(Distributed At AKMI – FKCCI – RI Dist. 3190 Seminar On Microfinance, On 18-01-2011)

Real Interest Rates Prevalent In Informal Money Lending In India, & Its Implications For Public Policy Making For Micro Credit In India,

By Dr. Ramesh Bellamkonda

Summary (Abstract): There is a widespread lack of understanding of the real interest rates prevalent in informal money lending in India, in significant part related to the absence in the country, of a standardized widely comparable method of calculation and expression of effective annual percentage rates (EAPR) of interest. This lack of understanding of real interest rates prevalent in informal money lending, has hampered proper policy making for micro credit in the country in the past and present, and threatens to substantially derail what ever progress has been made in recent years in providing micro credit services to the poor in the country. This paper suggests a standardized method of calculating and expressing effective annual percentage rates of interest, looks at some commonly prevalent informal money lending schemes in the country, calculates their real effective annual percentage rates, and discusses the implications of this understanding to public policy making for micro credit services to the poor in India.

Absence Of A Standardized Method Of Calculation & Expression Of Effective Annual Interest Rates In India: The author (of this paper) has been deeply involved in micro credit for poverty alleviation in India for about ten years now, and to the best of the author's knowledge and belief, there is no prescribed standardized widely comparable method of calculating and expressing effective annual percentage rates in India. If at all there is such a prescribed method, it is most certainly not being followed even by formal financial institutions. Methods of calculation and expression vary significantly, making any expressed and quoted figures for effective annual interest rates on declining balance by different people at different times, not comparable.

Some examples of what the author and his institution have experienced in the past ten years, are as below;

1. A certain annual interest rate quote was obtained for a fixed deposit from a leading nationalized commercial bank, which would pay interest quarterly. When monthly interest payment was requested on the same deposit, the bank quoted a slightly lower annual interest rate. Cross checking the two different stated rates for their effective annualized percentage rate (EAPR) by the method suggested further below by the author, showed the two seemingly different rates to be absolutely identical.

2. Loan offers from several formal financial institutions including commercial banks, had quoted rates of certain annual interest rates that had to be paid, but the interest payments generally had to be made monthly. There were no other quotes on the respective effective annual percentage rates (EAPRs) in these cases, giving no easy way for a shopper to compare how these would compare with loans where interest payments would have to be made quarterly or half yearly or even annually.

3. 'Average annual interest' yields quoted on multi year cumulative deposits by many formal financial institutions including banks from time to time in print media over the years, have been highly mis-leading with no publication of effective annual interest rate (EAPR) in comparable terms.

4. The most glaring problem however, as observed by the author, has been that the prevalent effective annual interest rates in informal money lending in the country, have been extremely and severely and consistently underestimated, with resulting lack of proper perspective of various policy options and their implications, for policy making bodies.

In the currently prevalent regulatory and social atmosphere, methods of expression of annual interest rates on 'declining balance method', vary widely. The following examples, made for the purpose of easy to understand illustration only, betray the serious weaknesses of the present methods of expression of interest rates;

Loan Example (a): A loan of Rs.100/- is made to a borrower and the borrower has to pay Re.1/- as interest daily, and has to repay the full loan principal, only at the end of one year (365 days).

Loan Example (b): A similar loan of Rs.100/- is made to a borrower and the borrower has to repay the loan principal of Rs.100/- at the end of one year (365 days), along with an interest of Rs.365/- also at the end of that one year period, with no interest being paid in between.

What is the effective annual percentage rate (EAPR) in loan example (a), and what is it in loan example (b)? Are the effective annual interest rates identical in the two examples or are they different? If they are different, which is more costly, and by how much? Is there a way to express both the EAPRs on declining balance, in a way that is precisely comparable between them and with any other loan example which may be quite dissimilar to both the above loan examples?

