"*With or without a model, we are going to (implement) this strategy. Connect me to these groups*."

Chief Executive Officer, Rwandan Commercial Bank

"The question is not whether we see the possibilities in linking. It is can we afford not to link…?"

Deposit Mobilization Manager, Tanzanian Commercial Bank

Focus Note 2: SG Linkages – The Business Case for Private Service Providers

In 2013, the Bill & Melinda Gates Foundation (BMGF) issued a statement of work calling for an evaluation of the feasibility of digitally linking savings and loan groups (SGs) to the formal financial system in alignment with BMGF's revised strategy to broaden the reach of digital financial systems. Thus, Bankable Frontier Associates (BFA) spent several intense months evaluating the case for promoted SGs[1] and their members to be linked profitably to the formal financial system via mobile money, and in doing so, expand the financial options available to their members. Specifically, BFA examined the case in Kenya, Uganda, Tanzania, and Rwanda—all countries with varying levels of formal financial access and mobile money developments. From Kenya—where Equity Bank has famously focused fully on the low income segment and where M-Pesa has been a staggering success and has now broken ground on a new era of mobile money services—to Uganda, where mobile money regulations are just now taking shape, BFA surveyed various participants of a possible linkage value chain to determine the costs and benefits of linking millions of poor SG members into the formal financial system.[2]

While the previous Focus Note asks what SG members have to gain from the world of formal finance and mobile money, this Focus Note outlines five incentives of SG linkages for banks and mobile network operators. The Note ends by discussing the tradeoffs which savings groups would face in deciding to make the switch to digital (including potentially prohibitive fees), along with a discussion of the requirements (and potential dangers) to scale digital linkages.

The BMGF-BFA SG Linkage Investigation

Despite the success of mobile money in Kenya, 53% of Kenyan adults that use mobile financial services do not have an account with a bank.[3] At the same time, 5.16 million Kenyan adults

[1] Throughout this Focus Note, SG refers specifically to savings groups promoted by international and national non-governmental organizations. Unlike informal savings groups which form spontaneously in communities, promoted groups follow standardized savings models, allowing interested parties to predict, with a fair amount of certainty, savings patterns and behaviors. An elaboration of the SG model and operations can be found in the Annex.

[2] Promoted SG members number between 3.65-3.97 million in Kenya, Tanzania, Rwanda, and Uganda, according to data gathered by Hugh Allen of the SAVIX.com from a selection of the largest promoting institutions and by BFA from conversations with promoting institutions in each country.

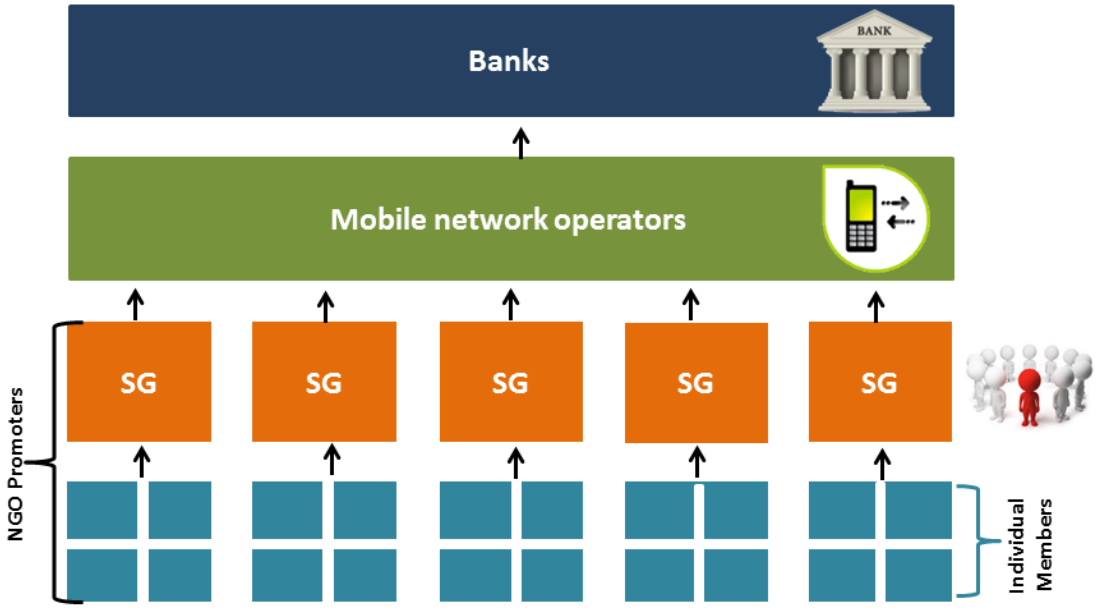
[3] FSD Kenya, Central Bank of Kenya. "FinAccess National Survey 2013." October 2013. FinAccess results are nationally representative, and Kenyan adults are defined as Kenyans 18 years and above.

(nearly 28%) belong to an informal savings groups—groups which provide the opportunity to save, and often borrow, without the constraints of needing to be close to a physical bank branch.[4] Among the poorest fifth of Kenyan adults, 15.5% use these informal savings groups while 28% use mobile financial services.[5] Moreover, mobile money has brought agents to within 5 km of three quarters of the population. Usage of savings groups is widespread across East Africa. Summed across all countries under investigation—namely Kenya, Uganda, Tanzania, and Rwanda—10.8 million individuals rely on informal savings groups as one instrument to manage their financial needs.[6] How can the ubiquity of both savings groups and mobile money agents be combined to create a broader set of financial services for the poor?

Many of these savings groups are trained and supported by NGO promoters, both domestic and international, and also allow for internal lending with the deposited funds. Although they have some important limitations, these promoted savings and lending groups (which will be referred to hereafter as SGs[7]) offer a unique opportunity to test whether mobile money can, indeed, play a transformative role for financial inclusion—by bringing the benefits of formal financial services to those who would otherwise remain outside of the formal financial ecosystem. A primer for the mechanics of promoted SGs is available in Annex 1 of this Note.

Building off of work which the Bill & Melinda Gates Foundation (BMGF) has already done in partnership with many international NGO promoters to pilot linkage partnerships, BMGF wished to investigate the incentives for stakeholders (Figure 1) to engage in digital linkage partnerships across East Africa.

Figure 1: The Digital Linkage Value Chain



[4] FSD Kenya, Central Bank of Kenya. "FinAccess National Survey 2013." October 2013.
[5] *Ibid*.
[6] World Bank. Global Financial Inclusion Index – Kenya, Tanzania, Rwanda, Uganda, 2011.
[7] For a detailed description of the SG model, please refer to the Annex.

This research shows that there are wins to digital linkages for SG members (see Focus Note 1) and supply-side providers, if structured correctly. While credit-led linkages could be dangerous to low-income SG members, particularly those that have not been exposed to the formal financial system prior, BFA's analysis found compelling incentives for banks and MNOs for **savings-led** linkages. The primary incentives of linkages for banks, MNOs, or both are identified below, along with a brief description of the expected benefit. Detailed analysis for each will be provided throughout this Focus Note.

Table 1: Incentives of SG Linkages for Supply Side Providers

Incentive:	Provider that would benefit:
1) Deposit Mobilization	If deposited, group savings would generate float income for **banks.** And because group deposits are expected to result in larger balances than those of the average individual benchmark deposit account offered to the low income segment[8], this float income would generate greater profit, on average, per account. This improves the business case for basic bank accounts, a particular incentive in countries where the cost of capital is high.
2) Liquidity	For **banks** or **MNOs** managing agent channels, SGs provide a predictable source of cash which could be used to coordinate liquidity among agents.
3) Acquisition of new clients	SGs provide **banks** and **MNOs** a single point of acquisition of multiple new customers, as many SG members may not have direct relationships with banks or mobile money providers.
4) Steady transactions	Regular transactions characteristic of internal SG financial behavior would benefit **MNOs** directly with steady transaction fee income, provided that fees are affordable enough for members to transact regularly.
5) Data on customer financial behavior	Last but not least, digital linkages would allow **banks**, **MNOs, and SG members** to benefit from data captured on savings and credit behavior. By capturing internal financial behavior electronically, providers could create profiles of expected customer savings and repayment capacity.

These conclusions were arrived at after a lengthy, iterative process. BFA spent five weeks in East Africa (and many weeks of deskwork beforehand) unearthing the motivations and goals for each of the possible stakeholders of an SG linkage value chain (Figure 1). BFA first gathered SG transactional data[9] during conversations with NGO promoters who were interviewed in East Africa. Using this data, BFA built a pro forma business model using a pro forma costing model developed during previous projects with BMGF, the *In*Focus[10] and Gateway Innovation for

[8] All outputs were derived from a pro formal business case which is based on data gathered from SG promoters, banks, and based on a generic costing model developed during previous projects with BMGF, known as InFocus and GAFIS.
[9] Most NGO promoters utilize the Savings Group Management Information System (MIS) to track transaction data of promoted groups. BFA analyzed this data to identify transaction profiles for each country.
[10] See InFocus Note #2, "How the Poor Use Their Savings Accounts – A Supply Side View" for an analysis of the business case to banks. < http://bankablefrontier.com/wp-content/uploads//documents/InFocus-Note-2-Segmentation-results.pdf>

Savings (GAFIS)[11] projects. During *In*Focus, BFA worked with four banks in developing countries to examine the case for providing savings products for low-income customers, while GAFIS went one step further to support five banks to design and deliver profitable savings products for the poor. This pro forma business model served as the basis for conversations with banks and MNOs, allowing the research team to verify and refine the model with new costing estimates. The conclusions in this Focus Note result from triangulation with a range of industry experts, including each country's Financial Sector Deepening Trust as well as experts in the field of SG promotion and support. BFA then tested the model using a number of potential linkage scenarios to determine whether a business case exists for banks to link with SGs, whether linkages would make financial sense for SG members, and to identify the risks which might result. In the rest of this Focus Note, analysis will be presented to support each of the incentives listed in Table 1 for respective supply side providers.

