continuous fine-tuning, including hands-on training for new staff and re-orientation training for the experienced employees.

The performance of employees and the turnover rates may be influenced by their pay structure and incentive schemes, given the nature of the job. Although the employees are paid according to the rules and regulation of Bangladesh Bank, education and experience influence their wages. This underlines the presence of staff incentive for improved productivity.

The objective of poverty alleviation through credit often requires Grameen Bank to expand its operations in areas where agroclimate and locational characteristics would not be considered favorable by other financial institutions. Econometric results based on the impact of agroclimate and locational characteristics on Grameen program placement in various thanas (administrative units in Bangladesh) suggest that program placement has not been affected by these factors. In contrast, both government and commercial banks have been affected by agroclimate and locational conditions, including distance to district headquarters; using these factors to determine placement in order to reduce their transaction cost. Grameen Bank locates its branches irrespective of agricultural potential or risk. Consequently, making profit in some branches such as flood-prone areas may be a risky venture.

Financial and economic viability

The viability of Grameen Bank depends on the revenue and cost structures as well as the assets and financial structures. While the revenue and cost structures indicate the degree of financial profit or loss, the assets and financial structures measure the expansion of assets over time, the capital adequacy and the role of internal resources in financing assets. Viability also depends on the rate of loan recovery which is a necessary condition for profitability through high turnover of loanable funds and minimization of default costs. Profitability, an outcome of the differences between revenue and cost, in turn indicates the extent of financial subsidy involved in operation. However, the long-term viability of Grameen Bank depends on the extent of the subsidy received from low-cost funds (provided by donor agencies of different countries and the government) and its ability to operate without such subsidy.

Grameen Bank is financially viable if it is profitable (that is, the financial subsidy is zero or negative) and it is economically viable when economic subsidy net of profit is zero or negative; therefore, the bank may be financially viable but not economically viable if its profit is less than the economic subsidy. In this analysis, Grameen Bank's viability is evaluated using two parameters - profitability and subsidy dependency. The level of profitability indicates the extent of financial subsidy while the subsidy dependency indicates the extent of net subsidy (economic subsidy net of profit) involved in Grameen Bank operation.

The loan recovery rate recorded over time is critical when measuring the amount of financial subsidy required to sustain a credit program. While the recovery rates for banks and other development financial institutions in many developing countries, including Bangladesh, have been quite low (in the 25 to 50 percent range), Grameen Bank has recorded exceptionally high recovery rates (about 98 percent). Interestingly, the loan recovery rates are lower for male borrowers than for women, which contradicts the conventional belief that women in general are higher credit risks than men.

Grameen Bank suffered losses in 1991 and 1992 only; in all other years since 1986 it has turned profits. An analysis of the trends in profit for the period of 1986-93 shows that Grameen's profit is very much influenced by whether or not grants received for research and development, training, and monitoring and evaluation are included as part of revenue. If profit is calculated on the assumption that Grameen meets these costs from its generated revenue, then Grameen Bank has been making loses since 1987. In contrast, if operating profit is calculated without costs on these accounts and grants, Grameen Bank can be shown as a profitable organization. This finding suggests that if institutional development were financed by donors or government, Grameen Bank could earn profit, given its cost and revenue structures.

Subsidy dependency

Grameen Bank made losses in 1991 and 1992 and received financial subsidy for these two years. It has also enjoyed what we call an economic subsidy for all years as its funds for on-lending and institutional development were mainly subsidized. As mentioned earlier, a comparison of the opportunity cost of such funds and their actual cost determines the economic subsidy. The net subsidy is then defined as economic subsidy net of profit. Following the definition of Yaron (1992), the subsidy dependency index (SDI) can be defined as the ratio of net subsidy and the average revenue (defined as the product of loan outstanding and on-lending interest rate). The SDI helps measure the percentage increase in the on-lending interest rate required to compensate Grameen Bank for the elimination of subsidy. A zero SDI means that profit equals the social cost of operation and hence Grameen Bank has achieved full self-sustainability. In contrast, a positive SDI implies that the economic cost exceeds the profit in which case the on-lending interest rate or the amount of loan outstanding must increase by the amount of subsidy to eliminate subsidy. For example, an SDI of 100 percent means a doubling of the on-lending interest rate or amount of loan outstanding to eliminate subsidy.

The estimates of economic subsidy are influenced by how one defines the alternative cost of subsidized funds. Using two measures of the opportunity costs of subsidized funds, one is the long-term fixed interest rate and the other is the short-term savings deposit rate, the estimates of subsidy and the degree of subsidy dependency (SDI) were calculated.

