Loan Pricing of Nigerian Microfinance Banks: Survey & Methods of Assessment – Short Version

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Contents

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is a federal enterprise with worldwide operations. The organization supports the German Government in the fields of international cooperation for sustainable development and international education. Through its work, GIZ assists people and societies in shaping their own futures and improving living conditions.

The GIZ Pro-poor Growth and Employment Promotion in Nigeria (SEDIN) Programme facilitates key state actors as well as members of the financial and business sectors in effecting reforms of the business and investment climate and to enhance access to financial services for micro, small and medium-sized enterprises in Nigeria. This is in line with Nigeria's national development strategy, the 'Vision 20:2020', and the Financial System Strategy 2020 (FSS 2020). It is divided into three components. One component focuses on financial sector reform by supporting implementation of the FSS 2020, a review of the microfinance policy, regulation and certification of Microfinance Banks, the introduction of micro-insurance, value chain financing, and the strengthening of microfinance banks and their associations in three States (Niger, Plateau and Ogun).

Introduction

There is a general agreement that the prices of microloans are very high in Nigeria. Yet, there is very scarce standardized data which could reveal how high prices really are. The article *"Loan Pricing of Nigerian Microfinance Banks: Survey & Methods of Assessment"* aims at filling this gap and moreover deliver first insights whether such price-setting is sustainable. The price MFBs charge for their loans is one of the main variables that determine where MFBs stand between their goal of alleviating poverty, i.e. their social mandate, and their goal of profit maximization. For being able to form a qualified opinion on this matter, it is necessary to go beyond the mere description of prices of microloans; one must analyze the drivers of the prices and find out whether these drivers are within the control of MFBs or whether they are determined externally.

In order to shed light on these matters, GIZ – SEDIN carried out a survey which covers all necessary information to compare different loan products in terms of all-in effective costs. The paper *"Loan Pricing of Nigerian Microfinance Banks: Survey & Methods of Assessment"* discusses different methods of comparing loans in terms of costs and concludes on the *annual percentage rate* (*APR*) as a suitable standard for comparison. The *APR* is one measure to express the cost of a loan as an annual interest rate which includes all costs such as nominal interest rate, additional fees compulsory savings requirements etc. To phrase it as simple as possible: the *APR* analyzes all cash-flows paid by a client when taking out a loan and expresses these costs in terms of how much interest a person would have to pay if he or she were to use the loan amount for one year. If e.g. a loan of NGN 1,000 with a tenor of 6 months has an APR of 10%, it means that a borrower who wants to use this NGN 1,000 for one full year would have to pay NGN 100. This makes loans with different amounts and tenors immediately comparable. Such *APR* calculations were applied to all 72 different loan products of 21 MFBs in the sample. Afterwards an assessment was carried out to specify the price drivers of microloan products in Nigeria. Specifically it was assessed whether there are correlations or patterns between *APR* and loan amount, loan tenor, loan use and/or the internal cost structure of MFBs respectively. This summary gives a brief overview of the main findings in the paper.

APRs in Nigeria at a glance

The *APRs* of loans in the sample range high in absolute terms with an average of 127% and a median of 102%. The spread between the cheapest loan product (*APR* of 38.4%) and the most expensive loan product (*APR* of 337.4%) is 299 percentage points.