In the current prevalent regulatory and social atmosphere in India, the interest rate on a declining balance method, in loan example (a) would be quoted as 365% per year. The rate in loan example (b) would also be quoted as 365% per year. If the idea of expressing interest rates as annual rates on a declining balance method, is to make the figures comparable for different loan products, the two figures namely, "365%" would sound like the interest rates in the two above examples are identical. In fact however, a quick cursory glance at the two loan examples, will tell us that the two rates cannot be identical at all.

If the persons concerned are more ethical and transparent, recognizing that the two loan examples above are different, they may express the annual interest rates on a declining balance method, with the addition of periodicity of "Rest". Thus, in loan example (a), the rate might be quoted as "365% with daily rest" and in loan example (b), it might be quoted as "365% with annual rest". Judging by how interest rates are presently quoted by formal financial institutions including banks, it may currently not be a regulatory requirement to express the periodicity of "Rest". Something like "12% annual interest with monthly rest" is not the way rates are always quoted.

Even assuming that financial institutions quote interest rates including periodicity of 'Rest', looking at the two interest rates quoted in the above two examples, namely "365% with daily rest" and "365% with annual rest", one can quickly estimate that the rate with daily rest is in fact far more costly than the same rate with annual rest. To generalize it further, one can readily intuitively see that in any two loan examples with identical annual interest rates on a declining principal balance, the example with a "rest" period that is smaller will be a more costly loan than an example with a "rest" period which is comparatively longer. Thus, 365% annual interest rate on a declining balance with a daily rest will be more costly than 365% with a weekly rest, which in turn will be more costly than 365% with monthly rest, which would be more costly than 365% with a quarterly rest, which would be more costly than 365% with an annual rest.

Thus, adding the "rest" period to the same expressed annual interest rate on a declining principal balance with two different "rest" periods, will make the two expressed rates more comparable than when the "rest" period is not added. It still however does not give us a clear picture of how different the two rates truly are. In other words, while we can recognize that 365% annual interest rate with daily rest is more costly than 365% annual rate with annual rest, it does not tell us exactly how much more costly the 365% with daily rest is, compared to 365% with annual rest.

Further, if we take two loan examples that have two different expressed annual interest rates with two different expressed "rests", there is simply no way for a person to look at the two numbers and easily compare and understand which is more costly and by how much. Let us take a **loan example (c),** where a loan of Rs.100/- is made and the borrower has to pay Rs.1,000/- interest at the end of one year, along with repayment of Rs.100/- loan principal also at the end of one year. The interest rate in loan example (c) can be expressed as "1,000% annual interest rate with annual rest". Let us now compare loan example (a) above, and loan example (c) above. Are the two interest rates now identical, or are they different? That is, is an annual interest rate of 365% with daily rest, the same as an annual interest rate of 1,000% with annual rest? If they are different, which is more costly, and by how much? If a borrower has the above two kinds of loan options, which loan would be cheaper and by how much? The currently prevalent regulatory and social atmosphere in India, does not offer any help to the borrower to compare the above two loan examples, and to make an informed choice.

In order for a borrower to properly understand the relative costs of any two different loan examples, and to make an appropriate informed choice, the interest rate expressed should not only be an annual interest rate on declining balance, but it should also have the same period of "Rest". "Annual Rest" would be the most logical rest for comparison. **For convenience we can call any "annual interest rate on**

a declining principal balance with annual rest", as "Effective Annual Percentage Rate ("EAPR")". Any annual interest rate with any rest other than an annual rest, must therefore be converted to an equivalent rate that is expressed in "annual interest rate on declining principal balance, with an annual rest", or it should be expressed in EAPR.

In the above three loan examples (a), (b), and (c), if we express the effective annual interest rates on a declining principal balance method with "Annual Rest" (expressed them as **"EAPR"**), the rates will be **3,678%** (rounded to the nearest full percentage point), **365%** and **1,000% respectively** (see further below for calculation methods)**.** When the interest rates are expressed this way, a borrower can easily see that loan example (a) is in fact more than three and a half times as costly as loan example (c), and more than ten times as costly as loan example (b).

