

When the A.P.R. isn't the Interest Rate

from our research dept. ...

Sometimes it is the simplest things that cause the biggest commotions. Take for example the old "rule of thumb" used by many in the consumer credit industry that "in the absence of fees included in the finance charge, the A.P.R. will equal the interest rate." If it was only that easy.

Like many things that are generalized, this "maxim" cannot simply be taken at face value. The annual percentage rate is a value computed by specific rules as outlined in Appendix J of Regulation Z. A more accurate statement is "in the absence of fees included in the finance charge and no other interval or payment irregularities, the A.P.R. may be the same value as the interest rate."

We field numerous calls from customers who begin a conversation by stating, "I just ran a transaction on your software and the A.P.R. is wrong because I used a 10% rate and the A.P.R. is 9.98%" Actually in these cases, the A.P.R. computation is accurate but the conclusion drawn by the user is not. Here is why.

In theory, if the only component of finance charge is interest, then the measure of charge should be identical to the rate used to produce that charge. In certain situations that holds true. However, most creditors don't consider the following two issues:

- rounding of the payment.
- difference in time counting methods between the way interest is computed and how the A.P.R. is computed.

Rounding of the Payment

One of the complications with consumer credit math is that any piece of code, formula, or algorithm produces theoretical numbers in an "extended precision" mode. In many cases as many as 32 decimal places exist to ensure accuracy. Unfortunately, creditors cannot collect the "mills" of a numeric value, only a dollar and cent amount.

For example, a \$1,000 loan amount computed at a 12% annual interest rate that is to be repaid in 12 equal monthly installments produces a payment of \$88.8487886783.

That entire ten decimal place number represents applying a 12% annual rate. Once the value is rounded, to say \$88.84, the effective rate is no longer 12% but 11.9812%. The value of \$.0087886783 is truncated off and the cumulative effect is more than \$.105 (12 x \$.0087886783) of interest is "uncollectible".

Truth-in-Lending measures only the actual dollar and cent values disclosed on the contract when determining an A.P.R. The actual finance charge disclosed for this transaction would be \$66.08. That value is in contrast to the potential interest amount of \$66.18546414 that precisely represents 12% annual interest.

What this illustrates is Truth-in-Lending working as it was intended and showing the consumer the actual cost of credit, 11.98%. The disclosed A.P.R. dis-

plays the cost of credit on a level playing field that can be used for evaluation.

Time Counting Methods

Unfortunately, the rules used to achieve that level playing field are not always clearly understood by the participants in the game.

Appendix J lays out specific rules for counting time, the quasi-infamous "Fed Calendar", in order to compute the A.P.R. However, the rules for counting time in an interval for computing interest are left to the discretion of a particular lending institution in most cases.

For example, March 1 to April 1 may be considered "1 month", aka 1/12 of a year, or it may be considered 31 calendar days. Each of those days may be 1/365 of a year or 1/360 of a year. These types of time counting options lay the groundwork for the fact that interest may be computed using different rules than Truth-in-Lending employs to measure the cost of credit.

Truth-in-Lending does not dictate, and indeed doesn't care, how the interest charge and resulting payment are computed. The Act only provides rules for disclosing those computations in a uniform manner.

If interest is computed, for example, on a first interval measured as 30 calendar days (30/365) but the Fed Calendar measures that same time period as 1 month (30/360), the interest rate of 12% will translate to a slightly lower A.P.R. The reason is that 30/365 (.0821917) produces less charge than 30/360 (.0833333) for the indicated interval.

This concept arises again when 45 calendar days is measured as 1 month and 14 days by the Fed Calendar. That is the reason February always plays such havoc with credit computations.

In summary, each of these concepts may cause the A.P.R. to differ from the interest rate. Very often a combination of the two in the same transaction may have a significant impact on the resulting A.P.R. when compared to the computational interest rate.

The only way to ensure the A.P.R. is always identical to the interest rate is to employ the same time counting method for both interest and A.P.R. computations and contract for an odd final payment to collect as much potential interest as possible.

Some software packages evaluate the precise A.P.R. against the interest rate and disclose the nominal value if the difference is not greater than the allowed .125% tolerance.

While that is a perfectly "legal" concept to incorporate, in this day and age of computing power, and its economical availability, it may be a dubious policy plank when defending a "pattern of practice." We feel it is always safer to disclose the precise, accurate A.P.R. value without disclaimers.



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