CSAF financial benchmarking
Summary presentation

July 2018
Dalberg analyzed financial data on close to 4K loan transactions from nine CSAF members to better understand financial performance on agricultural SME lending.

Objectives

- There is a large financing gap for agricultural SMEs related to the costs and risks associated with agricultural and small business lending.
- To inform potential interventions, it was agreed that a better understanding of the financial performance and loan economics of agricultural SME lending was needed.

Approach

- First, a survey of nine lending institutions that are members of Council on Smallholder Agricultural Finance (CSAF) was conducted between March and May 2018 to collect loan-level portfolio and operating cost data.
  - Dalberg collected and cleaned portfolio data on ~3,600 loans totally $2.35 billion in loan value ranging in size from USD 25K to 3M+ and disbursed between 2010 and 2016. Dalberg calculated historical loan interest, fees, and write-offs.
  - Operating cost data was collected from individual CSAF lenders and standardized to calculate actual costs per loan.
  - A second phase from June through August will survey local financial institutions in East Africa as well to give a more comprehensive view on lending economics.

Comparison

- This exercise is the first of its kind to bring together revenue, operating cost, and cost of funds to assess the true profitability of providing credit to agricultural SMEs.
Executive Summary

• An average CSAF loan for transactions analyzed is not profitable, though economics varied substantially by loan size, value chain, geography, and other factors:
  – CSAF loans in Latin America performed better than loans in Africa. Loans in Africa are twice as likely to end up in recovery and have operating costs that are 22 percent higher than loans in other regions.
  – Larger loans performed better than smaller ones. The operating costs are similar across different loan sizes, but interest and fee income is proportional to loan size. In addition, smaller loans below $500K have an approximately 80% higher risk of default than loans above $500K.
  – Loans to existing borrowers are significantly more profitable than loans to new borrowers. The risk of default is twice as high for new borrowers than existing borrowers, and origination costs are also 50% higher.
  – Loans in more formal coffee and cocoa value chains performed better than loans in other crops. Loans to crops other than coffee and cocoa were 2.5 times more likely to default. Several lenders also reported higher origination costs for these crops owing to a self-perpetuating cycle of less developed value chains and lower familiarity by lenders reluctant to take on higher risk.
  – Short-term loans (less than 12 months) performed better than long-term loans (12 months or more). Loans with tenors of more than 12 months were more than four times more likely to fall into arrears than loans under 12 months.

• Results point to a need for interventions to support lending to enterprises that have one or more of the risk factors above.
Financial need is greatest for the “missing middle”\(^1\): SMEs working with smallholder farmers and with capital needs between $50K and $1M USD

**Commercial banks:**
- Typically lend from $1M and above
- Usually require fixed asset collateral

**Social lenders:**
- Lending from $100K - $2M,
- Extending beyond commercial banks to reach a portion of the missing middle
- Often provide unsecured lending tied to seasonal production in absence of formal collateral

**Microfinance Institutions\(^3\):**
- Lend at a very small ticket size
- Moving towards higher loan sizes while remaining well under $50k

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(1) The Elephant in the Room: Financial Inclusion for the Missing Middle, 2015
(2) Graphic courtesy of CSAF
Loan characteristics: The largest share of loans analyzed were for working capital in Latin America in the Coffee value chain to existing borrowers.

Total number of loans disbursed 2010-2016
Number of loans, by region, loan size, value chain, financing product and new vs. existing borrower

Notes: (*) East Africa = Tanzania, Rwanda, Kenya, Uganda;(**) Export oriented are all other crops where loan was in hard currency; (***) Domestic oriented are all other crops where loan was in local currency; (****) borrowers that have previously accessed a loan from the same lender.
The data shows us that loans with one or more of the following “risk factors” were less profitable, due to three main issues:

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Africa</th>
<th>Small loan sizes</th>
<th>New borrowers</th>
<th>Loose value chains</th>
<th>Longer term loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low income (lower interest and fee revenue)</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher currency losses</td>
<td></td>
<td>Lower interest income</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>High cost (higher operating costs)</td>
<td>✔️</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Higher origination costs</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Higher origination and recovery costs</td>
<td>✔️</td>
<td></td>
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</tr>
<tr>
<td>High risk (more frequent and larger credit losses or provisions)</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher proportion of defaulting loans</td>
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</tbody>
</table>
Overall, the average CSAF loan in our dataset is just below break-even before considering the cost of capital

**Lifetime loan economics averages for all CSAF loans analyzed¹**

USD thousands

*Average loan size: ~$665,000; average tenor ~15 months*

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan transaction revenue</td>
<td>$42.8k</td>
</tr>
<tr>
<td>Operating costs</td>
<td>$23.8k</td>
</tr>
<tr>
<td>Income net of operating costs</td>
<td>$19.0k</td>
</tr>
<tr>
<td>Credit losses and recovery costs</td>
<td>$20.7k</td>
</tr>
<tr>
<td>Origination costs + Servicing costs + Allocated fixed costs</td>
<td>$1.3k</td>
</tr>
<tr>
<td>Currency loss</td>
<td>$1.8k</td>
</tr>
<tr>
<td>Risk-adjusted impact cost of funds</td>
<td>$16.1k</td>
</tr>
<tr>
<td>Income net of cost of funds</td>
<td>$17.9k</td>
</tr>
</tbody>
</table>

Set to an **average 3% p.a. (i.e. below-market)** across the dataset, but risk-adjusted by loan

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(1) Calculated based on averaging each individual metric across all loans in a given dataset; all analysis with this title utilize the same methodology (but with potentially different datasets depending on segmentation)

This unique and anonymized database allows for the first time to truly assess the profitability and needs for successfully providing loans to agriculture SMEs and the variation across different segments.
However, loan economics varied substantially by the risk factors mentioned earlier - region, size, borrower status, value chain, and tenor.

