Independent Study Course

The following training sessions will provide you with the tools you need to demystify transparent pricing. Featuring practical examples, screenshots from the Calculating Transparent Prices Tool and practice exercises, this educational resource provides you with classroom-quality lessons for a solid foundation in the concepts of transparent pricing.

Session 1: Building the Foundation for Understanding Transparent Pricing

Bridging the gap between desire and technical knowledge

MicroFinance Transparency's core mission is two-fold: to promote transparent pricing in microfinance and to educate all stakeholders on the issues of product pricing. Our public launch took place at the Microcredit Summit in Bali on July 28, 2008. In the two years since, we've seen tremendous interest for transparent pricing, but we've also seen constant confusion and misstatement of prices, even among those most desiring to determine accurate prices. The global microfinance sector still has not reached agreement on what transparent pricing really means and how to calculate it. This series of sessions will address these issues and serve as a resource to enable us all to better understand the critical concept of understanding and communicating our true prices.

> "The same principles of transparent pricing applied to the commercial finance industry in many countries should also be applied to the microfinance industry. It is our duty to clearly communicate true prices to our clients."
>
> *Muhammad Yunus, Founder, Grameen Bank*

Transparent loan pricing is built upon some very simple, basic ideas, but by the time it is implemented in the real world – on loan products being marketed to consumers in a competitive market – transparent pricing can become quite confusing. It's a very important concept to learn for anyone lending or borrowing money, but it is depressingly easy to be misled, even when you are intent upon determining the true price.

The fundamental situation can be summarized as follows: **Within the microfinance community, there is a significant gap between our strong desire to understand true prices and our limited technical knowledge about how to calculate true prices.**

Building your knowledge base for transparent pricing

Transparent pricing is an essential concept for anyone working in finance, and a valuable concept for any consumer of financial products. The key to bridging this gap is to fully learn the basics, to understand the underlying concepts, and then to build upon those concepts as we look at more complex product pricing.   This is the general approach we use in MF*Transparency* and is the approach you will move through as you work through these materials and complete the exercises in these sessions. With a modest amount of time reading these materials and working on the exercises, you'll quickly dispel the

confusion that comes from the many myths about pricing that circulate around the industry. We provide software for you to use as you study transparent pricing. This series of explanations and exercises will explain that software and will use that software to make the calculations in the examples. We want to emphasize and encourage you to not only read this material but to also make the extra effort to complete the exercises presented in each session. The exercises are critical for you to fully process and assimilate this material. The reality is: **You won't fully learn the concept of transparent pricing until you practice the exercises.**

In this first session, we'll start with some very simple examples. You may find these examples extremely simple, but you'll be surprised as you study them and think about them. The principles we learn in this first lesson will uncover the basic principles of what lending and borrowing mean and will provide an essential foundation for the next lessons. For those of you really interested in the technical formulas, we'll get there soon, but the foundational principles presented in this session are as important as the formulas that come later.

Starting with the basics

We are experienced consumers. We make purchasing decisions a dozen or more times every day. With all of that experience, we should at least have no problem with the basics. Here are three very straightforward loan products. How would you compare their prices?

Product	Loan Amount and Term	Payment Schedule	Total Paid
1	$1,000 for 12 months	Pay $1,120 in the 12th month	$1,120
2	$1,000 for 12 months	Pay $89/month for 12 months	$1,066
3	$1,000 for 12 months	Pay $10/month for 3 months, then Pay $117/month for 9 months	$1,080

The figure in the right column can be called "**Total Cost of Borrowing**" and is an approach commonly used in finance to compare the prices of different loans. But is it reliable? We'll study each of these three products and see what issues emerge as we address the question "**What does the price of a loan really mean?**" We won't yet learn how to calculate any of the transparent pricing indicators, but we will make reference to one of the most common pricing indicators, the **APR** (meaning Annual Percentage Rate). In Session 2, we'll begin to learn how to calculate the APR, and in later lessons we'll learn an alternative method, the **EIR** (Effective Interest Rate).

"Communicating the true price of a loan is so critical. How can you say you are teaching financial literacy to your clients while withholding the alphabet from them?"