Why SGs? A readily available source of clients and funds

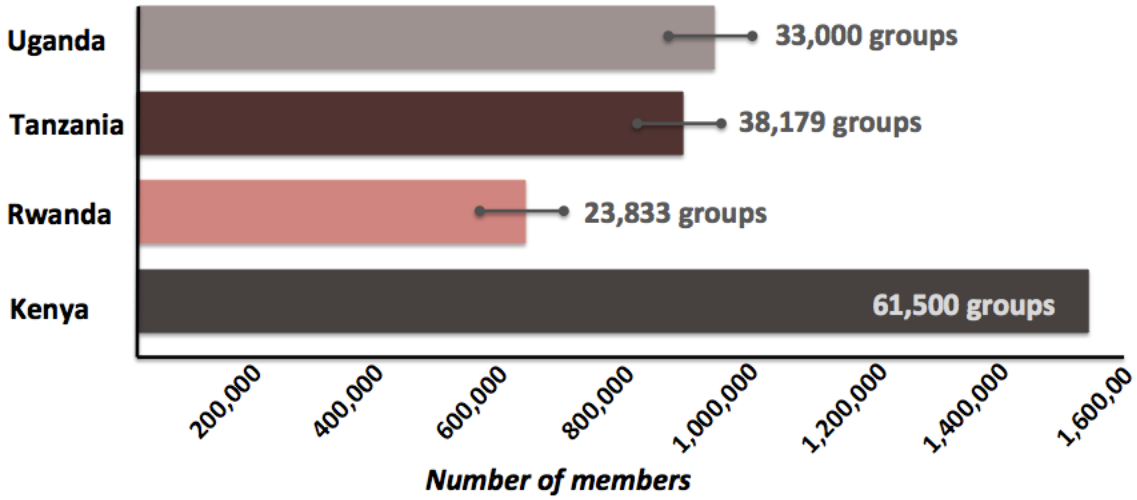
In the study's countries of Kenya, Rwanda, Tanzania, and Uganda, there are an estimated 3.65 million members across SGs promoted by international NGOs as of November 2013.[12] Note that this number does not include SGs promoted by local or community-based NGOs or those groups which have kept running after INGO support or formed independently of non-profit organizations.

[11] See GAFIS Focus Note #3, "The impact of gateway dynamics on the business case for small balance savings." < http://gafis.net/wp-content/uploads/2014/01/GAFIS_FN3_ImpactofGatewayDynamicsonBizCase.pdf>

[12] Allen, H. "SG Global Outreach." SEEP Network, November 2013. < http://www.seepnetwork.org/savings-groups-global-outreach-pages-20015.php> The 3.65 million estimate is based on data gathered in collaboration with Seep Network's Savings-Led Financial Services Working Group from the majority of international NGO promoters working in East Africa (Aga Khan Foundation, Build Africa, CARE, Catholic Relief Services, Global Communities, International Rescue Committee, PACT, Plan International, World Relief, World Vision, and others). The 3.9 million estimate is based on conversations and MIS data gathered by BFA in June and July, 2013. Of course, this estimate is based on the number of SGs formed and does not take into consideration groups which have disbanded over time.

NGO promoters form, train, and provide initial support to SGs. The promoted SG model has an impressive reach:

Chart 1: Estimated membership in Promoted SGs[13] (Number of members and groups)



Source: Membership estimates were gathered from discussions with NGO promoters during BFA's field research. While BFA was unable to meet with all promoters, these estimates align closely with SG membership data gathered by Hugh Allen of the Savix.com from a selection of the largest international NGO promoters working in each country.

Residual funds remaining in the box after all collections and loan disbursements have been conducted, also known as "cash-in-box," is a non-trivial amount (see Annex 1 for more on the SG model). In Kenya for example, the average cumulative cash-in-box for its nearly 62,000 SGs is more than USD 12 million.[14] This is a good proxy for the potential weekly deposit opportunity, assuming that all funds are deposited and that every SG is linked.

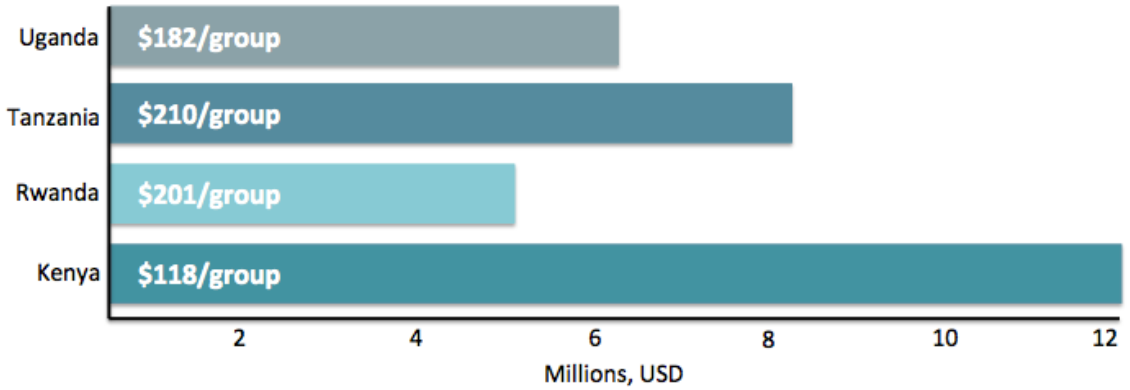
SGs and their members provide sizable deposit amounts, which, in addition to being steady and predictable, would fuel the linkage value chain. According to calculations based on MIS data on the savings behavior of first-year groups gathered from NGO SG promoters[15], these savings amount to an estimated 30 million U.S. dollars each week when totaled across SGs in East Africa.

[13] Membership estimates were gathered from discussions with NGO promoters during BFA's field research. While BFA was unable to meet with all promoters, the following estimates align closely with Hugh Allen's estimates from MIS data provided by international NGO promoters working in each country.

[14] Cash-in-box estimates derived from MIS data and conversations with promoting regarding SG cash flows during their 1st and 2nd savings cycles.

[15] Savings group MIS data on the internal financial behavior of first-year groups was collected from NGO promoters with whom the research team consulted in each of the countries studied: Aga Khan Foundation, CARE, Catholic Relief Services, and Plan International.

Chart 2: Average weekly "cash-in-box" (USD millions), across total promoted SGs per country[16]



Source: BFA calculated cash-in-box estimates for SGs in their 2nd year, when groups are considered to have matured for linkage, using data gathered during conversations with NGO promoters in each country and with MIS data from promoters, whenever possible.

The weekly deposit opportunity in each country may be even higher than the current cash-in-the-box, as these estimates reflect current practices which encourage members to borrow frequently and keep lock box savings amounts to a minimum (see Annex 1). This occurs for two reasons: 1) any money left in the village-level lock box between meetings is at risk of theft and 2) members are encouraged to borrow frequently to contribute interest to the savings pool.

However, high cash-in-the-box amounts—a danger and drawback to SGs—could well be a benefit for deposit-hungry banks. Well-designed linkages would provide opportunities to store residual funds in a secure bank account (and importantly, earn interest on these funds), benefiting both SGs *and* banks. Doing so would reduce pressure for members to borrow without reason and provide greater incentive to save, leading to attractive deposit-raising opportunities for linked banks.

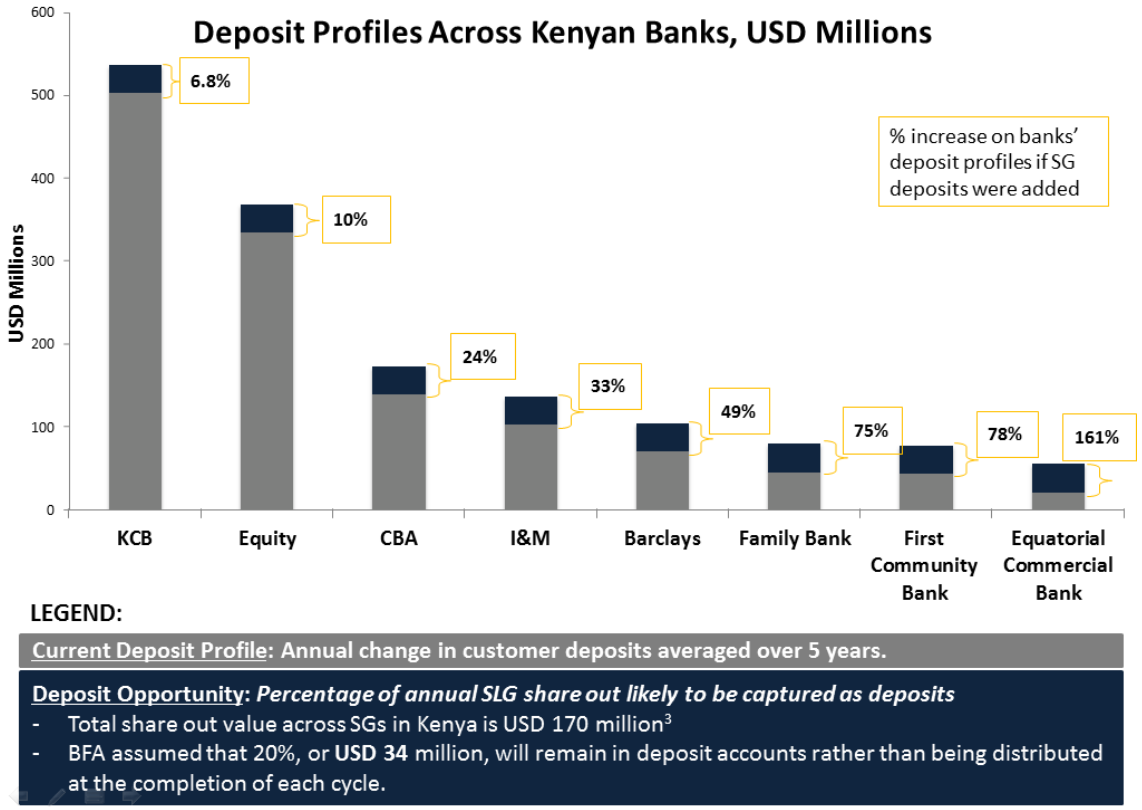
Incentive 1: The deposit mobilization business case of linkages for banks

Raising deposits in bulk

While SG members individually save relatively small amounts (particularly during their first cycles, when members are testing the reliability of SGs as savings vehicles), these deposits amount to a fairly steady and predictable source of deposits (Chart 2). In aggregate, the total deposit opportunity in each country compares favorably to the average annual deposit mobilization of commercial banks, particularly for small-to medium-sized financial institutions (see Chart 3, below, for an example from Kenya and Annex 3 for examples from Tanzania, Rwanda, and Uganda). Chart 3 shows the average annual change in deposits calculated over five years and portrays the increase that the addition of SG deposits would have on deposit growth for banks of various sizes.

