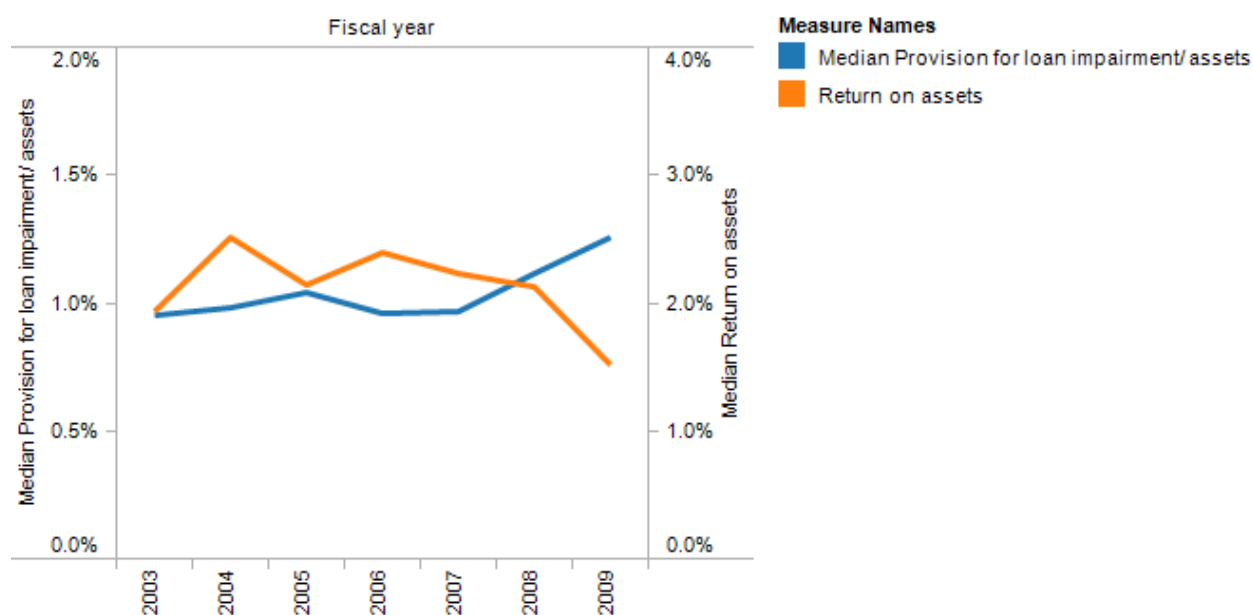


In [a comment](#) to our post on [cost and profitability in microfinance](#), John DeWit from [SEF - ZAF](#) raised the point that some MFIs may “charge high rates but...not make high returns because of large loan write-offs.”

This presents a perfect opportunity to look at the interaction between risk, return and costs for MFIs in greater detail. The figure below shows at a glance that returns decrease when risk rises, but before looking at the data in more detail, we should look at how we measure “risk.”



 tableau

(Data from the same sample of over 7400 observations from 1750 institutions over 7 years used [here](#).)

### What we talk about when we talk about risk...

The primary behavior that we are concerned in terms of risk is when borrowers stop repaying their loans. This is one indicator of “[poor quality micro-finance](#)” - non-payment tells us that *something* is going wrong, although it may not always tell us exactly what. So how do we observe non-payment by borrowers through the lens of MFI financial statements?

When a borrower stops payments, the MFI can generally do one of two things.

1. They can keep the loan on their books and try to collect on the outstanding payments. In this case, the loan is delinquent but still registers in the portfolio. Delinquent loans are tracked in the portfolio-at-risk (PAR) ratios, depending on how long they have been in non-payment status.
2. Or the MFI can decide that it cannot collect on the loan, and can write the loan off its books. In this case, the loan registers in the write-off ratio and the loan portfolio is reduced by the

remaining balance of the loan. (Occasionally, MFIs do collect repayments on loans that have already been written-off, but this is the exception rather than the rule.)

These are mutually exclusive events at a single point in time - a loan cannot be simultaneously both on and off the books - but both reflect the same underlying behavior by borrowers. Consequently, we might expect PAR and write-offs to be inversely related for a single MFI - they can't do both at the same time. You can actually see this see-saw pattern fairly clearly [in the data for SEF](#):



Over the past few years, PAR >30 and write-off levels have varied between about 1 - 2 percent for SEF, and the average total tends to be around 3 percent. Therefore a *rough* way to capture all non-payment behavior would be to add together the PAR and write-off ratios. That should cover both cases of non-payment - when the loans are kept on the books and when they are written off. [\[Fn1\]](#)

Timing presents some additional challenges to interpret risk indicators though. PAR and write-off ratios tell us about events that happened in the past. However, we don't always have good information on exactly *when* in the past these events occurred. Our signals for non-payment are received some time after the borrower actually stops payment on the loan.

