

---

# Cost of credit for financial institutions

Opinion paper and case studies in Ghana and Zambia

JULY 2020

---



## Authors

Diana Cazacu and  
Kubanych Abdraimov  
(Advison Finance B.V.)

©2020



---

# Cost of credit for financial institutions

Opinion paper and  
case studies in Ghana  
and Zambia

---

JULY 2020

Amale Aboabo  
Branch

E-Banking



Money Transfer



24hr  
ATM

AGENT

tel tigo





# Table of contents

---

---

<b>1. Executive summary</b>	<b>8</b>
<b>2. Introduction</b>	<b>15</b>
<b>3. The case studies</b>	<b>17</b>
<b>4. Composition of the cost of credit</b>	<b>19</b>
Component 1: cost of funds	<b>20</b>
Component 2: cost of operations	<b>22</b>
Component 3: cost of risk	<b>25</b>
<b>5. Conclusion</b>	<b>27</b>
<b>Annex 1: Methodology</b>	<b>28</b>
<b>Annex 2: Definitions of key ratios</b>	<b>30</b>
<b>Annex 3: Sources of information</b>	<b>31</b>

---

---

## List of tables

<b>Table 1:</b> Characteristics of financial institutions analysed	<b>17</b>
<b>Table 2:</b> Average outstanding loan size for credit products of the case studies	<b>18</b>
<b>Table 3:</b> Summary of case studies cost of credit indicators (2017-2018)	<b>27</b>

## List of figures

<b>Figure 1:</b> Cost of credit relative to average loan portfolio	<b>9</b>
<b>Figure 2:</b> Income from securities vs domestic credit in Ghana	<b>10</b>
<b>Figure 3:</b> Cost of credit structure for case studies	<b>10</b>
<b>Figure 4:</b> Cost per dollar lent (Operational cost relative to average loan portfolio)	<b>11</b>
<b>Figure 5:</b> Operating expenses structure	<b>11</b>
<b>Figure 6:</b> Sources of funding for the case studies	<b>12</b>
<b>Figure 7:</b> Loan loss provisions for the case studies	<b>13</b>
<b>Figure 8:</b> Cost of risk per credit type	<b>14</b>
<b>Figure 9:</b> Cost of credit relative to average loan portfolio	<b>19</b>
<b>Figure 10:</b> Cost of credit composition	<b>20</b>
<b>Figure 11:</b> Sources of funding for the case studies	<b>21</b>
<b>Figure 12:</b> Operating cost relative to average gross loan portfolio	<b>22</b>
<b>Figure 13:</b> Product OPEX ratio for the case studies	<b>23</b>
<b>Figure 14:</b> Operating expenses composition	<b>24</b>
<b>Figure 15:</b> Operating expenses composition	<b>24</b>
<b>Figure 16:</b> Cost of risk per product	<b>25</b>

# 1 | Executive Summary

## Introduction

Access to credit is important for economic growth, yet low levels of access continue to represent a major constraint in much of sub-Saharan Africa (SSA), with only 6.6%<sup>1</sup> of adults in SSA obtaining credit from a formal financial institution. Previous studies show that one of the key reasons for such low access in SSA is the high costs and risks faced by credit suppliers in providing credit<sup>2</sup>.



Ghana and Zambia are no exception to this low-access high-cost dynamic, with **11.6%** of Ghanaians and **10.4%** of Zambians taking out a formal loan in 2018, compared to the world average of **22.5%**<sup>3</sup>.

As the costs and risks of providing credit rises, access becomes increasingly limited: lending becomes less profitable or even loss-making for credit providers, leading them to turn to alternative, more attractive investment opportunities. It is therefore important for governments and regulators aiming to improve access to finance, as well as financial institutions themselves, to understand what drives the cost of credit.

The financial institutions' cost of credit is composed of all costs associated with delivering credit to the market:



The cost of credit is determined by internal as well as external factors. External factors include the regulatory and macro-economic environment in which a financial institution operates, the effectiveness of underlying credit market infrastructure such as credit bureaux and other market information, the cost of debt collection and the cost of contract enforcement. Internal factors include cost of staff, efficiency and economies of scale, composition of the product portfolio, client profile (e.g. corporate/individual, rural/urban), internal debt collection costs, size and cost of branch networks and other overheads.

This study explores the factors driving the cost of credit in Ghana and Zambia. It is based on analysis of financial statements and credit processes and interviews with seven financial institutions: four in Ghana and three in Zambia. These financial institutions were selected to provide a cross-section of both banks and non-bank financial institutions (NBFI) and to consider the cost of credit for different types of products: corporate, SME, micro-enterprise, consumer and agriculture loans.

<sup>1</sup> The Global Findex Database, 2017

<sup>2</sup> Banking in Africa: Delivering in Financial Inclusion, Supporting Financial Stability, EIB (2018); Microcredit Interest Rates and Their Determinants, CGAP (2013), Potential for cost reducing and efficiency increasing measures in financial institutions, KfW Development Bank (2016)

<sup>3</sup> Databook on financial inclusion, World Bank 2017

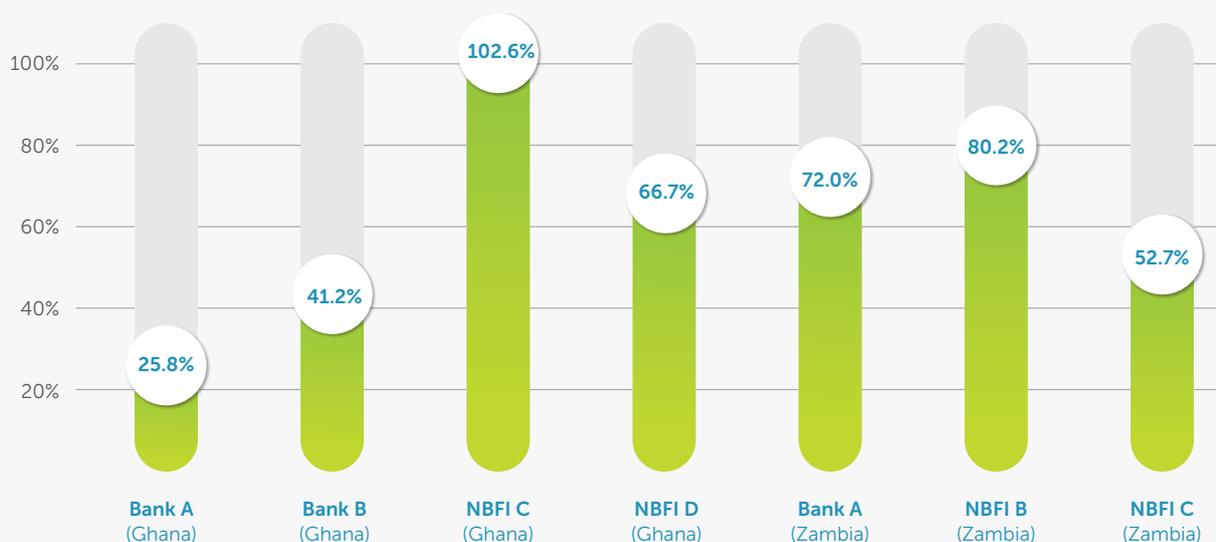
The financial institutions studied are not meant to be representative of the financial sectors in Ghana and Zambia, but rather to provide examples to understand the composition of the cost of credit and its determining factors.

**Cost of credit composition and factors: main findings**

**The overall cost of providing credit is high both in Ghana and Zambia.** In 2018, the cost of credit relative to their average portfolio, ranges between 26% and 103% for the Ghanaian institutions and between 53% and 80% for the Zambian institutions, as summarised in Figure 1.

Figure 1: Cost of credit relative to average loan portfolio

**Total cost of credit (2018)**



The lower the cost over portfolio, the more efficient the institution is and the higher the possibility of reducing the interest rates to the final consumer.

These numbers show the high diversity of the cost of credit for different types of institutions and different credit products.

The higher the cost of credit in the institutions studied, the higher the cost to the consumer and/ or the lower the profitability for the credit provider. Economies of scale in the case of Bank A and B in Ghana (having the largest portfolio size) and in the case of NBF C in Zambia (having a higher number of customers), are associated with lower cost of credit ratios: 26%, 41% and 53% respectively.

In Ghana, the high cost of providing credit, combined with regulatory tightening (implementation of new capital requirements, governance requirements and write-off policies) in 2018 drove financial institutions to reduce credit activity and move towards investing in less risky, more profitable treasury bonds. Figure 2 shows that the financial institutions analysed in Ghana invest between 33% to 82% of their assets in government securities and receive between 17% to 76% of their income from securities investments thus reflecting profit constraints and risk impacting on the credit products. This high variation in investments in securities is mostly driven by the financial institutions risk appetite and income targets.

Figure 2: Income from securities vs domestic credit in Ghana

Portfolio and income for loans and securities (2018, Ghana)

