List of Excel Functions That May Be Useful on the Exam

Below, find a list of Excel functions that may be useful when taking the exams on Corporate Finance and ERM practice area. Questions for this track have been developed assuming that candidates are familiar with these Excel functions. Candidates may also use other functions. Many times, Excel offers multiple functions and tools that can be used to perform the same task.

In the descriptions below, an array is one-dimensional, while a range can be two-dimensional (multiple rows and columns). Logical values are either True or False. Some Excel functions require that the arrays be in the same direction (SUMPRODUCT), but most do not. Other function inputs are variables. Some variables have limitations (a value between 0 and 1); others do not.

This document will be available to candidates when taking the exam. An Excel file, accessible on the exam study page, provides examples of most of the functions below. The Excel file will not be available to candidates during the exam.

AVERAGE(range1, [range2], …) – returns the arithmetic mean of the cells in a range (ignores blank cells)

range1 is the first range, cell reference, or number for which you want in the average
range2, … are additional ranges, cell references, or numbers for which you want to include in the average

BINOM.DIST(number_s, trials, probability_s, cumulative_logical_value) – returns the individual term binomial distribution probability when there are a fixed number of tests or trials, when the outcomes of any trial are only success or failure, when trials are independent, and when the probability of success is constant throughout the experiment

number_s is the number of successes
trials is the number of trials
probability_s is the probability of success for each trial
cumulative_logical_value is the logical values that determines the form of the function. If TRUE, the cumulative distribution function is returned, which is the probability that there are at most number_s successes; if FALSE, the probability mass function is returned, which is the probability that there are number_s successes

BINOM.INV(trials, probability_s, alpha) – returns the smallest value for which the cumulative binomial distribution is greater than the criterion value (or the number of successful trials for a cumulative binomial distribution based on a criterion value)

trials is the number of trials

probability_s is the probability of success for each trial

alpha is a criterion value from 0 to 1 that determines the number of successful trials

CORREL(array1, array2) – returns the correlation coefficient of two data sets

array1 is an array of cell values

array2 is a second array of cell values

COUNTIF(range1, criteria) – returns the number of cells in a given range that meet the criteria

range1 is a range of cells that could include values or formula results

criteria is the criteria to be met such as “>0” or “=15”

COVARIANCE.P(array1, array2) – returns the population covariance, the average of the products of deviations for each data point pair in two data sets (for a complete population, uses N in the denominator)

array1 is the first array of cell values

array2 is the second array of cell values

COVARIANCE.S(array1, array2) – returns the sample covariance, the average of the products of deviations for each data point pair in two data sets (for a sample, uses N-1 in the denominator)

array1 is the first array of cell values

array2 is the second array of cell values

MMULT(range1, range2) – returns the matrix product of arrays into an range with the same number of rows as range1 and the same number of columns as range2

range1 and **range2** contain the arrays to be multiplied. The number of columns in range1 must be the same as the number of rows as range2, and both ranges must contain only numbers. As an example, if both ranges are 2x2, the top left cell in the output will equal the sumproduct of the array in the top row in the first range and the array in the left column of the second range. To produce the output, the range of the output table must be highlighted, then the formula entered, and then cntl/shift/enter hit

NORM.DIST(x, mean, standard_dev, cumulative_logical_value) – returns the normal distribution for the specified mean and standard deviation

x is the value for which you want the distribution

mean is the arithmetic mean of the distribution

standard_dev is the standard deviation of the distribution

cumulative_logical_value is the logical value that determines the form of the function. If TRUE, the cumulative distribution function is returned; if FALSE, the probability density function is returned

NORM.INV(probability, mean, standard_dev) – returns the inverse of the normal cumulative distribution for the specified mean and standard deviation

probability is a probability corresponding to the normal distribution (a number between zero and one inclusive)

mean is the arithmetic mean of the distribution

standard_dev is the standard deviation of the distribution

NORM.S.DIST(z, cumulative_logical_value) – returns the standard normal distribution (has a mean of zero and a standard deviation of one)

z is the value for which you want the distribution.

cumulative_logical_value is the logical value that determines the form of the function. If TRUE, the cumulative distribution function is returned; if FALSE, the probability mass function is returned

NORM.S.INV(probability) – returns the inverse of the standard normal cumulative distribution (has a mean of zero and a standard deviation of one)

probability is a probability corresponding to the normal distribution (a number between zero and one inclusive).