As noted above, when a borrower stops payment, the loan can either be put into delinquency or written-off. So a loan may be written off one day after repayment stopped or several years later. It is fairly common for MFIs to write loans off after one year of delinquency, but this is by no means universal. For example, [the write-off policy from SEF - ZAF](#) is to write delinquent loans off after three months:

#### **Loan loss reserves**

In cases where borrowers experience death amongst their members, the company will decrease the borrower's repayment and write-off the amount owed by the member. Such write-offs are classified as provisions for claims not yet incurred. An amount of R 616 976 (2008: R 492 615) was provided for.

A debt is declared irrecoverable once it is 90 days in arrears. An amount of R766 406 (2008: R 629 850) was written off during the year under review.

We believe that this excellent performance will be maintained due to the nature of the lending procedures employed, the diligence of the field staff and the commitment of clients.

The only instance where the organisation allows the renegotiation of delinquent loans is where clients are able to provide medical evidence of long-term illness. Such amounts are not written off, and the respective clients are urged to continue with loan repayments when their condition improves. The accumulative amount renegotiated in this way since inception and still outstanding at year-end was R 306 785 (2008: R 320 422).

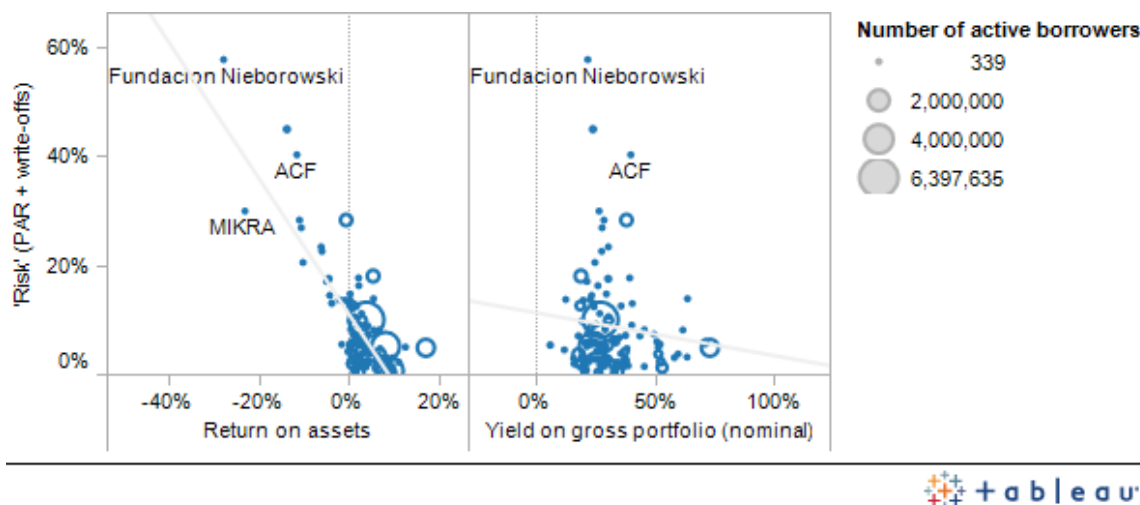
PAR ratios give us a little more information because they are based on an aging table that tells us how long ago the loan went into delinquency. You can see these aging tables on the MIX site if [you expand the 'delinquency' breakout for any MFI](#):

- Delinquency						
Less than one month	—	3,988,705	5,303,966	6,532,772	9,099,817	11,430,432
- One month or more	—	37,921	40,005	105,285	38,031	—
From one to three months	—	21,049	12,601	65,554	17,905	62,013
- More than three months	—	—	—	—	—	—
From three to six months	—	0	0	0	0	0
- More than six months	—	—	—	—	—	—
From six to twelve months	—	0	0	0	0	0
One year or more	—	0	0	0	0	0
Renegotiated loans	—	16,872	27,404	39,732	20,126	68,070