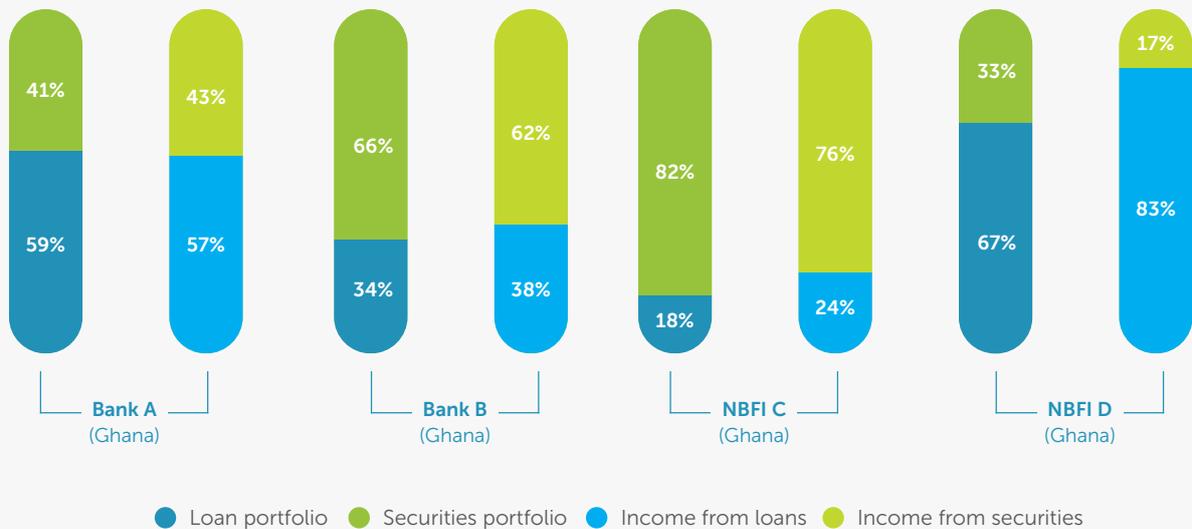
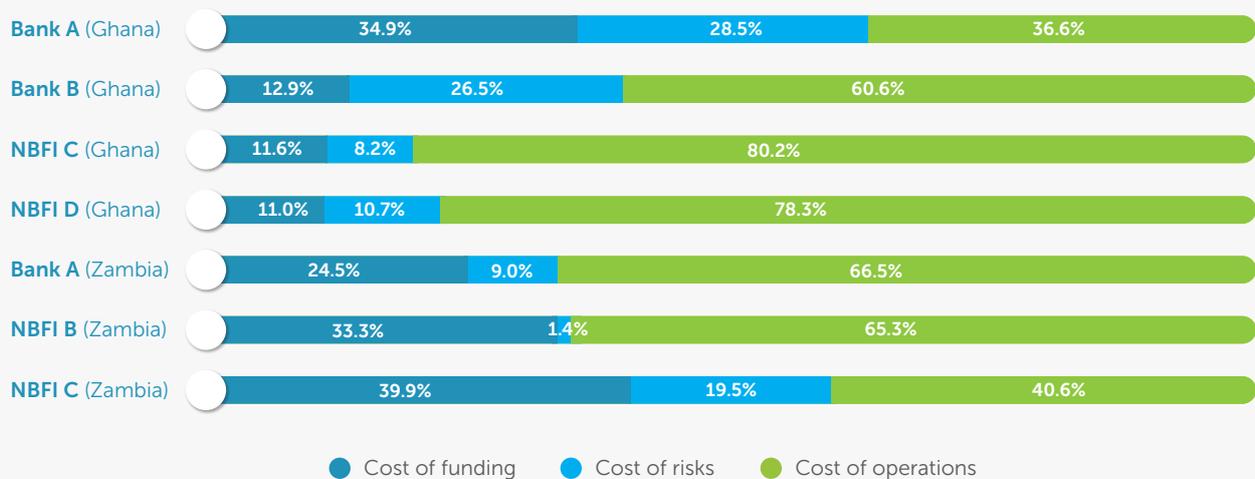


Figure 3: Cost of credit structure for case studies

Costing structure (2018)



**The cost of operations is the main component of the cost of credit amongst the institutions studied.** Figure 3 confirms the findings from previous research<sup>4</sup>, namely that the cost of operations is, in most cases, by far the most significant contributor of the cost of providing credit for financial institutions. Having said that, it varies widely, from 37% to 80% amongst the institutions studied. This high variation is mainly due to two internal factors – product portfolio composition and composition of operational expenses – which are described below.

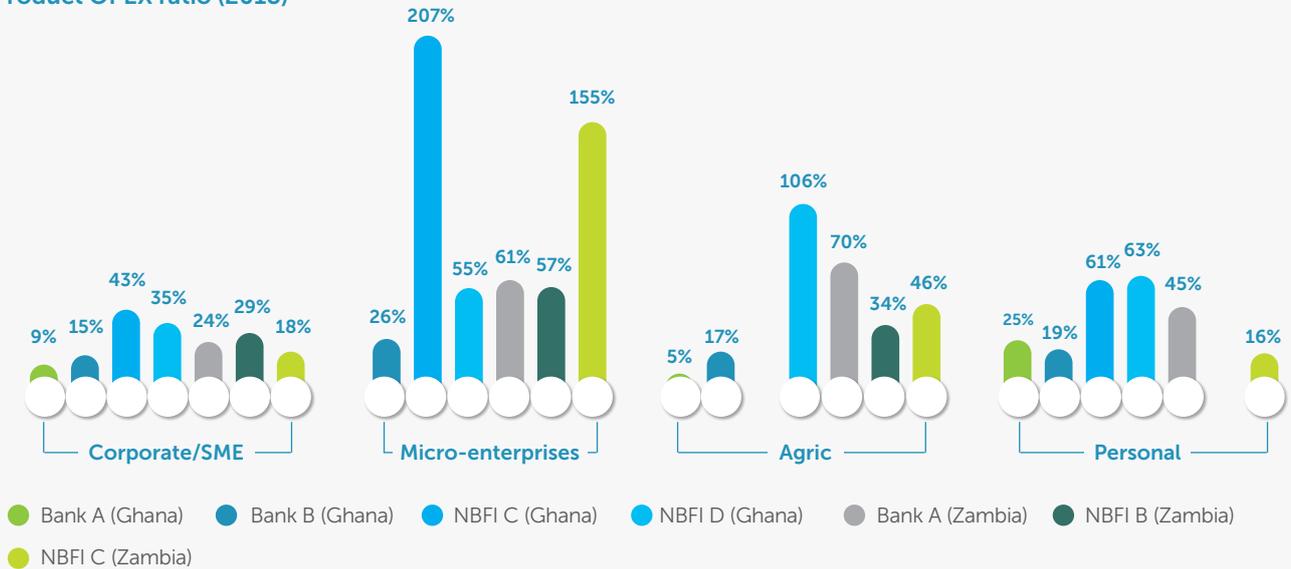
**Factor 1:** the composition of the product portfolio of each of the institutions studied affects the overall cost of operations for delivering credit. For example, Banks A and B in Ghana mostly provide credit to corporate companies and therefore have a relatively low cost of operations ratio compared to the NBFs studied, which focus mostly on micro enterprises and personal loans.

<sup>4</sup> Microcredit Interest Rates and Their Determinants, CGAP (2013)

Furthermore, Figure 4 confirms that the operational cost per dollar lent (measured by product OPEX ratio) is generally higher for the smaller size loans (SME/micro and personal loans), than for larger size loans (corporate).

Figure 4: Cost per dollar lent (Operational cost relative to average loan portfolio)

Product OPEX ratio (2018)

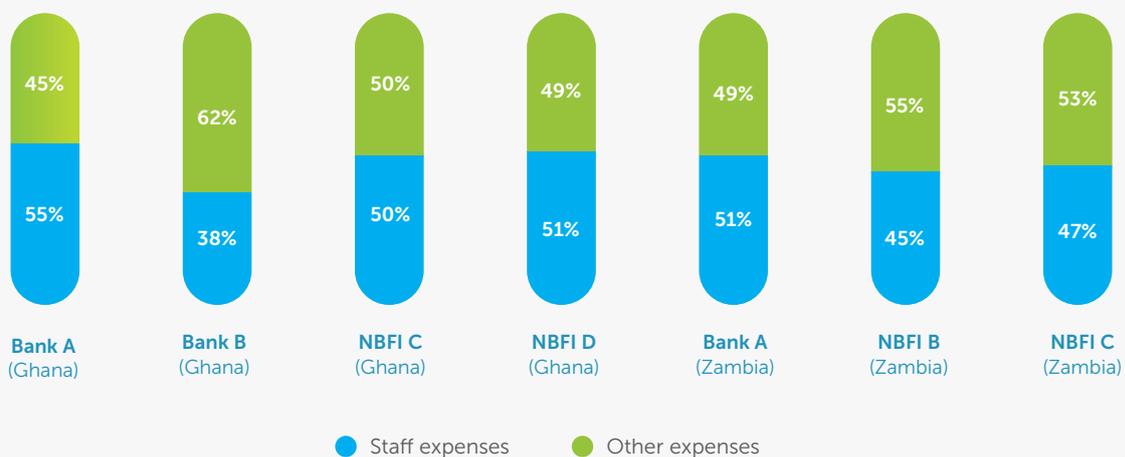


Similarly, for specialised consumer lenders with the benefit of collecting payments directly from payrolls or bank accounts and much simplified credit assessment and client origination (than for instance SME or micro-enterprise lending) there is a benefit in lower cost of lending as well as higher profitability. This applies to NBFI C (Ghana) and NBFI C (Zambia) which are specialised personal/consumer lending institutions, hence their internal processes are much more optimised for this type of loan.

**Factor 2:** the composition of operational expenses for delivering each type of product impacts the overall cost of credit. Our analysis shows that staff costs dominate the cost of operations, taking an average of 52% of the total operational cost (as shown in Figure 5).

Figure 5: Operating expenses structure

Operating expenses structure (average 2017-2018)



Staff related expenses are influenced by the efficiency of the internal processes within each institution and the availability and cost of skilled labour in the market. Generally speaking, micro loans (smaller loan size) require a larger number of staff (in the case of NBFIs), while corporate loans (larger loan size) require higher level of skills (hence more expensive resources), but a smaller number of staff.

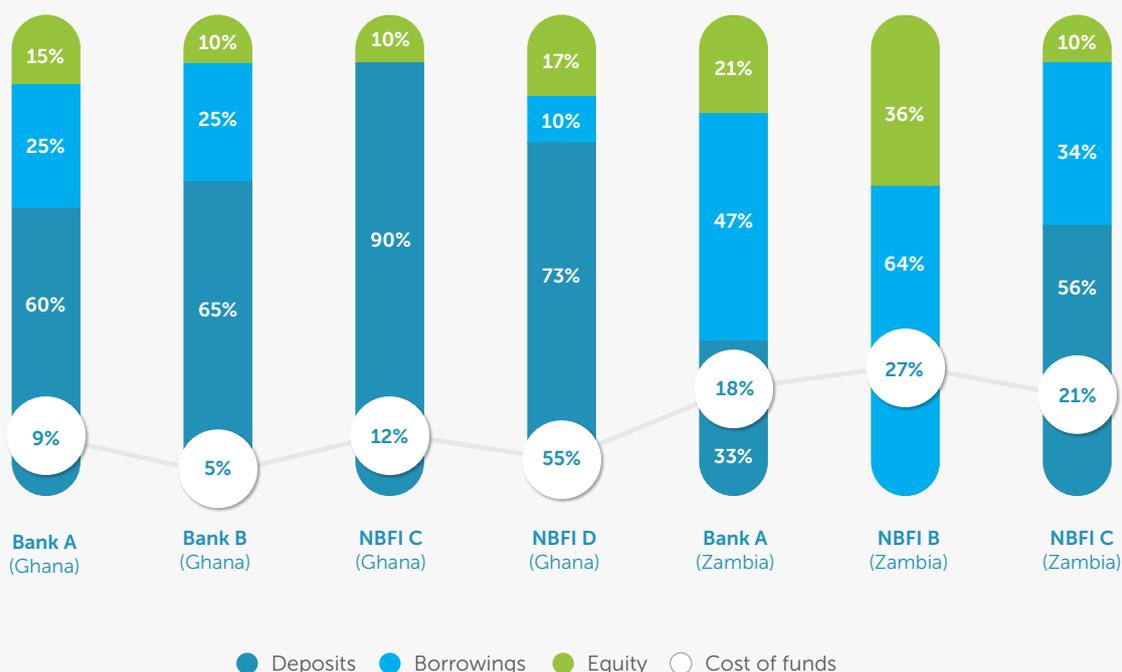
The factors described above are critical in understanding the cost of credit. The composition of each lender’s portfolio impacts the size and the composition of operational expenses.