[16] BFA estimated float estimates for SGs in their 2nd year, when groups are considered to have matured for linkage, using data gathered during conversations with NGO promoters in each country and with MIS data from promoters, whenever possible.

Chart 3: Average Annual Change in Deposits Compared with SG Deposit Opportunity, In Kenya[17]



Source: Customer deposit information collected from respective banks' Annual Reports for the years of 2006-2012. Converted to USD using December exchange rates for each year. Deposit opportunity estimated by BFA using aforementioned pro forma business model. See Annex 3 for Deposit Opportunities in Tanzania, Rwanda, and Uganda.

As seen in Chart 3, capturing even a portion (BFA estimated that about 20% of total SG deposits might be carried over as deposits by members with longer-term savings goals rather than distributed at the end of each cycle[18]) of combined annual share out would comprise a significant amount of average annual deposits mobilized each year by commercial banks. While the actual deposit opportunity may be less, depending on the number of SGs successfully linked to formal deposit accounts or on the actual amount carried over as savings rather than distributed to members, this amount may also be greater than the estimates above if savings behaviors change in response to linkage incentives (such as earning interest). Of course, bank interest in linkages will also depend on the macroeconomic factors in each country, such as cost of deposits or foreign funds. Annex 4 provides a richer discussion of the conditions which may influence this interest.

[17] Average change in annual deposits calculated using customer deposit information from Annual Reports of each bank (averaged over the previous 5 years).

[18] This estimate is based on the assumption that some members would value the opportunity to securely save in a deposit account for longer than one savings cycle or as a way to grow the group's accumulated funds through interest accrual. However, only through a well-designed pilot will we be able to confirm whether the propensity to save long-term in a bank would be less or greater than our rough estimate of 20%. As discussed in Focus Note 1 and later in the current Note, the cost of fees to groups and members may prevent uptake of mobile financial products.

The value proposition for banks

BFA's analysis of SG deposit and borrowing patterns found that group savings flows can offer large and stable deposits—exactly the kind which banks covet for float. The discussion which follows will compare estimated monthly net contribution margin (NCM, or what a bank can expect to earn from an account, minus variable costs) of an individual benchmark deposit account[19] versus the estimated monthly NCM of various SG linkage scenarios. This benchmark deposit account provides a reference point for what a bank would earn on an average deposit account per month.

Table 2: Estimated monthly net contribution margin of a branch-based individual benchmark deposit account versus branch-based SG group linkage scenarios

Row	Per month calculation	Individual benchmark deposit account (USD)	Scenario 0: SG group deposit account (USD)	Scenario 1: SG *and* individual deposit accounts (USD)*
A	Average balance in account	$ 93.75	$ 266.80	$ 757.16
B	Fees earned off of transactions (+)	$ 1.03	$ 0.15	$ 0.38
C	Bank cost to support those transactions (-)	$ 1.58	$ 5.05	$ 5.38
D	Net transaction margin (Fee revenue – cost)	$ (0.54)	$ (4.90)	$ (5.00)
E	Net float income (float revenue – interest paid to account)	$1.09	$ 3.21	$ 8.34
F	NET CONTRIBUTION MARGIN (net transaction margin + net float income)	**$ 0.55**	**$ (1.69)**	**$ 3.34**

Source: BFA calculations based on research conducted on basic bank accounts of 9 banks in developing countries during the InFocus and GAFIS projects. Note that this balance assumptions are based on MIS data from savings group promoters in Tanzania. See links to relevant project Focus Notes in footnote.[20,21]

**This includes the group account and also individual member accounts after completion of first cycle.*

Table 2 illustrates the business case for a bank to link with an SG using traditional branch and ATM channels (i.e. not using mobile money), compared with the average monthly profit (NCM) that the bank would expect to earn from an individual benchmark deposit account. While Scenario 0 illustrates a simple linkage scenario in which only the SG *group* account is linked, Scenario 1 illustrates the case in which both the SG group account and *each individual member* is linked as well. As shown in Table 2, NCM (row F) is the sum of net float income (row E) and net transaction margin (row D). On a typical benchmark account, NCM is estimated to be a monthly average of USD $0.55 per account. The challenge with most low income accounts is

[19] This benchmark deposit account represents the average behavior for an individual, basic savings account in a commercial bank in developing countries. This estimate is based off of work completed by BFA during the InFocus and GAFIS projects (see related Focus Notes cited in Annex 2).
[20] BFA. "InFocus Note #2: How the Poor Use Their Savings Accounts – A Supply Side View." May 2012. < http://bankablefrontier.com/wp-content/uploads//documents/InFocus-Note-2-Segmentation-results.pdf>
[21] BFA. "GAFIS Focus Note #3: The impact of gateway dynamics on the business case for small balance savings." April 2012. < http://gafis.net/wp-content/uploads/2014/01/GAFIS_FN3_ImpactofGatewayDynamicsonBizCase.pdf>

that the cost of supporting these accounts—inclusive of both the human and technological cost on every transaction—tends to be greater than the fee or float income generated on low balances, resulting in a loss or only the small profit shown above.

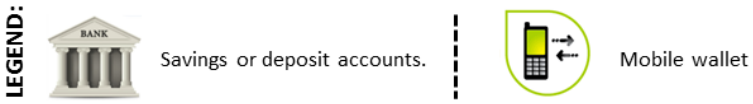
Based on BFA's analysis, SG accounts are estimated to do worse than individual benchmark deposit accounts, unless individual members are also linked and encouraged to save a portion of their share-out every year. By linking only the SG (Scenario 0), BFA estimates that banks would lose an average NCM of USD $1.69 compared with a small gain of USD $0.55 for a benchmark deposit account. Even though the average balance in the SG account is nearly three times the individual benchmark deposit account, the higher transactions from groups drive the NCM negative.

In the third column (Scenario 1), however, BFA went one step further to analyze the business case of a scenario in which individual members are linked along with the SG. This scenario provides the optimal benefits to members, as it helps overcome one of the key disadvantages of the SG model, i.e. it helps individuals save for longer than a year. Based on an assumption that individual SG members save a portion of their share-out each year and hold it over time (see Figure 4 in Focus Note 1), the bank benefits significantly from the much higher balances in both the group account and the many individual member accounts (row A). Though the bank bears the net costs of many more transactions (row C), the combined balances of both group and member accounts generate higher net float income (i.e. interest earned on deposits minus interest paid to clients, row E in Table 2), which more than pays for the cost of a higher number of transactions.

As shown in Table 3, below, it is estimated that enhancing these linkages with mobile money will result in an even greater monthly NCM. Table 3 illustrates the various "digital" linkage scenarios which might result—SGs can deposit savings to banks using mobile money (Scenario 2a), SGs *and* members could do the same (Scenario 2b), or SGs and members may decide to save in a mobile wallet only, leaving out the bank entirely (Scenarios 3a and 3b). The rest of this Focus Note will refer to the group-level linkage scenarios listed below. Further on, the costs and benefits to individual members will be examined in depth. Note that all of the bank-linked scenarios (except for Scenario 0) ultimately link the group account to individual accounts, just as in Scenario 1 in Table 2.

Table 3: Envisaged stylized linkage scenarios
Average monthly net contribution margin reflect earnings for the bank only and not for the MNO in the non-bank scenarios (3a and 3b).

SCENARIO:	SCENARIO:	Avg. monthly NCM
Benchmark deposit account: Branch-based, individual deposit account.		$0.55
Linkage scenario 0: Members contribute cash to SG. SG deposits cash in branch-based group account. *No individual accounts.*		$(1.69)
Linkage scenario 1: Members contribute cash to SG. SG deposits cash in branch-based group account. *Individual accounts.*		$3.34
Linkage scenario 2a: Members contribute cash to SG. SG transfers to group bank account using m-money. *Individual accounts*.		$6.06
Linkage scenario 2b: Members transfer m-money contribution to group m-wallet. SG transfers to group bank account. *Individual accounts.*		$6.17
Linkage scenario 3a: Members contribute cash to SG .SG deposits in group mobile wallet. *No bank account*. *No individual m-wallets*.		$0
Linkage scenario 3b: Members transfer contributions from individual m-wallets to group m-wallet. *No bank account. Individual m-wallets.*		$0



Source: BFA calculations. Refer to Annex 3 for assumptions supporting these business model outputs. Note that Scenarios 3a and 3b are not linked to a bank and thus do not have an estimated NCM.

Table 3 illustrates the possible linkage scenarios examined throughout this Note. While Scenario 1, which was examined above, is highly profitable, earning six-fold compared with the expected NCM of the individual benchmark deposit account, Scenarios 2a and 2b, which introduce the benefits of mobile money, further **double** expected monthly profits for the bank.

The accompanying Table 4 provides a breakdown of the assumptions driving the increased profitability for each. For greater detail on these assumptions, refer to Annex 2.