Median	Average	Minimum	Maximum	Spread
102%	127%	38%	337%	299%

Table 1: Descriptive statistical data on APRs

The triangles in Figure 1 symbolize the respective *APR* of the loan products while the grey area represents the spread of the observations.
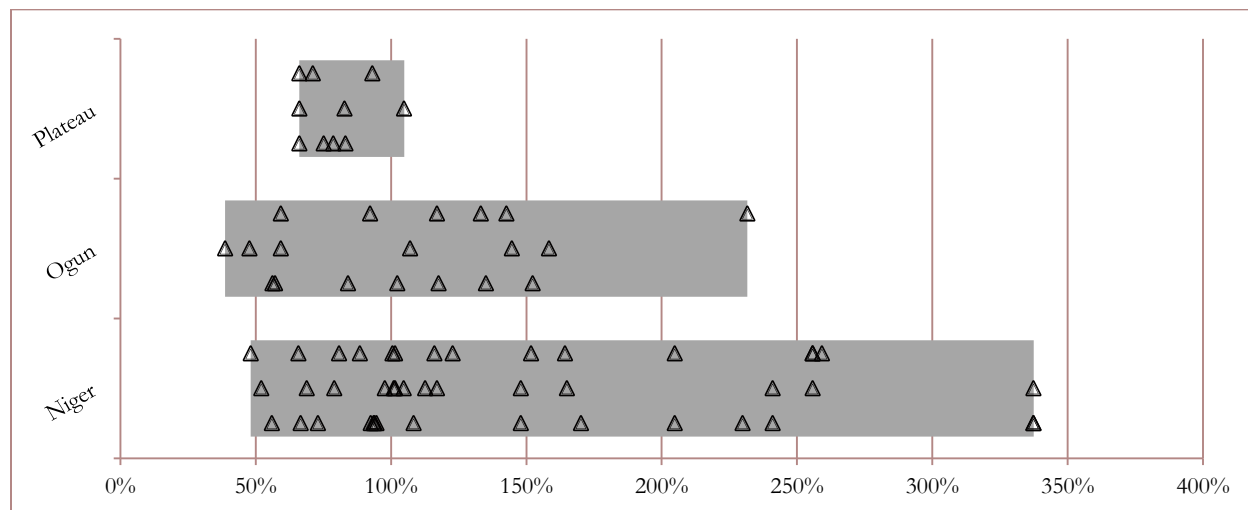

Figure 1: Range of APRs per state, author's calculations.

The large spread indicates that there is limited competition in the Nigerian microfinance sector. In fact, the situation seems to be somewhat better in Plateau State. However, the fact that all observations from Plateau come from four MFBs only does not allow a generalization of this observation, since the *APRs* of different loans within one MFB correlate strongly.

APRs in international comparison

The spread, median and average of the *APRs* is not only high in absolute terms but also by international comparison. The box plot in Figure 2 shows the median, the 25%- and 75%-quartile as well as the minimum and maximum values of the *APRs* for several African countries.[1,2] It can be seen that the median value of 102% is the highest in comparison to other African countries. This is 10 percentage points more than Ghana at 89% and 20 percentage points more than Malawi (78%) and Tanzania (79%). The same is true for the average of 127% which is higher than for any of the other countries, although this figure is usually distorted by extreme observations and should thus not be over-interpreted. Furthermore, it can be observed that the range between the 25 and 75 percentiles within which 50% of the data lies is comparatively wide (shown by the width of the box). The heterogeneity of the *APRs* in Nigeria is the same as in Ghana, and only Malawi shows a wider spread.

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[1] The box marks the range in which 50% of the observations lie. The remaining 25% of observations below that and above that respectively lie within the range the area exemplified by the line.

