It is important to recognize that there are three time periods in our project; short-term, long-term and steady-state. In the short-term your projections must depend on the historical data of the firm and your own firm-specific knowledge. As the level of competition and market saturation increase over the long-term, it will become increasingly difficult for any individual firm to continue to produce extraordinary growth. Therefore, the growth rate generally will decline, ultimately resulting in a steady level of growth consistent with the growth rate for the industry and the economy as a whole. This is the steady state. The length of time between the current period and the steady state is subjective and ultimately relies on the discretion of the analyst based on their knowledge of industry trends and the particular competitive advantages of the individual firm.

The fade rate method allows us to capture this progression from high short-term growth toward the level of steady state growth with a minimal number of inputs required. This helps us avoid the inconvenience of manually inputting a growth rate for each individual period in our projection.

There are four variables that are required for our formula:

1. **Starting Rate (G1):** The starting growth rate
2. **Long-term Rate (Gl):** The growth rate at which the company will eventually level off. This should be in the range of 4.5% to 6.5%
3. **Time until Long-term (T):** number of additional years it takes for growth to level out
4. **Fade rate (c):** determines how steeply the company’s starting rate will “fade” to the long-term rate.

|  |  |  |
| --- | --- | --- |
| **Fade rate = 0** | **Fade rate > 0** | **Fade rate < 0** |
| Rate falls linearly. | Rate falls fast initially and then falls at a decreasing rate toward the end of the projection period. | Rate falls slow initially and then falls at an increasing rate toward the end of the projection period. |

**Fade rate method formula**

****

**PROJECTION INPUTS**



Located to the far left side of the model you will find the cells where you will enter your inputs to be used in the fade rate formula. We will discuss each cell moving along the row from left to right.

The first three cells in the row allow the user to calculate an average based on the historical data that can be used as the starting rate.

[222] Starting Date

The first cell is a dropdown list containing the dates of available historical data. Select the starting date of the data you would like to include in the sample used to calculate the average.

[223] Ending Date

The subsequent cell to the right is another dropdown list containing the dates of available historical data. From this list select the ending date of the data you would like to include in the sample used to calculate the average.

[224] Historical Average

The formula for growth calculations:

The following cell contains the formula for the geometric mean and will use the dates selected by the user in the prior two cells as the start date and end date respectively to pull the values from Sales to be used in the calculation of the geometric mean. This helps provide a more accurate picture of the average level of Sales Growth.

The formula for other accounts:

The following cell contains a formula and will use the dates selected by the user in the prior two cells to pull the data between the start date and end date to calculate the Arithmetic mean for that sample of data.

[225] Starting Rate Input

If you would like to manually enter the starting rate to be used, instead of using the calculated historical average, then enter the rate you would like to use in this cell.

[226] Starting Rate

This is the cell that will be used in the fade rate formula. This cell checks whether [225] Starting Rate Input is blank (i.e. the user has not manually entered in a starting rate) and if so it will pull the value from [224] Historical Average to be used as the Starting Rate, otherwise if the user has entered a rate into [225] Starting Rate Input it will pull that value instead.

[227] Starting Date

The first cell is a dropdown list containing the dates of available historical data. Select the starting date of the data you would like to include in the sample used to calculate the average.

[228] Ending Date

The subsequent cell to the right is another dropdown list containing the dates of available historical data. From this list select the ending date of the data you would like to include in the sample used to calculate the average.

[229] Historical Average

The formula for growth calculations:

The following cell contains the formula for the geometric mean and will use the dates selected by the user in the prior two cells as the start date and end date respectively to pull the values from Sales to be used in the calculation of the geometric mean. This helps provide a more accurate picture of the average level of Sales Growth.

The formula for other accounts:

The following cell contains a formula and will use the dates selected by the user in the prior two cells to pull the data between the start date and end date to calculate the Arithmetic mean for that sample of data.

[230] Long-term Rate Input

If you would like to manually enter the Long-term rate to be used, instead of using the calculated historical average, then enter the rate you would like to use in this cell.

[231] Long-term Rate

This is the cell that will be used in the fade rate formula. This cell checks whether [230] Long-term Rate Input is blank (i.e. the user has not manually entered in a Long-term rate) and if so it will pull the value from [229] Historical Average to be used as the Long-term Rate, otherwise if the user has entered a rate into [230] Long-term Rate Input it will pull that value instead.

[232] Time until Long-term

Enter the number of additional years you project it will take for growth to level out.

[233] Fade Rate

Enter the fade rate here.

[234] Sales Growth Rate

###### Historical

IF: [199] Period Position Number = 0

THEN: Blank

ELSE: [207] Sales [Current Period] / [207] Sales [Prior Period] – 1

###### Projected

IF: [t <= [Time until Long-term (Years)]

THEN: IF [Fade Rate = 0:

THEN: Starting Rate – [(Starting Rate – Long-term Rate) / Time Until Long-term] \* [t – 1]

ELSE: (Starting Rate – [(Long-term Rate – Starting Rate)/(EXP(-Fade Rate \* Time until Long-term) -1)) + ((Long-term Rate – Starting Rate)/EXP(-Fade Rate\*Time until Long-term) -1) \* EXP(-Fade Rate \* (t – 1))

ELSE: Long-term Rate