Howard Finkelstein, the Law Offices of Howard J. Finkelstein

We will use two visuals to study each of these three products. The first visual is a graph that shows the amount of the loan balance each month. This graph helps you to see the change in money over time. The second visual is a table that

shows the key financial information each month – principal received and paid, outstanding loan balance, and interest paid. This information is used to calculate a "cash flow" from the loan, a foundational concept for studying loans. Both of these visuals come from MF*Transparency*'s software "Calculating Transparent Prices Tool." This tool is an Excel workbook that you can download at www.mftransparency.org. You won't need to access this software for this first session, and it is advisable not to dive into the software too fast. Session 2 will start to guide you through using the software.

Product 1: $1,000 for a full 12 months

Assume you are offered a $1,000 loan for 12 months, with the entire loan paid off at the end of the 12 months. The interest charged is 12% with interest also paid at the end of the 12 months. The following graph shows the loan balance for the 12 months. The graph is quite straightforward, with the red area representing your loan balance.
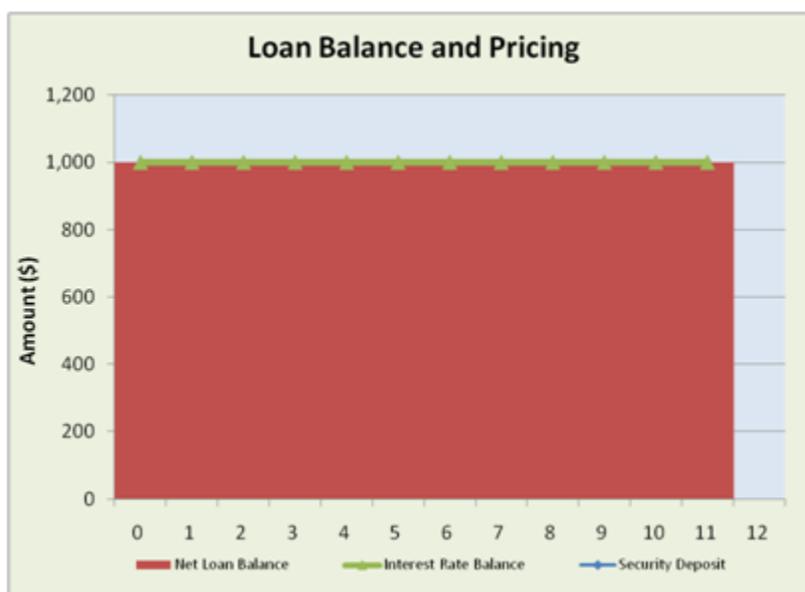

The following table shows the flows for this loan. As we will see shortly, pricing is all about the cash flow from the client's perspective. In this table, you get $1000 in Period 0 (1-Jan-2009) and pay back $1,120 at the end of Period 12 (1-Jan-2010). The $1,120 represents $1,000 of principal and $120 of interest. The $120 can be easily associated with the 12% annual interest rate charged on the loan. Later we'll see that the APR of this loan is 12.0%, as you might already expect.

Period #	Date	# Days	Principal Disbursed	Principal Paid	Balance	Interest Paid	Cashflow incl. Interest
0	1-Jan-09		1,000.00		1,000.00		1,000.00
1	1-Feb-09	31		-	1,000.00	-	-
2	1-Mar-09	28		-	1,000.00	-	-
3	1-Apr-09	31		-	1,000.00	-	-
4	1-May-09	30		-	1,000.00	-	-
5	1-Jun-09	31		-	1,000.00	-	-
6	1-Jul-09	30		-	1,000.00	-	-
7	1-Aug-09	31		-	1,000.00	-	-
8	1-Sep-09	31		-	1,000.00	-	-
9	1-Oct-09	30		-	1,000.00	-	-
10	1-Nov-09	31		-	1,000.00	-	-
11	1-Dec-09	30		-	1,000.00	-	-
12	1-Jan-10	31		1,000.00	0.00	120.00	(1,120.00)
			1,000.00	1,000.00		120.00	(120.00)

Product 2: $1,000 paid back evenly over 12 months

Now let's look at a loan that sounds very similar ($1,000 for 12 months at 12% interest), happens to have exactly the same APR, but has a very different cash flow. With this second loan, you are to gradually pay back the $1,000 over the 12 months. There are different ways loans can be paid back, but let's start with the simplest example, where the loan has equal principal payments of $83.33 in principal each month ($83.33 x 12 = $1,000). This is slightly different than the way Product 2 was presented in the options table above, but the results are not affected. In this second example, the graph looks very different – the red area shows the loan balance progressively declining. The green line indicates that interest is charged on the previous month's balance. With the 12% annual interest, we'll say that interest is charged at 1% per month.


