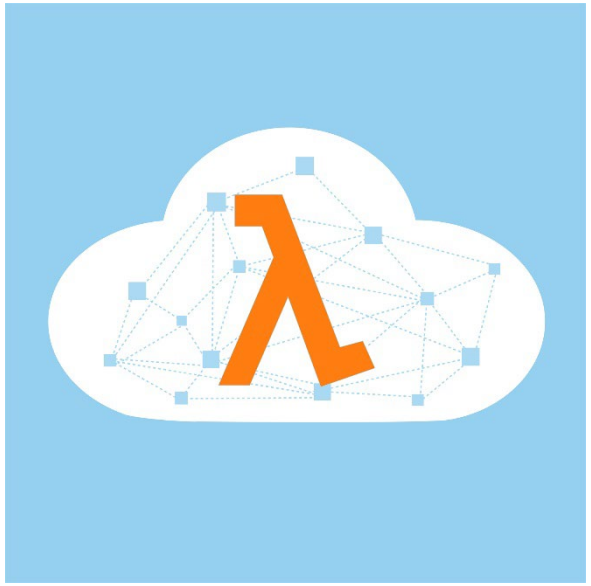


Lambda Functions in Excel: Create Your Own Functions Without VBA or Macros

How to Replace Confusing VBA with Slightly Less Confusing Function Definitions

Lambda Functions: Useful for Finance?

Microsoft has added *dozens* of new features, formulas, and functions to Excel over the past few years…

(See our coverage of XLOOKUP and FILTER, for example.)

Lambda Functions: Useful for Finance?

Lambda Functions are a very interesting addition that are potentially useful in financial modeling…

…but mostly if you're more of a **"power user"** who wants to make your files **more accessible and reusable**.

Lambda Function Basics

- **Best Use Case:** Define a relatively simple function that is annoying to type repeatedly that you can **re-use repeatedly** in a file, and that can benefit from *modest* error-checking

- **EX:** Calculating the Multiple of Invested Capital (MOIC) or MoM Multiple in investment analysis

- **Non-Ideal Use Case:** Writing a "Table of Contents" or formatting function – Lambda Functions are better for calculations, not inserting sheets or changing ranges of cells

- **Also:** Above a certain complexity level, they're annoying

Lambda Function Basics

- **Basic Syntax:** =LAMBDA(Parameters, Calculations) (Cells Or Values You're Inputting as Parameters)

- =LAMBDA(Base,Growth_Rate,Base*(1+Growth_Rate))(100,5%)

- **Error Message:** =LAMBDA(Base,Growth_Rate,Base*(1+Growth_Rate))

- **Why:** You haven't entered anything for the input parameters after the function definition!

Lambda Function Basics

For the written version, images, and Excel files, go to:

https://breakingintowallstreet.com/kb/excel/excel-lambda-functions/

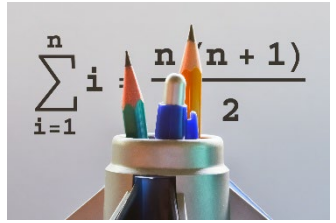
Outline for This Tutorial:

- **Part 1:** The MOIC Function **4:51**
- **Part 2:** Error-Checking the Function **7:16**
- **Part 3:** Extensions and Drawbacks of Lambda Functions **11:21**

Part 1: The MOIC Function

- **MOIC:** Gives you the ratio of cash flows + exit value to the upfront investment/development cost

- **Normally:** Use SUMIF to calculate it



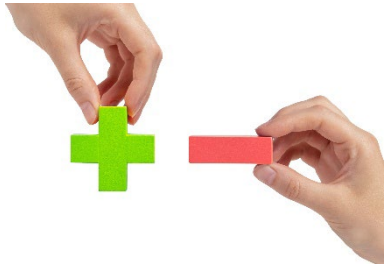
- **Rewrite as Lambda:**

=LAMBDA(Range,-SUMIF(Range,">0",Range)/SUMIF(Range,"<=0",Range))(F69:K69)

- **Name Manager:** Press Ctrl + F3 and enter this *without* the input parameters, name it, and use it in the file

Part 2: Error-Checking the Function

- **Obvious One:** Make sure there is at least *one positive number* and *one negative number* in the range



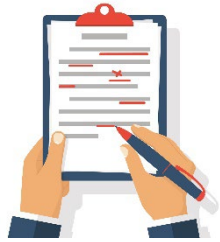
- **Excel:**
  IF(AND(COUNTIF(Range,"<0")>=1,COUNTIF(Range,">0")>=1)

- **Add** this condition to the Lambda Function in the Name Manager and re-run it to see how it now correctly captures errors, such as invalid numbers

Part 3: Extensions and Drawbacks

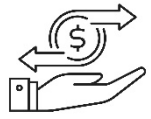
- **Next Steps:** This MOIC function is good, but it could be even better if we checked for issues such as text or dates rather than numbers in the range

- **Drawback #1:** Cumbersome to **edit** Lambda Functions in the Formula Bar (but can change the size)



- **Drawback #2:** Still not ideal for complex conditions, looping through ranges, etc.

- **Drawback #3:** Not portable – need to copy/paste the named functions into any new file you're working on



Recap and Summary

- **Part 1:** The MOIC Function

- **Part 2:** Error-Checking the Function

- **Part 3:** Extensions and Drawbacks of Lambda Functions