When the rates are expressed in comparable terms such as in "EAPR", not only any potential borrower can make an informed choice, but the public and the regulators concerned can also get a much better understanding of the real comparable rates between different choices that are prevalent in the society. That will automatically facilitate proper perception in the public, and making of proper regulation on the part of regulators. That can avoid serious public policy mishaps.

For example let us assume that in a society at a particular time, the economic conditions are such that loan example (b) (with an EAPR of 365%) will not be a workable, financially viable, option for any lender. If the public and regulators, driven by a lack of understanding, were to place obstacles for a lender against offering a choice as in loan example (c), let us say by placing a ban on any interest rate in excess of 500% per year without regard to the "Rest", the public and the regulators may unwittingly drive poor people to forcibly accept loan example (a) instead of (c), thus compelling poor people to forcibly pay an EAPR of 3,678% by driving out a lender with an EAPR of 1,000%. The serious damage to public policy and to the public as a result is not difficult to imagine.

In the context of micro finance in India at this time, there is a pressing need to establish a regulatory norm to express all interest rates, both in the formal institutional setting as well as for expressing prevalent interest rates in informal money lending in the society, as effective annual interest rates on declining principal balance, with the same "rest" period, preferably "WITH ANNUAL REST". "EAPR" as expressed above would be a suitable choice.

Real Interest Rates Prevalent In Informal Money Lending In India, Expressed As Effective Annual Percentage Rates (EAPRs):

Presently, at a national level, only a small fraction of the real credit needs of the poor masses are being met by formal credit systems. The poor, thus deprived of credit availability through formal channels, have been forced into the hands of informal money lenders for their legitimate credit needs, or they simply suffer severe deprivations due to lack of credit.

For those that are forced by circumstances into **informal money lending** system, **the interest rates** they pay **can be 3% a month, 5% a month, 10% a month, 10% a week, or in market areas in many towns and cities in India, 10% a day or 11% a day.** One common scheme [let us call it "Common Lending Scheme No.1"] amongst poor in rural and urban areas is for the lender to deduct 10% of the loan amount as interest at the time of disbursement, and then the borrower repays 1% of the original loan principal daily for 100 days. Example would be lender lends Rs.10,000/- from which he deducts 10% interest of Rs.1,000/- upfront, and hands over Rs.9,000/- to borrower. The borrower then repays Rs.100/- as loan principal daily, for 100 days. Another common scheme [let us call it "Common Scheme No.2"] is for the lender to deduct 10% of the loan amount as interest at disbursement, and the borrower repays loan principal in 10 weekly installments of 10% each, on the original loan principal.

How can we express all these different interest rates in comparable terms?

One way is to calculate the effective annual percentage rate of interest with annual rest (EAPR as defined above). This, the author proposes as the most logical way. **The definition of effective annual interest rate percentage (with annual rest) is, "the amount of interest payable (in Rupees) at the end of one year after borrowing Rs.100/- (One Hundred Rupees) loan principal, if the loan principal and interest are repaid/paid as a lump sum at the end of one year".**

Assuming the above definition of effective annual interest rate in percentage with annual rest, some of the interest rates that poor people pay are as below (please see calculations sheets further below);

Nominal Interest Rate (In Percent)	**Effective Annual Interest Rate With Annual Rest** (Percentage rounded to Zero decimal places) (See Attached Sample Calculation Sheets)
3% per month	**43%**
5% per month	**80%**

(The above are generally in cases where the lender and borrower are very close to each other, and these rates are generally not available on a large scale).

10% per month	**214%**
10% per week (in markets in towns & cities)	**14,104%**
10% per day (in markets in towns & cities)	**128,331,000,000,000,000%** **(128 Quadrillion Percent)** (A Quadrillion is a Million Billion)
11% per day (in markets in towns & cities)	**3,490,500,000,000,000,000%** **(3.5 Pentillion Percent)** (A Pentillion is a Billion Billion)

(A Thousand Thousand is a Million, a Thousand Million is a Billion, a Thousand Billion is a Trillion, a Thousand Trillion is a Quadrillion, and a Thousand Quadrillion is a Pentillion).