<table>
<thead>
<tr>
<th>Annualized net profit(^1) (%)(^2)</th>
<th>Other regions vs S/Saharan Africa</th>
<th>Large vs Small loan sizes</th>
<th>Existing vs New borrower</th>
<th>Tight vs Loose value chains</th>
<th>Short vs Long tenors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest of the World</td>
<td>Sub-Saharan Africa</td>
<td>&gt;$500k</td>
<td>&lt;$500k</td>
<td>Existing borrower</td>
<td>Tight</td>
</tr>
<tr>
<td>Net profit(^1) (USD, thousands)</td>
<td>-$13.0k</td>
<td>-$8.1k</td>
<td>-$24.8k</td>
<td>-$9.2k</td>
<td>-$10.4k</td>
</tr>
<tr>
<td></td>
<td>-$35.1k</td>
<td>-$24.8k</td>
<td>-$44.9k</td>
<td>-$31.8k</td>
<td>-$49.4k</td>
</tr>
</tbody>
</table>

Recall: Overall average profit after cost of funds was -$17.9K/loan

(1) Net profit = Interest + Fees – credit losses – operating costs – currency losses – cost of funds
(2) Annualized figures weighted on dollar-duration
These risk factors compound and drive profitability downwards, and almost half of CSAF loans have 2+ risk factors.

Expected loan revenue and income after OpEx, credit losses, and cost of funds
Assuming a 12-month fully-drawn loan of $500K, in USD thousands

<table>
<thead>
<tr>
<th>Rest of World</th>
<th>Sub-Saharan Africa</th>
<th>Sub-Saharan Africa</th>
<th>Sub-Saharan Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td># loans</td>
<td>1,562</td>
<td>266</td>
<td>92</td>
</tr>
<tr>
<td>% of portfolio</td>
<td>44%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>Avg. loan size</td>
<td>$706k</td>
<td>$767k</td>
<td>$649k</td>
</tr>
</tbody>
</table>

= 1 risk factor

84% of loans have at least one risk factor, 49% have 2 or more, and 23% have 3+.
Larger loan sizes tend to be more profitable across CSAF, and the majority of loans <$500K were loss-making after cost of funds

Profitability
Net profit\(^1\); percentage of loans in segment that are profitable (excluding cost of funds), by loan size (USD thousands, log scale)

\[
\text{% of loans in size class that were profitable (Overall = 42\%)}
\]

Net profit\(^1\): \[\text{Net profit} = \text{Interest} + \text{Fees} - \text{credit losses} - \text{operating costs} - \text{currency losses} - \text{cost of funds}\]

(1) Net profit = Interest + Fees – credit losses – operating costs – currency losses – cost of funds
(2) Logarithmic scale
Source: CSAF lenders survey conducted between April – June, 2018 of 3,561 individual loan transactions
While individual loan profitability is sometimes challenging, many borrowers can grow into profitable customers over time.

Modeled loan economics for sequence of loans to same borrower
USD thousands, based on typical working capital loans in dataset

First-time loan: Year 1: $300K
Renewal loan Year 3: $450K
Renewal loan Year 5: $700K

Earnings before COF | Economic Profit
--- | ---
-$21K | -$26K

+$13K | $2K

Implications:
- Reduced cost to serve, lower risk, and a larger balance can lift profitability by c. $30K / loan as the borrower grows over 3-5 years
- This lending growth occurs alongside revenue growth that means more payments to SHF and more jobs created
- However, at this stage, the borrower becomes more attractive to other FIs, meaning the original lender may not be able to capture these gains
- Thus, initial support to the lender for the first loan is still critical to unlocking value

One lender’s data reveals that 50% of borrowers are still borrowing 5 years later, with revenue growth of ~25% p.a., i.e. 2.4x in five years

We are currently planning a second phase of analysis to examine this “customer lifetime value” in more detail.

(1) Calculated based on averaging each individual metric across all loans in a given dataset; all analysis with this title utilize the same methodology (but with potentially different datasets depending on segmentation)
There are several ways in which donors can address the finance gap for ag-SMEs using blended finance instruments and other supporting mechanisms.

<table>
<thead>
<tr>
<th>Blended finance instruments</th>
<th>Driver addressed</th>
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<tr>
<td>Output-based incentives</td>
<td>1 2 3</td>
</tr>
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<td>Risk mitigation</td>
<td>1 2 3</td>
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<td>Direct funding</td>
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</tr>
<tr>
<td>Technical assistance</td>
<td>1 2 3</td>
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</tbody>
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<table>
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<tr>
<th>Other supporting mechanisms</th>
<th>Driver addressed</th>
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<td>Cost-cutting technology and innovation</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Coordinated value chain interventions</td>
<td>1 2 3</td>
</tr>
<tr>
<td>Enabling environment</td>
<td>1 2 3</td>
</tr>
</tbody>
</table>

- **Output-based incentives**: Provide top-up payments for lending to high-impact but underserved market segments.
- **Risk mitigation**: Absorb certain risks through 1st-loss buffers or guarantees in high-impact but underserved segments.
- **Direct funding**: Provide low-cost capital for financial institutions targeting high-impact but underserved segments.
- **Technical assistance**: Build capacity (e.g., marketing or financial management) for borrowers; help lenders invest in systems and processes.
- **Cost-cutting technology and innovation**: Fund disruptive tech innovations and encourage new actors/business models to enter the market and drive efficiency.
- **Coordinated value chain interventions**: Provide funding to link borrowers with upstream & downstream actors to improve their likelihood of success.
- **Enabling environment**: Improve legal and regulatory barriers; improve financial & physical infrastructure; convene actors to share learnings.