[2] All data for microloan products from other African countries is taken from MFTransparency. In MFTransparency's terminology the APR used is the "Full APR" that includes all fees, taxes, insurance, compulsory savings and nominal interest.
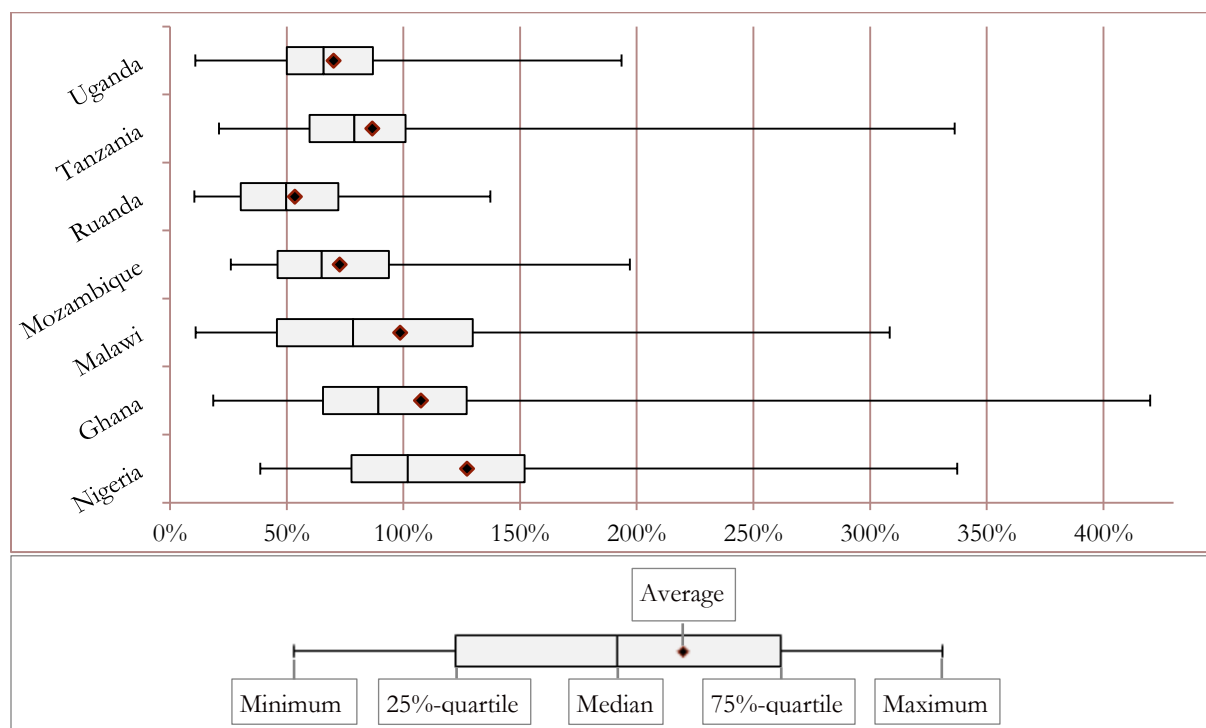
Figure 2: APRs in international comparison, data source: MFTransparency, author's calculations

APRs and product features

In line with the observations about the competitiveness of pricing, we neither find a strong correlation between *APRs* and loan amounts nor between *APRs* and loan tenor. In a strongly competitive market, one would expect the costs for loans to drop with higher loan amounts and longer tenors. The reason for this are the high transaction costs of micro lending compared to traditional commercial lending. In microcredit, the cost structure is dominated by fixed unit costs. In terms of operating expenses, it costs almost as much to make a $ 100 loan as it does to make a $ 1,000 loan. At the same time, income rises proportionally with the loan size, since it is generated as a percentage of the loan amount. Thus, in competitive markets, the *APR* should decline with increasing loan amounts. A similar relationship should exist with respect to the loan tenor. All else equal, loans with a longer maturity should have lower *APRs* because the fixed unit cost of originating the loan can be recovered over a longer interest-earning loan period.

In line with the observations above, we find no evidence of strongly competitive pricing, when looking at the relationships between *APR* and loan tenor or loan amount (see Figures 3 & 4).
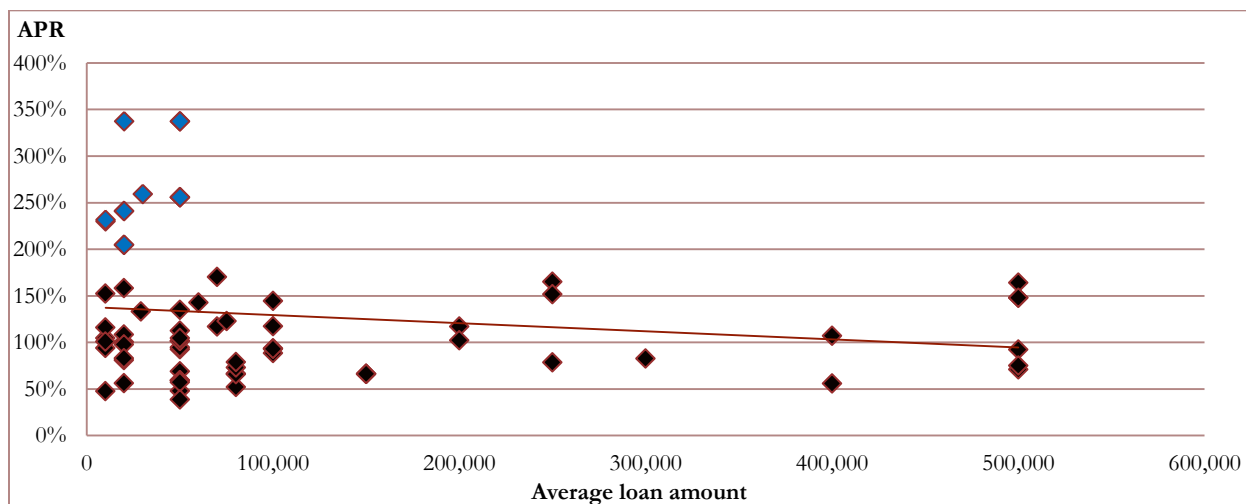
APR