Table 4: Drivers of net contribution margin for each stylized linkage scenario

Linkage Scenarios	Transaction Profiles	Assumptions driving NCM for the bank
Linkage scenario 0: Members contribute cash to SG. SG deposits cash in branch-based group account. *No individual accounts.*	• 1 branch deposit per month. • 1 branch withdrawal each cycle (year) for share-out distribution.	• In this Scenario, deposits outnumber withdrawals by 12 to 1. Because deposits are free to clients, banks can only recoup costs for 1 of 13 transactions.
Linkage scenario 1: Members contribute cash to SG. SG deposits cash in branch-based group account. *Individual accounts.*	• 1 branch deposit per month. • 1 branch withdrawal each cycle (year) for share-out distribution. • 1 transfer from group's bank account to each member's bank account each cycle	• While deposits still outnumber withdrawals, NCM is higher due to the larger SG deposit balance.
Linkage scenario 2a: Members contribute cash to SG. SG transfers to group bank account using m-money. *Individual accounts*.	• 1 mobile withdrawal and deposit each week (using mobile or agent). • 1 balance enquiry each meeting to confirm new balance. • 1 branch withdrawal each cycle (year) for shareout distribution. • 1 transfer from group's bank account to each member's bank account each cycle (year)	• The cost to support mobile transactions falls by 50-90% for mobile agents compared with branches.
Linkage scenario 2b: Members transfer m-money contribution to group m-wallet. SG transfers to group bank account. *Individual accounts.*	• 2 mobile transfers each week to individual wallets, assuming that 2 loans are distributed per meeting. • 1 balance enquiry by group each meeting to confirm new balance. • Members deposit cash and transfer to group account each week and withdraw from individual wallet in weeks in which they receive credit (they do a corresponding cash-in/cash-out transaction 50% of the times since they can have the funds available in their wallets for the contribution/would be willing to use the proceeds of loans without cashing them out). • At the end of each cycle (year), 2 mobile transfers to each member for share-out distribution (1 to individual bank account, 1 to individual wallet) plus 1 cash out per member.	• As in Scenario 2a, the cost to support mobile transactions falls by 50-90% for mobile agents compared with branches.
Linkage scenario 3a: Members contribute cash to SG. SG deposits in group mobile wallet. *No bank account. No individual m-wallets*.	• 1 withdrawal each week from the group wallet (using mobile or agent). • The treasurer gathers all member contributions and makes 1 deposit each week to the group wallet (using mobile or agent). • 1 balance enquiry by group each meeting to confirm new balance. • At the end of each cycle (year), there is one cash	• No NCM consideration as bank is not involved.

	withdrawal before share-out.	
Linkage scenario 3b: Members transfer contributions from individual m-wallets to group m-wallet. ***No bank account. Individual m-wallets***	• 2 mobile transfers each week to individual wallets, assuming that 2 loans are distributed per meeting. • 1 deposit each week of remainder cash-in-box into group m-wallet. • 1 balance enquiry by group each meeting to confirm new balance. • Members deposit cash and transfer to group wallet each week and withdraw from individual wallet in weeks in which they receive credit (they do a corresponding cash-in/cash-out transaction 50% of the time since they can have the funds available in their wallets for the contribution/would be willing to use the proceeds of loans without cashing them out). • At the end of each cycle (year), 2 mobile transfers to each member for share-out distribution (1 to individual bank account, 1 to individual wallet) plus 1 cash out per member.	• No NCM consideration as bank is not involved.

Note: Note that bank-linked scenarios (except Scenario 0) assume that members save 20% of share-out in their individual accounts which are opened after the first year.

Mobile money drastically reduces the cost for the bank to support each transaction compared with branch and ATM-based channels. Linkage Scenario 2b appears to be an ideal linkage scenario for banks, likely to result in higher margins than Scenarios 1 or 2a. Scenario 2b offers an additional benefit to banks. If members were to transact digitally (both with the bank but also with the group), banks could capture this data and use it to build individual member financial profiles. This would allow them to identify which of the members could be on-boarded for individual financial products. From Focus Note 1, we know that this is also one of the key attractions of linkages for customers with diverse financial needs as well. This idea will be explored further in the sub-section on Incentives 4 and 5, below.

From the member's point of view, we also know that linkages would have to compete with the proximity of the traditional SG model. Because of limited branch networks, particularly in rural areas where SGs tend to be located, we suspect that only mobile money-based linkages with a fairly extensive mobile money cash-in and cash-out network would provide a competitive alternative to village-based SGs. However, as we will discuss further on in this Focus Note, fees to individuals in each of the digitized Scenarios, particularly in Scenarios 2b and 3b, may prevent members from switching to mobile money at all.

Incentive 2: How could this help to solve the agent network management liquidity challenge?

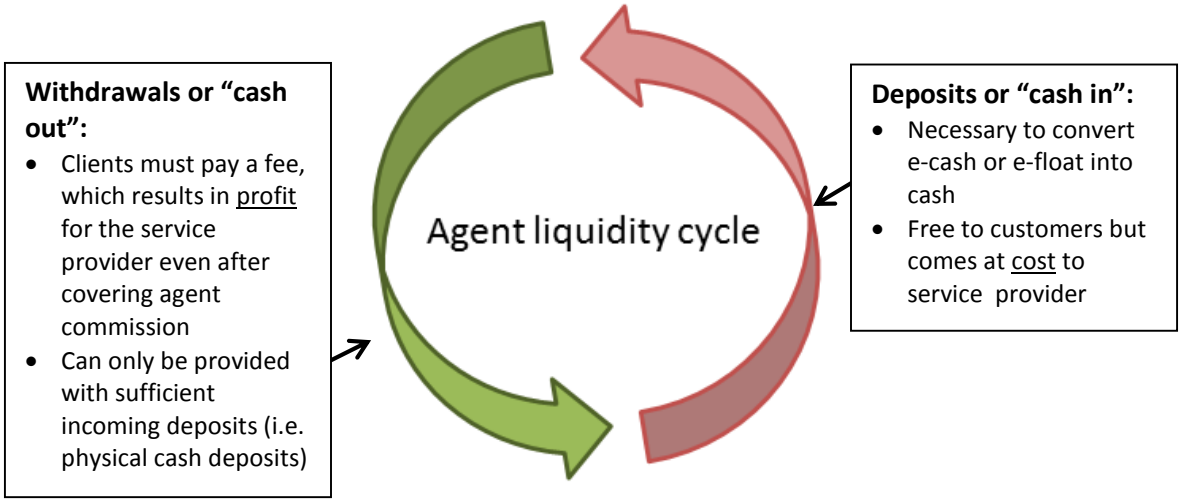
The above discussion establishes the need for mobile money to enable bank-SG linkages, but what is the case for mobile operators to be interested in linkage opportunities? After all, MNOs are *disincentivized* by frequent deposits which result in a financial loss (Figure 2).[22] However,

[22] Mobile network operators not only provide deposits at zero cost to customers, but they must pay agent fees for each deposit transaction. Thus, deposits incur a negative cost, compared with withdrawals and other mobile money transactions for which customers must pay related fees.

frequent SG deposits and withdrawals may provide a source of liquidity management for MNOs or banks which manage agent channels (Incentive 2).

Liquidity management is important for two reasons. First, as we see in Figure 2, MNOs profit when mobile money clients withdraw from mobile wallets and pay a withdrawal transaction fee. This profit accrues even after paying the mobile money agent commission. On the other hand, deposits result in a loss—not only do customers deposit for free, but MNOs must also pay agents a transaction commission.

Figure 2: Mobile Money Agent Liquidity Cycle



However, in order to profit from withdrawals, agents must have steady and sufficient cash to meet customer needs as and when they arise. In many markets, mobile money agents have not enjoyed a great deal of confidence, partly due to lack of liquidity when clients want to perform cash-in or cash-out transactions. For example, more than half of respondents of the Tanzania Mobile Money Tracker Survey cited insufficient e-float and or cash as the most pervasive problems with mobile money agents, at 31% and 25% of respondents, respectively.[23]

Liquidity management can be costly and tricky for MNOS to coordinate, particularly in rural areas where SGs tend to be located. In these areas, BFA's research found that rural mobile money customers tend to withdraw heavily rather than deposit into mobile money accounts. As a result, it is difficult for MNOs to achieve balanced cash and e-float levels among rural agents naturally. Many resolve this issue by paying third parties, known as liquidity aggregators or super agents, to manage cash and e-float balances in certain rural areas. However, in the course of BFA's research with MNOs, several agreed that if SGs were to deposit regularly, this might provide a cheaper, natural solution to liquidity management. In fact, one mobile money agent in Tanzania described how working with SGs had helped him manage liquidity, while increasing business from SG members. MNOs could predict deposits and withdrawals (for example, after

[23] Kaffenberger, M., et. al. "Tanzania Mobile Money Tracker Study: Wave 3 Report." InterMedia, November 2012. The Tanzania Mobile Money Tracker study is a one-year study, funded by the BMGF, to understand the drivers of and barriers to mobile money usage among Tanzanian adults. The study began in September 2011 and covered four waves of research, concluding in October 2012.

contribution collection at the end of a group's cycle) and benefit from a ready and accessible source of cash. Doing so could help to ensure adequate cash for profitable withdrawal transactions while improving reliability for customers.

Incentive 3: SGs provide a convenient aggregation point for new customers that brings down acquisition costs

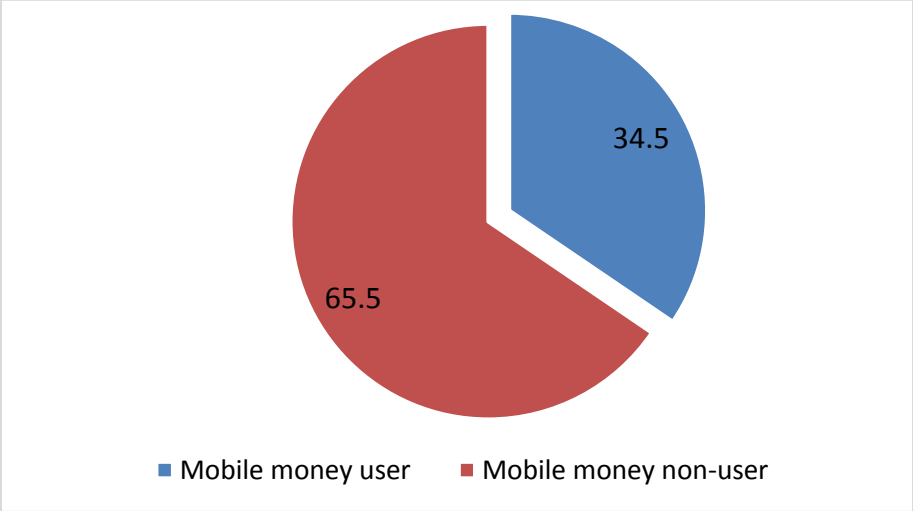
As illustrated in Chart 1, the estimated membership in promoted SGs across East Africa is **nearly 4 million**. With average membership in these SGs ranging from 20-30 individuals each, SG linkages offer an attractive acquisition point for new clients for banks and MNOs.

