



### Looking forward

Indian MFIs rely on debt to finance most of their operations, [with most of these funds coming from Indian banks](#) based on [priority-sector lending arrangements](#). During the crisis in Andhra Pradesh, this stock of debt has been seen as both a source of risk - [will banks stop lending to MFIs?](#) - and a potential [cause of the crisis](#). On the one hand, if banks stop lending, MFIs will have to curtail their operations. On the other hand, the easy availability of debt in India supported the rapid growth that some have seen at the root of the crisis. In either case, the dynamics of this debt are worth further attention. Earlier, we looked at [how the rapid growth of this debt got us to where we are today](#). In this article, we're going to use what we know about debt today to see what it can tell us about the future. What happens if banks stop lending to MFIs? How large are the risks to MFI portfolios?

To evaluate these risks, we're going to use detailed information about the stock of current debt for Indian MFIs from the MIX Funding Structure Database. For 2007 - 2009, the database contains information on approximately 2700 loans to Indian MFIs, of which we have information on loan terms for just under 1000 borrowings for last year. When we have information on loan terms - e.g. the loan maturity date - we can use this to project financing levels into the future. If an MFI has a loan maturing in 6 months, we then know that they will need to refinance some portion of that debt in 6 months. Using some basic assumptions and aggregating across the sector, we can then extrapolate the behavior of these loans to the total pool of debt financing.

### Methodology

In an ideal world, we would have full repayment schedules for all loans to MFIs. That would tell us exactly how much MFIs owe to their creditors, and when. However, since we lack data on full repayment schedules, we instead need to make some assumptions for how the loans are repaid.

We use two different assumptions to project two different scenarios - in one 'slow' scenario, we assume each loan has a bullet amortization (all principal is repaid at maturity), while for a second 'fast' scenario, we assume each loan has a straight line amortization (principal is paid off evenly month-to-month). These two scenarios provide high and low estimates for total refinancing needs. Though, the true refinancing level will be somewhere between the two.

To illustrate the methodology, say an MFI has two loans outstanding, one loan of 60 dollars maturing in 3 months and one loan of 40 dollars maturing in 4 months. If we don't know the exact repayment schedule, we have to make some assumptions. *Table 1* below shows how much debt outstanding the MFI would have if we assume the loans are bullet loans (i.e. each loan pays off entirely at maturity, in 3 and 4 months resp.).

**Table 1: Outstanding principal balance in sample 'slow' repayment scenario**

Period	0	1	2	3	4
Loan 1	60	60	60	0	0
Loan 2	40	40	40	40	0
Total	100	100	100	40	0

Table 2 below shows the other scenario - here we assume the principal is repaid evenly over the remaining term of each loan.

**Table 2: Outstanding principal balance in sample 'fast' repayment scenario**

Period	0	1	2	3	4
Loan 1	60	40	20	0	0
Loan 2	40	30	20	10	0
<b>Total</b>	<b>100</b>	<b>70</b>	<b>40</b>	<b>10</b>	<b>0</b>

