

Unit 2 *Simple and Compound Interest*

Introduction

Learning objectives

In this, the second of the Finance units, we consider the topic of income from savings and financial investments - of relevance to individuals, companies and indeed Governments. After studying this unit you should

- understand the difference between simple and compound interest
- be able to calculate the balance on an account given the initial value, the rate of interest paid and the time period involved
- be able to calculate the AER (Annual Equivalent Rate), given the initial balance on an account and the balance after a given period of time.

Key points

- for compound interest, unlike simple interest, the interest is added to the balance on the account (which will include any interest paid previously)
- interest on accounts is often paid annually but it can be credited monthly, daily, etc.
- comparisons between rates can be made by using the AER (annual equivalent rate) when interest is paid a number of times in a year.

Facts to remember

- If you invest $\pounds P$ in an account that pays compound interest at $r\%$ per year, the value of the account after T years will be

$$A = P \left(1 + \frac{r}{100} \right)^T$$

- AER (Annual Equivalent Rate) can be calculated using the formula

$$r = \left(1 + \frac{i}{n} \right)^n - 1$$

where r is the AER, n the number of times in a year that interest is paid and i the 'nominal' yearly interest rate.

Glossary of terms

- *Interest rate*: the percentage rate paid in interest on an account for a specified time period
- *Simple interest*: interest paid is not reinvested in the account and the balance remains constant
- *Compound interest*: interest paid is reinvested in the account
- *Annual Equivalent Rate (AER)*: the equivalent annual rate of interest paid on an account when interest is paid more frequently than once a year.