"Common Scheme No.1 above"	**124%**
"Common Scheme No.2 above"	**184%**

Sample Calculations Of 'Effective Annual Percentage Rate' (EAPR) Of Interest.

Sample Calculation-1, Calculating EAPR For Interest Rate Of 5% Per Month

Int. rate of 5% per month means, at the end of one month, borrower has to pay Rs.5/- interest on Rs.100/- principal. The total amount repayable becomes Rs.105/- or 105% of the beginning principal of Rs.100/-. Alternately, the total amount payable can be expressed as (100*105%) = Rs.105.

If the original principal was Re.1/- instead of Rs.100/-, the total amount repayable, including principal and interest, at the end of one month, would be (1*105%) = Rs.1.05

To calculate EAPR, interest and principal must both be returned only at the end of one year, not before.

The Re.0.05/- interest at the end of one month, will therefore have to be added to the original principal of Re.1/-, and the new principal for the second month becomes (1+0.05) = Rs.1.05/-. At the end of second month, the total amount repayable becomes, (1*105%*105%) = Rs.1.1025.

If nothing is paid at the end of second month also, then at the end of third month, the total amount payable, that is original principal + accumulated (compounded) interest, will be (1*105%*105%*105%) = Rs.1.157625.

105% is the same as 1.05. The above formula can thus be written as (1*1.05*1.05*1.05) = (1*1.05 to the power of 3) = (1.05 raised to the power of 3) = (1.05^3) = Rs.1.157625.
[Function '^' is on top of No.'6' on a computer key board. It can be used in Excel spreadsheet. A scientific calculator will also have this function]

If non-payment of any interest on the original principal of Re.1/- continues for full twelve months, at the end of 12 months, the total amount repayable, will be (1*1.05 to the power of 12) = (1.05 raised to the power of 12) = (1.05^12) = Rs.1.795856326.

Of the above amount, the original principal was Re.1/-, and the other Re.0.795856326 is interest.

If the original principal was Rs.100/- instead of Re.1/-, then the interest at the end of 12 months would have been (0.795856326*100) = 79.5856326.

In other words, if the original principal was Rs.100/-, and if principal and interest were both repaid only at the end of 12 months, without any payments in between, then the interest payable at the end of 12 months, will be Rs.79.59 (rounded to the nearest paisa) or Rs.80/- rounded to the nearest Rupee. In other words, EAPR will be 80% (rounded to the nearest full percentage point).

In other words, if the interest rate is 5% per month, the "Effective Annual Percentage Rate" or 'EAPR' will be, 80%. It is not 60%, because of monthly compounding effect till one year is reached.

Sample Calculation-2, Calculating EAPR For Interest Rate Of 10% Per Week.

Int. rate of 10% per week means, at the end of one week, borrower has to pay Rs.10/- interest on Rs.100/- principal. The total amount repayable becomes Rs.110/- or 110% of the beginning principal of Rs.100/-. Alternately, the total amount payable can be expressed as (100*110%) = Rs.110.

If the original principal was Re.1/- instead of Rs.100/-, the total amount repayable, including principal and interest, at the end of one month, would be (1*110%) = Rs.1.1

To calculate EAPR, interest and principal must both be paid / repaid only at the end of one year, not before.

The Re.0.10/- interest at the end of one week, will have to be added to the original principal of Re.1/-, and the new principal for the second week becomes (1+0.10) = Rs.1.1/-. At the end of second week, the total amount repayable becomes, (1*110%*110%) = Rs.1.21.
If nothing is paid at the end of second week also, then at the end of third week, the total amount payable, that is original principal + accumulated (compounded) interest, will be (1*110%*110%*110%) = (110%*110%*110%) = Rs.1.331.

110% is the same as 1.1. The above formula can thus be written as (1*1.1*1.1*1.1) = (1*1.1 raised to the power of 3) = (1.1 raised to the power of 3) = (1.1^3) = Rs.1.331.