PERCENTILE(range, k) – returns the kth percentile of the values in a range, interpolating if necessary.

range is the array or range of data from which the percentile should be found; the data does not need to be sorted

k is the percentile value in the range 0 to 1 inclusive. 0 returns the lowest value; 1 returns the highest value.

RANK(number, range, [order]) – returns the rank of a number in a list of numbers.

number is the number whose rank you want to find

range is the range that includes the list of numbers from which to find the rank of the number

order (optional) is ascending when the value is 1 and descending when the value is 0

SMALL(array, k) – returns the kth smallest value in a data set.

array is an array or a range of numerical data for which you want to determine the kth smallest value.

k is the position (from the smallest) in the array or range of data to return.

SQRT(number) – returns a positive square root

number is the number for which a square root is desired.

STDEV.P(range1, [range2], …) – calculates standard deviation based on the entire population given as arguments (ignores logical values and text; uses N in the denominator)

range1 is the first range, cell reference, or number corresponding to the population for which you want the standard deviation

range2, … are additional ranges, cell references, or numbers corresponding to the population for which you want to include in the standard deviation

STDEV.S(range1, [range2], …) – estimates standard deviation based on a sample (ignores logical values and text in the sample; uses N-1 in the denominator)

range1 – is the first range, cell reference, or number corresponding to the population for which you want the standard deviation

range2, … are additional ranges, cell references, or numbers corresponding to the population for which you want to include in the standard deviation

SUM(range1, [range2]) – adds all the numbers in a range of cells

range1 is the first range, cell reference, or number for which you want to include in the sum

range2, … are the additional ranges, cell references, or numbers for which you want to include in the sum

SUMPRODUCT(array1, [array2], [array3], …) – returns the sum of the products of corresponding arrays

arrays1, array2, array3,… are 2 to 255 arrays which the user wants to multiply and then add components. All arrays must have the same dimensions, vertical or horizontal

TRANSPOSE(array) – converts a vertical range of cells to a horizontal range, or vice versa

array is a range of cells on a worksheet or an array of value that the user wants to transpose (for example, to use in the SUMPRODUCT function). When using the TRANSPOSE function in another function, the formula must be entered and then cntl/shift/enter hit. When using the TRANPOSE function to produce output, the range of the output table must be highlighted, then the formula entered, and then cntl/shift/enter hit

VLOOKUP(lookup value, table_range, column_ index_number, logical_value) – looks for a value in the leftmost column of a table and then returns a value in the same row from a column specified by the user

lookup_value is the value to be found in the first column of the table. It can be a value, a reference, or a text string

table_range is a table of text, numbers, or logical values in which data is retrieved. It can be a reference to a range or a range name
column_index_number is the column number in table_range from which the matching value should be returned
logical_value is a logical value to find the next lowest match in the first column (must be sorted in ascending order) when equal to TRUE or omitted; or an exact match when equal to FALSE

List of Other Excel Tools (Besides Functions)
That May Be Useful on CFE/ERM Exams

GOAL SEEK – used when a user knows the desired result from a formula but is not sure what input value the formula needs to get that result. The steps to use Goal Seek are as follows:

1. Select the cell that contains the output you want to change.
2. On the Data tab, select What-If Analysis.
3. Select Goal Seek.
4. In the "Set cell" box, enter the reference for the cell that contains the formula you want to resolve.
5. In the "To value" box, type the formula result you want.
6. In the "By changing cell" section, select the reference for the cell that contains the value that you want to change.
7. Click "OK". Goal Seek runs and produces a result.