The business case for banks described in Tables 2 and 3 above were only on a net contribution, i.e. they did not consider either client acquisition or account maintenance costs. As a natural aggregation point, SGs could greatly reduce customer acquisition costs. From the work that BFA did on *In*Focus in 2010-2011 with four commercial banks, BFA established that the cost of opening an account ranged from $6.60 per account to $7.78 per account.[24] The lion's share of these costs would be for marketing and promotional expenses, while other costs would include the time for personnel to onboard clients, conducting due diligence related to KYC, printing cards, and so on. While more research needs to be conducted to determine if other acquisition cost can be further compressed, using SGs as a natural aggregator would dramatically lower the marketing costs to acquire new clients, making basic bank accounts a more attractive proposition for most banks.

Similarly, MNOs are driven by low cost acquisition of new clients and high transactions. The most recent FinAccess survey in Kenya show that the majority of savings group members are not mobile money users (Chart 5). Combined with the low cost of acquisition, this suggests that SGs provide an opportunity to acquire up to 25 new clients at once, exponentially enhancing the proposition of acquiring one client at a time.

[24] These figures exclude one of the banks where account opening costs were unusually high, $19.73, because the institution was working in a particularly challenging post-conflict environment.

Chart 5: Percentage of savings group members in Kenya that use mobile money?[25]



Source: FinAccess Kenya 2013

In rural areas, where populations are likely to be less literate, SGs can serve as a cost-effective marketing and education aggregation point, as members acquire information about products and technology from one another through peer learning. In Care's vast experience of promoting SGs, for example, lessons taught to SGs are quickly disseminated to other members and groups.[26] Banks and MNOs can take this opportunity to improve user understanding and customer experience, thereby increasing the likelihood that clients will become active, long-term customers.

Wait – what is in linkages for SG *members*?

The above analysis already establishes three incentives for banks and MNOs to pursue digital linkages, but we also need to ask – what does greater linkage and digitization means for clients in terms of costs and benefits? In Table 5 below, we examine the six possible linkage scenarios presented above, but this time, we consider both the net (interest earned less fees) costs to the members as well as the qualitative costs and benefits.

As we see in Table 5, the net cost to clients (on an annual basis) **rises** as digitization increases (i.e. moving from Scenario 2a to 2b and 3a to 3b) due to the high transaction fees incurred on a regular basis. However, we also see that the interest income that group members earn when saving in a bank over time (i.e. Scenarios 2a and 2b) is significant compared with Scenarios 3a and 3b where they save in an m-wallet only and do not earn interest.

[26] Hendricks, L., et. al. "Village Savings and Loans: A Pathway to Financial Inclusion for Africa's Poorest Households." Global Microcredit Summit Commissioned Workshop Paper, November 2011.

Table 5: Costs and Benefits of Linkage Scenarios from the Client Perspective

Linkage Scenarios	Net Monthly Benefit to Client (US$)[27]	Qualitative Costs to Client	Qualitative Benefits to Clients
Linkage scenario 0: Members contribute cash to SG. SG deposits cash in branch-based group account. *No individual accounts.*	**Earn USD 0.11**	• Group does not establish digital record of transactions • Group members do not have a way of saving longer than a year. • Costly to physically deposit cash on a regular basis (time, fees and travel costs, and safety).	• Cash remains accessible in lock box between bank deposits. • SGs exposed to bank products and procedures.
Linkage scenario 1: Members contribute cash to SG. SG deposits cash in branch-based group account. *Individual accounts.*	**Earn USD 0.20**	• Group does not establish digital record of transactions • Costly to physically deposit cash on a regular basis (time, fees and travel costs, and safety).	• Cash remains accessible in lock box between bank deposits. • SGs exposed to bank products and procedures. • Members have the opportunity to save for periods longer than the cycle.
Linkage scenario 2a: Members contribute cash to SG. SG transfers to group bank account using m-money. *Individual accounts*.	**Earn USD 0.08**	• Groups transact digitally but members do not establish individual financial records. • Process may seem less transparent for members who are illiterate or unfamiliar with m-banking.	• Members do not have to pay individual mobile money fees (as in Scenario 2B), which would be costly. • SG can track balance frequently, and deposit and withdraw as needed. • Safety of the group funds
Linkage scenario 2b: Members transfer m-money contribution to group m-wallet. SG transfers to group bank account. *Individual accounts.*	**Pay USD 0.28**	• May take time for new members to learn how to utilize m-banking. • Members without mobile phones may feel marginalized. • Regular travel to agent may take considerable time and cost (not included in actual cost calculation)	• Members can easily opt to save share-outs after the end of each cycle. • Individual financial records partially established. • Access to a range of formal financial products. • Members and SGs can track balances at any time.
Linkage scenario 3a: Members contribute cash to SG .SG deposits in group mobile wallet. *No bank account. No individual m-wallets*.	**Pay USD 0.10**	• Groups may quickly reach mobile wallet limits. • Individual relationships financial service providers not established. • Regular mobile money fees could be costly.	• SG can track balance frequently, and deposit and withdraw as needed. • Safety of the group funds. • No bank transaction fees incurred. • Optimization of transactional costs for the group.

[27] This was calculated by assuming that a group might deposit 20% of annual share out in a deposit account per year, for four years, and allow interest to accumulate. The resulting net annual benefit to client is the average cost or benefit which each individual member would receive at the end of four years once the balance, plus accrued interest, is re-distributed.

Linkage scenario 3b: Members transfer contributions from individual m-wallets to group m-wallet. *No bank account. Individual m-wallets*	**Pay USD 0.48**	• May take time for new members to learn how to utilize m-banking. • Members without mobile phones may feel marginalized. • Groups may quickly reach mobile wallet limits. • Individual relationships with financial service providers not established.	• Members and SGs can track balances at any time • No bank transaction fees.

Source: Net contribution margins derived from business case based on a pro-forma business model, generated by BFA, of a Tanzanian bank which took part in this study. This annual benefit is an average over three years. Model uses stylized behavior for low-income clients based off of BFA research with banks in other developing countries (see Annex 2). Margins presented are for an individual member. We assume weekly lending and deposits.

Clients have a clear **disincentive**, given the assumed fee structure, to operate in a fully digitized way. In the digitized scenarios, members pay part of their annual share-out in transaction fees. In relative terms, these fees cost as much as 10% of total weekly contributions. On top of these direct costs, members would also bear the additional cost of transportation to branches or agents (including multiple visits to agents if cash or e-float balances are insufficient, which is often the case),[28] plus the opportunity cost of increased travel and inconvenience associated with not having easy access to emergency cash in between meetings. This is clearly not a tenable situation for clients.

Thus, while we outlined a number of benefits to formal linkages for SGs in Focus Note 1 (greater security, new and more diverse financial options, and the opportunity to earn interest), the more immediate costs of going digital will need to be fully recognized by financial institutions and mobile money providers wishing to acquire SGs and members as clients.

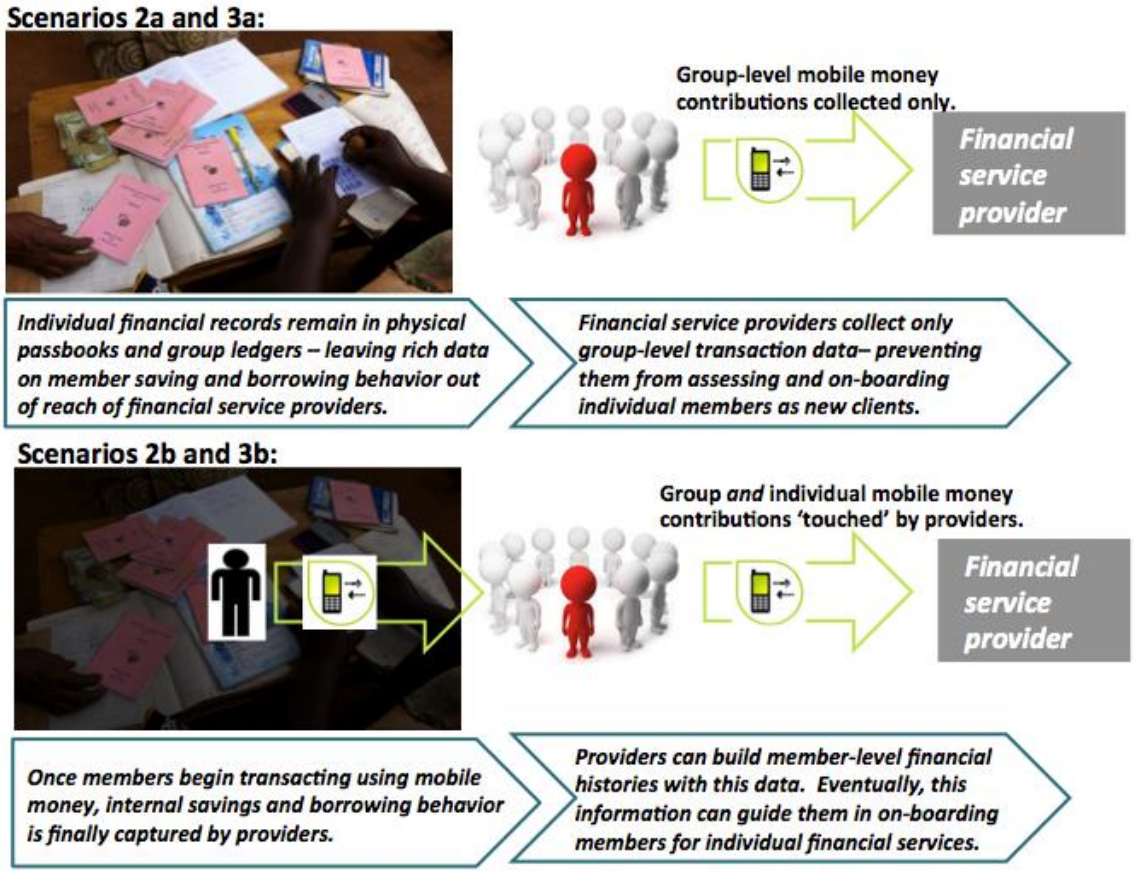
Incentives 4 and 5: Why digitize at all? The importance of individual transaction data to realize member-level financial inclusion

Table 5 suggests that the best linkage scenarios for individual SG members are Scenarios 1, 2a, and possibly 3a. Each would provide SGs with a safe place to deposit funds at zero or minimal cost to members.