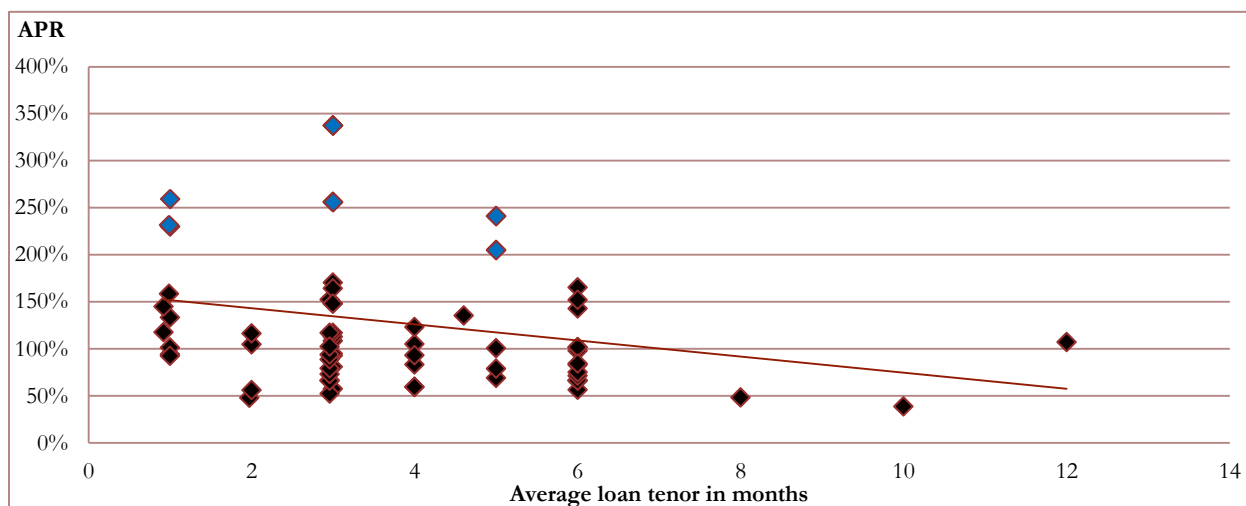**Figure 3: APRs & loan amounts.[3]**

APR

Figure 4: APRs & loan tenor.

Both Figures, 3 & 4 indicate a weak negative correlation. However, this effect mostly appears to be the result of a number of high rate outliers (marked in blue) in the short tenor and low loan amount segment respectively. Those same outliers are not found for very high loan amounts or long tenors. If the outliers are excluded the remaining observations lie roughly within the same range. In fact, concerning loan amounts the cheapest options are found for smaller loan amounts which contradicts theory.

The loan purpose – a further product feature that was captured in the survey – might explain some of the wide range of observed *APRs*. Figure 5 shows the distribution of *APRs* per different loan purpose (agricultural, business, consumption and unspecified).