A portfolio with a large number of SME loans, provided to a geographically dispersed client base would necessarily be more expensive to administer than a portfolio of large corporate loans in the capital city. A portfolio of payroll deducted consumer loans will equally be cheaper to administer than a mortgage loan portfolio or a portfolio of micro-enterprise loans.

The cost of funds, as measured by the interest expense over the total deposits and borrowings, is driven by the ability of a financial institution to attract cheap sources of funding. The financial institutions studied in Zambia face a higher cost of funds, at between 18% and 27%, as compared to those studied in Ghana, where the costs of funds were between 5% and 12% of overall cost of credit delivery. This was despite Zambia’s lower interbank rate of 9.9% compared to Ghana’s rate of 10.25% (2018). This difference appears to be mostly attributed to the composition of the sources of funds for each institution.

In Ghana between 60% and 90% of funds of the institutions studied come from customer deposits, while in Zambia the share of deposits is lower, between 33% and 56%, with one institution not using deposit financing at all. The commercial banks analysed confirm that customer deposits are the cheapest source of funds. However, in the case of NBFIs and smaller banks (Bank A Zambia), the blend of funding between customer deposits and external borrowings (both international and local) results in a lower cost than customer deposits alone (see NBFI C Ghana and Bank A in Zambia in Figure 6).

**Figure 6: Sources of funding for the case studies**  
**Cost of funds and composition of funding (2018)**



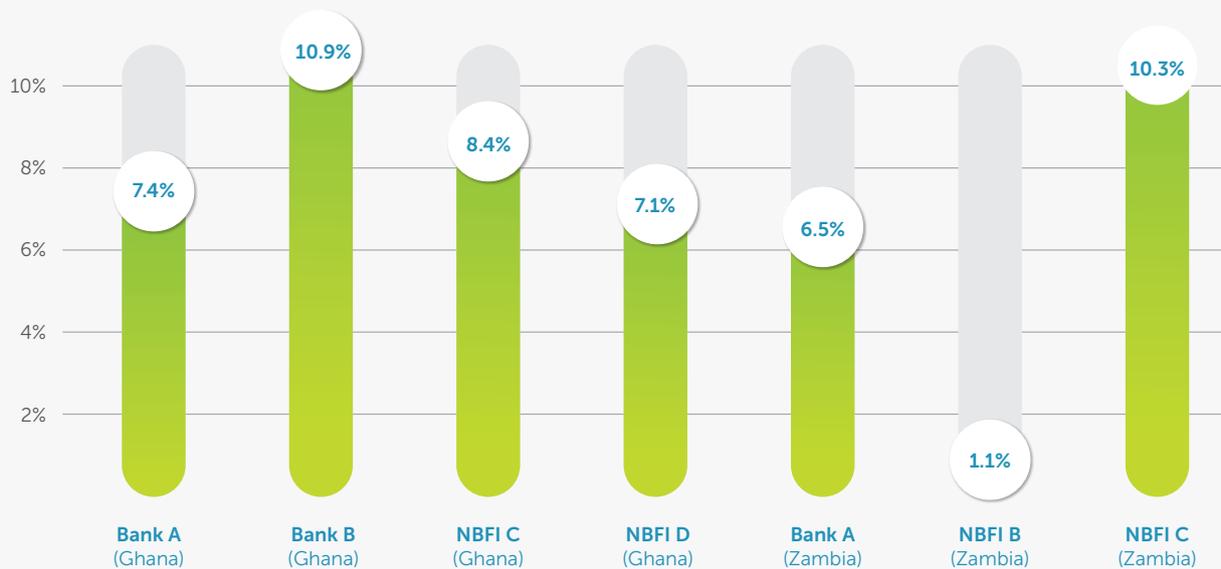
According to the financial institutions’ management interviewed, the availability of branches or mobile channels increases the trust in the institution, reducing the cost of attracting deposits. Higher median disposable incomes and a healthy savings culture in the country are external factors that impact the cost of funding through deposits.

However, we would like to point out that this assessment is based only on the interest cost of funding and does not consider the operational cost of managing a portfolio of deposits. The operation cost of managing different types of funding make a significant difference to the effective cost of funding sources.

The cost of risk is measured by the loan loss provision set aside by a financial institution. A high variation in the cost of risk was observed in the seven institutions studied: between 1.1% to 10.3% in Zambia and between 7.1% to 10.9% in Ghana (as shown in Figure 7).

**Figure 7: Loan loss provisions for the case studies**

**Loan loss provision over average portfolio**

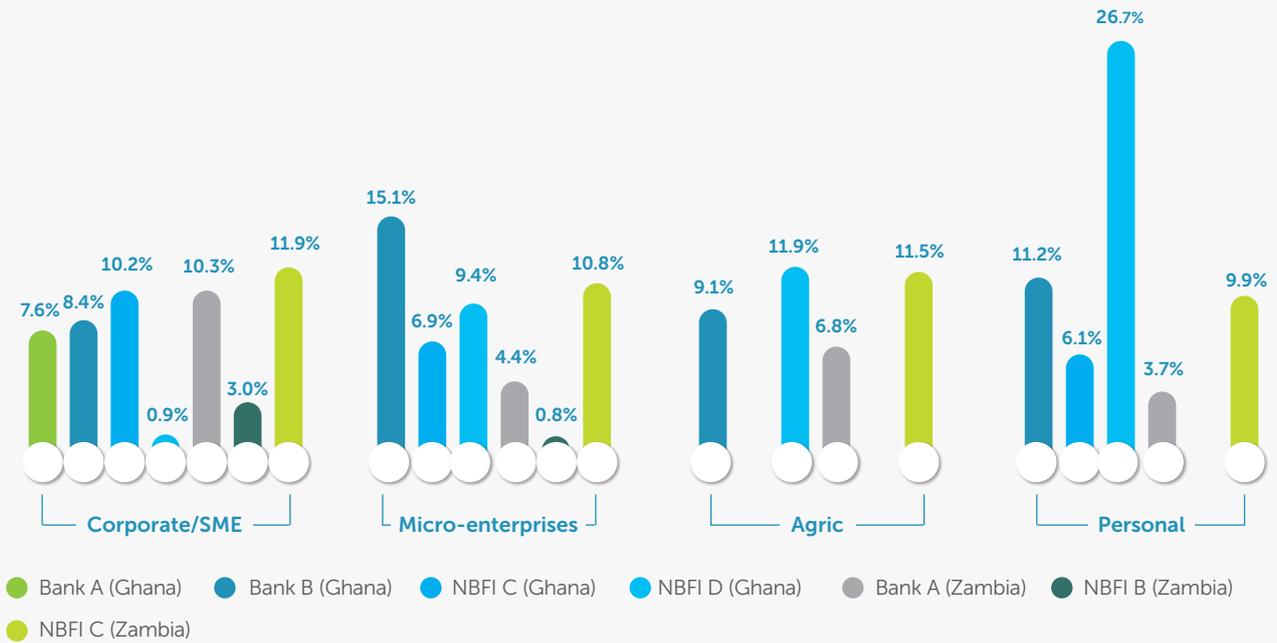


The high cost of risk and variation among the institutions’ cost of risk are attributed both to external and internal factors.

With regard to external factors, the 2017-2018 slowdown in economic growth in Zambia reduced the borrowers’ capacity to service their debt, hence affecting the financial institutions’ cost of risk. In Ghana implementation of regulatory reforms in 2018 destabilised the financial sector and increased the financial institutions’ cost of managing the risk. This explains why the cost of risk for Bank B and NBF C in Ghana is relatively high, as they acquired the non-performing loans (NPLs) of banks that were closed as a result of the regulatory reforms.

In terms of internal factors, from our research, we cannot conclude that credit product type affects the level of the cost of risk. Rather, imbalanced distribution of risk exposure to one single client (e.g. government salaries in the case of payroll loans at NBF D in Ghana) and the lack of portfolio scale (e.g. in the case of NBF C in Zambia) lead to high cost of credit risk.

**Figure 8: Cost of risk per credit type**  
**Product cost risk (2018)**



We would like to point out that our analysis was based on the credit loss provisions as reported by the different institutions. In certain cases the levels of provisions seems lower than the level of anticipated credit risk and comparative loss numbers from other sources.<sup>5</sup> Some level of under-provision may be likely in some of the cases.

This report provides a detailed explanation of the composition of the cost of credit and its drivers through the lessons learnt from the seven case studies in Zambia and Ghana.

<sup>5</sup> Credit Market Monitoring Report, Zambia (2017)

## 2 | Introduction

Access to credit is important for economic growth, yet low levels of access continue to represent a major constraint in much of sub-Saharan Africa (SSA), with only 6.6%<sup>6</sup> of adults in SSA obtaining credit from a formal financial institution. Previous studies<sup>7</sup> show that one of the key reasons for such low access in SSA is the high costs and risks faced by credit suppliers in providing credit.



Ghana and Zambia are no exception to this low-access high-cost dynamic, with **11.6%** of Ghanaians and **10.4%** of Zambians taking out a formal loan in 2018, compared to the world average of **22.5%**<sup>8</sup>.

As the costs and risks of providing credit for financial institutions rises, access becomes increasingly limited: lending becomes less profitable or even loss-making for credit providers, leading them to turn to alternative, more attractive investment opportunities. It is therefore important for governments and regulators aiming to improve access to finance, as well as financial institutions themselves, to understand what drives the cost of credit.

The financial institutions' cost of credit is composed of all costs associated with delivering credit to the market:



The cost of credit is determined by internal as well as external factors. External factors include the regulatory and macro-economic environment in which a financial institution operates, the effectiveness of underlying credit market infrastructure, such as credit bureaus and other market information, and the cost of debt collection and contract enforcement. Internal factors include cost of staff, efficiency and economies of scale, composition of the product portfolio, client profile (e.g. corporate/individual, rural/urban), internal debt collection costs, size and cost of branch networks and other overheads.