However, we know that one of the key benefits of linkages to members is the possibility of establishing a financial history, which could one day blossom into an individual formal financial relationship. While SGs provide numerous financial benefits, many of which would likely **not** be supplanted by formal services (access to immediate, low-cost emergency funds, for example), SGs have natural limits in what they can provide to their members. Analysis of promoter SG data suggests that members within SGs have varying needs. While some may be content with saving and borrowing within the group itself, other members may have greater financial demands which can only be met by the formal sector. Scenarios 1, 2a and 3a preclude *individuals* from fully realizing the benefits of group linkages to the financial sector. So long as members transact in cash only, financial service providers cannot collect information on individual financial behavior. This is illustrated below.

[28] InterMedia. "Mobile Money in Tanzania: Use, Barriers and Opportunities." February 2013.

Figure 3: How Mobile Money Can Unlock Valuable Member-level Financial Behavior



For banks and MNOs as well, Scenarios 2a and 3a do not capitalize on a key potential benefit of linking to SGs—that of acquiring individual clients cost-effectively. Only Scenario 2b and 3b would enable providers to 'touch' individual member transaction behavior within the group itself, as illustrated. This internal financial data would provide rich information about the saving and borrowing patterns of members within the group—and effectively, their capacity to use individual formal financial products.

Thus, it does appear that for both customers and financial service providers, fully digitized linkage scenarios would enable the possibility for individuals to establish individual financial relationships—an option which is **not** commonly available to low-income, rural clients. But as we saw above, if financial institutions are looking to obtain the benefits of a fully digitized SG structure, they will need to sacrifice some fees. Even with the prospect of establishing individual financial relationships, the costs of frequent mobile money transactions would be too onerous for low-income clients to bear. At the same time, it is predicted that banks would profit generously from a digital linkage scenario. Electronic transfers between m-wallets consist of 80% of the cost, suggesting that drastically reducing or eliminating fees between individual accounts to the group account and vice versa would make a sizable dent in the fees incurred by members.

Linkage Scenario 3b: Could SGs link directly to mobile wallets and bypass connecting to the bank?

Now that the need for mobile money to fully realize the financial inclusion benefits of linkages (for both members and providers) has been established, the case for linkages to banks versus to mobile wallets must be discussed. Unlike Scenario 2b, in which the SG has a group bank account to which all members can send mobile money contributions, Scenario 3b does away with the bank entirely. Instead, the SG has a group mobile wallet with no connection to a bank account and individual members have mobile wallets; all transactions are to and from this SG mobile wallet only. Thus, while Scenarios 2b and 3b have similar transactional profiles (see Table 4), Scenario 3b does not incur bank fees.

An immediate barrier to Scenario 3b is that in many countries, mobile wallet balances are capped by regulators at amounts which would be insufficient for most SGs. For example, in Tanzania, the cap on a Tier 1, or low KYC, m-wallet is 3 million Tanzanian shillings, or approximately USD $1,875.[29] In Table 6 below, we see that nearly all groups in their 2nd and 3rd cycles surpass this limit. Even if groups were prepared to meet the higher KYC requirements for a Tier 2[30] account, the higher limit of 5 million Tanzanian shillings would not be enough for some of the more mature groups. Only if regulators were to increase the maximum balance for individual mobile wallets or allow another category of e-wallet with a higher balance limit (such as a merchant wallet) could this provide a solution for SGs.

Perhaps more importantly, under most present linkage models, SGs would need to connect to a bank to avail savings and credit products. As more innovation occurs around financial product issuance, design and delivery, SG members may be able to access the full suite of financial services through group or individual mobile money wallets.

Table 6: Accumulation of cash-in-box compared with regulated mobile wallet limit

	Average share-out value by end of each annual cycle			Average week at which ceiling is reached		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Promoter A	4,575,024	5,764,354	6,045,671	49	47	45
Promoter B[31]	3,650,386	3,180,972	3,180,972	47	48	48
Promoter C	2,566,997	3,937,665	3,937,665	*Under limit*	52	50
Promoter D	2,052,710	5,272,063	10,762,151	*Under limit*	51	34

Note: Estimates calculated by using MIS data obtained from NGO promoters in BFA pro forma business model.

Danger Zones: Leading with credit rather than savings

The incentives which we have outlined for supply side players stem from savings-only linkage scenarios which BFA has modeled. While strong incentives for SG linkages exist, there are concerns for scenarios which would attempt to move into credit too quickly. For banks, the potential interest income from providing credit usually far outstrips the potential float income

[29] Di Castri and Gidvani. "Enabling mobile money policies in Tanzania." GSMA, February 2014.
[30] At the moment of writing this Focus Note, Tier 1 KYC requires that the client shows an ID to the agent, Tier 2 that the client allows the agent to photocopy the ID and Tier 3 requires an ID, Taxpayer ID and a business license.
[31] Groups of Promoter B save for an average of 48 weeks, rather than 52. Based on promoter data.

from savings account balances. Thus, a looming fear for SG-bank linkages is the proliferation of credit at the expense of members, many of whom have never been exposed to the formal financial sector before.

For example, in India, the Self Help Group (SHG)-Bank Linkage Programme has encouraged banks to extend subsidized credit directly to promoted savings groups (SHGs) for the past 20 years.[32] These informal SHGs function similarly to promoted SGs in East Africa. Group credit is extended based on the SHG's savings cycle rather than on the borrowing capacity of members. In addition, as a condition of extending credit, banks often block the SHG from accessing savings stored in the bank.[33] In a study by MicroSave, 47% of SHG members named default of another member as the primary reason for dropping out of an SHG themselves—they and fellow members were either unwilling or unable to bear the debt of other group members. And because bank savings are often blocked until bank loans are repaid, many SHG members admitted to seeking credit from other, more expensive sources instead.

Even without going to extremes, there is reason for concern with SG-bank credit-lead linkages due to the aspect of joint liability which is often used to mitigate risk associated with lending to low income borrowing. However, extending credit to a group on the basis of shared liability places undue strain on members who may be less capable of managing the additional financial burden if other members default on this external line of credit. Based on BFA's research with SG members, this is a real danger to low-income individuals which should be avoided at all costs.

The research conducted demonstrates that savings-led linkages can offer a positive business case for SG deposits *independent* of credit offerings, with the benefit of cost-effective alternative delivery channels. Thus, SG-bank linkages should begin with deposit opportunities *and that credit should only be added gradually and cautiously as the effects on SG members is better understood*. By capturing individual financial behavior digitally (Incentive 5), financial service providers can generate financial histories of members and discern which individuals may eventually have the capacity to benefit from credit or other products versus those who may only require an opportunity to save securely.

To be determined: What will customers value and how can digital linkages scale?

In this Focus Note, we have demonstrated that there are a number of incentives for banks and MNOs to engage in SG linkages. Yet, while we know of a number of benefits of linkages to SGs and members (discussed in Focus Note 1), digital linkages would come at a very real cost to clients due to high mobile money transaction fees. Financial service providers and MNOs may have to compromise some profit to convince customers to switch—and in doing so, they can capture a number of the benefits enumerated above.

However, this focus note has not yet touched upon the question of *how* to scale digital financial linkages to SGs. While there are an estimated 3.65-3.9 million promoted SGs throughout East Africa, one of the stakeholders of the Digital Linkage Value Chain (banks, MNOs, or NGO

[32] Thorat, Usha. "Financial Inclusion: The Indian Experience." Speech delivered at HMT-DFID Financial Inclusion Conference, June 2007. < http://www.bis.org/review/r070626f.pdf?frames=0>
[33] Ballem, A., et. al. "Why Do People Not Join or Drop Out of Savings Groups? MicroSave, May 2012. <http://www.microsave.net/files/pdf/Why_Do_People_Not_Join_or_Drop_Out_of_SHGs.pdf>

promoters) will have to take on the responsibility of identifying SGs which are ready for linkages, training SGs on the linkage process and on mobile financial services (as well as customer recourse mechanisms), navigating complex account opening procedures such as preparing KYC documentation, and engaging with regulators to ease the process of working with SGs. True scaling may also require new SGs to be formed. All of these activities are currently handled by the NGO promoters, who are familiar with the process of SG formation as well as the challenges of introducing complex financial topics to low-income, rural individuals). But does this mean that linkages will always be managed by NGO promoters, most of whom conduct their activities with the support of donor funds. Or is there a way for the donor-supported model to evolve into a sustainable savings group linkage program?

And perhaps more importantly, are we asking the right questions concerning sustainability? Can technology make the long list of linkage requirements mentioned above obsolete? If NGOs continue to conduct customer education and protection activities, could technology allow SGs to self-register through a mobile or on-line interface? And could this be automated in a way that slashed customer acquisition and service costs for financial service providers while retaining the core methodology of savings groups? Focus Note 1 and 2 documents the business case of linkages to the private sector and the benefit to SG members. This is an important contribution since there is little literature that researches, tests and models the economic viability of such linkages. However, to establish and scale sustainable linkage models, we must begin to address the questions centered on the appropriate role of SG value chain players and the use of technology to boost SGs' access and use of digital financial services.

Of course, we have not yet seen enough SG linkages in action to know how members will behave or what they will value in an SG linkage, let alone to envision how linkages could scale enabled by technology. In the scenarios in Table 5, which will members gravitate towards? Will there be a steady progression towards full digitization or will they persist in handling cash? The best way to see how members actually behave and to assess the requirements for scale is to witness the increasing experiments with SG linkages around the world and to design research and experiments around these growing linkages. These experiments should aim to more fully understand the value proposition for SG members and to test how technology innovations can automate parts of the value chain toward more efficient access and on-boarding of SGs to digital financial services.