If non-payment of any interest on the original principal of Re.1/- continues for full 52 weeks, at the end of 52 weeks, the total amount repayable, will be (1*1.1 to the power of 52) = (1.1^52) = Rs.142.042932.

Of the above amount, the original principal was Re.1/-, and the other Rs.141.042932 is interest.

If the original principal was Rs.100/- instead of Re.1/-, then the interest at the end of 52 weeks would have been (141.042932 *100) = 14,104%.

In other words, if the original principal was Rs.100/-, and if principal and interest were both repaid only at the end of 52 weeks, or at the end of one year, without any payments in between, then the interest payable at the end of one year, will be Rs.14,104/- rounded to the nearest Rupee. In other words, EAPR of 10% per week interest rate will be 14,104%.

In other words, if the interest rate is 10% per week, the "Effective Annual Percentage Rate" or 'EAPR' on that is, 14,104%. It is not 520%, because of weekly compounding effect, till one year is reached.

Sample Calculation-3, Calculating EAPR For Interest Rate Of 10% Per Day.

Using similar calculations as in Sample –2, the formula for total amount repayable at the end of 365 days, at 10% per day, will be (1.1^365) = 1.28331 Quadrillion Rupees. If we deduct the original principal of Re.1/- from that, the interest payable will still be approximately, 1.28331 Quadrillion Rupees.

If the original principal was Rs.100/- instead of Re.1/-, then the interest payable at the end of one year will be Rs.128.331 Quadrillion. (A Quadrillion is a Million Billion).

This figure would be theoretical and relegated to mathematical trivia except for the fact that it is the EAPR of an interest rate regime that is actually practiced, even if it is usually only for one day at a time, in real life, in the markets of many towns and cities all across India. **It is apparently a common practice in these places for a lender to lend Rs.100/- in the morning to petty traders, and collect Rs.110/- in the evening. A variation of this practice is to deduct the Rs.10/- interest at the time of Rs.100/- loan disbursement in the morning, effectively disbursing Rs.90/- only, and collect Rs.100/- in the evening. (The EAPR for this variation, using the same calculation methods as above, will be 3.5 Pentillion percent. A Pentillion is a Billion Billion)**

Sample Calculation-4, Calculating EAPR For "Common Lending Scheme No.1".

In the "common lending scheme No.1" observed to be in use amongst poor borrowers, the lender deducts 10% of the loan amount as interest at the time of loan disbursement, and then the borrower repays 1% of the original loan principal daily for 100 days.

In this example, unlike in sample calculations nos. 1 to 3, the principal loan amount due is not constant for the loan duration. We therefore have to first calculate the average loan principal outstanding during the loan duration of 100 days.

To calculate the average loan principal outstanding, let us start with a simpler example where a loan of Rs.3/- is given to a borrower on the morning of day number 1. The borrower then repays one Rupee loan principal daily starting the next morning (day no.2), and at the end of three days (morning of day no.4), the principal becomes zero. In this example, the loan principal outstanding from day to day, can be written as below;

Day No.	Principal Outstanding (Rs.)
1	3
2	2
3	1

The middle day here is day no.2, and the principal outstanding on the middle day, is Rs.2/-. The average of the three days is ((3+2+1+) / 3) = (6/3) = 2. Thus in a system where the loan principle outstanding is going down in a steady fashion, the average loan principal outstanding for the duration of the loan will be the same as the loan outstanding at the middle point (in this case on the middle day) of the loan duration.

In more general terms, as the loan principal outstanding comes down in steady steps, the amount outstanding during the middle step, is the same as the average loan principal outstanding during the duration of the loan.

Let us take another example, where the loan amount is Rs.4/-, and it is repaid in daily installments of Re.1/-. Then the loan principal outstanding day to day, will be as below;

Day No	Principal Outstanding (Rs.)
1	4
2	3
3	2
4	1

Which day is the middle day in this example? Day no.2 is not the middle day, and day no.3 is also not the middle day. The loan principal outstanding comes down in steps from Rs.4, to Rs.3, to Rs.2, to Re.1. If there was one middle step here, the average loan principal outstanding would have been the loan amount during that middle step. There is however, no one middle step here. There are two middle steps, that of Rs.3/- and Rs.2/-, which are the loan principal outstanding amounts on the two middle days, day no.2 and day no.3. We then have to take the average of these two middle steps, to get the average loan principal outstanding for the duration of the entire loan. Thus the average loan principal outstanding for the duration of the loan, going by this method, will be = ((3+2) / 2) = (5/2) = 2.5.

