



# Phil's Rule #1 Investing Formulas for Excel

Investing on your own for the first time can be daunting, but with Phil's calculators and excel formulas, you can get on the right track faster. Read on to understand the excel formulas behind Phil's calculators.

The formulas behind the calculations that Phil uses are all listed below, and will cover what you need to:

- Estimate Company Growth Rates
- Find the Sticker Price
- Find the Margin of Safety Price

These will be based on excel's:

- Future Value (FV) function
- Present Value (PV) function
- Rate function - Rate()

When you start typing any of these functions into an Excel spreadsheet and hit the F1 key on your keyboard, Excel will help you step through how to use them.

If you have used excel before, you will have a slight advantage -- but even if you haven't, don't get intimidated.

**Just follow the explanations below and you'll be on your way to Rule #1 Investing!**

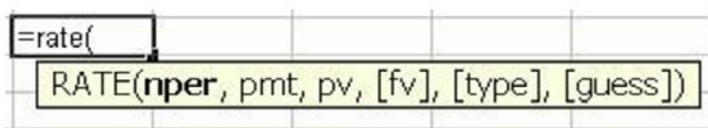
## Calculating Growth Rates

Whether you're calculating an Equity, EPS, Sales, or Cash Growth Rate, the process (and the formula) is the same.

First, find the data for these 4 categories as far back as you can (10 years is best).

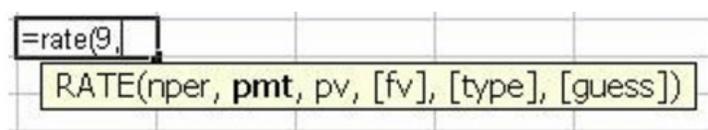
- You'll do each of these 4 critical numbers separately. I usually start with Equity or Book Value Per Share, so that's what I'll show you here.
- Repeat for all the other growth rates

In Excel, type =RATE( and you'll see the formula below appear:

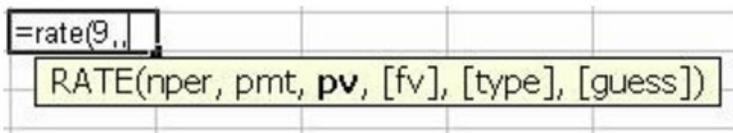


The bolded abbreviation **nper** means you should enter the number of years (let's do a 10-year average growth rate).

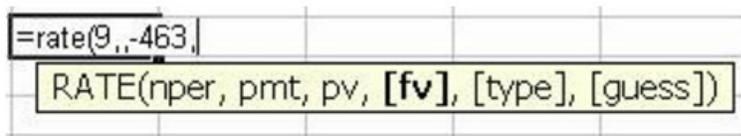
If we have a 10-year average growth rate, then you add up the number of years worth of data you have (10) then subtract 1. This means you would put a 9 in the nper section, and then type a comma. Notice that when you type the comma in, the next section in the formula preview turns to bold (pmt).



The bold **pmt** means you should enter means you should enter the payments each year. However, we're not doing payments, so we're not going to enter anything. Just type another comma and move into the next section (pv).



The bold **pv** is the number you want to START with. Let's say the OLDEST Equity number you have from 10 years ago is \$463,000,000. Input NEGATIVE 463 (-463). The minus sign is just a convention to make the formula work correctly. It's basically saying "I paid out this amount.". Next, type another comma.



The bold **[fv]** is the number you want to END with. Let's say the NEWEST Equity number you have is from last year, and it's \$1,683,000,000. Enter 1683. This says to the formula "This is the amount you're taking out."

Ignore [type] and [guess] and close the parentheses on the formula.



Then, hit 'enter' and Excel will calculate the rate of Equity growth for the last 9 years.



In this case, it's 15%. As mentioned, all growth rate calculations work exactly the same way.

If you wanted to find the growth rate for Equity for the last 5 years, just copy the completed formula into a new cell and change the original '9' to a '5' - then change the '-463' to whatever the Equity number was from 6 years ago. Hit 'enter' and you'll get the new 5-year Equity growth rate.

To find the number for 3 years, copy it again and change the '5' to a '3' - then insert the new starting point 4 years back and hit 'enter'. Repeat one last time for 1-year numbers and you're done.

You have just calculated the 9, 5, 3, and 1-year Equity Growth Rates. Now, you can look to see if the growth is consistently moving up or down. Repeat the process for EPS, Sales, and Free Cash.

# Calculating Future Earnings Per Share

First, determine the growth rate you wish to use to make a projection of future Earnings Per Share.

