

Real Estate Financial Modeling

Conditional Statements Introduction

Audio Transcript



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Conditional Statements Introduction Overview

- Here on the Conditional Statements Introduction tab we introduce the technique of using conditional statements to allocate values over time. This technique will allow us to model our transactions more easily, especially as assumptions change, which they inevitably do. Once again, this discussion assumes our hypothetical apartment building development with underground parking and a ground-floor retail component.

Control Panel

- The first element that we will talk about is the creation of a timeline “Control Panel”.
- What we are doing here is numerically labeling the events or milestones in our financial model with respect to the project’s timeline, or *time coding* them. Because our pro-forma is going to be constructed on a monthly basis, our Project Start Date, or what some call the Analysis Start Date, will be designated Month #1 as shown in Cell E8. Thus, we have input the number 1, and because this is an assumption, we have formatted it in bold blue type.

Timeline Compression Discussion

- Before we go any further, please note that for the purpose of this lesson, we have significantly compressed the timeline of the transaction so that we can keep our screens magnified to a reasonable size and do a minimum of scrolling during the lesson. While our transaction in The Basics module spanned 60 months, our transaction here lasts only 12 months. Nonetheless, the principles taught here are applicable to transactions of any length.

Pre-Construction Period

- As described in The Basics lesson, the period of the development transaction that pre-dates the construction period is known as Pre-Construction. We will quantify the duration of the Pre-Construction period at 3 months as shown in cell C9. Thus we are assuming that the land is controlled, the project is designed, all construction drawings are produced, and a building permit is secured all within periods 1-3 of this illustrative timeline.

Construction Start Month and Duration

- Thus, the first major milestone that we will calculate is the Construction Start month. This is shown in Cell E10, and is simply the sum of Cells E8 and C9.
- The next element to code is the duration of the construction period, which is also known as the construction schedule. We have assumed that this is 4 months, and have input the number 4 in Cell C11.

First C of O

- The next milestone in Cell E12 is the receipt of the first apartment unit's Certificate of Occupancy, or C of O, declaring that unit legal for occupancy by tenants, and the commencement of rent from this first unit. We make a distinction here in labeling this the first Certificate of Occupancy because typically in apartment projects, each apartment unit will receive its own C of O. As the developer, you naturally want to monetize each unit as soon as you can, so you will take advantage of receiving the first C of O by leasing and occupying that unit. Note that this formula includes a minus 2 at the end. This accounts for our starting construction in the beginning of the Construction start month and our assumption that in our compressed timeline we receive our first C of O 1 month before the end of construction. In a more realistic timeline, this timing might be up to several months before the end of construction, naturally depending on the size of the project.

Construction End Month/Final C of O

- The next milestone in Cell E13 is the Construction End month, which is also when the building will receive its final C of O. Note that this formula includes a minus 1 at the end. This accounts for our starting construction in the beginning of the Construction start month.

Post-Construction Leasing Duration

- The final phase of development transactions is the Post-Construction phase. The most important timing element here is the rate at which the lease-up will occur.

- As shown in Cell C14 we have assumed a Post-Construction Leasing Duration of 3 months, which means that our last unit will be leased by the end of Month #10, as calculated in Cell E14.
- Next in Row 15 we show the total number of Units to Lease, as calculated on the Apartment Unit and Mix Details tab.
- In Cell C16, we calculate the total number of months of leasing that it takes to lease up the building, which is the sum of the number of months of leasing between the first C of O and the end of construction, and the number of Post-Construction leasing months.
- In columns G through J, we have a check formula running to make sure that we have leased all of the units.
- In Cell C17, we divide our total units by the number of months of leasing to get to the units leased per month. As you may imagine, 37 units per month is not a very conservative estimate. This high rate is a result of the compressed illustrative timeline we have used for the sake of the lesson. Depending on the market, the actual rate could be more like 10 to 15 units per month.
- As you may have noticed, the value of units leased per month is referenced in the check formula here.

Retail Tenant TI Payment

- Next in Cell E18 we have our assumption for the month in which we will pay out our retail tenant's tenant improvement payment. For the sake of simplicity, we have assumed that we make a lump-sum payment in month 12, which we see in Cell E19 is the same month in which we sell the retail along with the apartments and parking.

Retail Tenant Rent Commencement

- Lastly, in Cell E20 we show the month in which the retail tenant's rent will commence. What we have done here by hard keying in the month 15 is assume that we will have a retail tenant signed, but that their rent would not start until after we sell the asset.

- Press pause now to step through each line in the control panel, hitting F2 to view and understand the formulas before we move on.

Time Coding Overview

- Now let's talk about rows 21 through 25. What we've done here is set up the timeline for the project, and described, or coded each period, which in our case is a monthly period, in multiple ways.

