

## Making sense of different interest rates

### Comparing apples with apples

When considering investment choices, you may have seen interest rates being quoted in different ways. Making sense of this can be confusing. We'd like to explain what the different rates mean, so that you can be sure that you are comparing apples with apples, making the best investment choice.

Say you are looking at investing R1000, for 5 years (60 months) with your interest paid at maturity.

Lets use an **example** of 13% per annum on a 5 year Green Savings Bond

The interest rate is a **simple**, non-compounding rate. This means that you earn 13% interest on the original capital amount invested, every year until maturity, at which point you get your capital back with all the interest. There is no interest being compounded in this example. Compounded interest means that you earn interest on interest. This is also sometimes referred to as having your interest "capitalised". The 13% therefore the **simple interest rate**.

See illustrative example below

Capital	Interest Rate per annum	Daily Interest	Start date	End Date	Interest amount	comments
R 1 000.00	13.00%	*R0.36	01-May-16	01-May-21	<b>R 650</b>	total interest earned for the 5 year investment period

\*Capital\*interest rate per annum/365

To help you better understand, the table below provides a breakdown of the simple interest earned on an annual basis:

Capital	Interest Rate per annum	Daily Interest	Start date	End Date	Interest amount	comments
R 1 000.00	13.00%	*R0.36	01-May-16	01-May-17	R 130	year 1
R 1 000.00	13.00%	R0.36	01-May-17	01-May-18	R 130	year 2
R 1 000.00	13.00%	R0.36	01-May-18	01-May-19	R 130	year 3
R 1 000.00	13.00%	R0.36	01-May-19	01-May-20	R 130	year 4
R 1 000.00	13.00%	R0.36	01-May-20	01-May-21	R 130	year 5
					<b>R 650</b>	total interest earned

\*Capital\*interest rate per annum/365

So, if the above example is the simple rate of interest that you would earn with no compounding, what would the equivalent rate of interest be, if interest was compounded?

Say we are compounding interest every year you would be earning interest on interest. This is commonly referred to as the **Annual Effective/Equivalent Rate**. The equivalent rate for interest compounding annually, giving you the same interest amount, paid on maturity (as used in the above example) would be 10.53% per annum.

Capital	Interest Rate per annum	Daily Interest	Start date	End Date	Interest amount	comments
R 1 000.00	10.53%	*R0.29	01-May-16	01-May-17	R 105	year 1
R 1 105.30	10.53%	R0.32	01-May-17	01-May-18	R 116	year 2
R 1 221.69	10.53%	R0.35	01-May-18	01-May-19	R 129	year 3
R 1 350.33	10.53%	R0.39	01-May-19	01-May-20	R 143	year 4
R 1 492.91	10.53%	R0.43	01-May-20	01-May-21	R 157	year 5
					<b>R 650</b>	total interest earned

\*Capital\*interest rate per annum/365

You will notice that the Annual Effective/Equivalent rate is lower than the simple interest rate. This is because you will be earning interest on interest, every year.

If we now look at interest compounded monthly, commonly referred to as the **Nominal rate**, the equivalent interest rate would be 10,06% per annum (nominal, annual, compounded monthly).

To summarise, the annual compounded interest rate of 10.53%, the monthly compounded interest of 10.06% and the simple interest rate of 13% all give you the same total interest of R650 on the original R1 000.00 capital amount invested, paid on maturity of the 5 year period. See the table below.

	Simple interest No compounding Interest on maturity	Compound interest Compounded Annually Interest on maturity	Compound interest Compounded monthly Interest on maturity
Amount invested	R1000	R1000	R1000
Total interest earned	<b>R650</b>	<b>R650</b>	<b>R650</b>
Period	5 years	5 years	5 years
% p.a.	13,00%	10,53%	10,06%
Terminology	Simple interest, no compounding	Annual Effective Rate, Compounded Annually	Nominal Annual, Compounded Monthly

So, when making your investment choices you cannot look purely at the rate quoted on different investment alternatives. You should be sure to compare rates of alternative investments considered, using the same compounding periods. This way you will be assured that you are comparing apples with apples.