

SAVINGS COLLECTORS AND FINANCIAL INTERMEDIATION IN GHANA

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1. Introduction

Savings mobilization by full-time individual savings collectors is rarely described in the literature on informal finance, which focuses more on rotating savings and credit associations (ROSCAs) and on credit. Survey evidence from Ghana reported in this article indicates that most saving by Ghana's market women is through daily deposits to individual collectors, who mobilize a significant share of deposits in commercial banks near some major urban markets. This system has spread from rural markets to urban office workers, and offers greater potential to provide true financial intermediation between third-party savers and borrowers, especially through linkage to the formal financial system, than do either ROSCAs (which are closed groups) or moneylenders (who do not mobilize others' savings).

We present survey data on the methods, incomes, and transactions costs of these individual collectors and analyze their potential for greater financial intermediation by expanding their lending operations. We conclude that linkage to the formal banking system could be accomplished within existing bank practices and would increase the efficiency of the financial system as a whole.

2. Review of Literature on Informal Financial Intermediation

Most of the literature on informal savings mobilization in Africa focuses on ROSCAs (Ardener 1964, Aredo 1993, Bouman 1977, Geertz 1962, Mauri 1987. ROSCAs-called *tontines*, *susu* groups, *esusu*, *iqqub*, *chilemba*, and other names-have been described or are thought to exist in almost all African countries, although their importance and form vary (Miracle et al. 1980, Bouman 1993). They appear to have had a longer tradition in Western Africa (Ardener's 1964 description remains apt), but sophisticated forms are also found in Eastern Africa (Aredo 1993, Mauri 1987).

In a typical ROSCA, all members pay in similar amounts at regular intervals agreed upon by the group to a common pool, with the proceeds handed over to each member of the association in turn (bidding is allowed in some variations). Members usually may make multiple contributions and collect as many times as their number of contributions, enabling better-off members to boost the size of the fund and improve their access to lump sums. Recent literature has modeled ROSCAs as a simple mechanism of accumulating funds that involves intermediation between those whose turns come earlier and later (Besley et al. 1993). Since all recipients but the last receive the accumulated sum sooner than if they had acted alone, the average cost of ROSCA funds may be competitive even for people

who have access to credit from formal institutions (van den Brink and Chavas 1991). ROSCA intermediation, however, is within a small, closed group over a fixed period of time, and those late in the rotation generally are not compensated for providing their savings or for the risk that early recipients will drop out.

ROSCA proceeds typically are spent on consumption goods or used as working capital; relatively broad patterns of use have been found in Nigeria and Cameroon (Miracle et al. 1980). In Malawi, Chipeta and Mkandawire (1991) found that ROSCA participants "invested" most of the proceeds (65 percent) in fertilizer; farm labor accounted for 5 percent, school expenses 3 percent, and the remaining 27 percent went for other consumer goods and services. Many traders and market women in Ghana use ROSCAs to expand their businesses by increasing their stock or variable inputs (Aryeetey and Gockel 1991). Although in principle the ROSCA disbands after each rotation, some continue over long periods and develop supplementary social welfare, insurance and loan funds. The system has many adaptations over time, cultures, and uses.

Less attention has been paid to groups aimed at accumulating savings for a specific purpose-sometimes including lending to earn a return. These Accumulating Savings and Credit Associations (ASCRA's; sometimes called "fixed fund associations") may be aimed toward common objectives such as school fees or annual festivals for which ROSCAs are unsuitable, toward community development (a monetary evolution of communal labor traditions), or a source of borrowing for members' businesses (Bouman 1992). ASCRA's have much in common with the system described in this paper, except that they are membership organizations that must agree on objectives.

On the credit side of informal finance, moneylenders are commonly mentioned but infrequently examined empirically. Moneylenders may engage in this activity as a full-time profession, and may even be registered as such (Adjetey 1978). Others are part-time moneylenders, occasionally using surpluses from other business activities such as trading to lend short-term at relatively high interest rates (Adegboye 1969). In both cases, they may be seen as using their own savings as working capital for their moneylending business, rather than intermediating between third-party savers and borrowers.

Less prominent in the literature are individual savings collectors, who collect an agreed amount from each client every day and at the end of the month return an amount "equal to the sum of the deposits minus one-thirtieth, or one day's deposit, which is the banker's fee" (Lewis 1976). As early as 1976, Lewis observed that these "ambulatory bankers have largely replaced collegially organized and managed rotating credit associations" in Abidjan, in part because "the impersonal nature...frees participants of the interpersonal

tensions that have plagued the rotating credit associations." They have been observed in a number of West African countries, including Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Niger, Nigeria, Sierra Leone, and Togo, although studies of informal financial institutions in East Africa do not identify such arrangements.

Individual collectors are believed to have evolved from ROSCAs, as reflected in the use of the same term for both in Ghana-*susu*-and francophone countries-*tontiniers* (Aryeetey and Gockel 1991, Lelart and Gnansounou 1989). Since *tontiniers* may also organize group ROSCAs, distinctions cannot always be clearly drawn.¹ They also resemble some ASCRAs; e.g., Ojo (1976) reported that 19 percent of urban respondents and 7 percent rural in Ondo State, Nigeria, saved principally through an *ajo*, a market society whose treasurer recorded daily contributions that were returned at the end of the month minus one day's fee. Some observers may not have distinguished individuals who collect savings on their own from designated agents of voluntary groups.