This study explores the factors driving the cost of credit in Ghana and Zambia. It is based on analysis of financial statements and credit processes and interviews with seven financial institutions: four in Ghana and three in Zambia. These financial institutions were selected to provide a cross-section of both banks and non-bank financial institutions (NBFI) and to consider the cost of credit for different types of products: corporate, SME, micro-enterprise, consumer and agriculture loans.

<sup>6</sup> The Global Findex Database, 2017

<sup>7</sup> Banking in Africa: Delivering in Financial Inclusion, Supporting Financial Stability, EIB (2018); Microcredit Interest Rates and Their Determinants, CGAP (2013); Potential for cost reducing and efficiency increasing measures in financial institutions, KfW Development Bank (2016)

<sup>8</sup> Databook on financial inclusion, World Bank 2017

The financial institutions studied are not meant to be representative of the financial sectors in Ghana and Zambia, but rather they provide examples to improve our understanding of the composition of the cost of credit and its determining factors.

In Ghana, formal financial inclusion is higher than the average for SSA, with 57.7% of adults having a bank account, compared to the SSA average of 42.6% in 2017. However, only 11.6% of the population borrowed from a financial institution, slightly more than the SSA average of 8.4% and well below the world average of 22.5%. In Zambia, 45.9% of the adult population has a bank account, less than in Ghana, but still slightly above the SSA average of 42.6%. Access to credit is similar in Zambia, with 10.4% of Zambians obtaining a formal credit in 2018. Ghana is slightly ahead in terms of mobile money accounts with 38.9% of the adult population having a mobile money account, while in Zambia only 27.8% of the adult population owns a digital wallet<sup>9</sup>.

There have been significant changes in the financial services sector in Ghana in the last two years. Following a comprehensive Asset Quality Review (AQR) in 2016, the Bank of Ghana concluded that the excessive level of NPLs (22.8% at its peak in 2018) required several regulatory reforms. The objective of these reforms was the modernization and strengthening of the financial sector. Among other measures, in 2018 The Bank of Ghana initiated the implementation of the Basel II/III supervisory framework and tightened minimum capital requirements. In 2018 Bank of Ghana also issued a Cyber and Information Security Directive and a Corporate Governance Directive, as well as enforced the write off policy<sup>10</sup>. As a result, the number of banks in the country fell from 34 in 2016 to 23 in 2018, while the number of non-banking financial institutions dropped from 702 to 206.

In contrast, the regulatory framework in Zambia has not experienced the upheaval encountered in Ghana in recent years. The Bank of Zambia continued to undertake legal and regulatory reforms aimed at aligning its supervisory framework with international best practice, which enhanced the Bank's capacity to address challenges in the financial sector, particularly in consumer protection and corporate governance. The level of NPLs in Zambia has been stable, with the average rate standing at 10.95% in 2018.

<sup>9</sup> All data in this paragraph is based on Databook on financial inclusion, World Bank 2017

<sup>10</sup> State of the Financial Sector in Ghana, World Bank, 2018

# 3 | The case studies

Seven financial institutions were analysed: four in Ghana and three in Zambia. The financial institutions were selected to cover different types: banks and non-bank financial institutions (NBFI). The report draws on the information from three universal (commercial) banks, three deposit-taking financial institution and one non-deposit taking financial institution. The report is based on a combination of financial statement information and more detailed statistics provided by each of the participating institutions.

The financial institutions are not meant to be representative of the financial sectors in Ghana and Zambia. They are presented as examples to improve our understanding of the composition of the cost of credit and its influencing factors.

Table 1 provides a brief profile of the case studies.

**Table 1: Characteristics of financial institutions analysed**

### Bank A Ghana

Universal bank focused on large corporate and medium enterprises

 20-35	 <5,000	 \$490M	 \$997M
-------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------

### Bank B Ghana

Universal bank focused on small and medium enterprises

 50-75	 30,000-50,000	 \$323M	 \$1,285M
-------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------

### NBFI C Ghana

Deposit taking credit provider servicing salaried customers and micro-enterprises

 10-20	 5,000-10,000	 \$7.5M	 \$62M
-------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------

### NBFI D Ghana

Deposit taking credit provider servicing micro, small and medium enterprises

 <10	 10,000-25,000	 \$25M	 \$48M
-----------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------

 # of branches	 # of active savers	 Average portfolio	 Average assets
---------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

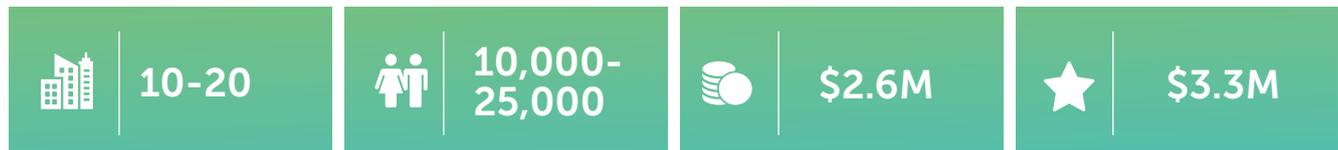
### Bank A Zambia

Microfinance bank servicing micro, small and medium enterprises



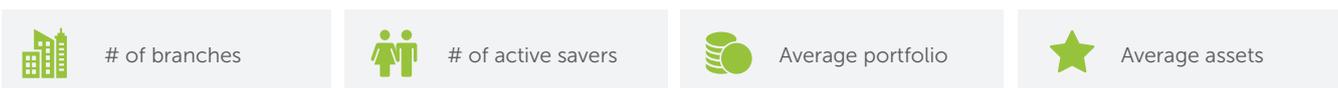
### NBFI B Zambia

Non-deposit taking credit provider servicing micro and small enterprises



### NBFI C Zambia

Deposit taking credit provider servicing salaries consumers and micro enterprises



Our analysis took into consideration the type of products offered by the seven institutions. Due to the diversity of the customer segments served by each institution, the definition of the credit products is not uniform and is explained in Section 5 (Methodology) of this report. Table 2 below summarises data on the average loan size (in USD) by product for each institution analysed.

**Table 2: Average outstanding loan size (in USD) for credit products of the case studies**

	Bank A Ghana	Bank B Ghana	NBFI C Ghana	NBFI D Ghana	Bank A Zambia	NBFI B Zambia	NBFI C Zambia
Large Corporate	2,529,499 <sup>11</sup>	2,792,042	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
SME	117,817	Included in Micro	66,268 <sup>12</sup>	2,155 <sup>13</sup>	48,086	4,640	8,300
Micro-enterprises	Not applicable	11,610	561	479	553	53 <sup>14</sup>	418
Personal/ Consumer	9,867	4,602	778	647	1,546	N/A	1,113
Agriculture	Included in large corporate	55,443	Not applicable	180	591	399	1,700

<sup>11</sup> Bank A (Ghana): The Large Corporate loans in this report are what the bank classifies as Agriculture loans. Due to the large average outstanding loan, we considered them loans to large corporates.  
<sup>12</sup> NBFI C (Ghana): The SME loans in this report are marketed as Corporate loans by NBFI C (Ghana).  
<sup>13</sup> NBFI D (Ghana): The SME loans in this report are marketed as Corporate loans by NBFI D (Ghana). The Micro-enterprises loans in this report are marketed as SME loans by NBFI D (Ghana).  
<sup>14</sup> NBFI B (Zambia): Micro-enterprises loans are marketed as SME/Micro loans.

# 4 | Composition of the cost of credit

The financial institutions' cost of credit was calculated as the total cost for providing credit relative to the average gross loan portfolio. The cost for providing credit consists of three components: the cost of funds, cost of operations, and the cost of risk.

**The cost of funds** is the weighted cost of funding from depositors and external creditors. For the purposes of this research, the cost of funds is considered as the interest paid on customer (wholesale and retail) deposits and borrowings by a financial institution.

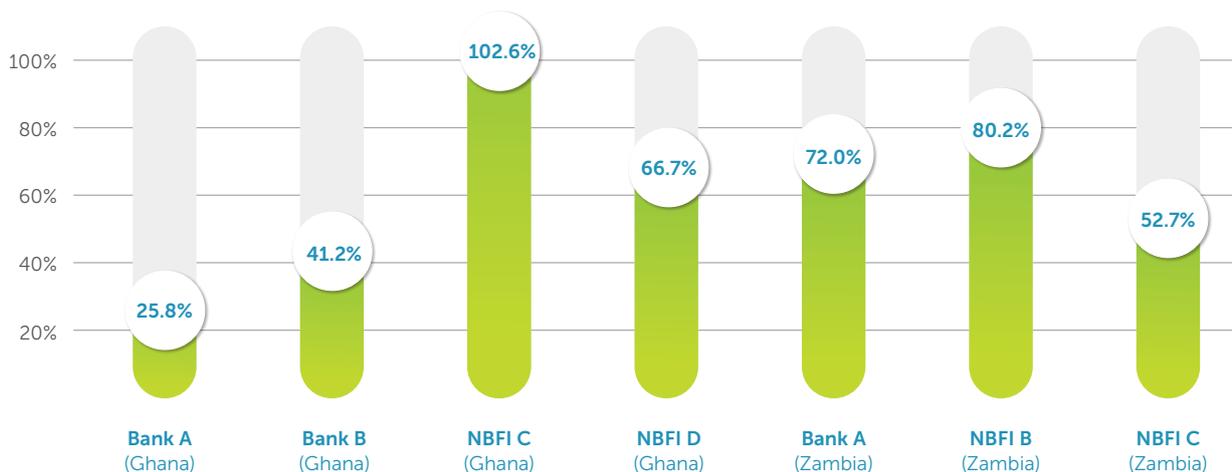
**The cost of operations** includes all expenses related to the activities that financial institutions perform in order to deliver their credit products to the market. In this research, the cost of operations is considered as the total yearly operating expenses of the financial institution. None of the financial institutions applied a cost allocation method between different types of activities.

**The cost of risk** is the loan loss provision that the financial institutions make to manage the credit risk.

The overall cost of providing credit is high in both Ghana and Zambia. In 2018, the cost of credit relative to their average portfolio ranges between 26% and 103% in the Ghanaian institutions and between 53% and 80% in the Zambian institutions, as summarised in Figure 9.