Loan Balance and Pricing
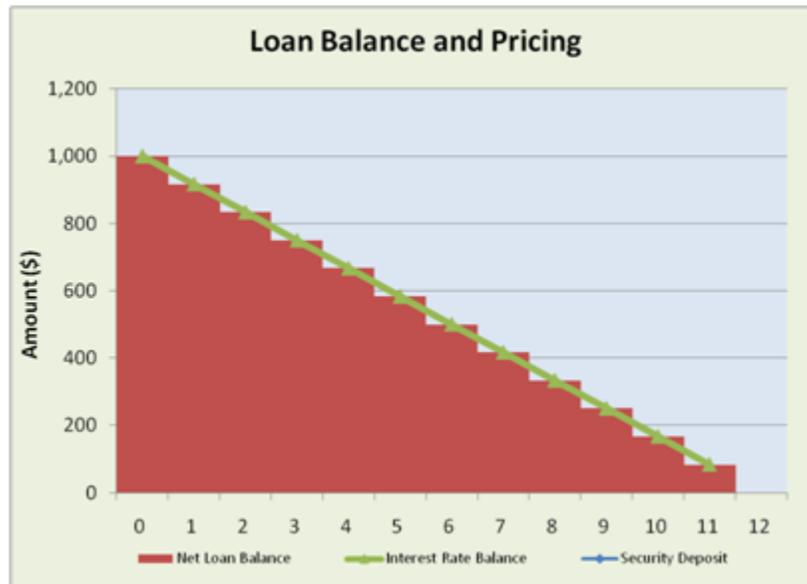
The cash flow table for this loan is also very different. It shows equal amounts of principal each month, but the interest each month varies. Looking closely, you can see that the interest each month is 1% of the previous month's loan balance. This is consistent with the textbook definition of interest as "the charge for the use of money over time". In this case, you have $1,000 for one month, at 1% per month interest. Thus, the interest in Period 1 is $10.00. In Period 2 interest drops to $9.17 because the previous month's balance was $916.67. Interest gradually decreases each month as the outstanding balance drops. As shown in the bottom line, you pay back the $1,000 of principal, but in this case you only pay back a total of $65.00 in interest, much less than the $120 of interest in the first example. Yet, as with the first example, this loan has an identical APR of 12%.

Period #	Date	# Days	Principal Disbursed	Principal Paid	Balance	Interest Paid	Cashflow incl. Interest
0	1-Jan-09		1,000.00		1,000.00		1,000.00
1	1-Feb-09	31		83.33	916.67	10.00	(93.33)
2	1-Mar-09	28		83.33	833.34	9.17	(92.50)
3	1-Apr-09	31		83.33	750.01	8.33	(91.67)
4	1-May-09	30		83.33	666.68	7.50	(90.83)
5	1-Jun-09	31		83.33	583.35	6.67	(90.00)
6	1-Jul-09	30		83.33	500.02	5.83	(89.17)
7	1-Aug-09	31		83.33	416.69	5.00	(88.33)
8	1-Sep-09	31		83.33	333.36	4.17	(87.50)
9	1-Oct-09	30		83.33	250.03	3.33	(86.67)
10	1-Nov-09	31		83.33	166.70	2.50	(85.83)
11	1-Dec-09	30		83.33	83.37	1.67	(85.00)
12	1-Jan-10	31		83.33	0.00	0.83	(84.17)
			1,000.00	1,000.00		65.00	(65.00)

Product 3: $1,000 over 12 months with 3 months of grace

In the third loan product, the one difference is a three-month grace period on principal payments. You can use the entire $1,000 for three months and then pay back the loan in equal installments over nine months. This next graph shows how you have the use of more money for more time.