In the literature on Asia, daily collections appear more in connection with loan repayment than savings mobilization. For example, a credit program in Indonesia (Judd and Bussau 1987) and "moneyshops" in the Philippines use "teller-collectors [who] go through the market once or twice a day to collect loan installments and possibly to accept savings deposits.....greatly reducing [clients'] transaction costs" (Von Pischke 1992). These examples, however, represent **formal** institutions that find daily collection "a very effective means of packaging formal financial services for those accustomed to informal finance" (Von Pischke 1992). The "Pygmy Deposit" scheme of the Syndicate Bank in India, which mobilizes deposits through daily collection (though for long-term rather than monthly accumulation), likewise is a conscious innovation of a formal institution (Bhatt 1989)-though it may have been based on similar activities by informal *bishi* since the mid- 1970s (Bouman 1989). Moneyguards who act much like the West African savings collectors are reported in Bangladesh (Maloney and Ahmed 1988), but in general money-lenders, pawnbrokers and private bankers appear to dominate informal finance in Asia (Chandavarkar 1989). It may be that the widespread availability of village moneylenders and pawnbrokers, credit from merchants, credit unions, and other forms of informal and semi-formal finance in Asia and Latin America has forestalled the emergence of savings collectors.

1. Lelart and Gnansounou (1989) describe a combination scheme in which a *tontinier* collects CFAF 2,000 a day from 21 clients and distributes the accumulated pool (minus fee) every 10 days to each of the clients in turn over 210 days.

The literature offers little on the evolution of informal institutions in response to various macroeconomic and institutional changes within African economies. For instance, Seibel (1989) provides a taxonomy of four types of savings and credit associations, including those that do and do not operate on a rotational basis, but does not analyze how various types have evolved in response to new demands on existing structures. Nevertheless, Bouman (1992) and Soedjede (1993) suggest that there has been substantial evolution and adaptation of the various informal institutions reviewed above. More research is needed on the dynamic variations in the operations of these institutions as socioeconomic conditions change, especially to understand how the informal-formal linkages suggested by Seibel can be achieved.

In this paper we include a dynamic element by analyzing how one such institution could be assisted in its efforts to transform to meet growing demand for its services, in particular for credit. We first provide evidence that individual savings collectors play an important role in mobilizing monetatly savings in the underdeveloped financial systems that characterize most African countries and describe their operation in Ghana. We then note an unsuccessful modification of the system and show how a linkage between the formal and informal systems could better enhance the ability of savings collectors to intermediate mobilized funds by expanding credit to their clients.

3. Methodology

Unless otherwise noted, the data presented in this article are from interviews with 151 informal financial agents in Ghana conducted by Dr. Aryeetey in 1990, supplemented by indepth follow-up questionnaires in 1992 on transaction costs and risk perception with five of those respondents and by three meetings of the authors with the executive committee of the Greater Accra *Susu* Collectors' Cooperative Society (GASCCS).² We first review the nature and extent of the savings (or "*susu*") collection business and the costs involved. We then examine the lending behavior of savings collectors and the average and marginal costs of such lending. Finally, we explore the linkage between savings collectors and the formal financial system and show how strengthening this linkage could generate mutual benefits by expanding the intermediary role of savings collectors.

2. These studies were funded by the African Economic Research Consortium (AERC) and the World Bank Research Committee; for further details see Ernest Aryeetey, "The Relationship Between Formal and Infomal Segments of the Financial Sector in Ghana," paper presented at the AERC Research Workshop, Nairobi, May 1991; and Ernest Aryeetey and William F. Steel, "Incomplete Linkage Between Informal and Formal Finance in Ghana," Washington, D.C., World Bank Industry and Energy Department Working Paper, Industry Series No. 62, August 1992.

4. An Introduction to the Business of Savings Collection

Ghana's *susu* collectors, or individual mobile bankers, take daily deposits from a variety of savers (mainly market women) and return these deposits to their owners at the end of each calendar month. Aryeetey and Gockel (1991) found that 77.5 percent of market women in Ghana's three principal cities saved in this manner. No interest is paid on the deposits, but rather a service fee of one day's deposit is withheld by the savings collector. This system has been reported in rural markets and, more recently, among office workers and households in Ghana; this article focuses on urban markets, where there is a constant demand for credit as well as for savings instruments.

Although most of the clientele of *susu* collectors in urban markets are female (over 70 percent), 90 percent of the collectors are male. One explanation is the high level of illiteracy among market women; men are more likely to have the education needed to keep proper records of deposits. Previously most savings collectors were primary and middle school teachers who undertook the business on a part-time basis. Today, many new, young entrants are engaged full-time. In 1990, 59 percent of them had been in business for fewer than 3 years, coming in after the Economic Recovery Program. For 73 percent, mainly between 25 and 50 years old, savings collection was their only occupation; for the remaining 27 percent, trading occupied about a third of their time.

The average *susu* collector takes in C87,000 or US\$218 daily in deposits that range from C100 to C1,000 and average C290.³ Collectors average about 300 clients; large operations involve up to 1,500 persons in a month (collectors with more than 600 clients usually have an assistant). The 500 members of GASCCS are able to mobilize C43,500,000 worth of deposits daily.