Figure 9: Cost of credit relative to average loan portfolio

Total cost of credit (2018)



The lower the cost over portfolio, the more efficient the institution is and the higher the possibility of reducing the interest rates to the final consumer.

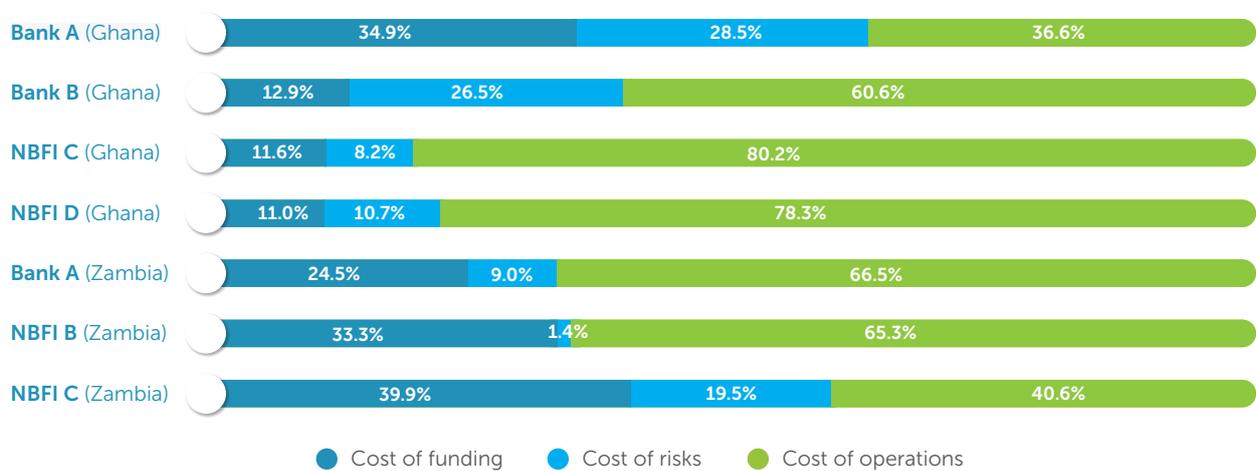
These numbers show the high diversity of the cost of credit for different types of institutions and credit products.

The higher the cost of credit in the institutions studied, the less profitable the credit business is. Economies of scale in the case of Bank A and B in Ghana (having the largest portfolio size) and in the case of NBF C in Zambia (having a higher number of customers), led to lower cost of credit ratios: 26%, 41% and 53% respectively.

The cost of operations is the main driver of the cost of credit amongst the institutions studied. Figure 10 shows that the cost of operations is, in most cases, by far the most significant contributor of the cost of providing credit for financial institutions. No other clear similarities could be observed for the composition of cost of credit of the case studies. This variation in the costing structure is mostly attributed to the diversity in loan products, loan portfolio size and the customer segment serviced by each financial institution. For example, the lower operating cost contribution is attributed to the large corporate gross loan portfolio -for Bank A and B in Ghana- and to higher number of loans offered to salaried customers - for NBF C in Zambia.

**Figure 10: Cost of credit composition**

**Costing structure (2018)**



**Component 1: cost of funds**

As mentioned in the previous sections, cost of funds in this assessment is the interest paid on deposits and borrowings. It does not consider the operational cost of managing a portfolio of deposits. Including the operation cost of managing different types of funding make a significant difference to the effective cost of funding sources.

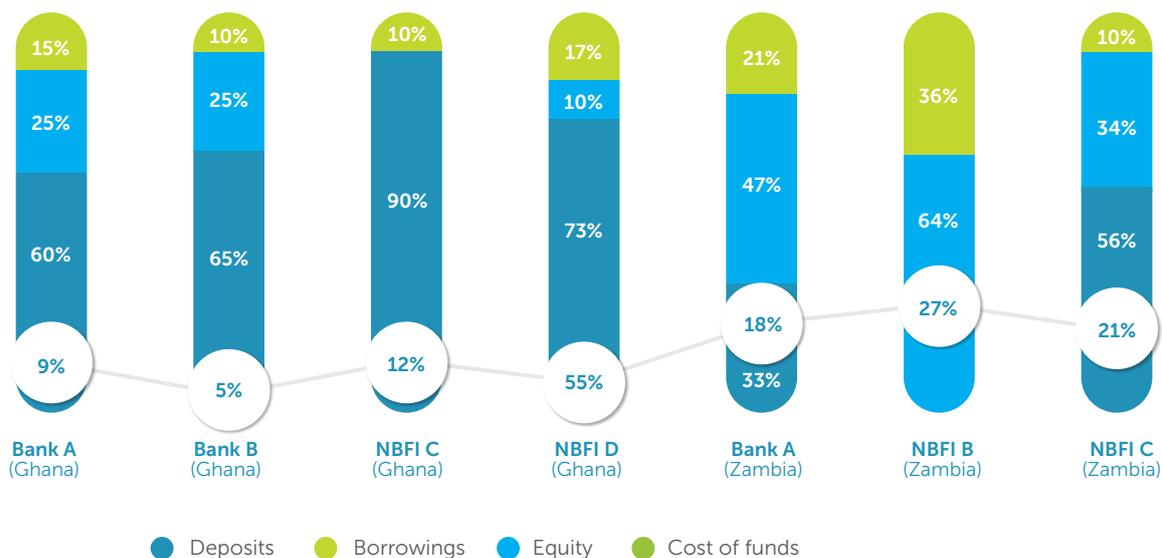
The interest paid on domestic deposits and borrowings is affected by a country’s monetary policy. The Monetary policy (MP) interest rate<sup>15</sup> set by the central bank is an important determinant of the cost of funds a financial institution faces, as depositary interest rates and interbank interest rates are influenced by this rate. Next to monetary policy, the source of funds and the risk perceived by investors are important drivers of the cost of funds.

Figure 11 shows that the financial institutions studied in Zambia face a higher cost of funds as they source their funding mostly from external creditors, as compared to those studied in Ghana, where the funding is predominantly sourced from domestic deposits.

<sup>15</sup> In Ghana and Zambia, the monetary policy interest rate refers to the interest rate target that is set by the central bank. (Bank of Ghana and Bank of Zambia). In both countries this rate is set by the monetary policy committee. In the UK this rate is referred to as the base rate, in the US as the target rate.

Figure 11: Sources of funding for the case studies

Cost of funds and composition of funding (2018)



In Ghana, as the financial institutions analysed are all deposit-taking institutions and have greater capacity to attract domestic deposits, the main source of funds is the wholesale and retail deposits (representing between 60% to 90% of the funds). This is aligned with the trend observed in Ghana, where, in 2018, 60% of total funds in the industry were reported as coming from deposits, 20% from external creditors and 10% represented by shareholder capital<sup>16</sup>.

The Bank of Ghana’s Monetary Policy Committee has gradually reduced its MP interest rate from 26% in 2016 to 16% in 2019, which led to a reduction in the average rate paid for funds by banks from 25.4% to 16.2% (Average Interbank rates for 2016-2018). Therefore, the four FIs studied in Ghana paid between 5.3% and 11.9% as average interest rate on deposits and borrowings in 2017 and 2018. We would expect that the FIs that rely more heavily on customer deposits would have the lowest cost of funds. Instead, NBFI C has the highest cost of funds (11.9%) among the four institutions in Ghana, despite receiving 90% of their funds from domestic deposits. This is due to the fact that NBFI C had to increase the interest paid on deposits to solve a temporary liquidity challenge caused by the 36% NPL rate in 2017. The other financial institutions profiled have much more diversified source of funding.

In Zambia, we analysed two deposit taking institutions (Bank A Zambia and NBFI C Zambia) and one non-deposit taking institution (NBFI B Zambia). As expected, the deposit taking institutions have a lower cost of funds as the non-deposit taking institution. However, even though NBFI C Zambia has a higher percentage of their funds in customer deposits (at 56% of total funding) than Bank A in Zambia (with 33% of total funding in customer deposits), NBFI C cost of funds is 3% higher than that Bank. This is due to the fact that Bank A secured borrowings from external creditors at lower price than the interest paid on domestic deposits.

The Bank of Zambia MP rate decreased from an all-time high of 15.5% in 2016 to 10.25% in 2019. Accordingly, the average cost of funds for the financial sector in Zambia fell from 16.1% to 9.9% in 2018. The three case studies in Zambia did not benefit greatly from this reduction, given that they pay between 17.6% and 26.7% interest on their funds. This is mostly due to the higher reliance on external funding as well as their smaller customer deposit sizes.

<sup>16</sup> Banking sector report, Bank of Ghana, 2018

The seven case studies show that customer deposits are not always the cheapest sources of funds, as other studies had proven previously<sup>17</sup>, but blended funds can lead to a lower cost of funds for FIs. Banks attract more depositors and higher deposits, negotiating lower interest rates paid to customers. This is mostly due to their better infrastructure, more trust from customers as well as better liquidity risk management.

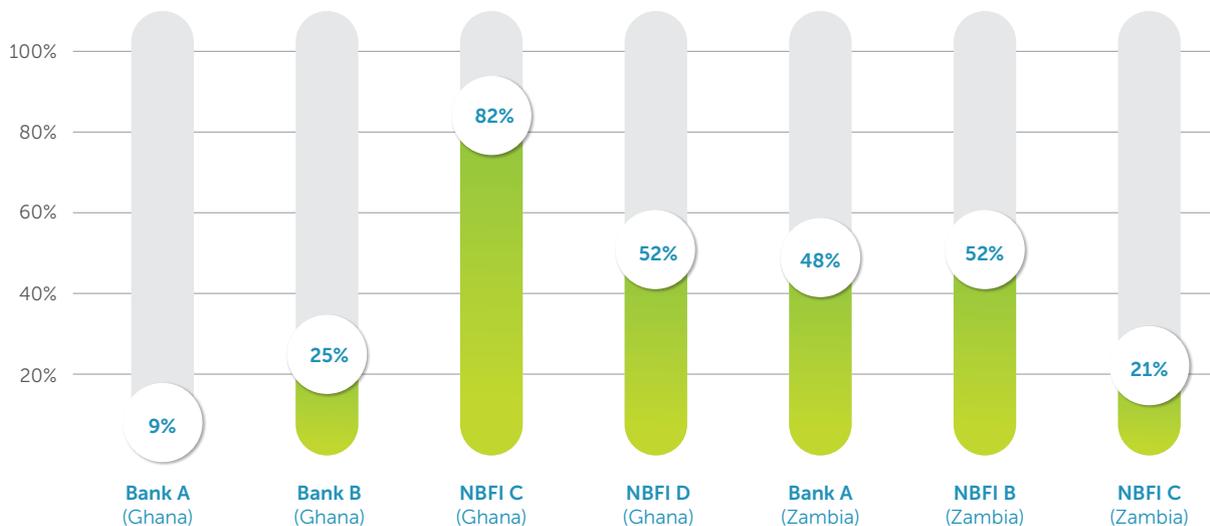
## Component 2: cost of operations

Operating costs include all expenses related to the activities that financial institutions perform in order to deliver their credit products and services to the market. As the largest contributor to the cost of credit, operating expenses (OPEX) drive the financial institutions' efficiency in delivering credit to the market.