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[3] One observation of loan with an APR of 84% at a loan amount of NGN 1 million was dropped from the graph for reasons of scaling.
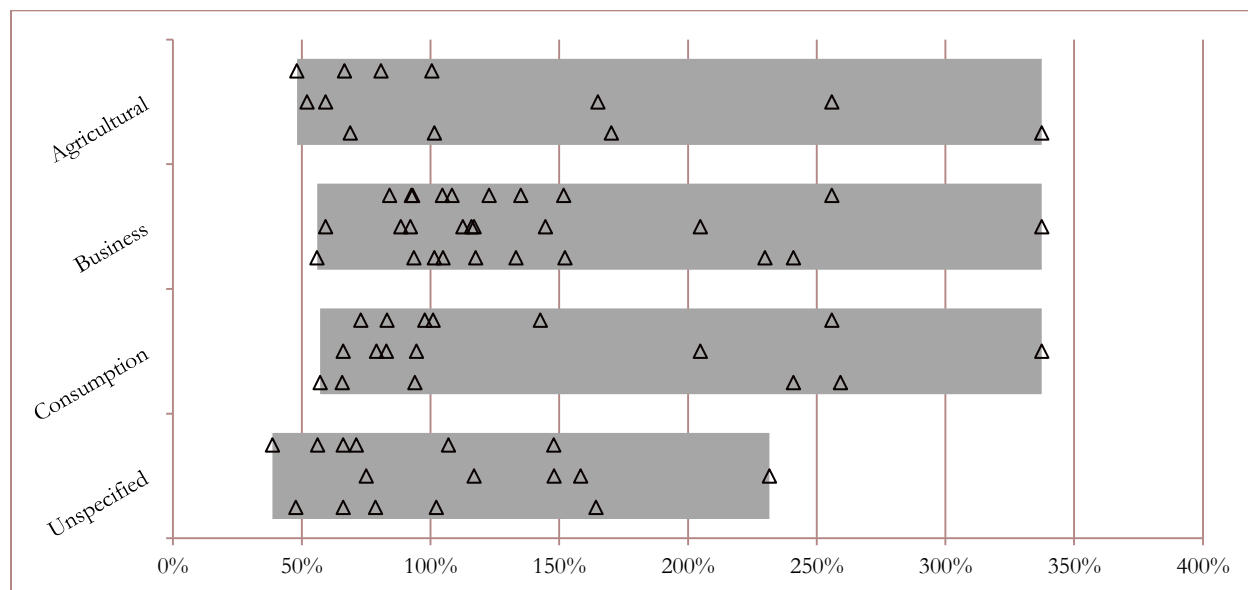
Figure 5: Range of APR per product, author's calculations.

In fact, the data shows some variation of the prices with regards to the loan purpose (see figure 5). When disregarding the single outliers with extremely high rates, we can get an intuitive sense from the clustering of the *APR* observations in Figure 5 that business loans are the most expensive, while agricultural, consumption and unspecified are cheaper on average, with the lowest rates observed overall coming from agricultural and unspecified loans.

Concerning business loans there was no straightforward expectation. On the one hand, one might have expected *APRs* of business loans to come out lower than for agricultural and consumer lending. The reason being that business loans are typically the most visible, high-volume product where pricing should be the most competitive. On the other hand, investments into business usually generate the highest economic returns, which is also sustained through our data as more than half of the business loans in the sample are specified to be used for (different combinations of) trading, working capital, inventory and supplies, all of which tend to generate comparatively high margins in micro and small enterprises. It could be the case that high charges for business loans are the result of high projected returns. However, no clear answer can be given the limited sample size and the fact that the average *APRs* for the different product categories do not deviate very strongly.

The comparatively low rates on agricultural loans are somewhat counter-intuitive. In global microcredit practice and in Nigeria in particular, agricultural loans are perceived as very high risk due to commonly occurring crop failures. Our expectation therefore would have been higher rather than lower average *APRs* on agricultural loans. Taking a look at the repayment structures of different loan products suggests that the lower *APRs* on agricultural loans might simply arise accidentally when MFBs apply the same monthly flat

interest rate quote to the common bullet repayment profile which is found more frequently for agricultural loans. To phrase it more simply: Charging 5% flat interest per month for three months is not equal to charging 15% on a bullet repayment after three months – a fact which does not seem to be taken into account properly by MFBs when looking at the different repayment profiles.