Savings collectors can use the deposits mobilized in five ways: deposit in a bank account; hold at home; invest in own small business; lend to regular deposit clients; and lend to non-clients. In the past, demand deposits dominated the choices made, but there are indications of increasing interest in putting the money to work. Out of the total collection, *susu* collectors surveyed in 1990 deposited between 30 percent and 100 percent (with an average of 74 percent) in their bank accounts, and 56 percent of the collectors maintained that they deposited the entire collection. Since the financial system does not presently offer

3. Market women themselves report an average daily deposit of C500 (Aryeetey and Gockel 1991). This may represent their *desired* daily saving, but appears to overestimate the level of deposits they are actually able to sustain. The exchange rate at the time of the survey was C400 (C = cedis) to one US\$.

any interest-bearing short-term accounts, this high use of demand deposits may reflect either a preference for security over return or the lack of financial instruments suitable for the short period (less than one month) over which they can hold the deposit. Most of the remainder not deposited in banks was either invested by the savings collector himself in a trading business or kept at home (although they seldom admit the latter). However, as trading opportunities have improved, they are reporting a smaller proportion of deposits (about 45 percent presently) and using more for trading and lending to a few trusted clients and occasionally to non-clients (Table 1).

Table 1

ESTIMATED DISTRIBUTION OF *SUSU* COLLECTORS' ASSETS (percentage)

	1990	1992	With expanded lending
Deposits with banks	74	45	50
Deposits either held at home or invested in trading	16	40	17
Advances to regular clients (low-risk, low returns)	6	9	30
Loans to non-clients (high-risk, high returns)	3	5	0
Arrears (10% of loans outstanding)	1	1	3

Note: Advances and loans include any arrears.

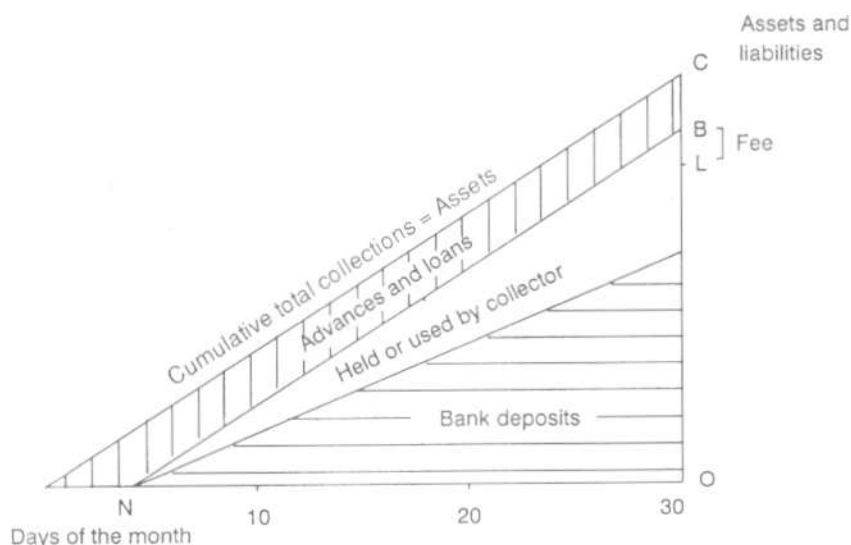
Figure 1: MONTHLY DISTRIBUTION OF *SUSU* COLLECTORS' CASH FLOW

Figure 1 illustrates the current pattern of collections and their disposition by *susu* collectors. Advances to clients (and loans to non-depositors) are usually made out of the collections at the beginning of the month; NB = net collections, assuming that all advances and loans are repaid within the month. A portion of subsequent collections is deposited periodically in banks. Liabilities (deposits to be returned at the end of the month) equal cumulative collections minus the fee of one day's collection, less total advances and loans ($OL = OC - CB - BL$).

The average *susu* collector earns C87,000 per month from the 3.3 percent commission on average monthly deposits of C2,610,000. Monthly administrative expenses are minimal: C5,600 for transport (mainly taking deposits to banks); C2,000 in taxes; and C1,666 for printing ledger cards to record deposits. The total of C9,266 represents less than 0.4 percent of deposits and 10.7 percent of gross earnings. Projected net annual earnings of

US\$2,332 are about six times Ghana's average annual income per capita (World Bank 1992).

From the depositor's viewpoint, the monthly fee of 3.3 percent for the service of daily cash management at the place of business is equivalent to putting a fixed daily amount into a savings account with a **negative** daily interest rate of -0.2 percent on the average daily balance during the month (see Annex 1). This represents an annualized rate of -54.4 percent for a depositor who takes the balance out at the end of every month. One interpretation is that banks would have to pay over 54 percent annual interest to attract these savers. (A saver who accumulates without withdrawal over an entire year would incur a lower rate of -6.4 percent because average daily balance is much higher, but would lose the stream of benefits from using the funds at the end of each month).

Three principal reasons explain why *susu* depositors are willing to pay to save, despite annual inflation rates over 30 percent in Ghana at the time. First, the contractual savings are a form of financial management to ensure the working capital need to restock supplies, from which they earn a stream of profits. Among *susu* clients who request advances, 70 percent stated purchase of stock as the purpose (other uses include "lumpy" expenditures such as consumer durables or school fees and-for 3 percent of women interviewed-accumulation of contribution to a monthly *susu* group). Second, the collector offers security, not just from theft but from competing claims. The contractual nature of the system shields the funds from other social demands and thereby satisfies participants' "illiquidity preference" (Shipton 1990). Third, transaction costs for the depositor are far lower than for formal savings and credit; the fee compensates for the convenience of savings collectors' daily visits to the client's home or workplace.

5. Lending by Savings Collectors

Savings collectors in Ghana presently intermediate only a small proportion of the funds they collect. About 60 percent of depositors request advances each month, but collectors lend an average of only 9 percent of average monthly deposits to 13 percent of their clients, with an average loan size of about C6,000. The collector normally advances less than the expected monthly deposit, preferably no more than half. The charge for such monthly advances remains simply one day's deposit, i.e., 3.3 percent of the amount advanced (equivalent to a daily interest rate of 2.0 percent or an annualized rate of 119 percent; see Annex 1).

