Rule of 72 Vs Rule of 78

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Rule of 72 and Rule of 78 are two mathematical approaches that have been commonly used in Malaysia since the late 1980s. This began to be used when the banking industry was growing and the use of the computer to calculate the loan formula was limited.

During the 1970s, the 1980s and the early 1990s, banks were mainly using formulas with manual calculation to be translated into payment schedules/table forms.

This approach changed during the late 1990s with the widespread use in the banking industry of computers with programmes for these formulas, making calculation much easier.

However, consumers or borrowers had very little knowledge of the two rules then and this is true even today. The knowledge gap between consumer and bankers must be reduced so we can have informed consumers.

WHAT IS RULE OF 72?

Rule of 72

The Rule of 72 is a simple formula used widely to calculate the estimated compounding period / tenure required to double an investment. In other words, you use it if you want to know within how many years your investment of, say, RM10,000.00 will double to RM20,000.00 at a specific interest rate.

This Rule of 72 approach is an easy way to calculate the number of years it will take to double the investment instead of using scientific calculator (or spreadsheet) to get the answer.

Formula:

$$n = 72 / i$$

Where:

1. "n" is estimated compounding number of years required.

2. "i" is annual interest rate.

Example:

Assuming John invests RM10,000 in an investment vehicle which promises an interest/return/dividend of 6% per year. Now, John wants to know the estimated number of years it will take to double his investment to RM20,000.

You may calculate this by using the calculator that is readily available in any mobile phone.

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Rule of 72

At 12% — your money doubles in 6 years

At 6% — it doubles in 12 years

At 3% — it doubles in 24 years

n = 72 / i

n = 72 / 6
= 12* years

Note: *Therefore, it will take an estimated 12 years for RM10,000 to double to RM20,000 at 6% interest per year.

The same formula can be used to calculate other parameters or variables i.e. the interest rate required, given the tenure.

In my opinion, notwithstanding the above, the limitation of this formula is it is not appropriate to calculate the simple interest rate. The result is just an estimation; hence, this formula can be applied as a general guide by consumers or investors.

However, with this knowledge, consumers or investors can have better guidance before committing to any of the many non-genuine investment or financial schemes in existence today. However, the drawback of using this rule is, the higher the interest, the less the accuracy. It will give a close to accurate result if the interest rate is within the range of 6% to 10%.

WHAT IS RULE OF 78?

The Rule of 78, on the other hand, is a formula widely used to calculate the rebate on fixed interest /financial charges if the loan were settled before maturity. Rule of 78 is also known as sum of digits: the number of months in a year i.e. 1 + 2 + 3 + 4+ 5 + 6 + 7+ 8 + 9 + 10 + 11+ 12 equals to 78. This formula is commonly used in hire purchase (HP) or personal loans where the interest is added to the principal before the calculation of the fixed/ monthly instalment.

Under Rule of 78, a lender will gain interest at a bigger margin at the beginning of the loan tenure. If one takes a 12 months' repayment HP loan, the interest portion on the first instalment is very much higher than the interest portion on the last instalment.

For example, if a hirer intends to settle his hire purchase loan before the due date of the 3rd month's repayment for a loan with twelve (12) months' repayment tenure, he will be get a rebate of 70.51% ((78 – (11 + 12)) / 78) from the total interest/finance charges. And the lender has already gained 29.49% ((11 +12) / 78).

Table 1: Combination of Interest Gained & Total Rebates to the Hirer / Borrower

Period in Months	Remaining Tenure	% Interest Gained by Lender (% X Total interest / Finance Charges)	% Rebate to the Borrower /Hirer (% X Total interest /Finance Charges) {100- Interest Gained by Lender)
1	12	(12/78)= 15.39	84.62
2	11	(23/78) = 29.48	70.52
3	10	(33/78) = 42.31	57.69
4	9	(42/78) = 53.84	46.16
5	8	(50/78) = 64.10	35.90
6	7	(57/78) = 73.08	26.92
7	6	(15/78) = 80.77	19.23
8	5	(68/78) = 87.18	12.82
9	4	(72/78) = 92.31	7.69
10	3	(75/78) = 96.15	3.85
11	2	(77/78) = 98.72	1.28
12	1	(78/78) = 100	0.00
	78		

The table above gives more combinations of interest gained and total rebates to the hirer/borrower.

In my opinion, however, the limitation of this formula is that the rebate calculation does not factor in any penalty due to late payment or additional fees levied during the repayment period. ■