In Excel, type **=FV**( and you'll see the formula below appear:

```
=FV(
FV(rate, nper, pmt, [pv], [type])
```

The bolded abbreviation **rate** means you should enter the growth rate you have determined, typed in as a percentage, and followed by a comma.

```
=FV(15%,
FV(rate, nper, pmt, [pv], [type])
```

The bolded **nper** should be 10 (the number of years into the future for this estimate), followed by a comma.

```
=FV(15%,10,
FV(rate, nper, pmt, [pv], [type])
```

The bolded **pmt** can be skipped, so just enter another comma.

```
=FV(15%,10,,
FV(rate, nper, pmt, [pv], [type])
```

The bolded **pv** is the number you want to start with. Input it as a negative number. Let's say that in our example, the current EPS is \$1.43 per share, which is entered as -1.43. Then close the parentheses.

Next, hit 'enter' and Excel will immediately calculate the EPS 10 years into the future. IN this case, 20 years from now we're estimating the earnings in this business will be at least \$5.79 per share.

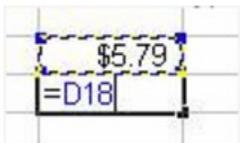
\$5.79		

All Future Value (FV) calculations work the same way. Be very careful about inserting commas. If you fail to input a comma in the right place (or fail to use a minus sign in front of certain values) you won't get the right results.

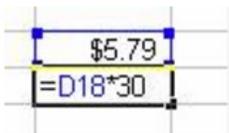
## Calculating Future Stock Price

The future stock price is the estimated (future) EPS multiplied by a PE of your choice. See Chapter 9 in Rule #1 for a complete explanation of how to arrive at a PE.

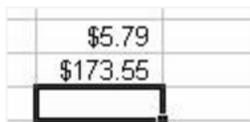
In Excel, type = and click on the future EPS number, in this case \$5.79.



Now, we'll multiply by 30 (or whatever the PE number is that you've chosen) by typing \*30 into the field.



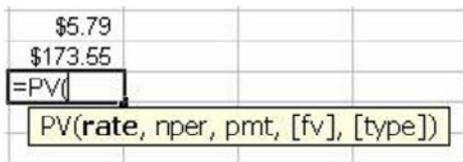
Hit 'enter' and Excel will immediately calculate the stock price 10 years into the future. In this case, 10 years from now we're estimating the stock price of this business will be about \$173.55 per share.



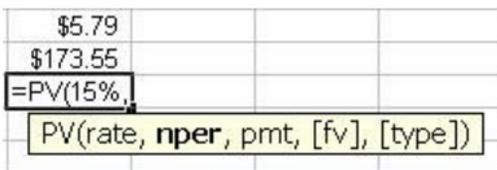
# Calculating Sticker Prices

First, determine your minimum acceptable rate of return. For Rule #1 investors, it's 15% per year.

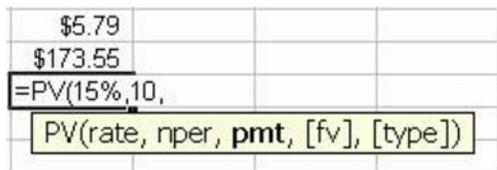
In Excel, type **=PV**( and you'll see this formula appear:



The bolded abbreviation **rate** means you should enter the minimum acceptable rate of return - which will be 15% followed by a comma.



The bolded **nper** means you should enter the number of years from the future back to today. In this case it will be 10 followed by a comma.



The bolded **pmt** is a field you can skip for this calculation. Simply type a comma and move on.

When you move on, the **[fv]** will be bolded, and here you should enter the future stock price. In this example, the future stock price is \$173.55. You'll want to enter the negative version of that number, so you should type in -173.55, or type a minus sign and then click the cell that already contains the value. Then, close the parentheses.

\$5.79		
<b>\$173.55</b>		
=PV(15%,10,,-D19)		

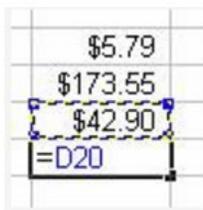
Hit 'enter' and Excel will immediately calculate the Sticker Price - which, in this case, is \$42.90.

\$5.79
\$173.55
\$42.90

## Calculating the Margin of Safety Price

The Margin of Safety price is HALF of the Sticker Price.

In Excel, type = and then click on the cell containing the sticker price.



An Excel spreadsheet with four rows. The first row contains '\$5.79', the second '\$173.55', the third '\$42.90', and the fourth '=D20'. The cell containing '\$42.90' is selected, and a dashed border indicates the formula bar is active.

\$5.79
\$173.55
\$42.90
=D20

To figure out what half the price is, multiply it by 50% by typing \*50%



An Excel spreadsheet with four rows. The first row contains '\$5.79', the second '\$173.55', the third '\$42.90', and the fourth '=D20\*50%'. The cell containing '\$42.90' is selected, and a dashed border indicates the formula bar is active.

\$5.79
\$173.55
\$42.90
=D20*50%

Hit enter, and Excel will immediately calculate the MOS price. In this case, the MOS is \$21.45 – which is half of \$42.90.

How hard was that? :)

Once you get used to working in Excel, these calculations will soon become second nature to you.



[Get going on your investment research with Phil's calculators here.](#)