When loans exceed one month (rarely), the daily normally increases (representing an additional interest charge). For example, a C1,000/day depositor who receives a loan of

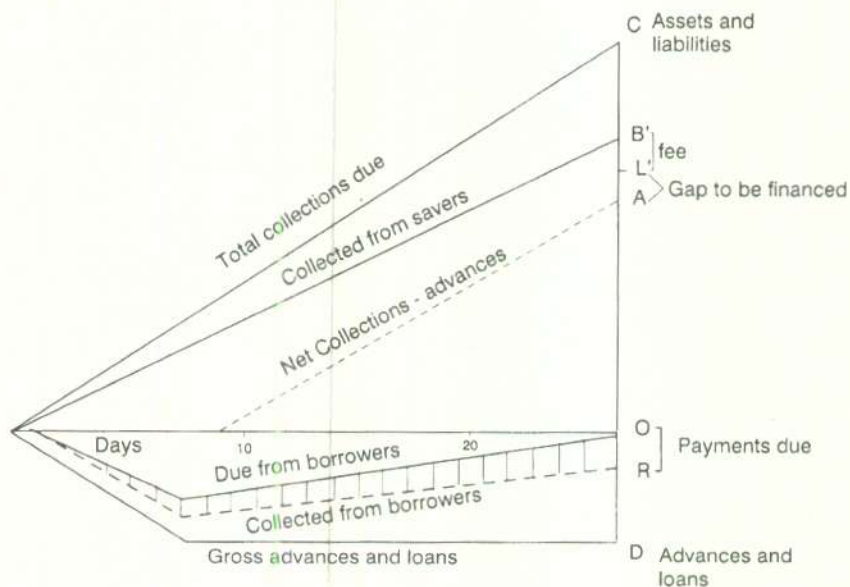
C90,000 repayable over 3 months might have to raise the daily payment to C1,200, bringing the total commission over the period from C3,000 to C19,200 (over 91 days), or 21 percent of the amount lent. This amortization schedule represents an implicit daily interest rate of 0.4 percent, or 45.4 percent per annum when compounded over 91 days (388.4 percent over 365 days). This repayment schedule and interest charge is also typical of the occasional loans made to non-clients.

The cost of funds to savings collectors is **negative**; as noted above, they offer a savings deposit interest that "pays" a daily rate equivalent to -0.2 percent (-6.3 percent compounded over a month or -54.4 percent over a year). Hence their spread on lending ranges from 0.4 to 0.6 percent per day, or monthly and annualized rates of at least 13 and 174 percent, respectively.

Not surprisingly, savings collectors express strong interest in expanding their lending. They believe that many more of their clients who request advances represent good risks, and that an increased probability of credit would attract additional clients, thus increasing their commissions on deposits. They also see profitable opportunities in lending longer-term or to non-clients, with the higher interest rate more than sufficient to compensate for additional risk.

Nevertheless, they are reluctant to increase lending because of the risk that slow repayment and loans maturing beyond one month would catch them short of the funds needed to refund depositors' payments at the end of the month. Failure to meet a month's obligations would put them out of business as savings collectors. They would, however, increase lending if they had access to a line of credit or other fall-back that would enable them to borrow to meet any shortfall in liquidity at the end of the month. The situation is illustrated in Figure 2. With expanded lending ($CB' = OD$), arrears (and payments due on loans beyond one month) may be sufficiently large ($B'A = OR$) that net liquid assets at the end of the month (OA) are insufficient to cover liabilities (OL'). Even if the entire fee ($B'L'$) is used, there may still be a gap (AL').

Figure 2: COLLECTIONS AND ARREARS WITH ADVANCES TO 30% OF CLIENTS



OL' = Liabilities to savers at end of month (minus fee)

DO = B'C = Collections due from borrowers

OR = B'A = Arrears (and term loan payments due)

6. Costs of Informal Sector Lending

Substantial opportunities for profitable lending are implied by the high proportion of *susu* clients who request advances, collectors' desire to expand lending to them, and the high

implicit rates on borrowing (informal moneylenders report rates ranging from 30 percent on a one-month loan to 100 percent for a one-year loan; Duggleby, Aryeetey and Steel, 1992). Could this excess demand be met by the commercial banking system? Our evidence suggests that the additional costs to banks of daily collection-cum-supervision would be high relative to bank lending rates, whereas lending represents a negligible marginal cost to collectors.

We base our estimates of the cost of informal lending on the time spent on this activity by the savings collectors in our sample, valued at their average monthly earnings of C87,000. We also apportion the direct administrative costs.

Savings collectors base screening and risk assessment on the regularity with which clients make payments and the length of time they have saved, as indicators of cash flow and commitment to financial contracts. They screen out those who have not saved steadily for at least 4 to 6 months. For existing clients, this information is readily available from the individual ledger cards on which all daily payments are entered; irregular payments are conspicuous from blank spaces. Especially for non-clients, information on reliability and indebtedness is obtained from other collectors, who regularly exchange information on difficult clients during the monthly GASCCS meetings.

The collectors surveyed devoted about 60 percent of their time in the first three days of each month to receiving and screening loan applications; this represents about 6 percent of total monthly personnel time, or C5,220. This represents a real cost to existing collectors because it reduces time available for deposit collection. In addition, the cost of ledger cards, which provide the information for screening, comes to C1,000 per month for the 60 percent of clients who request advances. Total screening costs of C6,220 are equivalent to about 2.6 percent of the total amount lent per month.