Loan Balance and Pricing
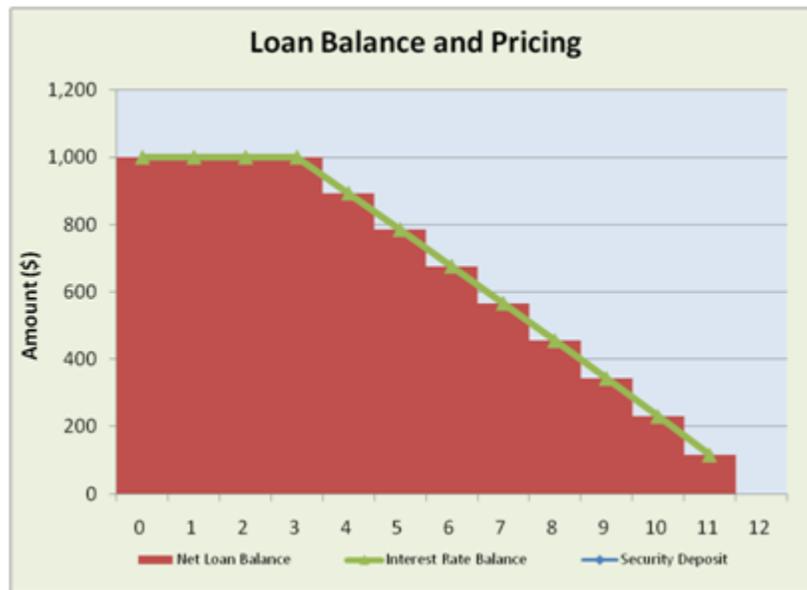
The table below shows your cash flow for this loan. You pay interest of $10 for the first three months (no principal), with the $10 figure calculated as 1% of the previous month's balance of $1,000. In Period 4, you again pay $10 of interest because the previous month's balance is $1000, but you now also begin to pay back principal. The outstanding balance drops in Period 5, and therefore interest payments begin to drop. Notice how the monthly payment of principal and interest stay fixed at $116.74 each month. This is a very useful system called "amortized payments" that gives the convenience of paying a fixed amount each month while still having interest calculated as a percentage of the previous month's balance. As you scan down the interest column, you'll see that interest each month is exactly 1% of the previous month's principal balance. As you might have guessed, the APR of this product is also 12%.

Period #	Date	# Days	Principal Disbursed	Principal Paid	Balance	Interest Paid	Cashflow incl. Interest
0	1-Jan-09		1,000.00		1,000.00		1,000.00
1	1-Feb-09	31		-	1,000.00	10.00	(10.00)
2	1-Mar-09	28		-	1,000.00	10.00	(10.00)
3	1-Apr-09	31		-	1,000.00	10.00	(10.00)
4	1-May-09	30		106.74	893.26	10.00	(116.74)
5	1-Jun-09	31		107.81	785.45	8.93	(116.74)
6	1-Jul-09	30		108.89	676.56	7.85	(116.74)
7	1-Aug-09	31		109.97	566.59	6.77	(116.74)
8	1-Sep-09	31		111.07	455.52	5.67	(116.74)
9	1-Oct-09	30		112.19	343.33	4.56	(116.74)
10	1-Nov-09	31		113.31	230.02	3.43	(116.74)
11	1-Dec-09	30		114.44	115.58	2.30	(116.74)
12	1-Jan-10	31		115.58	0.00	1.16	(116.74)
			1,000.00	1,000.00		80.66	(80.66)

Comparing the three loan options: What can we learn?

To summarize, you are comparing three loans of $1,000 for a year, each at the same quoted interest rate, 12%. The only difference is how long you get to use various amounts of the loan for. In the first loan, you get to use all $1,000 for a year. In the second loan, you use a gradually reducing amount. The amount of interest paid in the first loan is higher ($120) than in the second loan ($65). The third loan option is somewhat between option 1 and option 2, in that you get to use a bit more money for more time. The total interest paid in option 3, $80.66, also falls between the other two options.

The challenge is: How would you determine and compare the true price of these three loans if you didn't know that the interest payments were calculated at 12% on a declining balance? As you may intuitively have guessed once you looked at the cash flows, the true prices of these three loans (when expressed as APR) are identical, even though the *amounts* we pay are very different. The most common intuitive approach when any of us buy products is to look at the amount of money we pay. With loans, the most common approach among borrowers is to ask "How much do I have to pay back in total?" **The intuitive approach fails when comparing loans. We need to understand why.**

A loan is "renting money for a specified time"

This brings us to our first and most important fundamental point to understand when we are discussing prices of loans:

The client is not "buying" a loan, but rather is renting some amount of money for some amount of time. And in most loan products, both the amount of money and the amount of time are moving targets, making calculation of pricing very confusing. It is important to recognize that loan pricing needs to be understood as the process of *renting* something rather than *buying* something.