The SDI estimates suggest that there was a monotonic increase in the subsidy dependency of Grameen Bank between 1987 and 1990, and then after 1991 the SDI fell. For example, in the case of long-term interest regime, the SDI decreased to 130.16 percent in 1991 from 165.94 percent in 1990, followed by further declines in 1992 and 1993; in 1993 it was estimated to be only 65.88 percent. The decline in the SDI in recent years was due to the large increases in loan disbursement and increased profit mainly due to increased lending rate from 16 percent to

20 percent. This suggests that the subsidy dependency of Grameen Bank has been reduced over the years through increased volume of lending and on-lending rate. However, such increases were not enough to eliminate the subsidy. Estimates suggest that if Grameen Bank were to eliminate the subsidy, it must double either its lending rate from 17 to 34 percent or annual disbursement from Taka 6.3 million to Taka 12.6 million per branch.

Whether Grameen Bank can double its lending rate or double its annual disbursement depends on the ability of its 1,030 branches to expand lending as well as the ability of borrowers to earn a positive rate of return on investment at the increased rate of interest. This requires an examination of branch-level profitability and borrowers' viability.

Branch-level profitability

The panel data of 118 branches, out of 1,030 Grameen Bank branches, for 1985-91 was used to analyze the issues of branch-level profitability and economies of scale. The econometric results suggest that it takes about five years for a branch to break-even.[10] Grameen's investment in staff training has a positive effect on branch-level profitability. Branches with technology loans, possibly because of their larger loan size, and better road infrastructure earn profits. Branches with only female borrowers make losses compared to branches with both male and female members.[11] In addition, the presence of other banks reduces the profitability of Grameen Bank branches.

An analysis of the cost data of these branches indicates that economies of scale exist in branch-level operation. For instance, the estimated marginal cost of mobilizing an additional member was estimated to be Taka 138, while the estimated marginal cost of lending an amount of Taka 4,000 was only Taka 64 with a total cost of Taka 202. Given the average interest income of Taka 600 at, say, 15.06 percent rate of interest for lending Taka 4,000 for a year, Grameen Bank branches are clearly operating at levels below where marginal cost equals marginal revenue. This suggests that Grameen Bank branches, which operate under profit maximization principle, would gain if they expand their business. The 1993 data suggest that Grameen Bank has successfully utilized this previously unused branch capacity to increase its lending by almost 70 percent in a single year. This has helped Grameen Bank earn profits in 559 branches out of 1,038 branches by December 31, 1993.

Borrower viability

But the sustainability of Grameen Bank and its branches ultimately depends on the viability of the borrowers. This can be judged in terms of outcomes relevant to the economic

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[10]This is usually the case for any bank even in the more developed financial market such as that of the United States. Thus, the argument that banking with the poor is not profitable is not true.

[11]This is again perhaps due to the size of loan. Women, on an average, borrow less than their male counterparts.

and social welfare of the members as well as their dropout behavior and loan repayment performance. The household-level welfare impacts of Grameen Bank are being quantified using household and individual survey data and are not yet ready. Some aggregate indicators of borrower-level viability such as members' dropout rate, loan default rate, and rural wage impacts are discussed in this paper.

The formation of a Grameen Bank group and its viability depends on the decision of each member to continue within the group-based system, given the costs and benefits of program participation. Members may dropout of the program for a variety of reasons, including "graduating," i.e., they no longer require Grameen Bank credit and its other services.

The aggregate dropout rates of Grameen Bank members increased from about 5 percent in 1985 to 15 percent in 1991. This rate is higher in the case of men: it was 22 percent in 1991 compared to 7 percent in 1985. In contrast, the corresponding dropout rates for women were 14 percent in 1991 and 4 percent in 1985. Overall, the dropout rate increased annually by 17 percent over the 1985-91 period; the average annual growth rate was 21 percent for female members and 18 percent for men. This suggests that the benefits must have been high enough; otherwise, the membership dropout rates would have been higher.

The branch-level data and information on local area characteristics were used to estimate the determinants of dropout behavior. The results indicate that the age of the branch is an important factor, as relatively new branches have higher dropout rates and the rate declines as the age of a branch rises. Increased salaries of branch managers and improved education infrastructure reduce the dropout rates of members from the program. However, rural electrification and the presence of commercial banks accelerate the rate. Thus, the more developed is the local economy and the more alternative income-earning opportunities, the higher is the dropout rate of Grameen Bank members.