Monitoring and collection is done by savings collectors in the course of their daily rounds to collect deposits, and imposes no marginal cost on their time. The deposit ledger cards provide the necessary information to monitor signs of cash flow problems and possible default. For a bank hiring collectors, however, the labor cost can be estimated at 11.7 percent of *susu* collectors' monthly time, or C10,179 (to monitor 13 percent of clients from the third to the last day of the month). We can also attribute costs of 9 percent (the share of loans in total deposits) of monthly taxes and transport costs to monitoring and collection, or C684. Total monitoring and collection costs then come to C10,863 (4.6 percent of the total loan amount) for a bank hiring collectors, or C684 (0.3 percent) marginal cost for existing collectors lending to existing clients.

Contract enforcement costs are kept low by savings collectors through daily collection and

monitoring. Between 0 and 10 percent of borrowers are typically delinquent in the sense that they do not complete repayment at the end of the month. Delinquent loans are usually repaid by the end of the second month, and few actually default. An educated guess is that additional costs of enforcing delinquent loans are currently a maximum of 10 percent of normal monitoring costs, i.e., C1,018 of 0.4 percent of the total loan amount.

Total lending costs, therefore, are estimated at 7.5 percent of the monthly loan amount for new lenders, or for existing *susu* collectors lending to non-clients. This is considered high relative to normal spreads for commercial banks (estimated to average about 14 percent per annum in 1991 and 12 percent in 1993). For a *susu* collector lending to existing clients, however, the marginal cost is only 3 percent of the loan amount (since collection and monitoring involve no additional time), which is low relative to their spread of 13 percent per month. Furthermore, the extra cost involved in lending to non-clients is likely to be compensated by the high rates currently prevailing for informal sector loans, whereas commercial banks do not yet substantially vary their interest rates by client.

We conclude that the allocation of financial resources would be improved if savings collectors were able to expand their lending operations. To assess the feasibility of such an expansion, we first investigate how the linkage between the *susu* collectors and the formal banking system might be completed and then review other recent developments that draw on *susu* collectors' methods or cater to them.

7. *Susu* Collectors' Relationship with the Banks

The GASCCS requires its members to open accounts with a major commercial bank, partly in hopes of influencing the bank to grant them facilities such as credit for on-lending and exemption from various charges usually levied on demand deposits. All of the 151 *susu* collectors interviewed had (or were about to open) an account with Ghana's largest commercial bank and 117 had accounts with several branches (20 percent had a savings account as well as a demand deposit account). Aside from GASCCS's requirements, *susu* collectors make deposits (an average of three per week) for security reasons.

Although savings collectors account for a significant share of monthly deposits in some branch banks (as much as 40 percent in one case), so far the banks have shown little interest in them, for several reasons. First, they have not identified *susu* collectors separately from other customers. Second, banks view their deposit growth as adequate without special efforts (although part of that growth is through the efforts of *susu* collectors), especially since tight monetary policies in recent years have restricted lending opportunities. Third, the banks are concerned that collectors' balances drop by over 90

percent just before the end of the month after building up steadily (although other accounts, such as direct salary deposits, have an inverse pattern). Third, banks view their deposit growth as adequate without special efforts, especially since tight monetary policies in recent years have restricted lending opportunities.

While high transaction and information costs make it difficult for commercial banks to lend directly to individual collectors, it should be feasible for banks to grant an overdraft facility to GASCCS, which in turn could on-lend to its members. At the time of this study, GASCCS had invested C5 million of its members' monthly contributions (C1,500 each) to a welfare fund in Treasury Bills, which could be used as collateral for the overdraft.

An overdraft facility of C5 million would fully meet the estimated monthly shortfall of GASCCS members if they each provided advances to 30 percent of current clients (i.e., half of those who request it), or C783,000. Collectors could meet this demand from collected funds within 9 days, or sooner if they have accumulated capital from previous earnings or have access to credit. Assuming a 10 percent delinquency rate (the current maximum reported), the anticipated shortfall at the end of the month would be C78,300—approximately equal to net monthly fees of C77,734 (C87,000 commission less expenses of C9,266). To allow for variations and higher risks associated with increased lending, we assume that arrears and payments due on loans beyond one month may reach 15 percent in a given month, or C117,500. Collectors would need an individual ceiling of approximately C40,000 to cover this amount less net monthly fees if they are to lend and still be sure of repaying depositors who did not receive advances. Assuming that no more than 25 percent of collectors would need to draw down their credit line in any given month (or that collectors draw an average of 25 percent of their individual ceilings), the total credit line needed to cover the 500 members of GASCCS would be C5 million.

Actual design of an on-lending facility would have to be sufficiently flexible to adjust to two main sources of uncertainty: deviations between the assumptions in the preceding paragraph and actual experience; and increased risk associated with increased lending. In particular, GASCCS estimates that increased lending could lead to doubling the number of clients. At some point, however, new clients attracted primarily by access to credit may prove riskier borrowers than present clients, whose primary motive is saving. Collectors believe they can manage this risk by requiring a period (e.g., six months) of saving before a client can receive credit and through careful selection and daily monitoring.

