



Explaining a Flat-rate Loan

By [iCompareLoan Editorial Team](#)



After purchasing their dream homes, to make things more perfect most home-owners will like to transform its interiors into a comfortable nest; so they will spruce it up with quality renovation and beautiful furnishings.

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To finance these costs, some home-owners will opt for a renovation loan or furnishing loan.

Financing institutions (FIs) in Singapore generally offer these [loans](#) with tenure ranging from one to five years. As this duration is considered relatively short, the FIs usually offer these loans on flat-rate basis. Some banks may also offer them on monthly-rest basis.

Buying a house is already a huge financial liability for the majority of people, so you will want to be as cost-effective as possible in the taking of a renovation loan or furnishing loan.

This article thus proceeds to explain about flat-rate loans.

So what is a flat-rate loan?

I maybe teaching grandmother to suck eggs by defining a flat-rate loan. But I will error on the side of caution and explain it nonetheless.

A flat-rate loan is a loan in which total interest payment is determined at the beginning of the loan based on the total principle. Therefore the effective interest on a flat rate is higher than a loan based on periodic-rest, all else equal.



Nothing beats a concrete example. So we will use the below loan details to understand the payment for a flat-rate loan.

- Loan Quantum = S\$20,000
- Loan Tenure = 3 years
- Interest Rate = 10% p.a.

Total Interest = Principal x Term of Loan In Years x Nominal Interest Rate p.a.

$$\textit{Total Interest} = \$ 20,000 \times 3 \times 10\% = \$ 6,000$$

$$\textit{Total Payment} = \textit{Principal} + \textit{Total Interest}$$

$$\textit{Total Payment} = \$ 26,000$$

$$\textit{Instalment} = \frac{\textit{Principal} \times (1 + \textit{Term of Loan In Years} \times \textit{Nominal Interest Rate p.a.})}{\textit{Total Number of Payment Periods}}$$

Thus the instalment in each period is simply the Total Payment divided by the number of payment periods.

Most loans are serviced monthly; in that case the number of payment periods is simply $12 \times 3 = 36$.

The monthly instalment becomes $\$26,000 / 36 = \722.22

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Sometimes flat-rate loans can be repaid quarterly, semi-annually or even annually. Consequently, the total number of payment periods will be Term of Loan in Years x Payment Frequency Per Year.

Finding the interest rate on a flat-rate loan

Ok, so now that we have settled on what is a flat-rate loan. Next we will move onto learning the computation of the ENR (equivalent nominal rate) per annum and effective interest rate per annum.

As loans come in different types (for example a flat rate versus a periodic-rest) and even within the same type there can be differences in the annual payment frequency or the mode of payment (annuity-immediate versus annuity-due); hence to compare the true cost between these loans we need to standardise the interest rates. This is where the ENR (equivalent nominal rate) per annum and effective interest rate per annum come in.

(The subject of annuity-immediate and annuity-due will be discussed in future articles. For this piece and previous ones, I have always assumed the case of annuity-immediate.)

Using the same example as earlier

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- Loan Quantum = S\$20,000
- Loan Tenure = 3 years
- Interest Rate = 10% p.a.

This time round instead of having only monthly repayments, we will have quarterly, semi-annual and annual as well.

Table 1

Payment Frequency Per Year	Total Number of Payment Periods	Payment Per Period (\$)
Monthly	36	722.22
Quarterly	12	2,166.67
Semi-annual	6	4,333.33
Annual	3	8,666.67

How do we then find their ENR? In two of my past articles (go [here](#) and [here](#)), I have discussed about the math formulas and Excel functions for ENR, nominal and effective rates. So here I will dive right into the Excel syntax to be used to find ENR.

Table 2: Excel Syntax for ENR



	Syntax
Monthly	=12* RATE (36, 722.22, -20000)
Quarterly	=4* RATE (12, 2166.67, -20000)
Semi-annual	=2* RATE (6, 4333.33, -20000)
Annual	=1* RATE (3, 8666.67, -20000)

Having found the ENR, we use it as the nominal rate in the computation of the effective interest rate (Please refer to my previous article if you do not know how to find the effective rate).

So we arrive at the following effective rates:

Table 3

	Effective Rates (%)
Monthly	19.46
Quarterly	18.28
Semi-annual	16.76
Annual	14.36

Looking at the numbers, what can we deduce about the relation between the true cost of the flat-rate loan and the payment frequency? The more frequent are the payments the higher the cost is. This has to do with the fact that total interest payment has been decided right from the start; therefore the more frequent the repayments are the less liquidity you have. Seen in another way, it has something



to do with the time value of money. \$1 pays today costs more than \$1 pays a year later.

Click [HERE](#) for the Excel spreadsheet to compute the payment and effective rate for the flat-rate loan.

For advice on a new loan, go [here](#).

For refinancing advice, go [here](#).

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