There is a high variation of operating cost relative to average gross loan portfolio (operating expense or OPEX ratio) for the analysed banks (between 9% to 52%) and non-bank financial institutions (between 21% to 82%), as shown in Figure 12. This variation is mainly due to the product portfolio composition, credit process efficiency and composition of operational expenses.

Figure 12: Operating cost relative to average gross loan portfolio

### Cost of operations



Additionally, we note that the average NBFIs' OPEX ratio of 52% is much higher than the average operating expense ratio in SSA's microfinance sector of 19% reported by CGAP in 2011<sup>18</sup> and the 30% operating expense ratio for three microfinance banks in DRC, Madagascar and Mozambique reported in case studies published in 2015 by KfW<sup>19</sup>. This difference is explained both by the lack of economies of scale (size of the credit portfolio) as well as the high operating expenses of the NBFIs analysed in this report.

<sup>17</sup> The True Cost of Deposit Mobilization, CGAP, 2007; CGAP, Access for all: Building Inclusive Financial Systems

<sup>18</sup> Microcredit Interest Rates and their determinants, CGAP (2013)

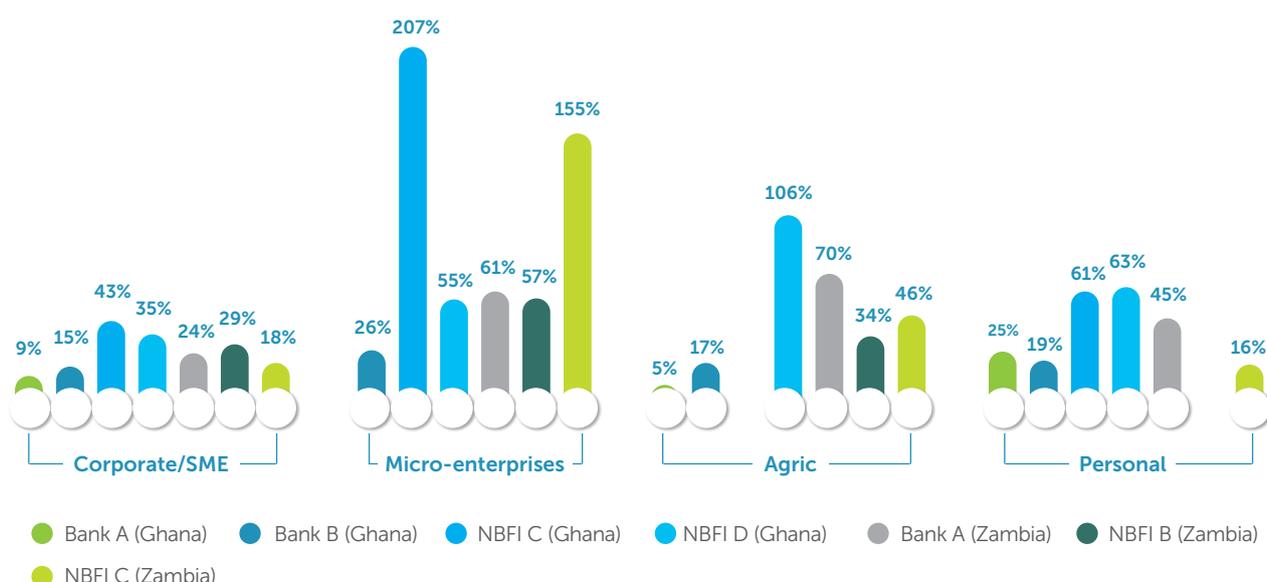
<sup>19</sup> Potential for cost reducing and efficiency increasing measures in financial institutions, KfW Development Bank (2016)

The product portfolio composition of each institution studied affects the overall cost of operations for delivering credit. For example, Bank A and B in Ghana mostly provides credit to corporate companies and therefore have a relatively low operating expense ratio compared to the NBFIs studied, which focus mostly on micro enterprises and personal loans. The nature of the credit products offered, together with the credit processes efficiency affects the time and resources each financial institution spent on customer acquisition, risk analysis and the overall management of the loan portfolio. For example, corporate and SME loans are more labour intensive than payroll loans, as they require more in-depth credit analysis and higher level of monitoring.

Although more costly in absolute terms, Figure 13 shows that corporate / SME loans for both Ghana and Zambia’s institutions are the most efficient from the point of view of operational expenses (with an OPEX ratio between 9% and 23% for banks and between 15% and 43% for the NBFIs). This is due to higher average ticket size of the corporate/SME loans than of the other types of loans. Conversely, where the loan size is smaller, but creating volume by disbursing individual loans faster via efficient processes can improve product OPEX ratio. This is the case of NBFI C (Zambia), with a personal loan OPEX ratio of 16.2%.

Figure 13: Product OPEX ratio for the case studies

Product OPEX ratio (2018)

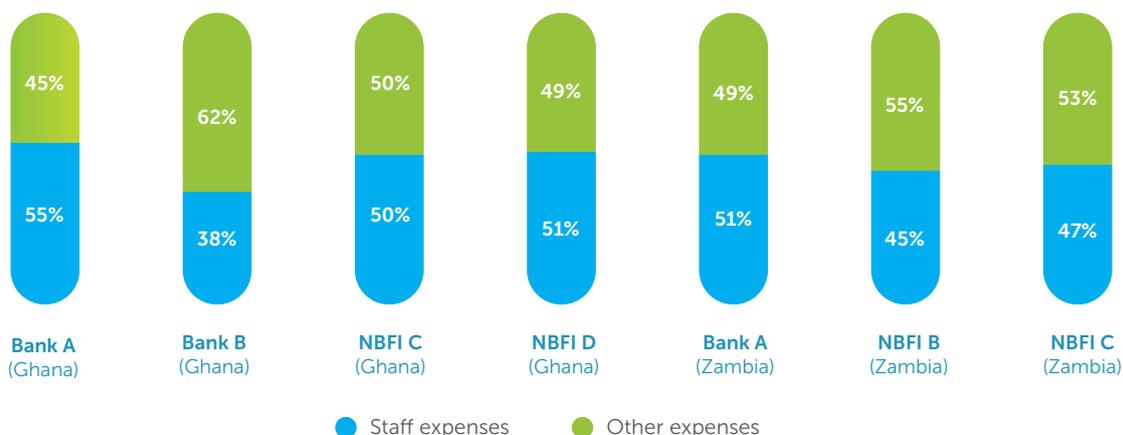


Process efficiency affects all products OPEX ratios. In Ghana, NBFI D is the most efficient financial institution in providing micro-enterprise loans, with 55% product OPEX ratio. This is attributed to their more automated processes for micro-enterprise loans, which led to higher volume of transactions and high loan officer productivity (high case load). However, process efficiency must be accompanied by low overhead cost and high business generation activity level. NBFI C in Ghana has the highest micro-enterprise loan OPEX ratio (at 207%) because of high overhead cost (at 80% of operating expenses), low business generation (with only 7% of staff being loan officers), despite the relatively rapid loan disbursement of between five and seven days.

The composition of operational expenses for delivering each type of product impacts the overall cost of credit. Our analysis shows that staff costs dominate the cost of operations, taking an average of 52% of the total operational cost for all case studies (as shown in Figure 14 on the following page).

Figure 14: Operating expenses composition

Operating expenses structure (average 2017-2018)



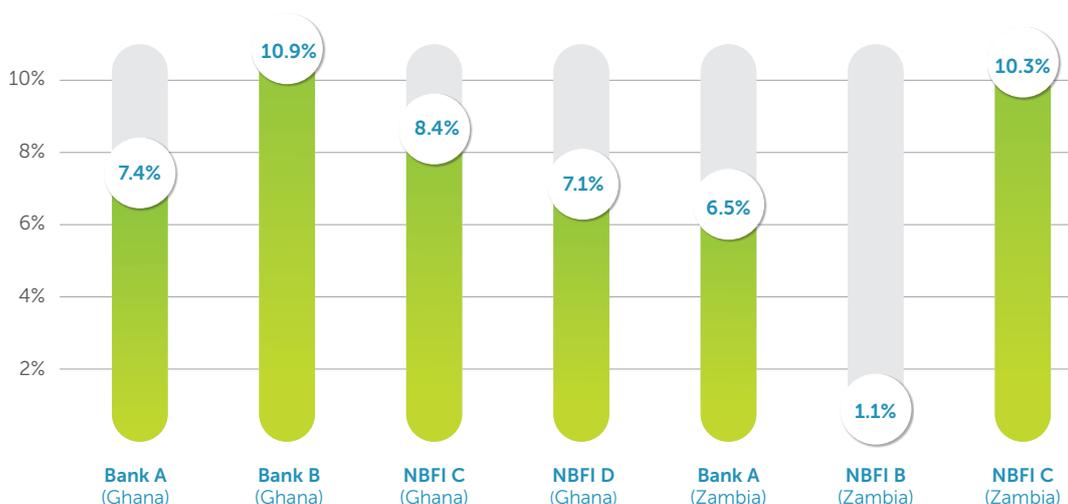
Staff related expenses are influenced by the internal operational set up of the institutions and the availability and cost of skilled labour in the market. Generally speaking, micro loans (smaller loan size) require a larger number of staff (in the case of NBFIs), while corporate loans (larger loan size) require higher level of skills hence more expensive resources.

In terms of external factors, the availability of skilled labour and the cost of living in the country to a large extent dictates salary levels. In 2018, the median banking salary in Ghana was USD 1,056, while in Zambia it was USD 844. The average pay of the FIs studied in Ghana per staff member was USD 1,673 compared to USD 428 in Zambia, although this is mainly driven by the three banks analysed.

Additionally, technological advances offer huge potential to reduce operational costs for the financial institutions. In Ghana, almost 40% of adult population have a mobile money account and 50% made or received digital payments in 2017<sup>20</sup>. In Zambia, 28% of population owns a mobile money account and almost 40% used digital payments in 2017.