Furthermore, the system depends on the ability of the association to judge the creditworthiness of its members and prevent them from taking excessive risks. We believe that the system should be designed with fairly conservative initial guidelines, which could be

gradually eased if warranted by experience. Given the high information costs and risks associated with new clients and non-depositors, participating collectors should lend only to clients with at least six months savings experience. Furthermore, to ensure that collectors maintain an adequate ratio of bank deposits to advances, their individual credit ceilings should be established in proportion to their average daily bank balance. A credit limit of 20 percent of average daily balance would enable a collector to finance payments due of up to 18 percent by keeping half of net collections in the bank (if net profits are also used; if not, the maximum coverage would be 9 percent). The change in distribution of assets under these assumptions is shown in the last column of Table 1. By updating the credit ceiling for members who draw on it, GASCCS can monitor their bank balances and obtain an early warning of those who may be overextending their lending.

Expanded lending involves risks for both the *susu* collectors and their depositors. The additional fees from doubling the number of clients could be offset by losses if eventual defaults reach 5 percent of loans. While this rate is higher than those presently reported by savings collectors and by character-based lending programs in Indonesia and Bangladesh, defaults could easily reach this rate if collectors become overly aggressive about lending to new clients. The suggested credit ceiling would discourage collectors from overextending their lending. (For those who do, GASCCS would have to decide whether to extend an emergency loan at a higher rate to enable the collector to stay in business, on the condition that they reduce lending, or to accept likely default by the collector on outstanding credit.) Some depositors may suffer if overextended collectors are unable to meet their liabilities to depositors at the end of the month. Unlike the situation with the savings and loan associations, depositors have no more than a month's savings at stake; a collector who fails to pay will immediately lose his depositors. Losses to depositors may be reduced because the incentive for collectors to abscond with their collections before the end of the month is reduced by the amount of advances.

Thus it should be possible to establish a fully-backed overdraft facility that would enable GASCCS members gradually to expand their lending to existing clients and subsequently to new clients, as proceeds are added to their Treasury Bill holdings to bank up an increased overdraft facility.⁴ If indeed the total number of depositors doubles an 30 percent

4. It is estimated that GASCCS could cover its cost of funds and transaction costs of on-lending by charging a 4 percent monthly fee (60 percent per annum) for credit drawn by its members, assuming that the banks would charge no more than 2 percent per month for a collateralized overdraft facility. To the extent that GASCCS provides credit out of monthly collections from members, it would avoid the cost of obtaining the funds from a bank. Surplus funds (and perhaps an additional levy) would be invested in additional Treasury Bills to expand the size of the overdraft facility.

receive advances, the total credit provided by its Greater Accra members could reach C783 million a month, requiring that the overdraft facility rise to on the order of C10 million. Because collectors make advances and loans from their own resources and need the overdraft only to cover the end-of-month gap (AL'), the ratio of loans to overdraft is high-equivalent to OD/AL' in Figure 2, divided by the average share of credit ceilings used in a given month. Implementation of this scheme would depend on greater competition in the banking system and lower interest rates on government paper so that banks have more incentive to develop linkages with the informal financial system and on technical assistance to train GASCCS and its members in techniques of financial intermediation.

8. Recent Evolution of the System

In the late 1980s, the savings collection methodology was adopted by a number of "savings and loan" companies that emerged in Ghana to amass funds by taking advantage of the strong demand for credit in Ghana's growing economy. They hired collectors to take daily deposits using the *susu* method and offered near-automatic credit to savers who accumulated funds over six months or more. The promise of credit attracted substantial deposits.

Soon, however, the savings and loan companies ran into liquidity problems through a combination of mismanagement of collected funds, excessive lending, and poor repayment performance. Defaults were largely attributable to inadequate screening and monitoring, which were not built into the system. The collapse of most of these companies led the Bank of Ghana to issue regulations in 1990 and 1993 concerning capitalization, lending ratios, permanent premises, and other requirements for non-bank financial institutions. By mid-1992, only two companies had met its criteria. So far, the regulations have not been applied to individual savings collectors, although in principle they could be required to meet the formal standards.

Purchase finance companies that have emerged since 1985 have proven more successful. They provide partial credit for the purchase of consumer durables and equipment, with the goods serving as collateral. Using the *susu* method, their employees collect both loans and savings daily. New clients may have to save up to half the purchase price before obtaining a loan, typically to be repaid over three to six months. These finance companies intermediate between informal savers and borrowers without direct links to formal banks. Although they serve a market niche of somewhat larger enterprises than the usual clients of *susu* collectors, most of them are not large enough to meet the requirements of the Bank of Ghana.

In 1993, a newly-established, private savings and loan institution targeted informal market niche by locating in a marketplace and offering quick, convenient services to larger traders and *susu* collectors, who gather smaller amounts from petty traders. Registered with the Bank of Ghana and affiliated with a commercial bank, it provides a direct link between informal and formal financial systems. As it gains enough confidence in its savings collector clients to extend credit to them, the collectors will be able to extend credit to their own clients. Another private savings and investment institution (not yet licensed) is targeting microenterprises such as back-yard bakers, food preparers, and carpenters for term loans of 3 to 6 months, using the *susu* method of daily collection of loan repayments or savings.

9. Conclusion

Commercial banks in most African countries are ill equipped to provide the daily on-site collection and monitoring needed for effective credit to the informal sector. But access to formal credit by informal financial agents would exert substantial leverage in expanding credit to traders and microenterprises by enabling savings collectors to intermediate between savers and borrowers among their own clients. Because they receive rather than pay commissions on deposits, the resulting expansion of deposits would generate additional funds that could be used to meet shortfalls. Without access to credit as a last resort, however, the savings collectors cannot risk their livelihood as deposit collectors by extending significant amounts of credit. The proposed linkage is made feasible in Ghana by the presence of an association that can act as an intermediary and provide collateral to the bank.