Annex 1: The SG model, in detail

The SG model is based off of the ASCA model described above. CARE promoted the first standardized SG model, branded the Village Savings and Loan Association (VSLA) model, in 1991. Since then, numerous NGOs have branded their own variations of SGs. Catholic Relief Services' SGs are known as Savings and Internal Lending Clubs, or SILCs, while those promoted by Aga Khan Foundation are referred to as Community-Based Savings Groups (CBSGs). In these two focus notes, we refer to all promoted groups as SGs.

While the parameters of the SG model vary by promoter, region, and group, SGs predominantly share several common criteria:

1) SG members **contribute regular savings** by purchasing "shares." Each SG sets a minimum numbers of shares each member must purchase per meeting (usually, one), at a fixed price per share. Members have the option of purchasing additional shares, according to his/her ability. SGs typically set a maximum share limit (BFA observed an average maximum of 5 shares per individual, per meeting). The share system not only allows members the flexibility to contribute more or less depending on his/her abilities at the time of meeting, but it also simplifies bookkeeping. Rather than totalling large sums, members can keep track of how many total shares they have saved to date, with each share often being documented by an inanimate object for members that may be less educated. In Figure A1 below, members of the SG save "shares" worth $5 each. For example, while the red member saved three shares worth $15 during the first meeting, he/she contributed only one share worth $5 in the second.
2) SGs tend to lend out most of the funds saved as loans during each meeting. This allows the group to intermediate between net-savers and net-lenders who have need for more funds than they naturally have access to. Interest rates are charged on a per-month basis, and are usually 10%, though some charge as low as 5% or as much as 20%. While the additional amount deposited with the principal is termed as interest, it is in essence "additional forced savings" and can add up to significant amounts, as it is also continually lent out. As a prudential measure, the maximum loan amount is capped at some multiple of total savings amount, usually three times this amount.
3) With few exceptions, SGs **store excess liquidity** after loans have been disbursed (also known as "cash-in-box") in metal lock boxes. A group treasurer will take responsibility for the lock box between meetings. To prevent the risk of the treasurer or members of a group colluding to steal residual funds between meetings, lock boxes typically have three separate locks and keys, each of which is entrusted to a different member.
4) SGs **adhere to a cycle** that usually lasts 9-12 months, at the end of which members receive their total savings contributions, plus any interest generated from internal lending. This is known as the "share-out" and can sum to considerable amounts.
5) In preparation for share-out, SGs h**alt lending several weeks to 2 months prior to the end of cycle**. This allows SGs to recover share contributions accumulated over the cycle. This results in large sums of cash accumulating in the lock box over a brief period.

Annex 2: Assumptions Driving the Business Model

The following assumptions drive the pro forma business model from which we included outputs and analysis in this Focus Note. This pro forma business model is based on a pro forma costing model developed during previous projects with BMGF, the InFocus and Gateway Financial Innovations for Savings (GAFIS) projects. For greater detail on these projects and the costing model, please refer to the following Focus Notes:

- "InFocus Note #2: How the Poor Use Their Savings Accounts – A Supply Side View." May 2012. < http://bankablefrontier.com/wp-content/uploads//documents/InFocus-Note-2-Segmentation-results.pdf>
- "GAFIS Focus Note #3: The impact of gateway dynamics on the business case for small balance savings." April 2012. < http://gafis.net/wp-content/uploads/2014/01/GAFIS_FN3_ImpactofGatewayDynamicsonBizCase.pdf>

Thus, the business model developed by BFA uses pro forma costing from these previous two projects. Note that BFA did *not* conduct a thorough costing in each of the markets covered in this study. Further, in this Focus Note, we use inputs and costing assumptions that are from Tanzania. One important item to note is that we assume that all cash-in/cash-out is done with bank agents, rather than MNO agents.

Basic Inputs	SGs
Number of SGs in country	38,179
Average number of members per SG	23
Social Fund	101
Interest received from Bank	9.0%
Interest paid to Savers	0
DPF premium per year	0
Promoter/champion fee - % of period saving	0
Within groups that are mobile enabled, % of members doing mobile to mobile payments	0

SG Savings Characteristics	
Average amount saved per period - year 1 (USD)	1.36
Average amount saved per period - year 2 (USD)	1.59
Average amount saved per period - year 3 (USD)	1.99
Pay in period (weeks)	1
Time period until share-out (weeks)	50
Percentage of groups that opt to save longer than 1 year each year (%)	31%
Percentage of members retained for next cycle	100%
Amount of share-out they opt to save each year (%)	20%

Credit Characteristics	
Lending?	Yes

If lender, how many members in each group take a loan?	100%
Percentage of "pot" loaned out	76%
Interest charge per month	5%
Repayment period (weeks)	9
Max Loan Leverage	3
Write-off amount	0%

On-Lending Characteristics	
Max Loan as % of final savings	50%
Interest rate on loan	22.50%
Wait period before loans disbursed (periods)	4
Loans disbursed every X period	1
Term of loan as % of expected life of group	50%

Cash Flows of a First Year Group	USD
Shareout	2,072
Total Loan Disbursed	4,115
Accumulated Savings at Shareout	1,566
Average Funds Under Mgmt, Per Period	992
Average Savings Under Mgmt, Per Period	799
Average Savings Leftover, Per Period	216

Cash Flows of First Year Groups – Accumulated Across the Tanzanian Market	USD
Shareout	79,096,832
Total Loan Disbursed	157,122,932
Accumulated Savings at Shareout	59,794,279
Average Funds Under Mgmt, Per Period	37,868,434
Average Savings Under Mgmt, Per Period	30,495,083
Average Savings Leftover, Per Period	8,228,243

COST PER TRANSACTION ASSUMPTIONS:

Net revenues per transaction – for Banks	Cost/Tx (USD)	Customer fee/Tx (USD)	Net Revenue/ Cost (USD)
Branch			
Cash withdrawal	1.25	1.25	0
Cash deposit	1.25	0	(1.25)
Balance enquiry	0.75	0.31	(0.44)

ATM - This Bank's System			
Cash withdrawal	0.25	0.38	0.13
Balance enquiry	0.25	0.13	(0.13)
ATM - Other Banks' System			
Cash withdrawal	1.50	2.50	1.00
Mobile Channel			
Cash withdrawal	0.56	0.70	0.14
Cash deposit	0.56	0	(0.56)
Transfer	0.13	0.23	0.11
Balance enquiry	0.13	0.09	(0.03)
Agent Channel			
Cash withdrawal	0.56	0.47	(0.09)
Cash deposit	0.56	0	(0.56)
Balance enquiry	0	0.09	0.09
Electronic payments			
Third party payments	0.04	0.04	0

Net revenues per transaction – for MNOs	Cost/ Tx (USD)	Customer fee/ Tx (USD)	Net Revenue / Cost (USD)
Mobile Channel			
Cash withdrawal	0.02	0.03	0.01
Cash deposit	0.02	0	(0.02)
Transfer	0.02	0.03	0.01
Balance enquiry	0.01	0.01	0

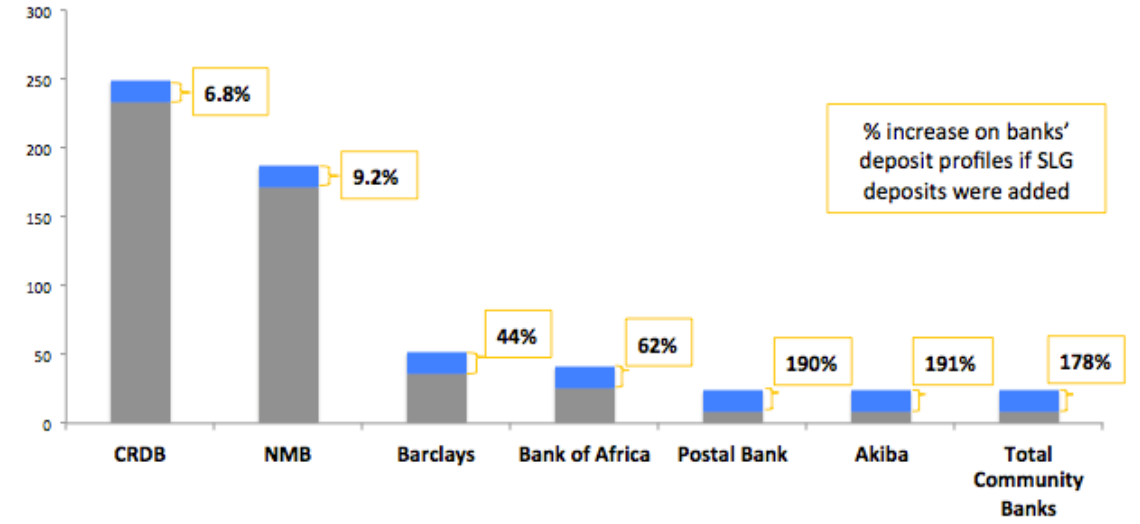
Cost per mobile transactions – to clients*	USSD cost (USD)	m-Wallet Cost (USD)
Mobile Channel		
Cash withdrawal	0.02	0.34
Cash deposit	0.02	-
Transfer	0.02	0.03
Balance enquiry	0.01	0.04
Electronic payments		
Third party payments	0.02	0.04**

*Cost per mobile transactions based on Vodacom Tanzania transaction costs at the writing of focus note.