Figure 15: Operating expenses composition

Loan loss provision over average portfolio



<sup>20</sup> Findex Global Database, World bank, 2019

For the financial institutions in our case study, technology could have a significant impact on their cost of credit, as only the two banks in Ghana use ATMs and mobile applications as digital channels.

The case studies show that the credit related cost of operations is determined by the product portfolio composition and credit process efficiency, balanced by highly qualified business generation staff and low overhead cost. Operational efficiency is expected to come from the introduction of new technology-based products and channels, thereby reducing the cost of operations.

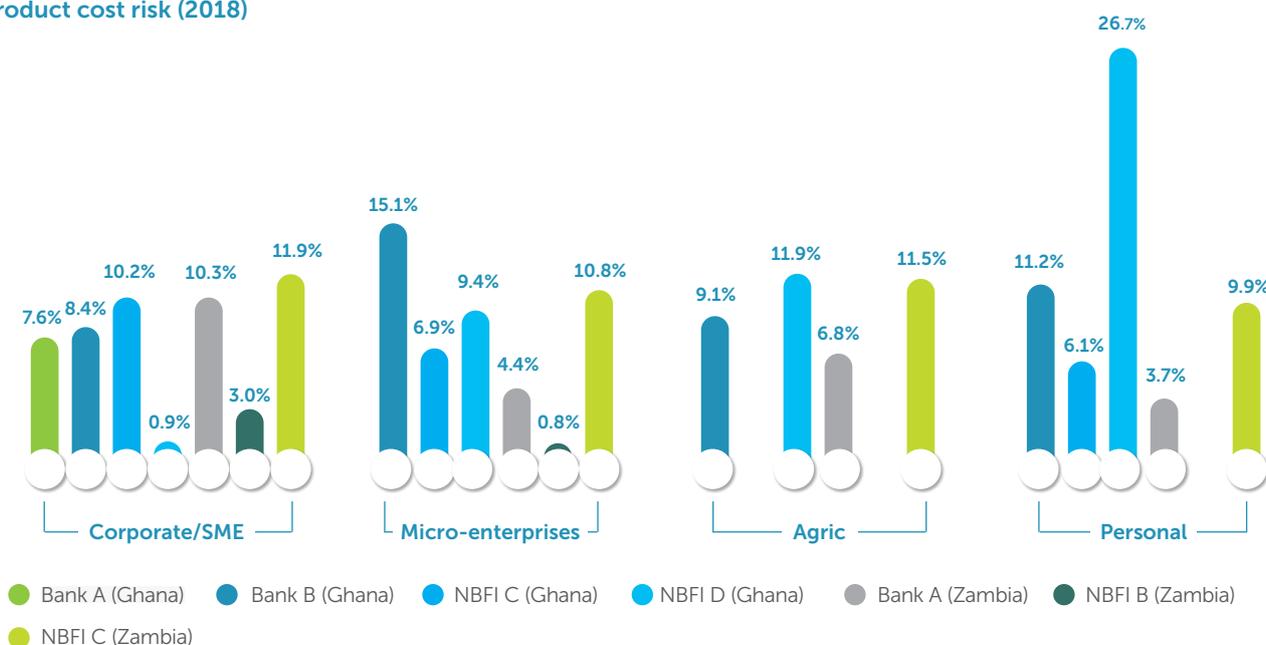
### Component 3: cost of risk

In this report, the cost of risk is defined as the loan loss provision set aside by a financial institution. NPLs affect proportionally the loan loss provision levels of each financial institution.

A high variation in the cost of risk was observed in the seven institutions studied: between 1.1% to 10.3% in Zambia and between 7.1% to 10.9% in Ghana (as shown in Figure 16).

Figure 16: Cost of risk per product

#### Product cost risk (2018)



The high cost of risk and variation among the institutions' cost of risk are attributed both to external and internal factors, including the possibility of under-provisioning, in certain cases. Based on the interviews with financial institutions' management and confirmed by the PwC survey, the main external factors affecting the level of non-performing loans in 2018 was the performance of the economy and regulatory reforms, which affected clients' capacity to meet payment obligations.

The 2017-2018 slowdown in economic growth in Zambia reduced the borrowers' capacity to service their debt, hence affecting the financial institutions' NPL, which reached the average of 11% for the financial sector in Zambia in 2018. In Ghana implementation of regulatory reforms in 2018 destabilized the financial sector and increased the financial institutions' NPL (reaching a peak of 22.6% in 2018), despite Ghana's economic boom in 2018. This explains why the cost of risk for Bank B and NBFI C in Ghana is relatively high, as they took over the non-performing loans (NPLs) of banks that were closed as a result of the regulatory reforms.

In terms of internal factors, from our research, there was not a strong correlation between the credit product type and the level of the cost of risk. Rather, imbalanced distribution of risk exposure to one single client (e.g. government salaries in the case of payroll loans at NBF D in Ghana) and the lack of portfolio scale (e.g. in the case of NBF C in Zambia) lead to high cost of credit risk. The variation in the cost of risk for different products can be explained by the specificity and strength of each institution's risk management. For example:

- Defaults in a few corporate loans can cause a high loan loss provisioning due to the large ticket size. This is the case of the majority of the case studies showing between 8% and 12% cost of risk in Figure 17.
- The lack of scale for a specific credit product can lead to high risk concentration for the product. This is the case of micro-enterprise loans for NBF C in Zambia (at 10% cost of risk and 3.5% of its portfolio in micro-enterprise loans) and of agriculture loans for NBF D in Ghana (with 6% share in the total gross portfolio) and NBF C in Zambia (with 1% share).
- Lack of or inadequate risk concentration management can spike up the loan loss provisioning in case of unforeseen events. As mentioned above, this was the case of NBF D in Ghana, with a high share of portfolio (28%) concentrated in loans to government employees and government contractors. Due to delay in payments to contractors and employees by government, the non-performing loans affected the cost of risk for the personal/payroll product.

Therefore, the seven case studies show that a healthy portfolio concentration risk management will reduce the level of risk resulting from external risk events.

# 5 | Conclusion

The study illustrates the significant challenges which financial institutions face in providing credit profitably. High input costs often render credit provision a loss-making activity, except at very high interest rates. The variance in the cost of credit between institutions further demonstrates the complexity of cost of credit composition and the variety of factors that impact its size.

Table 3 shows the wide range of values that institutions pay for their funds (cost of funds), the variation in the cost of operations and variation in provisions for credit losses (cost of credit risk).

**Table 3: Summary of case studies cost of credit indicators (2017-2018)**

Summary of case studies indicators (2017-2018)	Ghana	Zambia
<b>Cost of funds</b> Interest paid on average deposits and borrowings	5.3% to 11.9%	17.6% to 26.7%
<b>Cost of operations</b> Operating expenses relative to average gross loan portfolio	9% to 82%	21% to 52%
<b>Cost of risk</b> Loan loss provisions relative to average gross loan portfolio	7% to 11%	1% to 10%
<b>Cost of providing credit</b> Total cost of credit relative to average gross loan portfolio	26% to 103%	53% to 80%
<b>Actual annual lending rates</b> Average interest rate charged by financial institutions on all products	19% to 55%	47% to 65%
<b>Net profit margin on lending</b> Average portfolio yield minus total cost of credit <sup>21</sup>	-60% to -1.5%	-17.4% to -5.5%

Despite the high interest rates charged, all seven banks in our sample recorded a loss on their lending activity as shown by the net profit margin in Table 2. Bank A in Ghana and NBF C in Zambia recorded the highest margin (although still negative 1.5% and 5.5%), which is likely a result of their economies of scale (corporate loans and payroll loans respectively). The high cost of providing credit influenced the financial institutions analysed to reduce credit activity and move towards investing in less risky, more profitable treasury bonds.

<sup>21</sup> Calculation of net profit margin on lending used the formulas detailed in Annex 1: Methodology and Annex 2: Definition of key ratios

# Annex 1

## Methodology

---

### Quantitative and qualitative data analysed

---

- The case studies are financial institutions in Zambia and Ghana that expressed interest in participating in the study. The financial institutions were selected from different tiers: banks, credit and savings, microfinance institutions.
- Audited financial statements for 2017-2018 and loan portfolio reports provided by the financial institutions were used for analysis. Additionally, interviews were conducted with the financial institutions' management and staff to understand the nature and factors driving the cost of credit.
- Different sources were used for macro-economic indicators and trends for Zambia and Ghana. The sources of information are specified in the annex.

### Definitions related to the cost of credit composition

---

- Cost of credit is defined as sum of cost of funds (or funding cost), cost of risk (or risk cost) and cost of operations (or operating cost).
- Cost of funds is calculated as the percentage of the 2018 interest expense on the average deposits and borrowings (2017 and 2018 financial statements). Operating expenses to attract and manage the funds are not included in our analysis.
- Cost of risk is calculated as the percentage of the 2018 loan loss provisions on the average gross loan portfolio.
- Cost of operations is calculated as the percentage of the 2018 operating expenses on the average gross loan portfolio.
- Average gross loan portfolio is used throughout the analysis and it was calculated as the average between the outstanding gross loan portfolio reported in the balance sheets of 2017 and 2018.
- Income from loans in the report is interest and non-interest income reported in the income statement of the financial institutions.

### Credit products definitions

---

- Large corporates loans – Refer to credit offered to large corporates. The value of outstanding loans is over USD 1 million.
- SME loans – These refer to credit offered to smaller corporate organizations and small and medium enterprises, as defined by each institution. The average loan outstanding varies between USD 2,000 and USD 120,000.
- Micro-enterprise loans – These refer to credit provided to micro enterprises, individual businesses, both formal and informal. The average loan outstanding varies between USD 100 and USD 12,000.
- Personal and consumer loans – These are salary (pay-slip based) loans and loans provided to the retail market for household consumer purposes. The average loan outstanding varies between USD 600 and USD 10,000.
- Agriculture loans – These refer to credit given to small holder farmers and agriculture SMEs (processors and other small and medium businesses operating within the agriculture value chain). The average loan outstanding varies between USD 55,000 (for agriculture SME) and USD 200 (small holder producers).