Thus individual savings collectors (unlike ROSCAs and ASCRAs) have the potential to move from their already important role in mobilizing household savings to expanding the ability of the financial system as a whole to intermediate and provide credit. The emergence of private banking techniques oriented toward informal depositors, borrowers and savings collectors is already improving the ability of the financial system as a whole to mobilize and intermediate funds.

ANNEX 1

IMPLICIT INTEREST RATES AND COST OF FUNDS FOR SAVINGS COLLECTORS

From the depositor's viewpoint, saving with a daily savings collector may be compared to putting a fixed daily amount (D) into a savings account with interest calculated on the

average daily balance during the month. Because the depositor pays a commission instead of receiving an interest payment, the amount in the account at the end of the month is less than the sum of the daily payments and the implicit interest rate is *negative*. The daily interest rate (r) that would make the saver indifferent between the two (by compensating for transaction costs) can be calculated as:

$$\sum_{i=1,30} D \cdot i \cdot r = -D \text{ (the commission charged by the savings collector)}$$

Since $\sum_{i=1,30} i = 465$, $r = (-D)/D \cdot 465 = -0.00215$

To annualize this daily rate of -0.2 percent, we take:

$$(1+r)^{365} - 1 = (1-0.00215)^{365} - 1 = -0.544 \text{ or } -54.4 \text{ percent.}$$

In some variations of the savings collection scheme, depositors save for longer periods of time, e.g., six months or a year, to accumulate larger sums or to qualify for possible credit. Someone who saved C1000 a day over 365 days and paid a monthly commission of one day's deposit would accumulate C365,000 - 12,000 = C353,000. The daily interest rate on the average daily balance in an equivalent savings account would be:

$$\sum_{i=1,365} D \cdot i \cdot r = -12D \text{ (the commission charged by the savings collector)}$$

Since $\sum_{i=1,365} i = 66,795$, $r = (-12D)/D \cdot 66,795 = -0.00018$

To annualize this daily rate of -0.018 percent, we take:

$$(1+r)^{365} - 1 = (1-0.00018)^{365} - 1 = -0.0635 \text{ or } -6.35 \text{ percent.}$$

The implicit interest cost of keeping money on deposit with a savings collector falls sharply with the length of time of the deposit because the average daily balance rises while the monthly commission remains the same. However, by leaving funds on deposit, the saver must forgo the stream of benefits (or profits) that would accrue from the goods purchased with the monthly lump sum.

A *borrower* receives the anticipated monthly accumulation net of the commission ($30D-D$) as an **advance** at the beginning of the month, and repays it through the daily deposit (D). This can be considered equivalent to a loan of $29D$ that accumulates interest (r) on the remaining balance at the beginning of each period and is amortized through fixed partial payments (D) over 30 periods (i.e., days). This loan would be amortized at precisely the

previously calculated implicit daily interest rate for monthly accumulation, i. e., 0.215 percent. However, since this is a *positive* interest rate paid on the loan balance, the calculation of the annual compound equivalent differs slightly from that of the corresponding negative rate:

$$(1+r)^{365} - 1 = (1+0.00215)^{365} - 1 = 1.1904 \text{ or } 119.0 \text{ percent.}$$

If a borrower receives an advance equal to an entire year's accumulation ($365D-12D$) and amortizes it through daily payments (D), the implicit daily interest is again the same as above, or 0.018 percent. This corresponds to an annualized rate of 6.8 percent.

The *cost of funds* can be represented by the implicit interest rate on a savings account that accumulates funds in the same pattern as the savings collector. The rate is the same as that calculated above that would make the depositor indifferent between the two schemes, i.e., -0.2 percent daily or -6.3 percent compounded over a month and -54.4 percent per annum.

References

- Adams, Dale, and G. Fitchett, eds., *Informal Finance in Developing Countries*, Westview Press, Boulder, Colo., 1992.
- Adegboye, R.O., "Procuring Loans by Pledging Cocoa Trees," *Journal of the Geographical Association of Nigeria*, Vol. 12, Nos. 1 and 2, 1969.
- Adjetei, S.M.A., "The Financial System of Ghana," Bank of Ghana Research Memorandum, Accra, 1978.
- Ardener, S., "The Comparative Study of Rotating Credit Associations," *Journal of the Royal Anthropological Society of Great Britain and Ireland*, 1964, pp. 201-229.
- Aredo, D., "The Informal and Semi-formal Financial Sectors in Ethiopia: A Study of the *Iqqub*, *Iddir* and Savings and Credit Co-operatives," African Economic Research Consortium Research Paper No. 21, Nairobi, 1993.
- Aryeetey, E., and F. Gockel, *Mobilizing Domestic Resources for Capital Formation in Ghana: The Role of the Informal Financial Sector*, African Economic Research Consortium Research Paper 3, Nairobi, 1991.
- Besley, Timothy, Stephen Coate, and Glenn Loury, "The Economics of Rotating Savings and Credit Associations," *American Economic Review*, Vol. 83, No. 4, September 1993, pp. 792-810.
- Bhatt, V. V., "On Financial Innovations and Credit Market Evolution," World Bank, Economic Development Institute Working Paper, Washington, D.C., 1989.
- Bouman, F.J.A., personal communication, February 8, 1993.
- Bouman, F.J.A., "ROSCA and ASCRA: Beyond the Financial Landscape," paper for Financial Landscapes Reconstructed: A Seminar on Pioneers, Problems and Premises of Rural Financial Intermediation in Developing Countries, Wageningen, The Netherlands, Wageningen Agricultural University, Nov. 17-19, 1992.
- Bouman, F.J.A., *Small, Short, and Unsecured: Informal Rural Finance in India*, Oxford University Press, Delhi, 1989.
- Bouman, F.J.A., "Indigenous Savings and Credit Societies in the Third World: A Message," *Savings and Development*, Vol. 4, 1977, pp. 181-209.
- Chandavarkar, Anand G., "Informal Credit Markets in Support of Microbusiness," in Jacob Levitsky, ed., *Microenterprises in Developing Countries*, Intermediate Technology Publications, London, 1989.
- Chipeta, C., and M. L. C. Mkandawire, "The Informal Financial Sector in Malawi: Scope, Size and Role," African Economic Research Consortium Research Paper No. 4, Nairobi, 1991.
- Duggleby, Tamara J., Ernest Aryeetey and William F. Steel, "Formal and Informal Finance for SMEs in Ghana," World Bank, Industry and Energy Department Working Paper, Industry Series No. 62, Washington, D.C., 1992.