The analysis of the relation between different loan product features and *APR* did not deliver clear results: No concise patterns emerged that could rationalize the strong divergence of *APRs* observed across Nigerian MFBs. The slight differentiation according to loan purpose can neither adequately explain the large spreads nor the high absolute level of *APRs*. Far from practicing fine-tuned, competitive risk-adjusted pricing strategies, it appears then that MFBs charge according to "rules of thumb" rather than precise *APR* calculations.

MFB-internal drivers of APR

Moving away from analyzing particular loan features to analyzing the internal cost-structure of MFBs and its relation to *APRs* requires a deeper understanding of how these two figures interrelate: The *APR* that an MFB charges on average for its loans minus the share of money it loses on these loans due to defaults gives the gross yield that the MFB realizes on its loan portfolio. This amount, the yield on loan portfolio, should in theory be sufficient to cover all costs and additionally generate a certain return on equity for capital preservation, paying out dividends, being able to access finance and simply being able to maintain a growing loan portfolio.

Approached from the perspective of an MFB, one can rephrase this: the internal costs and the desired return on equity should determine how much money the MFB must charge on its portfolio in order to realize a yield on loans that is sufficient for the MFB to be profitable and grow sustainably. In other terms: the required yield on loan portfolio of an MFB should determine the average *APR* charged by the MFB.

To analyze whether MFBs price according to such a rational, i.e. whether the internal cost-structure of MFBs is one main price driver of microloans, we consequently compared the desired yield on loan portfolio with the actual average *APR* charged. Three figures were estimated for this comparison. All three estimations are based on the following formula to calculate the required yield on loan portfolio (for details of the formula see CGAP 2002 or original paper):

$$R = \frac{AE + LL + CF + P - II}{1 - LL}$$

with:

R – required yield on loan portfolio   *AE – administrative expense ratio*   *CF – cost of funds rate*

P – profit margin   *II – investment income rate*   *LL – loan loss ratio*

Because there is no reliable data for the *investment income* several estimations were necessary for a proper estimation of the required yield on loan portfolio.
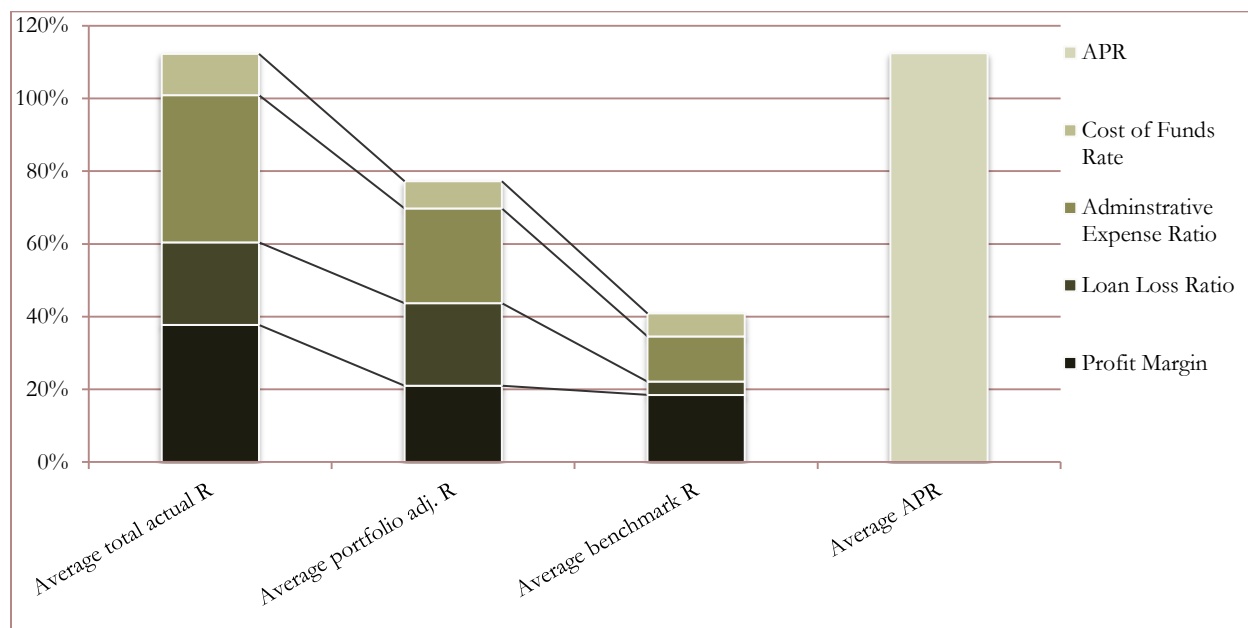