If we calculate the average loan outstanding by the usual method of adding up the loan principal amount on all different days, and dividing it by the number of days, we get ((4+3+2+1) / 4) = (10/4) = 2.5. The result is the same as by taking the average amount outstanding on the middle two days of the loan duration.

Thus, when the loan principal amount comes down by one step on each day, in a steady fashion, the amount outstanding on the middle step, or on the middle day in this case, will be the same as the average loan principal outstanding for the duration of the loan. If there is no one middle step, but there are two middle steps with the middle point being between those steps, then the average principal outstanding in those two middle steps, will be the average loan principal outstanding for the full duration of the loan.

Instead of each step being one day, if each step was one week, the same calculation method would apply. In such a case, the loan principal outstanding in the middle week will be the same as average loan outstanding during the entire loan duration. If there is no one middle week, but there are two middle weeks with the exact middle point being between the two middle weeks, then the average of the loan principal outstanding in those two middle weeks, will be the average loan principal outstanding for the entire duration of the loan.

Let us now come back to "Common Lending Scheme No.1". Here, 1% of the loan principal is repaid every day. On day 1, the loan principal outstanding is 100%, on day 2, the loan principal outstanding is (100%-1%) = 99%, and so on, till on day 100, the principal outstanding will be (100%-99%) = 1%.

Stated another way, if the loan principal amount was Rs.100/-, and Re.1/- was repaid daily, over 100 days, then the loan duration will be 100 days, and the two middle days will be day no.50 and 51. The loan principal outstanding on day no.50 will be Rs.51/-, and on day no.51 will be Rs.50/-. The average loan principal outstanding on the two middle days will be = ((51+50) / 2) = (101 / 2) = Rs.50.5.

If the original loan principal amount was Rs.10,000/- instead of Rs.100/-, then the average loan principal outstanding for the duration of the loan will be = (50.5*10,000 / 100) = Rs.5,050/-.

The duration of loan in 'scheme-1' is 100 days.

We now have the average loan principal (Rs.5,050/-), we have loan duration (100 days), and we know that the interest amount incurred is Rs.1,000/-.

For average loan principal of Rs.5,050/-, the interest amount is Rs.1,000/-. If the average loan principal is Rs.100/-, then the interest would be = (1000*100/5050) = Rs.19.8.

There is another complication in the loan scheme no.1 as practiced. That is, in reality, interest is not paid at the end of loan period, but rather it is deducted at the beginning of the loan period.

Thus, if we deduct Rs.19.8 as interest on Rs.100/- of average loan principal, at the time of loan disbursement, then the real average loan principal outstanding will be = (100 – 19.8) = Rs.80.2, and it is repaid at the end of 100 days along with Rs.19.8 interest (80.2 + 19.8 = 100). Thus, if the average loan principal for 100 days is Rs.80.2, the interest on that will be Rs.19.8 paid at the end of 100 days. If the average loan principal is Rs.100/-, then the interest will be = (100*19.8 / 80.2) = Rs.24.69. Thus, the real interest rate for 100 days of loan in this scheme is 24.69%.

<u>To calculate EAPR, interest is paid and principal is repaid only at the end of one year, or 365 days, not before</u>.

At the end of 100 days therefore, the interest payment due of Rs.24.69 gets added to the original principal amount of Rs.100/-. The new principal will be Rs.124.69.

If the principal was Re.1/- instead of Rs.100/-, the total amount due for payment at the end of 100 days will be Rs.1.2469. As explained in earlier sample calculations, it can also be expressed as 1.2469^1. Given that the interest rate of 24.69% [which can also be expressed as 0.2469 per unit principal] is for 100 days, the total amount repayable at the end of 100 days can also be expressed as 1.2469^(100/100).