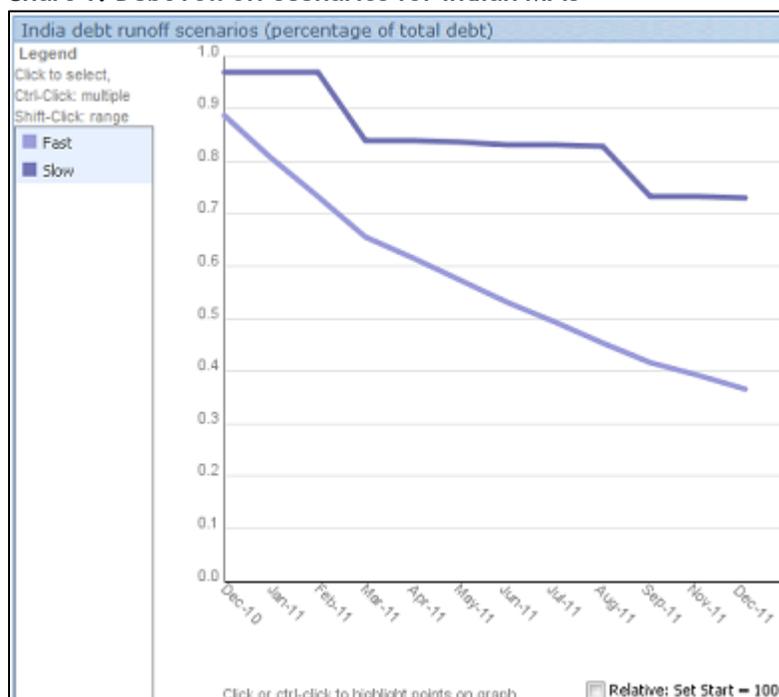
We can see that the 'fast' scenario (*Table 2*) has the stock of debt declining faster than in the 'slow' scenario (not surprisingly), but that both reach a 0 balance at the same time, based on the [terms of the loans](#). The true maturity profile would likely be somewhere between the two scenarios - slower than the fast scenario and faster than the slow scenario. Some loans are amortizing, while others are bullet loans, but we don't have detailed information on the proportion of either.

It should be noted that neither of these scenarios account for unforeseen events. We are assuming that everyone holds to the terms of current loans, which may not be the case in a time of crisis, as borne out by the [recall of 22 million USD in loans by Yes Bank](#). However, even that recall by one of the leading lenders in the market constitutes less than 1 percent of total debt to the sector. Consequently, this type of high-level projection can help us with upper and lower bounds for refinancing gaps, and even if some details are missing, we still walk away with a sense of the level of refinancing needed in each period.

### Refinancing scenarios

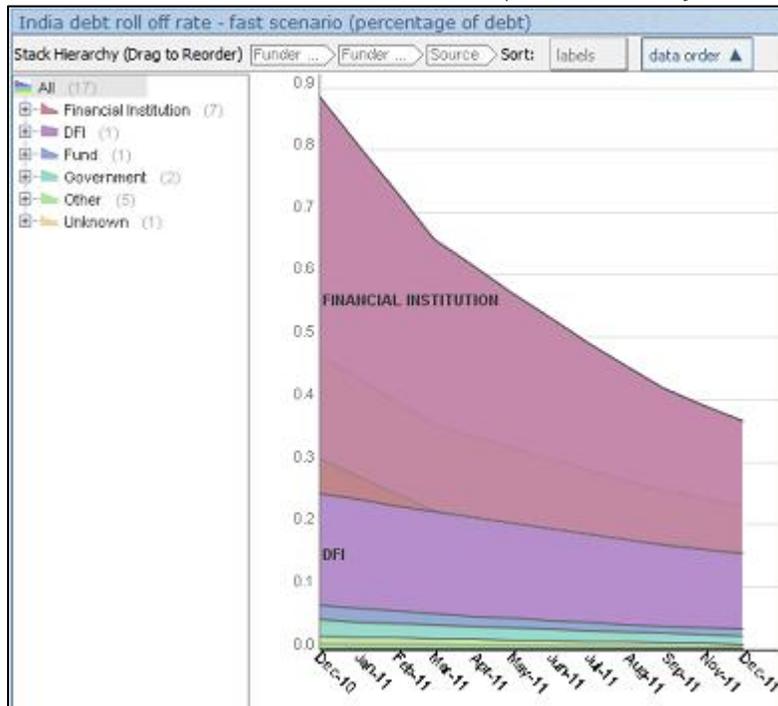
Currently, Indian MFIs have somewhere over 3 billion USD in debt ([3.5 billion USD at the end of fiscal year 2009](#)). Chart 1 shows the amount of debt that we projected to remain on MFI balance sheets if there were no refinancing in each of the two scenarios, starting from November 2010. For each month, we can read off the percent remaining from the chart (and convert that into dollars using the current debt volume). By the end of fiscal year 2010 (in March 2011), the slow scenario has 84% remaining, meaning MFIs will need to refinance 16% or roughly 560 million USD. Similarly, in the fast scenario, a refinancing gap of 34% has emerged by March 2011 or almost 1.2 billion USD. If we average these out, we can expect almost 900 million USD in financing needed to keep portfolios at current levels. Projecting out further, to year-end, between 73 (fast) and 37 (slow) percent of debt has rolled off, leaving a financing gap of some 1.6 billion USD if we average the two scenarios. These figures are very rough, but again, provide a starting point for looking at the sector as a whole.