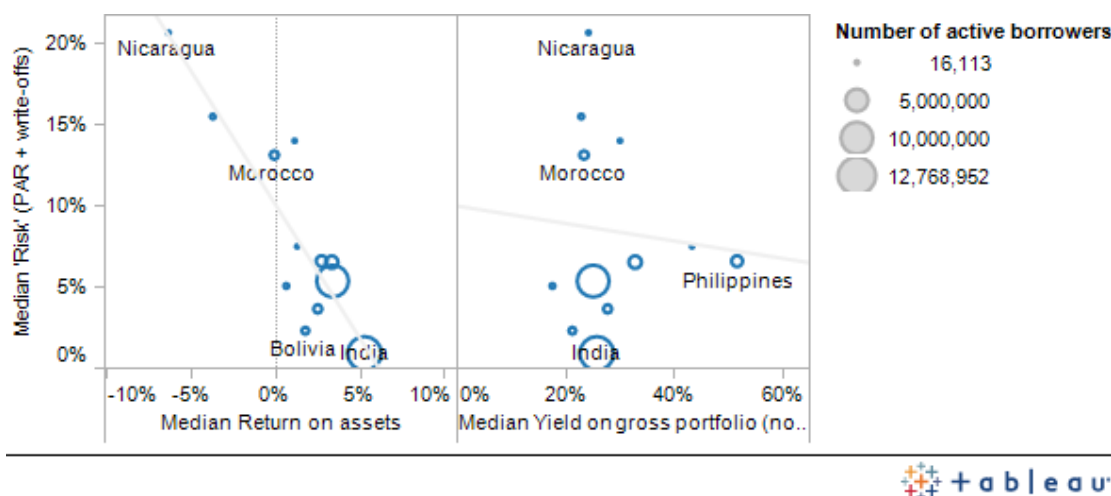
But beyond a certain point (generally one year is the maximum in the aging table), we're also left guessing as to how far in the past the non-payment behavior began. In addition, the portfolio-at-risk often contains a substantial portion of loans that have been renegotiated or restructured. This further disconnects the signal for non-payment from the underlying phenomena. (For an example, see the note [here](#).)

### Risk vs. return

Having gone through some of the issues with the indicators, we can still look at the relationship between risk and return for MFIs. The graphs below show the relationship between risk (PAR + write-offs) and returns on assets for MFIs globally from 2003 to 2009. (Unlike [the previous post](#), for these charts we've kept the same set of about 180 institutions that have provided data for all years, since that makes changes over time easier to track and keeps the graphics more readable.)



The next chart shows the same results grouped by country (for countries with three or more MFIs).



For MFIs and at the country level, there is a clear negative relationship between ‘risk’ (or PAR > 30 days + write-offs) and returns.

This result should not be surprising. Write-offs are an expense that directly reduces the profit levels of an MFI. Delinquent portfolios do not directly increase expenses, but they do indirectly affect profits when MFIs increase the reserves or buffers held to cover losses in the portfolio. Both types of expenses - increases in reserves and write-offs - are captured in the [provision for loan impairment / assets](#) ratio. Consequently, this ratio is our best way to see the impact on revenues of non-payment. The graph at the start of the article shows this relationship between returns and risk-related expenses over time.

However we look at it, the relationship between risk and return is most dramatic in 2009, as risk levels increased for MFIs worldwide. Consequently, we can attribute some of the declining returns for the past several years (as seen [here](#)) to increased losses due to higher risk levels. This addresses part of the question from John DeWit’s comment.

The second part of the question was on the relationship between high risk and high interest rates (or high costs to clients). Do MFIs that charge more for their services incur higher risk levels, and thus, lower profits? Here, the evidence is less clear. Based on the data posted above, it is not obviously the case that MFIs (or countries) with high yield levels have higher risk. If anything, the *opposite* appears to be true slightly more often. But we know there are many confounding factors at work here. It is hard [to compare interest rates across countries and across MFIs with different product mixes](#). Interest rates can reflect institutional policies. We know that other factors, beyond price, drive high risk levels. We also do not have accounting relationships to draw the links for us between risks and profits (as we did with risk and return). We will look into our current knowledge on costs to clients and the relation to financial performance in future research though.

Fn1: We say ‘rough’ because write-off and PAR ratios are different types of indicators - PAR reflects data at a single point in time, and uses the outstanding gross loan portfolio as the denominator. Write-offs are reflected over a period of time and the denominator is the average gross loan portfolio over that period. So these are not precisely comparable, but as a rough metric adding them can be useful.

Fn2: Here is a little more detail: say we have 2 MFIs each with 100 loans out for \$1 each, and both MFIs charge 10% on their loans. Say each MFI has one bad borrower who stops payment on their loan. For simplicity, let’s assume the borrower never pays the MFIs back any principal or interest. (Given what we know about multiple lending, maybe this is actually the same person.) MFI 1 puts the bad loan into delinquency status, and keeps it there. The loan portfolio thus stays at \$100, but PAR goes up and the yield goes down (since they have one non-accruing loan still on their books). MFI 2 has a different policy. They write the loan off immediately. Thus the loan portfolio drops to \$99, and the write-off ratio goes to 1 percent while the PAR ratio stays at 0 percent.

MFI 1	Beginning of period	End of period
Loan portfolio	\$100	\$100
PAR > 30	0	1%
Write-off ratio	0	0
Yield	10%	9.9%

MFI 2	Beginning of period	End of period
Loan portfolio	\$100	\$99
PAR > 30	0	0
Write-off ratio	0	~1%
Yield	10%	10%

So both MFIs experience the same 'level' of non-payment by borrowers - one bad loan apiece, at the same point in time. But because they have different ways of accounting for this, the ratios show up differently at the end of the period. If we pretend that these MFIs merged, we would then see one MFI that had 0.5 percent PAR > 30 and 0.5 percent write-off ratio (representing two 'bad' loans) and a yield between 9 and 10 percent.

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