## Assumptions

---

- Financial institutions management confirmed that most of the annual expenses are related to credit activities, therefore the credit operating cost was considered equal to the total value of annual operating expenses reported in the financial statements.
- Due to the complexity of cost allocation methods used in the industry, together with the lack of detailed data from the financial institutions analysed, we chose a simplified cost allocation method and applied it across the case studies. The cost of operations allocation per product used different factors for staff expenses and other expenses. Staff expenses were allocated based on the average time spent on loan origination and disbursement (as reported by the institution); the other expenses were allocated based on the size of the product portfolio. The product cost of risk was calculated as the product loan loss expense reported to the average outstanding portfolio for the product as reported by the institutions for 2017-2018.

# Annex 2

## Definitions of key ratios

All ratios are calculated based on data of 2017 and 2018 audited financial statements.

<b>Average gross loan portfolio</b>	AVERAGE of gross loan portfolio 31.12.2018 and gross loan portfolio 31.12.2017
<b>Interest expense</b>	Annual interest expense on deposits and borrowings
<b>Total cost of credit</b>	$= \frac{\text{Cost of funding} + \text{Cost of risk} + \text{Cost of operations}}{\text{Average gross loan portfolio}}$
<b>Cost of funding</b>	$= \frac{\text{Interest expense}}{\text{Average gross loan portfolio}}$
<b>Cost of operations</b>	$= \frac{\text{Total operating expenses}}{\text{Average gross loan portfolio}}$
<b>Cost of risk</b>	$= \frac{\text{Loan loss provisioning}}{\text{Average gross loan portfolio}}$
<b>Cost to Income ratio</b>	$= \frac{\text{Operating Expenses}}{\text{Operating Income}}$
<b>Net portfolio margin on lending</b>	= Average portfolio yield - Total cost of credit
<b>Average portfolio yield</b>	$= \frac{\text{Annual interest income} + \text{loan related commissions and fees}}{\text{Average gross loan portfolio}}$
<b>Loan portfolio to deposits ratio</b>	$= \frac{\text{Average gross loan portfolio}}{\text{Average customer deposits}}$
<b>Capital adequacy ratio</b>	$= \frac{\text{TIER 1 Capital} + \text{TIER 2 Capital}}{\text{Risk weighted assets}}$

# Annex 3

## Sources of information

A new banking model for Africa: Lessons on digitization from four years of operations, IFC, 2018	<a href="https://www.ifc.org/wps/wcm/connect/ccfc72e8-1434-4fcb-9262-990fb864e22c/Longitudinal+study_New+Banking+Model+for+Africa_final.pdf?MOD=AJPERES">https://www.ifc.org/wps/wcm/connect/ccfc72e8-1434-4fcb-9262-990fb864e22c/Longitudinal+study_New+Banking+Model+for+Africa_final.pdf?MOD=AJPERES</a>
Banking in sub-Saharan Africa - Recent Trends and Digital Financial Inclusion, EIB, 2018	<a href="https://www.eib.org/en/publications/economic-report-banking-africa-recent-trends-and-digital-financial-inclusion.htm">https://www.eib.org/en/publications/economic-report-banking-africa-recent-trends-and-digital-financial-inclusion.htm</a>
Finance and Growth: Theory and Evidence, Ross Levine, 2005	<a href="http://faculty.haas.berkeley.edu/ross_levine/Papers/Forth_Book_Durlauf_FinNGrowth.pdf">http://faculty.haas.berkeley.edu/ross_levine/Papers/Forth_Book_Durlauf_FinNGrowth.pdf</a>
Financial inclusion and economic growth in OIC countries, D. Kim, 2018	<a href="https://www.sciencedirect.com/science/article/abs/pii/S0275531917304798">https://www.sciencedirect.com/science/article/abs/pii/S0275531917304798</a>
Microcredit Interest Rates and their determinants: 2004–2011, CGAP, 2013	<a href="https://www.cgap.org/research/publication/microcredit-interest-rates-and-their-determinants-2004-2011">https://www.cgap.org/research/publication/microcredit-interest-rates-and-their-determinants-2004-2011</a>
Business credit interest rate by country: the latest data, The Global Economy, 2019	<a href="https://www.theglobaleconomy.com/rankings/business_credit_interest_rate/">https://www.theglobaleconomy.com/rankings/business_credit_interest_rate/</a>
The Global Findex Database, Measuring Financial Inclusion and the Fintech revolution 2017, World Bank, 2018	<a href="http://documents.worldbank.org/curated/en/332881525873182837/The-Global-Findex-Database-2017-Measuring-Financial-Inclusion-and-the-Fintech-Revolution">http://documents.worldbank.org/curated/en/332881525873182837/The-Global-Findex-Database-2017-Measuring-Financial-Inclusion-and-the-Fintech-Revolution</a>
The Little Data Book on Financial Inclusion, Word Bank, 2018	<a href="https://www.unsgsa.org/files/3815/2511/8893/LDB_Financial_Inclusion_2018.pdf">https://www.unsgsa.org/files/3815/2511/8893/LDB_Financial_Inclusion_2018.pdf</a>
The Role of Finance in Economic Development, Beck, T.H.L., 2011	<a href="https://pure.uvt.nl/ws/portalfiles/portal/1379830/2011-038.pdf">https://pure.uvt.nl/ws/portalfiles/portal/1379830/2011-038.pdf</a>
<b>Ghana</b>	
Annual report 2018, Bank of Ghana, 2019	<a href="https://www.bog.gov.gh/wp-content/uploads/2019/07/AnnRep-2018.pdf">https://www.bog.gov.gh/wp-content/uploads/2019/07/AnnRep-2018.pdf</a>
Annual report 2017, Bank of Ghana, 2018	<a href="https://www.bog.gov.gh/wp-content/uploads/2019/07/AnnRep-2017.pdf">https://www.bog.gov.gh/wp-content/uploads/2019/07/AnnRep-2017.pdf</a>
Banking reforms so far: topmost issues on the minds of bank CEOs, PwC, 2019	<a href="https://www.pwc.com/gh/en/assets/pdf/ghana-banking-survey-2019.pdf">https://www.pwc.com/gh/en/assets/pdf/ghana-banking-survey-2019.pdf</a>
Corporate Fraud: Causes, Effects, and Deterrence on Financial Institutions in Ghana, European Scientific Journal, 2018	<a href="https://www.researchgate.net/publication/328752008_Corporate_Fraud_Causes_Effects_and_Deterrence_on_Financial_Institutions_in_Ghana">https://www.researchgate.net/publication/328752008_Corporate_Fraud_Causes_Effects_and_Deterrence_on_Financial_Institutions_in_Ghana</a>
Choice of Monetary Policy Regime in Ghana, Bank of Ghana, 2008	<a href="https://www.bog.gov.gh/wp-content/uploads/2019/07/Choice-of-Monetary-Policy-Regime-in-Ghana.pdf">https://www.bog.gov.gh/wp-content/uploads/2019/07/Choice-of-Monetary-Policy-Regime-in-Ghana.pdf</a>
Ghana: Deposit interest rate, The Global Economy, 2019	<a href="https://www.theglobaleconomy.com/Ghana/deposit_interest_rate/">https://www.theglobaleconomy.com/Ghana/deposit_interest_rate/</a>
Ghana Baking Survey. Having secured the new capital; what next for banks? PwC, 2018	<a href="https://www.pwc.com/gh/en/assets/pdf/2018-gh-banking-survey.pdf">https://www.pwc.com/gh/en/assets/pdf/2018-gh-banking-survey.pdf</a>
Ghana Financial Sector Development Project, World Bank Group, 2018	<a href="http://documents.worldbank.org/curated/en/768071536096255699/Ghana-Financial-Sector-Development-Project">http://documents.worldbank.org/curated/en/768071536096255699/Ghana-Financial-Sector-Development-Project</a>

State of the Financial Sector in Ghana, Bank of Ghana, 2018	<a href="https://angelaalu.files.wordpress.com/2018/03/state-of-the-banking-system.pdf">https://angelaalu.files.wordpress.com/2018/03/state-of-the-banking-system.pdf</a>
The Effect of External Conditions on the Economy of Ghana, Bank of Ghana, 2019	<a href="https://www.bog.gov.gh/wp-content/uploads/2019/07/The-Effect-of-External-Conditions-on-the-Economy-of-Ghana.pdf">https://www.bog.gov.gh/wp-content/uploads/2019/07/The-Effect-of-External-Conditions-on-the-Economy-of-Ghana.pdf</a>
World Bank Open Data, Ghana, World Bank Group, 2019	<a href="https://data.worldbank.org/country/ghana">https://data.worldbank.org/country/ghana</a>
<b>Zambia</b>	
Annual Report 2018, Bank of Zambia, 2019	<a href="https://www.boz.zm/BOZ_annual_REPORT_2018.pdf">https://www.boz.zm/BOZ_annual_REPORT_2018.pdf</a>
Annual Report 2017, Bank of Zambia, 2018	<a href="https://www.boz.zm/BOZANNUALREPORT2017.pdf">https://www.boz.zm/BOZANNUALREPORT2017.pdf</a>
Credit Market Monitoring Report, Bank of Zambia, 2017	<a href="https://www.boz.zm/Credit-Market-Monitoring-Report-Year-2017.pdf">https://www.boz.zm/Credit-Market-Monitoring-Report-Year-2017.pdf</a>
Monetary Policy Committee statement, Bank of Zambia, 2019	<a href="https://www.boz.zm/MPCStatementAug2019.pdf">https://www.boz.zm/MPCStatementAug2019.pdf</a>
World Bank Open Data, Zambia, World Bank Group, 2019	<a href="https://data.worldbank.org/country/zambia">https://data.worldbank.org/country/zambia</a>
Zambia Banking and Non-Banking Industry Survey, PwC, 2019	<a href="https://www.pwc.com/zm/en/assets/pdf/zambia-banking-non-banking-industry-report2018-04.2019.pdf">https://www.pwc.com/zm/en/assets/pdf/zambia-banking-non-banking-industry-report2018-04.2019.pdf</a>
Zambia: Financial Sector Assessment Program - Financial System Stability Assessment, International Monetary Fund. Monetary and Capital Markets Department, 2017	<a href="https://www.imf.org/en/Publications/CR/Issues/2017/11/17/Zambia-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-45408">https://www.imf.org/en/Publications/CR/Issues/2017/11/17/Zambia-Financial-Sector-Assessment-Program-Financial-System-Stability-Assessment-45408</a>





FSD Africa, Nairobi, Kenya  
info@fsdafrica.org  
@FSDAfrica

[www.fsdafrica.org](http://www.fsdafrica.org)



DFID, London, UK  
enquiry@dfid.gov.uk  
@DFID\_UK

[www.gov.uk](http://www.gov.uk)