The regular repayment of loans also determines the viability of the groups and the loan repayment record is another indicator of borrowers' viability. The proportion of defaulters (who have not repaid after 52 weeks) was nil in 1985-86. About 1 percent were defaulters in this category in 1987-89, but this percentage increased to 2 percent in 1990-91. Given the large number of borrowers, nearly 1.6 million, and the volume of disbursement, the default rate is almost negligible, which indicates the long-run viability of the borrowers and their groups. Estimates suggest that the default rate goes up with the age of the branch while increased managers' salaries and staff training, rural electrification, road length, education infrastructure, and rainfall reduce the loan default rates.

The rural wages in 25 Grameen villages were compared with those of 72 non-program villages.[12] The wage impact estimates show that Grameen Bank has a positive effect on rural wages, especially for male and child labor, even after controlling for possible influences of other

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[12]The village-level wage is the average of all categories of labor (formal, informal and agricultural) by labor-type (male, female and child).

area factors. This means Grameen Bank has a net positive effect on local economic growth, leading to sustainable poverty reduction.

The savings mobilized from each member is another indicator of borrower-level viability. The per member savings was Taka 775 in 1992 compared to Taka 648 in 1987. As the borrowers' dropout rate is quite low and their loan repayment rate is high, this suggests that the benefits generated by Grameen Bank has been substantial and has been sufficiently sustained to keep its members enrolled in the program and also generate savings. The 40 percent annual growth rate of savings during 1985-92 can be treated as an indirect measure of borrower viability and program sustainability.

Given the extent of the benefits of Grameen Bank, the social cost of such program intervention is small. In 1992, Grameen Bank received about 11 percent subsidy for each Taka disbursed to its borrowers; this per Taka loan subsidy was 12 percent in 1987 and gradually increased to 14 percent in 1990. As Grameen activity is aimed towards the rural poor, its members actually receive this subsidy in the form of training and organizational assistance to improve their productive means, rather than as a direct transfer. In this sense, each member received the support equivalent to Taka 416 in 1992 compared to Taka 321 in 1987 (based on the estimates using long-term deposit rate). Note, however, that per member savings mobilization far exceeds (by two and one-half times) per member subsidy. Thus, if induced savings mobilization from the poor is a measure of social benefit, then social benefit exceeds the social cost of such a program placement.

Grameen's Potential for Expansion

Grameen Bank needs to expand both horizontally and vertically in order to be more cost-effective, especially when it will have to depend more on market conditions than a protected environment with help from donors and the government to finance its lending activities. However, the returns to activities financed by Grameen Bank are likely to decrease, given demand constraints, as more and more people join the bank and undertake similar productive activities. Thus, Grameen Bank expansion in Bangladesh entails risks that would threaten the viability of both the borrowers and the lender. As such, changes in the loan portfolio mix for more growth-oriented activities over time and the achievement of cost efficiency will be of major concern.

The empirical findings suggest that Grameen Bank could make more profits if it disbursed more money for technology loans than for general and collective loans. Similarly, branches that have both men and women borrowers make more profit than those branches with only female borrowers. As the average principal for a technology loan is relatively larger than for general loan and as men on average borrow more money than women, these findings clearly suggest that increasing the loan amount per borrower is one possible way of attaining both cost efficiency and profitability.

Increasing the loan amount per borrower depends on whether the borrowers can absorb increased volume of credit. This depends in turn on the entrepreneurial ability of the borrowers and the market opportunities that they face. But the economic growth of the economy shapes the nature and extent of credit demand of these borrowers, as the overall economic growth determines substantially the growth in rural nonfarm and agricultural-based enterprises that are being financed. Nevertheless, Grameen Bank can help accelerate the overall growth of the economy through portfolio diversification as well as increasing the effective demand for food and nonfood items of the poor.

Attaining cost efficiency is another major concern. If Grameen Bank is not cost-effective at the market rate of interest for loanable funds, it will become very difficult for it to continue its operation without subsidized funds for long. Besides, it would be a serious weakness for its long-term prospects if Grameen Bank would have to rely on funds from international sources.

One way of attaining cost efficiency is to increase membership for a given branch operation. Grameen Bank is currently attracting only 25 percent of the target households in its area of operation. This low participation may reflect constraints on both the supply and demand side. On the supply side, member mobilization is the single largest marginal cost of lending. Grameen's long-run cost efficiency thus depends on how effectively it reduces its cost of member mobilization. On the demand side, transaction costs of membership may be too high for potential borrowers to participate. Thus, Grameen Bank must find ways to reduce the transaction costs of membership in order to increase membership in each branch and thus help attain cost-efficiency.

However, the long-run cost-effectiveness of Grameen Bank depends on the long-run viability of borrowers who can absorb the increased cost of borrowed funds at the market rate of interest if Grameen Bank cannot absorb the full amount of increased cost through internal cost efficiency. This means, borrowers need to be efficient as well as capable of diversifying into new enterprises over time as the economy expands. Grameen Bank can help promote the entrepreneurial development of borrowers through relevant skill training, technology, and market promotion. It can also help promote marketing of their products by exploring and tapping potential export markets.