Figure 6: Required yields vs. benchmark yield vs. APR

Figure 7 shows the result of estimating different required yields on the loan portfolio. The first bar shows the result of estimating the *total actual R*. The *total actual R* signifies the yield that a MFB must realize on its loan portfolio in order to cover all of its cost. It is included for methodical completeness only and it does not hold any information for the comparison with *APRs*. This is due to the fact that the value is highly distorted since especially in Nigeria MFBs use large parts of their funds for other financial investments. In fact, within the sample the loan portfolio is on average only 48% of total assets. This distorts the *total actual R* as it means that a loan portfolio which is on average less than half of total assets must cover all costs; even the costs that are covered through the income of other investments. To correct for this error, the specific balance sheet and portfolio structures of each MFB must be taken into account and adjusted accordingly.

This adjusted balance sheet serves as the basis for the *portfolio adjusted R*. The *portfolio adjusted R* signifies the amount that an MFB **must charge** to cover **all costs that are necessary for maintaining the loan portfolio**. Costs which arise in connection with undertaking investments other than microloans are taken out of the calculation. While the *portfolio adjusted R* explains how much MFBs must charge on average to be profitable and grow sustainably it does not hold any information whether charging this amount is fair to customers.

The third bar, the *benchmark R*, signifies the amount of money that MFBs **would have to charge** in order to be profitable and grow sustainably, **if they operated efficiently**. The benchmarks used to calculate the

benchmark R were taken from the CAMEL-toolkit (Hoback 2013). The benchmarks of this toolkit are conceived specifically for the Nigerian microfinance landscape. The *benchmark R* is thus sensitive to all particularities of Nigerian microfinance, such as country-specific costs of doing business. This is supported through the fact that four MFBs outscore the conservatively chosen benchmark.

Figure 6 reveals that MFBs are on average highly inefficient and would have to charge much less if they decreased their *operating expenses* and their *loan loss* (difference between *portfolio adjusted R* and *benchmark R*). It is important to stress that this comparison holds that both MFBs grow at the same pace realizing a generous pre-tax return on equity of 30%. However, the fictional MFB which operates efficiently can offer its loan products about 40 percentage points cheaper to realize the same profits.

Additionally it becomes apparent that MFBs charge much more than they would have to, to cover all their costs, even when passing on all inefficiencies to customers (difference between *portfolio adjusted R* and *APR*).

For assessing whether the required yield on loan portfolio is actually a price driver, it is however not sufficient to analyze average values for all MFBs. It is necessary to compare the values for each MFB in order to judge whether all MFBs take their specific internal cost-structure into account.