** Cost per mobile payment based on the cost of sending 3,000 Tsh from a Vodacom Tanzania m-wallet.

Annex 3: The SG Deposit Opportunity in Tanzania, Uganda, and Rwanda

Figure A3-1: The Tanzanian SG Deposit Mobilization Opportunity, USD Millions

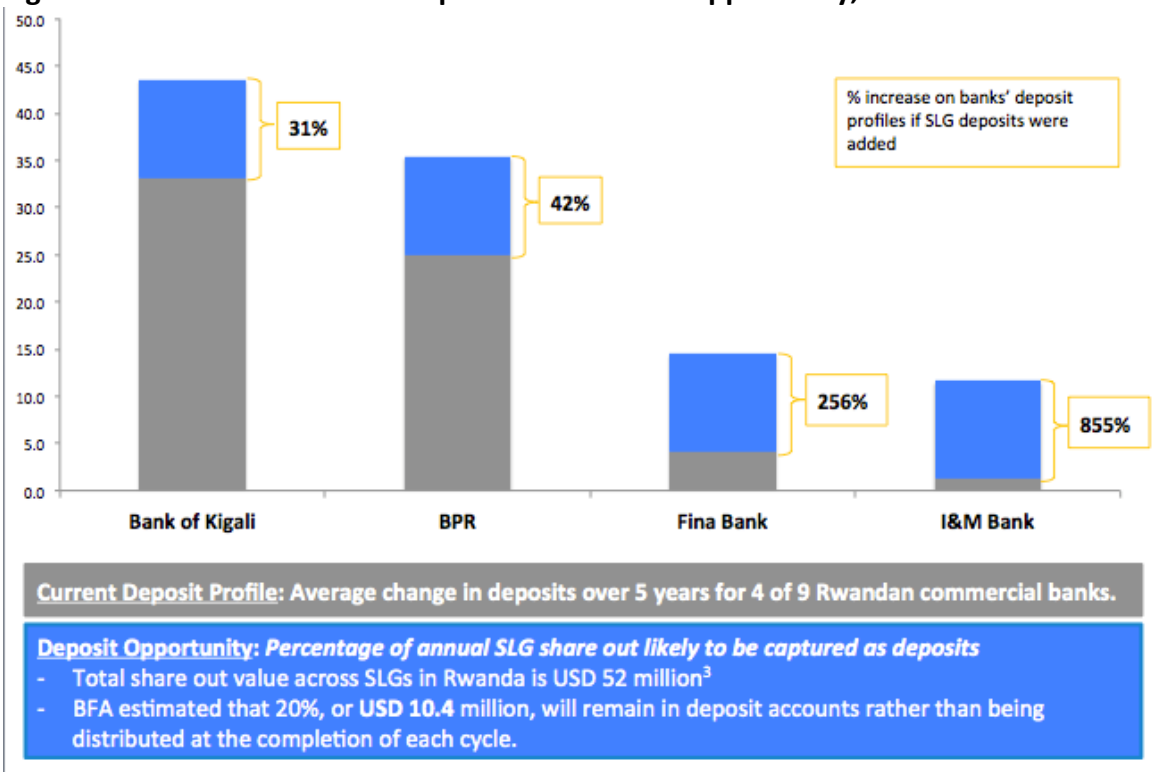


Current Deposit Profile: Average change in customer deposits over 5 years.

Deposit Opportunity: *Percentage of annual SLG share out likely to be captured as deposits*

- Total share out value across SLGs in Tanzania is USD 79 million[3]
- BFA estimated that 20%, or **USD 15.8** million, will remain in deposit accounts rather than being distributed at the completion of each cycle.

Figure A3-2: The Rwandan SG Deposit Mobilization Opportunity, USD Millions

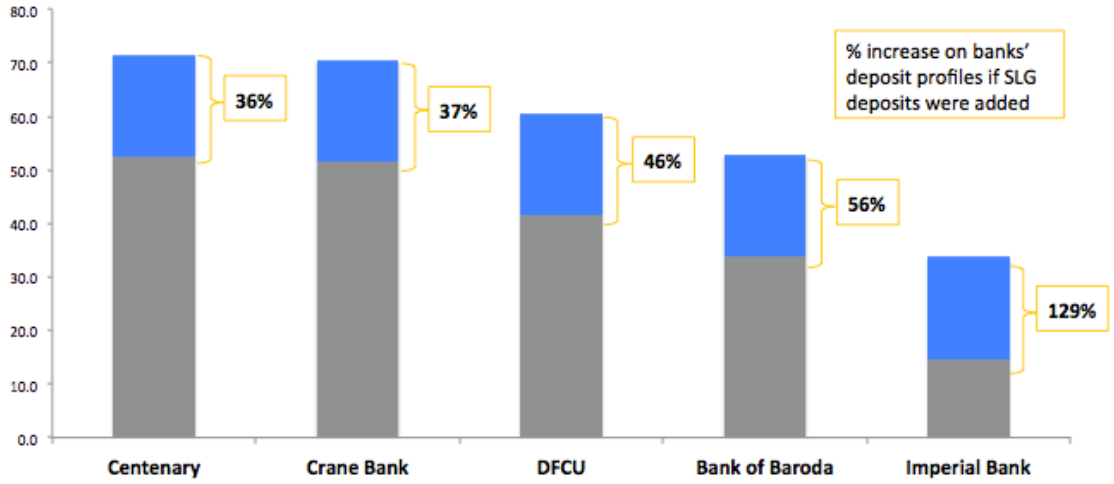


Current Deposit Profile: Average change in deposits over 5 years for 4 of 9 Rwandan commercial banks.

Deposit Opportunity: ***Percentage of annual SLG share out likely to be captured as deposits***

- Total share out value across SLGs in Rwanda is USD 52 million[3]
- BFA estimated that 20%, or **USD 10.4** million, will remain in deposit accounts rather than being distributed at the completion of each cycle.

Figure A3-3: The Ugandan SG Deposit Mobilization Opportunity, USD Millions



Current Deposit Profile: Average change in customer deposits over 4-5 years.

Deposit Opportunity: *Percentage of annual SLG share out likely to be captured as deposits*

- Total share out value across SLGs in Uganda is USD 95 million[3]
- BFA estimated that 20%, or **USD 19** million, will remain in deposit accounts rather than being distributed at the completion of each cycle.

Annex 4: Not all macroeconomic environments or bank economics will lend itself to a thirst for retail deposits

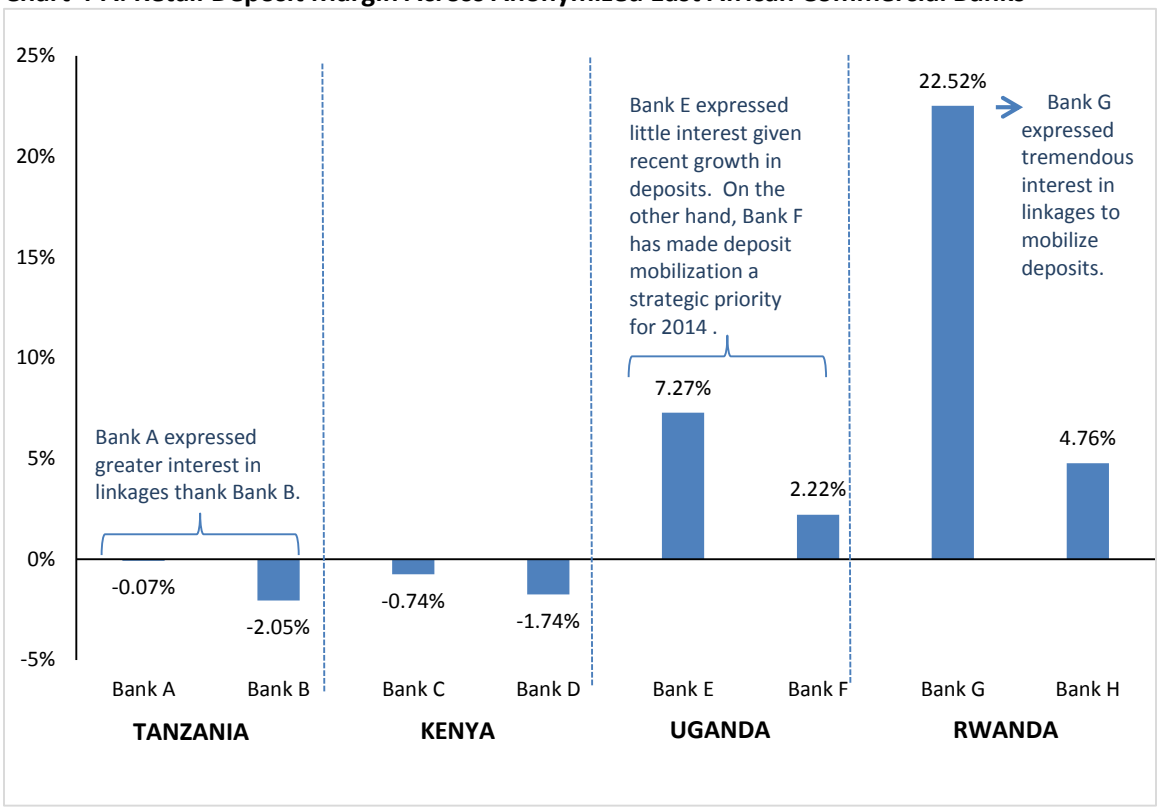
The business case for linkages for banks rests on a drive for retail deposits, but the environment in which a bank works does not always lend itself to deposit-thirst. These factors are numerous and include everything from interest rates to the availability of cheap sources of international funding.

We analyzed the difference paid on non-retail liabilities compared with retail deposits (which we call the retail deposit margin) sheds light on whether commercial banks will find SG deposits an enticing opportunity. A more positive retail deposit margin reveals an opportunity for higher earnings from the deposits of retail customers, including SGs and their members, compared with other liabilities (such as deposits of other banks and other sources of funds).

Chart 4A provides this analysis for a selection of banks from each country visited. In most cases, those banks with a higher deposit margin expressed greater interest in linking with SGs during BFA's research than other banks consulted. In Tanzania, even with a slightly negative retail deposit margin, Bank A expressed interest in linking with SGs. In Rwanda, Bank G, with a retail deposit margin of more than 20%, was particularly enthusiastic about this opportunity. However, deposit margin cannot be assessed in isolation. For example, in Uganda, contrary to expectation, Bank E was not interested in SG linkages due to recent double-digit growth in deposits. For this reason, Bank E felt that SG deposits would provide only minimal additional benefit. On the other hand, Bank F has made deposit mobilization a strategic priority for the coming year, and SG linkages would fit well with this plan.

While this is not the only measure of bank interest, we believe that it provides a helpful framework for identifying countries in which banks may be more amenable to engaging in linkages.

Chart 4-A: Retail Deposit Margin Across Anonymized East African Commercial Banks



Source: Calculated by BFA using data on liabilities gathered from each banks' respective 2012 Annual Report. Retail deposit margin provides an estimate of the cost of retail liabilities versus other funds.