Geertz, C., "The Rotating Credit Association: A 'Middle Rung' in Development," *Economic Development and Cultural Change*, No. 1, 1962, pp. 241-263.

Judd, M., and D. Bussau, "A Study of the Maha Bhoga Marga Small Enterprise Support Program," USAID, Jakarta, draft (processed), 1987.

Lelart, M., and S. Gnansounou, "Tontines et tontiniers sur les marchés Africains: Le Marché Saint Michel de Cotonou," *African Review of Money, Finance and Banking* Vol. 1, 1989.

Lewis, Barbara C., "The Limitations of Group Action Among Entrepreneurs: The Market Women of Abidjan, Ivory Coast," in Nancy J. Hafkin and Edna G. Bay, eds., *Women in Africa: Studies in Social and Economic Change*, Stanford University Press, Stanford, 1976.

Maloney, Clarence, and A.B. Sharfuddin Ahmed, *Rural Savings and Credit in Bangladesh*, Dhaka University Press, Dhaka, 1988, cited in Adams and Fitchett (1992).

Mauri, Arnaldo, "The Role of Financial Intermediation in the Mobilization and Allocation of Household Savings in Developing Countries: interlinks between organized and informal circuits" East West Center Honolulu, 1987.

Miracle, Marvin P., Diane S. Miracle, and Laurie Cohen, "Informal Savings Mobilization in Africa," *Economic Development and Cultural Change*, Vol. 28, July, 1980.

Ojo, "The Nigerian Financial System," Bangor: University of Wales, Occasional Economics Paper No. 7, 1976, cited in Hans Dieter Seibel (1984), *Ansatzmöglichkeiten für die Mobilisierung von Sparkapital zur Entwicklungsfinanzierung*, München: Weltforum Verlag.

Seibel, Hans Dieter, "Financial Innovations for Microenterprises: Linking Formal and Informal Financial Institutions in Africa and Asia," in Jacob Levitsky, ed., *Microenterprises in Developing Countries*, Intermediate Technology Publications, London, 1989.

Shipton, Parker, "How Gambians Save - and What Their Strategies Imply for International Aid," World Bank, PRE Working Paper No. WPS 395, Washington, D.C., 1990.

SODECON, Ltd., "Financial Intermediation for Microenterprises in Bangladesh, Kenya, Tanzania and Zambia," draft (processed), 1990.

Soedjede, Douata Adjémida, "De l'analyse des obstacles au développement des PME des secteurs privés formels et informels aux innovations financières," paper presented to the Conference on Agents of Change in Policy Development and Implementation for Small Enterprises, Committee of Donor Agencies for Small Enterprise Development, Abidjan, 30 November-2 December, 1993.

van den Brink, Rogier, and Jean-Paul Chavas, "The Microeconomics of an Indigenous African Institution: The Rotating Savings and Credit Association," Cornell Food and Nutrition Policy Program Working Paper 15, Washington, D.C., 1991.

Von Pischke, J.D., *Finance at the Frontier*, World Bank, Economic Development Institute Studies, Washington, D.C., 1992.

World Bank, *World Development Report 1992*, New York: Oxford University Press for the World Bank, 1992.

Abstract

Individual savings collectors play an important role in mobilizing savings from households and microentrepreneurs and to have substantial potential for financial intermediation in some African countries. Savers are willing to pay for the convenience and security of collectors coming to their work places and accumulating their daily savings over a month, or sometimes longer periods. Collectors sometimes provide advances, but their lending capacity is severely limited by their lack of assets and of access to credit. This informal system is evolving through linkages to the formal banking system that enable savings collectors to intermediate as well as mobilize savings and through application of their methods by semi-formal institutions.

LES COLLECTEURS D'ÉPARGNE ET L'INTERMÉDIATION FINANCIÈRE AU GHANA

Résumé

Les "banquiers ambulants" jouent un rôle important dans la mobilisation de l'épargne des ménages et des microentreprises et offrent de bonnes possibilités d'intermédiation financière à certains pays d'Afrique. Les épargnants sont prêts à payer pour la commodité et la sécurité qu'offrent les collecteurs qui se rendent sur leurs lieux de travail et qui accumulent leur épargne quotidienne sur un mois et parfois davantage. Les collecteurs consentent quelquefois des avances mais leur capacité de prêt est gravement limitée, faute de capitaux et d'accès au crédit. Ce système informel évolue grâce aux liaisons avec le système bancaire formel qui accroît l'aptitude des collecteurs d'épargne à servir d'intermédiaires et à l'application de leurs méthodes par des institutions semi-formelles.