How can I use the YIELD function in Excel?

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The YIELD function in Excel is a tool that allows users to calculate the annual yield of a bond, based on its price and other relevant information. This function is useful for investors and financial analysts who need to determine the potential return on their investments. To use the YIELD function, users must input the bond's settlement date, maturity date, coupon rate, and price. The result will be the annual yield of the bond, expressed as a percentage. This function is a valuable tool for making informed investment decisions and analyzing the performance of bonds.

This article describes the formula syntax and usage of the **YIELD** function in Microsoft Excel.

Description

Returns the yield on a security that pays periodic interest. Use YIELD to calculate bond yield.

Syntax

YIELD(settlement, maturity, rate, pr, redemption, frequency,)

Important: Dates should be entered by using the DATE function, or as results of other formulas or functions. For example, use DATE(2008,5,23) for the 23rd day of May, 2008. Problems can occur if dates are entered as text.

The YIELD function syntax has the following arguments:

Settlement Required. The security's settlement date. The security settlement date is the date after the issue date when the security is traded to the buyer.

Maturity Required. The security's maturity date. The maturity date is the date when the security expires.

Rate Required. The security's annual coupon rate.

Pr Required. The security's price per $100 face value.

Redemption Required. The security's redemption value per $100 face value.

Frequency Required. The number of coupon payments per year. For annual payments, frequency = 1; for semiannual, frequency = 2; for quarterly, frequency = 4.

Basis Optional. The type of day count basis to use.

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Basis	Day count basis
0 or omitted	US (NASD) 30/360
1	Actual/actual
2	Actual/360
3	Actual/365
4	European 30/360

Remarks

Microsoft Excel stores dates as sequential serial numbers so they can be used in calculations. By default, January 1, 1900 is serial number 1, and January 1, 2008 is serial number 39448 because it is 39,448 days after January 1, 1900.

The settlement date is the date a buyer purchases a coupon, such as a bond. The maturity date is the date when a coupon expires. For example, suppose a 30-year bond is issued on January 1, 2008, and is purchased by a buyer six months later. The issue date would be January 1, 2008, the settlement date would be July 1, 2008, and the maturity date would be January 1, 2038, which is 30 years after the January 1, 2008, issue date.

Settlement, maturity, frequency, and basis are truncated to integers.

If settlement or maturity is not a valid date, YIELD returns the #VALUE! error value.

If rate < 0, YIELD returns the #NUM! error value.

If pr ≤ 0 or if redemption ≤ 0, YIELD returns the #NUM! error value.

If frequency is any number other than 1, 2, or 4, YIELD returns the #NUM! error value.

If basis < 0 or if basis > 4, YIELD returns the #NUM! error value.

If settlement ≥ maturity, YIELD returns the #NUM! error value.

If there is one coupon period or less until redemption, YIELD is calculated as follows:

$$YIELD = \frac{(\frac{redemption}{100} + \frac{rate}{frequency}) - (\frac{par}{100} + (\frac{A}{E} \times \frac{rate}{frequency}))}{\frac{par}{100} + (\frac{A}{E} \times \frac{rate}{frequency})} \times \frac{frequency \times E}{DSR}$$

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where:

A = number of days from the beginning of the coupon period to the settlement date (accrued days).

DSR = number of days from the settlement date to the redemption date.

E = number of days in the coupon period.

If there is more than one coupon period until redemption, YIELD is calculated through a hundred iterations. The resolution uses the Newton method, based on the formula used for the function PRICE. The yield is changed until the estimated price given the yield is close to price.

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