At the end of second 100 days, or at the end of the first 200 days, it becomes 1.2469^2, which can also be expressed as 1.2469^(200/100).

At the end of the first 365 days, the total amount repayable can be expressed as 1.2469^(365/100) = 2.237615.

Of this, the original loan principal was Re.1/-, and the balance of 1.237615 will be interest payable at the end of one year.

If the original loan principal was Rs.100/- instead of Re.1/-, then the interest payable at the end of one year as per scheme-1, would be 123.76.

Thus, using the interest rate regime that is charged in scheme-1, if the interest and principal were repaid at the end of one year in a lump sum, the interest payable would be 123.76%. Thus, EAPR in scheme-1 is 123.76%, or rounded to the whole percentage point, it will be 124%.

Sample Calculation-5, Calculating EAPR For "Common Lending Scheme No.2".

In Scheme-2, the practice is to lend Rs.10,000/- with 10% interest deducted at the time of loan disbursement, and the loan principal repaid in 10 weekly installments of Rs.1,000/- each. Alternately, it can be a loan of Rs.1,000/- with all amounts being proportionately decreased to one tenth.

The calculations here will be on similar lines as in the previous sample. Please see sample calculation no.4 above, for details.

The average loan principal outstanding for the ten weeks duration will be Rs.5,500/-. With the interest for this being Rs.1,000/-, the interest rate percent will be 18.18% for the ten weeks period.

Given that the interest amount is deducted upfront, the effective interest rate will be 22.22% for ten weeks.

Given that in EAPR, interest and principal both have to be repaid only at the end of one year, because of compounding every ten weeks, the effective interest rate for one year, will be = (((1.2222^(52/10))-1)*100) = 183.9% rounded to 184%

Thus, Effective Annual Percentage Rate or EAPR in Scheme-2, will be 184%

Public Policy Implications Of True Interest Rates Prevalent In Informal Money Lending:

Lending small amounts to poor people is a very costly affair. It is the intent and desire of many good people including public policy makers, to make loans available to poor people at low rates so as not to burden them. There is thus a temptation to set interest rate caps on what lenders can charge. From time to time in recent years, and particularly in year 2006, there have been cries and demands on the part of some politicians, bureaucrats, and some otherwise intelligent and caring members of the public, to set interest rate caps on what MFIs can charge, and there has been in existence for a very long time, a legal cap on interest rate that banks can charge on their direct lending of small amounts to poor people, equal to the bank's PLR.

If well meaning people including policy makers knew that nationally, poor people are having to suffer from severe deprivation of access to credit, and when they do access credit from informal money lending systems, they commonly pay EAPRs (Effective Annual Percentage Rates (with Annual Rest)) of 124% and above, even up to astronomical figures of Quadrillion percent and Pentillion percent at times, would they be making a huge fuss and cry about 30% or 40% or 50% EAPR that MFIs may be charging, or would they support a continued legal ban on banks charging more than their prime lending rates (with EAPRs of 12% to 15%) on direct lending by banks of small amounts to poor people? **I truly think, NOT. Particularly not, if they understood that it was and is their mistaken enthusiasm to cap interest rates on loans from formal financial institutions, that has brought this misery on the poor people of India.**

Interest rate caps have resulted in severely restricted access of credit to the poor for many decades through out the country. When and where such access has been partially provided by informal money lending systems, the poor are having to endure unnecessarily very high to astronomical EAPRs. (Effective Annual Percentage Rates) of interest.

It is the author's understanding and belief that the marked improvement in access to credit that many poor people have experienced in recent years in areas where MFIs have started working has close ties to two things that RBI did in recent years. In 1999, RBI lifted interest rate caps on indirect lending from banks to poor people via intermediaries such as MFIs (micro finance institutions) (that is, RBI lifted interest rate caps on what banks could charge MFIs to lend on-lending funds, and what MFIs could charge end borrowers). This combined with a RBI ruling in recent years that micro lending to poor people by banks through intermediaries such as MFIs, would count towards requirement of priority sector lending by banks, has made bank loans available to MFIs in recent years, for on-lending to poor people who have thus far been severely deprived of credit services.