**Chart 1: Debt roll off scenarios for Indian MFIs**

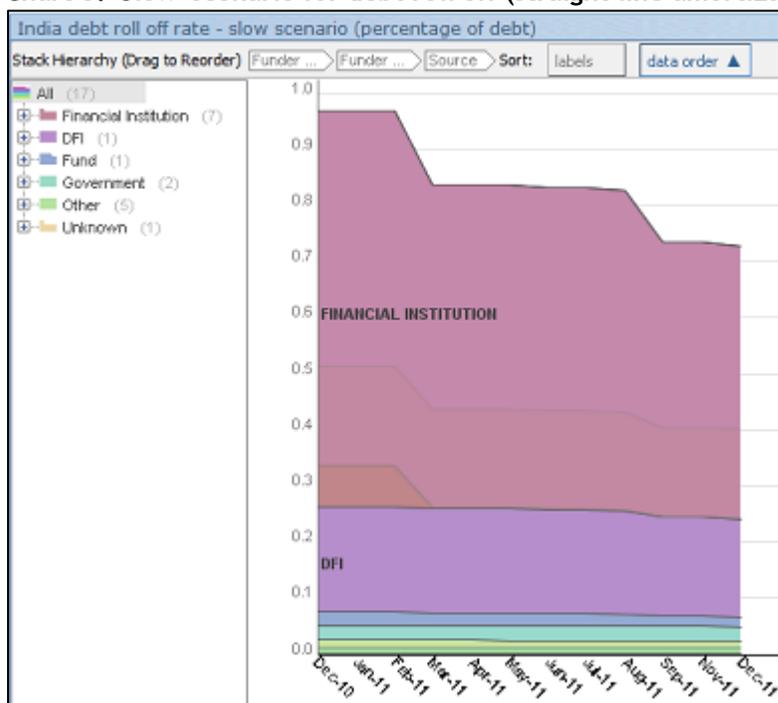


Charts 2 and 3 explore the individual scenarios in more detail - in these charts, the projected volume of outstanding debt can be organized by the type of lender or the size of the MFI. (To filter the projections by the type of funders or the source of funds, you can choose the option to 'interact' with the chart, and then move the chevrons along the top of the graph or select from the menu at the left-hand side. Readers who wish to print the charts should choose the 'interact' option before printing.)