"Our clients, who are the poor people that we're working for, need to understand what they are paying for. This is a matter of trust. If we lose that it would mean that microfinance would miss its point, and I think that would be the end of microfinance in the way we want it to be."

Christian M. X. Loupéda, Director – Credit with Education, Freedom from Hunger

These three examples, though quite simple, show that the consumer often is presented with options of borrowing different amounts of money for different lengths of time. The client renting $1,000 for a year has a pretty clear rental price, but the client who rents $1,000 for one month, $916.67 for one month, $833.34 for one month, and so on, has a more challenging price calculation. In this second case, it is misleading to look at the "total cost" of the loan. $65 sounds cheaper than $120, but it is the same price when expressed as an APR.

Definition: Transparent pricing determines the price to rent a unit of money for a year

Based on what we have learned already, we can create a beginning, useful definition of what we look for with transparent pricing:

Transparent pricing is a calculation to determine the price to borrow one unit of money for one year. An APR of 12% means that to borrow (or "rent") $1 for one full year will require the payment of $0.12 to the lender.

As consumers, we simply aren't very experienced working with rental prices, since there aren't many products that we actually rent. In most cases, we *buy* products. When we compare different products for purchase, we compare prices based on factors such as the quantity you are buying. You might see two cans of tomato sauce, one large and the other small. They have different prices, and you want to compare the prices to see which is cheaper. To do so, you look at how much the cost per unit of volume is by dividing the purchase price by the volume in the can.

Loans are different. We don't buy a loan, we rent money. And we often don't buy a home or buy office space but instead rent the facilities. The rental price is generally specified for a period of time, such as a month or a year. The rental price is also generally for a specific amount of space. (Imagine the challenges if the space you were renting reduced in size every month!) In comparing prices, apartments and office rents are commonly quoted in "price per square meter per year." This unit price conversion allows the user to compare prices of different office spaces of different sizes. It makes it easier to compare dissimilar products.

> "I think [interest rates are] confusing to the borrower, particularly someone who is illiterate, innumerate, and has not had access to financial services in the past besides to a moneylender and that was a lender of last resort."
>
> *Pamela A. Eser, Microenterprise and Economic Development Director, MercyCorps*

Interestingly, this is much the same approach as the APR giving us a "rental price per dollar per year." As we have seen already, in comparing two very similar products, we cannot use the common, instinctive approach of "total cost of borrowing." That approach already fails in this very simple loan product, and we'll find it to be extremely misleading as we start to explore more complex pricing systems. The proper comparison is a measurement that allows you to compare the price to rent a unit of currency.

Summary

To summarize what we have discussed in this first session:

- Understanding pricing of loan products is much more complicated than assumed.
- Practicing pricing transparency takes more than good intentions; it requires a solid understanding of the principles.
- The microfinance industry does not yet have a consistent and clear definition of true prices
- A fundamental starting point is to consider a loan as "renting" a product rather than "buying" a product.
- Total Cost of Borrowing is not an accurate comparative measure. Other indicators that evaluate unit cost for a specified time, such as APR and EIR, will be needed.

> "MF*Transparency* provided our team of investigative reporters with invaluable help that allowed Business Week to make sense of the complex financing schemes that make microfinance so expensive in Mexico—and so difficult for the average consumer to understand."
>
> *Geri Smith, Mexico Bureau Chief, Business Week*

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In order to receive notification when the next session is posted, you can subscribe to this lesson series. You can get email announcements about new sessions by writing to info@mftransparency.org and requesting a subscription to the Understanding Transparent Pricing Training Sessions.

Topic for Session 2

Session 2 will focus on the basics of calculating and understanding the APR (Annual Percentage Rate). We will calculate the APR of several example loans including interest – both declining balance and flat – and including up-front fees.

Exercises

The following exercises will help you to incorporate the material in this lesson:

1. A friend says they are going to get a loan of $500 for six months with weekly payments of $25 because it is cheaper than the loan of $400 for three months with weekly payments of $30. How would you explain to your friend that he or she isn't focusing on the right information?
2. Consider the situation of renting a car. The prices are quoted for daily and weekly rentals, and for cars of different sizes and features. What factors do you consider as you make a choice?
3. Think about loan products that have fees charged as well as interest. What do the fees do to the "Total Cost of Borrowing" (TCB) concept? Is the TCB a more accurate comparison or a more confusing comparison than it is with an interest-only loan?

Answers to these exercises will be posted along with the next training session.