Problems At Present:

1. Events in Krishna District of Andhra Pradesh State in early 2006 involving several MFIs, and an event in Davanagere District of Karnataka in September 2006 involving one MFI, were marked in important part, by undue pressure being brought on the MFIs concerned to reduce the interest rates charged by them. There have been cries from time to time from politicians, bureaucrats and some others, seeking to impose interest rate caps on lending by MFIs.

2. There continues to exist a government imposed interest rate cap on banks for any direct micro lending by banks to poor people, with the cap being equal to the bank's PLR, on loans of less than two lakh Rupees.

A good understanding of true EAPRs prevalent in informal money lending, on the part of well meaning people in the public as well as on the part of policy makers, will remove the threat of possible interest rate caps on MFIs, and will help remove interest rate caps on direct lending by banks. If the cap on direct lending by banks is removed, banks with their enormously huge resources compared to MFIs, can appropriately direct their attention to providing access to credit for the bottom 50% of Indian population that is presently deprived of adequate access to the same. This in turn can help alleviate poverty on a large scale in India, than otherwise possible.

In any particular setting, other than those that are actually willing to lend, others are not in a good position to know what is a workable interest rate from the lenders' stand point. The rates that may be workable from a lender's stand point may seem to be high to many others, and may indeed truly be high in absolute terms. **The way to** counter that from a borrower's stand point and **bring down the prevalent interest rates, is to foster fair, honest, and open competition amongst many different lenders,** and thus encourage the most favorable terms for the borrower, including the most favorable interest rates. Such competition will drive improved efficiencies on the part of the lenders' operations, and gradually but ultimately result in the most competitive and yet sustainable rates becoming available to the poor, who have been deprived of adequate credit services for a long time. **Interest rate caps are not the way to bring down interest rates! Caps only restrict access!**

Direct provision of cheap credit with subsidized interest as well as subsidized principal repayment, have been tried by the government machinery for several decades now. Such experiments have largely been failures due to various reasons, a detailed discussion of which is beyond the scope of this paper. Briefly however, corruption within the government machinery, target driven approaches, populist twists given by politicians, major pipe line leakages, and fundamentally flawed approaches to solving a major ongoing needs of this kind, have resulted in the poor not only not gaining sustained and meaningful access to credit for the longer term, but have also resulted in severe damage to credit discipline amongst the poor in the past.

One caveat in competition is, that there should be complete disclosure by the formal lenders on their interest rates and all other charges, in clear and comparable terms. A strict view should be taken by RBI against hidden charges, back door charges, charges without adequate prior notification, misleading marketing information etc. Interest rate deregulation for banks without those precautionary measures, will run the risk of unintentionally formalizing loan sharking! Close monitoring of events on the ground, after deregulation, will be necessary to prevent predatory marketing conduct by larger, private, for profit entities, to drive out smaller entities.

Done correctly, this move (interest rate deregulation on direct micro loans by banks to poor people) can give a marked boost to economic activities amongst the poor, job creation, and to large scale and long term poverty alleviation throughout the country. Interestingly, there is no need for subsidies to do this!

Important Note About 'EAPR' (Effective Annual Percentage Rate)

It is important to note that in the above different interest rate regimes, regardless of when the interest is actually paid or when the principal is actually repaid, EAPR calculation captures all that information.

EAPR will thus become one meaningful and very useful way of calculating and expressing, and comparing, interest rates even when the different rates are nominally different, and even when the periods of "Rest" are different in different loan facilities potentially available to a borrower! Calculation of EAPR can compensate for all the other differences, and still express it in numbers that can be compared from one loan to another.

List Of Abbreviations:

EAPR = Effective Annual Percentage Rate (of Interest)
MFI = Micro Finance Institution
PLR = Prime Lending Rate