Policy Conclusions

Grameen Bank is a unique financial institution in Bangladesh that has succeeded in providing credit, without collateral, to over 1.6 million poor people and recording very low default rates. Grameen Bank is more than a bank, however. Its objective includes the alleviation of poverty of the rural poor through credit and social intermediation. Its success as a financial institution is its creation of a market niche. Its success as a poverty alleviation program, on the other hand, is its outreach to women among the rural poor who constitute over 94 percent of its membership.

What has been difficult for many DFIs to accomplish for several decades with the support of governments and various bilateral and multilateral agencies has been accomplished by

Grameen Bank in a decade. Although poverty alleviation through subsidized credit and economic growth was the objective of many DFIs, not much success was possible for a variety reasons. The principal reasons were the stringent asset-based collateral requirements and the organizational weakness of DFIs that caused the subsidized funds to be channelled to the rich, although these were earmarked for the poor. These better-off recipients used the cheaper money both for productive and non-productive purposes which did little to help the poor. These efforts not only failed to reduce poverty over time, but also could not ensure the viability of DFIs -- subsidy, low recovery rates, and the erosion of portfolios due to low (often negative) real interest rates undermined the solvency of these institutions.

Grameen Bank has directly attacked poverty by targeting credit and organizational assistance directly to the poorest people, at reasonable terms the poor find acceptable. The member dropout rate is low (15 percent), while the loan repayment rate has been consistently high (above 90 percent). The benefits from program participation must be high enough, given the cost of program participation; otherwise, the dropout rate would have been high and the loan recovery rate would have been low. The accrued benefits to the members are also high; as they save about 19 percent for each amount of loan disbursed.

Given the success of Grameen Bank in reaching the poor and alleviating poverty, the question is whether the program is replicable in other countries. This issue depends on the extent to which its program design is replicable and, to a large extent, on the role of Dr. Yunus in the development of Grameen Bank. If Grameen Bank is successful mainly because of the charismatic and committed leadership of Dr. Yunus, then the program is not replicable. Similarly, if the program design is unique and context-specific, it is also not replicable. As discussed earlier, the management of Grameen Bank is highly decentralized and major decisions are taken by managers in the field. Grameen's expansion in about 50 percent of all villages in Bangladesh is an example of its wide replication. Once the program was institutionalized, Dr. Yunus has played a limited role in day-to-day business. The issue of leadership is, however, more pertinent in the early stage of program design and in its development process.

What is more important is whether Grameen's group-based lending is replicable. Group-based lending is replicable in an environment where social intermediation is required for lending to the poor. It is also applicable in rural settings where asymmetric information and imperfect enforcement make credit transactions highly risky and costly. Group lending is also desirable for the poor where the economics of poverty is rooted in the socio-economic inequities of the societies so that existing social institutions cannot be used to deliver subsidized inputs to the poor. Group-based targeted credit and other inputs may also be necessary where there is a market failure.

However, the successful replication depends on the creativity and commitment of the leadership and its ability to carve out a market niche. The other crucial factor for successful replication is the availability of funds for on-lending to the target population. For institutional development and experimentation, the availability of grants and concessionary finance is necessary. Moreover, as shown earlier, a Grameen Bank branch takes about five years to break-even. A targeted credit program that works to improve efficiency in the case of a market failure must receive the seed fund for institutional development. It is in this context that the World Bank's grant of $2 million to Grameen Trust for replication exercises would help further poverty alleviation effort through targeted credit.

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GRAMEEN BANK SOME STATISTICS (as of June 1993)

Number of Branches	1,030
Total Number of Employees	10,452
Number of Villages Covered	32,529
Number of Centers	
Total	54,819
Male	3,640
Female	51,179
Number of Members	
Total	1,614,673
Male	1,517,044
Female	97,629
Number of Borrowers	
Total	1,586,145
Male	95,803
Female	1,490,342
Loan Disbursement (cumulative)	
Total	Taka 23,979.2 million
Loans to Women	Taka 19,682.0 million
Loans to Men	Taka 2,581.4 million
Loans Outstanding Total	Taka 7,029.6 million
Savings and Deposits	
Total	Taka 6,659.5 million
Total Member Savings	Taka 4,553.3 million
Male Member Savings	Taka 1,307.0 million
Female Member Savings	Taka 3,246.3 million
Social Development	
Number of group-operated schools	16,169
Number of students in schools	459,405
Number of marriages without dowry	18,616

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