**Chart 2: 'Fast' scenario for debt roll off (bullet maturity for debt)**



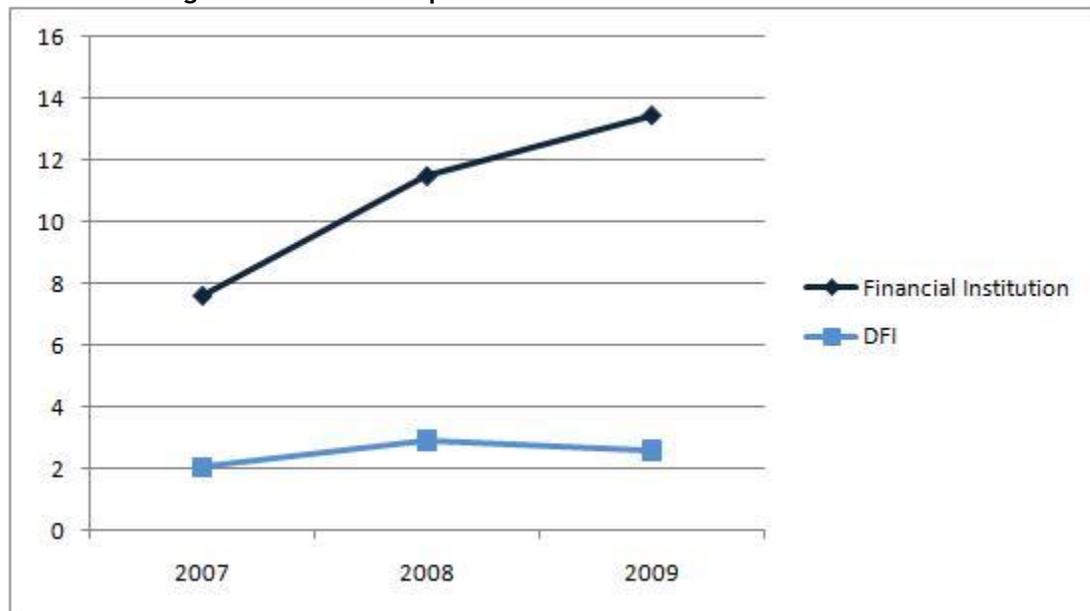
**Chart 3: 'Slow' scenario for debt roll off (straight line amortization of debt)**



In both cases, debt from financial institutions rolls off the most rapidly - between 30 to 70 percent of this debt (or between 20 to 50 percent of all MFI debt financing) will require refinancing within the calendar year. Bank loan terms are relatively long - roughly 3 years on average - and generally [similar to the terms from \(Development Finance Institutions\) DFIs, the government and other sources](#). So how can we explain the relatively higher need to refinance bank lending?

Part of the issue is the sheer number of loans that MFIs have from banks. Chart 4 shows the average number of loans from banks and DFIs per MFI from 2007 - 2009. Banks and DFIs make up over 90 percent of funding to MFIs, so this covers the vast majority of debt outstanding. The typical MFI has between 2 - 3 loans from DFIs, with only a slight increase over time. However, the typical MFI will have many more loans from banks - on average, more than 13 for the last year, and this figure has almost doubled since 2007. The largest MFIs can have several dozen loans on their books at once. It is clear that both the volume of bank lending and the number of banks providing loans to MFIs has increased rapidly. Then, when things turn sour, the need for MFIs to more frequently refinance this debt compounds the difficulties. A recent attempt at developing an early-warning system for microfinance flagged [the number of investors](#) as a possible risk factor. Could earlier tracking of this variable signaled problems to come? (And perhaps in other sectors?)

**Chart 4: Average number of loans per MFI from investors**



### Conclusions

The question at the root of this analysis is: how quickly would an inability to refinance lead to contraction of the sector? Overall, we see that about half of the current financing would dissolve over the course of the next year, if banks stopped lending to MFIs. Of course, banks haven't completely stopped lending to MFIs. While there has been pullback in some cases - such as from Yes Bank - lenders have stepped in to [signal support](#) in others.

The answer to this question also relies not only on the stock of debt, but also what happens to MFI portfolios in the interim. We know that in many cases, MFI portfolios are already contracting due to non-repayment or [slower disbursements](#). If lending contracts faster than the need for financing arises, then this doesn't present an immediate crisis. If an MFI loses 20 percent of its portfolio, but only 10 percent of its debt matures during the same period, it will even have excess funds for the reduced portfolio. We plan to post updated data from the sector early this year, [especially from leading MFIs](#), at which point it will be easier to evaluate the impact of the crisis on MFI portfolios and borrowing.

### RELATED PUBLICATIONS:

- [Reviewing the Reserve Bank of India's Microfinance Framework](#)
- [How has the growth of Indian microfinance been funded?](#)
- [India scenario analysis: What if microfinance was less profitable?](#)

*More on loan terms: We make a further assumption about the maturity of the loans. When we have an explicit maturity date for a loan - i.e. '12/31/2010' - we use that date. However, for some loans we only have a term in months. In these cases, we assume that the loan is halfway through its lifespan at the fiscal year-end. On average this should yield a reasonable approximation to the actual dates*