Figure 8 implies that this is not the case. It compares the value that a MFB must charge to be profitable and grow sustainably, the *portfolio adjusted R*, with the amount they actually charge, the *average APR*, for each MFB in the sample. The figure reveals that there does not seem to be a uniform way of how MFBs take into account their internal cost-structure as the markups charged on the internal costs differ widely. In fact, five MFBs charge even less than what they would have to in order to be profitable and grow sustainably (five values to the far right in the figure).
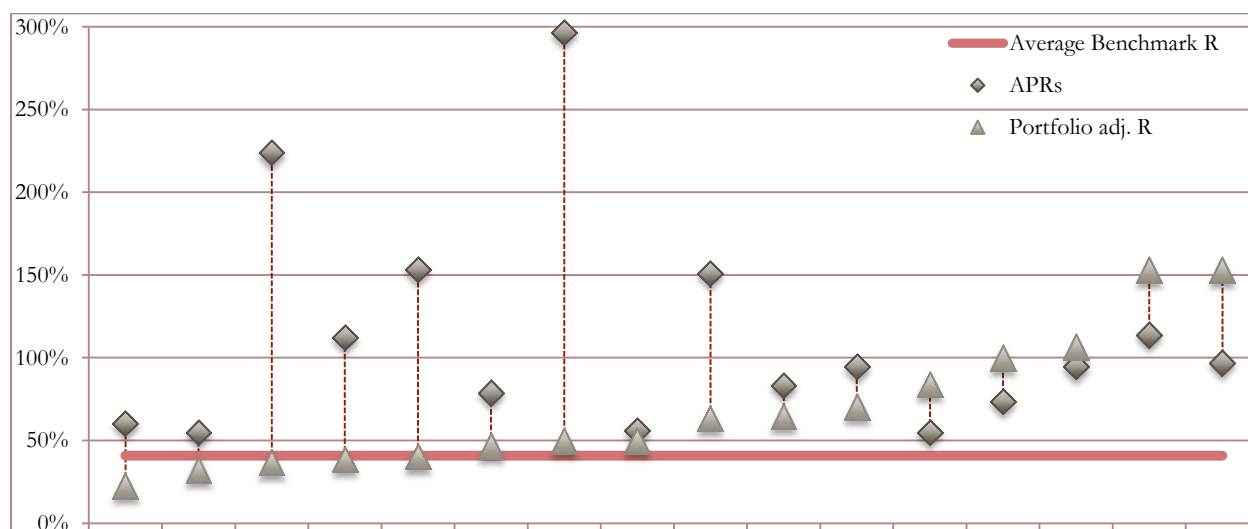

Figure 7: Portfolio adjusted R vs. APRs for specific MFBs

Conclusion & Outlook

In conclusion, we found that *APRs* charged in Nigeria are high in absolute value and by international comparison. The large spread of the values indicates limited competition in the Nigerian microfinance sector. Moreover, pricing seems to be administered in a highly irrational manner as neither basic loan features, nor the internal cost-structure of MFBs show a clear correlation or pattern with the amount charged to customers.

Taking all of this into consideration, it appears that there is a considerable lack of knowledge on how to properly price microloan products. At the same time high costs of microloans presents a large barrier for the financial inclusion of the poorest. However, excluding a broad range of people from financial services does not only negatively affect consumers: As long as the prices of loans remain in a range of about 100%, all investments with an annual return below 100% cannot be continuously financed through microloans, a fact which largely restricts the growth potential of MFBs of the Nigerian microfinance sector. Welfare gains through becoming more efficient could thus mean an enhancement of the growth potential for the sector if these gains are passed on to customers. As for the way forward this means that there is need for capacity building in terms of enhancing efficiency, e.g. through better delinquency control etc. However, this single measure would surely not suffice as the knowledge on how to pass on internal cost-benefits to customers is largely restricted. Thus, the need for capacity building goes far beyond internal cost control to the very basics of transforming internal cost-structures in a responsibly priced loan portfolio taking into account the basic features of the loan products offered.

It must be stressed that we are far from being able to estimate precisely the "responsible price" of microloans that would allow sustainable growth of MFBs, help alleviating poverty and increase outreach to the financially underserved. However, we can say with confidence that a median APR of 102% is well beyond an acceptable range!

Taking into account the feedback of SEDIN's partner MFBs it would be a first necessary condition to empower MFBs to calculate the *APRs* they charge, as in fact many MFBs are not aware of the actual price they demand. A short guide to calculate the *APR* using the Excel-based toolkit by MFTransparency is attached and hopefully marks a first small step to enhance responsible pricing of Nigerian MFBs.

Literature

CGAP (2002): *Microcredit Interest Rates.* Occasional Paper No. 1. CGAP: Washington.

HOBACK, Brock (2013): *CAMEL Self-Rating Manual.* Internal publication; available on demand; GIZ SEDIN: Abuja.