How do I calculate the net present value (XNPV) in Excel?

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The net present value (XNPV) is a financial metric used to determine the current value of future cash flows. It takes into account the time value of money, meaning that a dollar received in the future is worth less than a dollar received today. In Excel, the XNPV function can be used to calculate the net present value by inputting the discount rate, the cash flows, and the corresponding dates. This allows for accurate decision making when evaluating investment opportunities or projects. The XNPV function is a powerful tool in financial analysis and can assist in making informed and efficient financial decisions.

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

Description

Returns the net present value for a schedule of cash flows that is not necessarily periodic. To calculate the net present value for a series of cash flows that is periodic, use the NPV function.

Syntax

XNPV(rate, values, dates)

The XNPV function syntax has the following arguments:

Rate Required. The discount rate to apply to the cash flows.

Values Required. A series of cash flows that corresponds to a schedule of payments in dates. The first payment is optional and corresponds to a cost or payment that occurs at the beginning of the investment. If the first value is a cost or payment, it must be a negative value. All succeeding payments are discounted based on a 365-day year. The series of values must contain at least one positive value and one negative value.

Dates Required. A schedule of payment dates that corresponds to the cash flow payments. The first payment date indicates the beginning of the schedule of payments. All other dates must be later than this date, but they may occur in any order.

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.

Numbers in dates are truncated to integers.

If any argument is nonnumeric, XNPV returns the #VALUE! error value.

If any number in dates is not a valid date, XNPV returns the #VALUE! error value.

If any number in dates precedes the starting date, XNPV returns the #NUM! error value.

If values and dates contain a different number of values, XNPV returns the #NUM! error value.

XNPV is calculated as follows:

$$XNPV = \sum_{i=1}^{N} \frac{P_i}{(1+rate)^{\frac{(d_i - d_1)}{365}}}$$

where:

di = the ith, or last, payment date.

d1 = the 0th payment date.

Pi = the ith, or last, payment.