Calendar Month

- The first row, Row 21, is simply the calendar month. To keep the entire model timeline compressed within one calendar year for the sake of the exercise, we have chosen January 2010 as the month that corresponds to Month #1, our Project Start Date. We enter this as 1/1/2010. We do the same for February by inputting 2/1/2010. And to get the rest of the values to fill in without inputting them by hand, what we do is hover the mouse over the bottom right corner of these two selected cells, and then we are simply going to drag across to the end of the range, and our values will fill in automatically.

Counting Numbers

- In the next row, Row 22, we have simply labeled the project timeline in the counting numbers that correspond to those in Control Panel. The formula here is very straightforward: the first month is hard coded in as month #1, and the second month and all subsequent months are the previous month plus 1.

Construction Month

- In Row 23, we introduce the concept of "Construction Month #". This simply starts counting at month 1 of construction, and stops counting at the last month of construction. This is helpful to employ because your construction schedule will have certain milestones within it, such as the topping out of the structure, which you will want to refer to in the context of what month of *construction* it is rather than what month # it is in the project.

- The formula here is a conditional statement that refers back to the milestones in the Control Panel. The formula says the following:
 - If the Current Month is greater than the month in which construction ends, return a dash, signifying construction has completed.
 - If the Current Month is greater than or equal to the # of months of Pre-Construction + 1,
 - And If the Current Month is = the number of months of Pre-Construction, then return a 1
 - Otherwise, return Last Month's Construction Month # +1
 - Otherwise, return a 0, signifying construction has not yet commenced.

- This may seem a little bit confusing but we see how the formula works here, as construction month #1 starts in April, which is month #4, as designated and calculated in our control panel. Construction lasts 4 months, as designated in our control panel, and after the month in which construction ends, month 7, which is July 2010, the Construction Month # shows dashes, which mean that construction has ended.

Construction Status

- In Row 24, we introduce the concept of “Construction Status”, whereby we designate status 1 as being Pre-Construction, status 2 as during Construction, and status 3 as Post-Construction. Once again, we code our timeline in this additional way because many of our costs will be driven off of the current phase of construction as we move through the model. The formula used here refers to the designations we made in the control panel. It says the following:
 - If the Current month # is less than the month # in which construction starts, code this month a 1;
 - If the Current month # is greater than the month # in which construction ends, code this month a 3,
 - Otherwise, code this month a 2.

Cell Reference Locking

- You will note in this formula that I have introduced the cell reference locking function, which is activated and signified by dollar signs in front of either or both of the row or column coordinates.
- Let's take a second to make sure we understand the power of this function in Excel.
- Note that when you reference a cell in a formula without doing anything special, that cell reference is a *relative* coordinates reference, that is, the formula points to that cell based on where that cell is located on spreadsheet relative to the cell in which the formula itself resides.
- You can see this by simply looking at cells F22 and G22. When we copied over the formula from F22 and pasted it into G22, the new reference in G22 is F22, not E22 as it was previously.
- For Row 23, we want the formula to always reference the same two cells in the Control Panel, so what we want to do is “lock down” the reference in the formula so that it is not a relative reference but rather an absolute reference. We can do this by either typing dollar signs in between the Row and Column coordinates, or by placing our cursor in between the Column and Row coordinates and hitting the F4 button until the formula shows dollar signs in front of both the Column and Row coordinates. We then do this in all of the other places where we want to retain this absolute reference, and then copy the formula across the timeline.

Calendar Year

- The last row, Row 25, is simply a coding of each month with respect to which elapsed year it belongs so that when we want to summarize data by year, we can do so easily by writing a formula to check that row to see to which year each month (or each column) belongs. The formula introduces the ROUNDUP function and says the following:
 - Round up the quotient of the current month divided by 12, to the tens place. For example, for month 1, $1 \text{ divided } 12 = 0.083$, which rounded to the tens

place, is 1.0. You will notice that the formula returns a 1 for all of the first 12 months, and a 2 for the year starting in month 13.

Development Fee Example

- Now that we have all of this under our belts, let's take a look at an example of applying a conditional statement to allocating one of our soft costs, the Development Fee, over the life of this hypothetical project.
- Assuming we are paid our development fee only during construction, and that we are paid the fee evenly during the construction period, we can set up a formula to check to see if the current month is coded Construction Status 2, as being a Construction month, and then have the formula consequently return the right value.
- This is shown here in Row 29, whose formula says the following:
 - If the Current Month is Construction Status 2, take the total Development fee and divide it by the number of periods of construction;
 - Otherwise, return the value 0.
- Note that we employ the cell locking feature here when referring to Cells C11 and C29, and also note that the Development Fee is spread over evenly only the months of construction, as shown here in construction month 1, 2, 3 and 4.
- When you're ready to move on, click on the Sources and Uses of Funds tab.