**Learning Objectives: Part 1: Understand and develop the Weighted Average Cost of Capital (WACC) for Campbell Soup. Use that WACC in a discounted cash flow (DCF) analysis. Perform sensitivity analysis on a DCF analysis. Part 2: Write VBA code to develop a “real world” retirement analysis.**

**Excel objectives; Use of Index and Match Functions, Max in an Array function, sensitivity analysis, regression analysis, VBA, analyze output.**

**BEFORE YOU BEGIN, Please write this formula in Cell AA5 in the Beta Computation Worksheet. =MAX(IF(N2:N241<=X5,N2:N241))**

**Before you begin: Please use the “Replace\_Data\_Debt\_Detail” FILE and simply copy columns A through P into your Case file.**

**Instructions for completion:**

**Part 1**

It is assumed that you have watched the WACC videos prior to beginning this case. This homework will not explain in details any theoretical knowledge or models. That is the purpose of watching the videos.

**Your starting file should be what you submitted for Case 3, but corrections from Case 2 MUST be made prior to beginning your work!**

If you want to see where I got the data for MV Debt, you will need to examine firm 10-Ks. There are two ways to do this: Using “interactive data” and using “Documents.” For most items, use “interactive data”; when you need to use “Documents” it will be noted in the instructions below.

How to access 10-K’s:

Go to [www.sec.gov](http://www.sec.gov)

Go to “Filings” and then in the drop down menu, select “Company Filing Search”

Company name: Campbell Soup (note: there is no apostrophe in the name).

Click on the first CIK; Then on the next page, under filing type, enter 10-K.

Select the 10-K filed on 9/24/2020.

Notice the 2 formats: Documents and Interactive Data

WACC issues: In the videos: I show you how to compute WACC using 2016 as “your time 0”.

Your case should be completed with 2020 fiscal year end as your “time 0”. “Time 0” will be the date of the 10-K (August 2, 2020). The filing date of 9/24/2020 is when Campbell Soup uploaded the file, the date of the 10-K is August 2, 2020. You can see this on page 1 of the 10-K (viewable under the document format). Therefore, the data you use for this analysis should be as of this date (or the closest PRIOR date).

The “basics” of case #4 are similar to what is in the video, but you will need to complete this analysis for a different year!

**Instructions continued on next page**

**I provide “numbers only” files for both. They are listed here in this assignment tab as:**

1. **“Three\_Statement\_Model\_Valuation\_Student\_Version\_For\_Week\_10\_Numbers\_Only.xlsm” (Matches what is in the videos).**

**What is in the week 10 excel files has NOT been updated (there were a few typos in the videos, but these have been corrected in the ABOVE file with “UPDATED” in the file name!)**

**B) “Case\_4\_Numbers Only\_Spr\_2021.xlsm”**

**Worksheets that you will need for Part 1 of this case.**

WACC and Growth

MV Debt & YTM

Debt Details

Required Return Equity, Re,

Beta Computation

DCF Analysis

Part 1: Compute WACC, use this WACC in the DCF analysis and perform some sensitivity analysis

**Details of work necessary; Any cell in grey needs a formula**

**Please watch the videos for week ; this will help you greatly!**

1. “MV Debt and YTM” and “Debt Details”

This worksheet contains bond prices and YTMs for Campbell Soup debt. You need to obtain the price and YTM on the date closest to, but not after your time 0.

In “Debt details”, keep cell W2 as 8/2/2020 at 11:59:59 p.m. You will be pulling bond prices and yields for all of CPB’s debt as of this date (or the closest date PRIOR to this date). The bond prices and yields in this worksheet are for Campbell’s long-term debt.

In T8 through T19 use an array function along with MAX and IF statements by comparing cell W2 to Column N (the entire series of data in Column N) and by comparing S8 (or S9 or S10, etc) to Column Q. For example, for the bond with symbol “CPB.GA”, the maximum date (of bond trades) prior to 8/2/2020 is 7/29/2020 at 11:31 a.m.

**Instructions continued on next page**

In Cells W8 through X19, use a series of INDEX and MATCH functions to pull the PRICE and YTM for the bond in Column S at the date/time in Column T

In “MV Debt & YTM” check that P7 through P18 and S7 through T18 “pulls” the data from “Debt details” (Columns T, W and X).

In this worksheet, you will be computing a weighted average YTM to use as “Rd” in the WACC equation. You will compute a weighted average YTM for long term debt, short term debt, and then you will combine that into a single YTM.

In the area from F6 through J28, place formulas only in the gray cells. The data in columns A through E have been pulled from the company 10-K (see video for more detail). These are the book values of each piece of debt. You need to compute market values of debt. The easiest way to do this is to take the book value and multiply that by the price. Example: if the book value of the debt is $300 million, and the price of one bond is 103.50, the market value will simply be $300 x 103.50/100 = $310.50 (recall that the prices are stated as percentages; this is why we divide by 100). Once you have the market values, you can compute the weight that each piece of debt comprises in the totals. Take the weight and multiply it by that bond’s YTM, and sum that column (Column J).

Ignore capital leases and other in the calculation of market value of debt.

For short term, debt, you will work in cells A46 – I48. I’ve put the YTMs in this section for short term debt. Assume that the market value of short term debt is equal to its book value; therefore assume the “price” for each piece of short term debt is 100.

Finally, make sure the area from A60 to E65 calculates the weighted YTM correctly. Note: Yields should appear just as a regular number, not a decimal. We will later divide by 100.

NOTE: There was an incorrect formula in the video on SUMs ---the file posted **with this assignment** (for the solution that goes with videos) is posted!

**Instructions continued on next page**

1. Required Return Equity, Re and Beta computation

In the Required return equity, Re worksheet, you will see “pieces” of the Capital asset pricing model equation. In addition, in Cells B4 and B5 you will find a “drop down menu” for the period of time over which beta needs to be computed, and a selection of the market index you should use. Please select 60 months and S&P.

In cell B8, you should hardcode the 30-year treasury rate estimate of 2%. O Please change the label in D8 to indicate the date and source. In Cell B9, you need to write a nested if statement that will pull the correct beta (from the beta worksheet) based on any combination of the drop-down menus in B4 and B5.

Those choices include a 60- or 120- month beta, and a market return which is either an equally weighted (EW) return for all stocks, a value weighted (VW) return for all stocks, and the S&P 500 return. So B9 should populate the betas computed in the beta computation worksheet that corresponds to these possibilities.

The market risk premium should be 5.6% according to Pablo Fernandez 2020 study.

1. Beta computation worksheet

You will be computing a 60- month beta and a 120- month beta which will be “fed” into the Required return of equity, Re worksheet). Before you begin, carefully examine the formulas in O2 through V241. Notice the formulas are currently returning #VALUE cells for some cells. Once you complete the formulas in this sheet, the returns that you will need will populate, and the ones you do not need will remain blank.

**Make sure all cells have a formula!**

We need our last return to be the one from 7/31/2020.

Please use the “EDATE” function in Cell X12 as follows: =EDATE(X13,-X7+1). This should return 8/31/2015 as the first return in the 60-month series.

Use the “EDATE” function in Cell X15 as follows: =EDATE(X13,-X8+1). This should return 8/31/2010 as the first return in the 120-month series.

In Cell AB5, pull the closing price from Finance.Yahoo.com for Campbell soup on 7/31/2020 (the closest date to the 10-K).

Now using the slope function and the data in columns O through V, compute betas in W19 through X24. Make sure you reference ALL rows (**2 through 241**) in the slope function so that your betas will work if you change the # of months. You may want to test this! Go back to Required return, equity Re worksheet and make sure it is all working!

**Instructions continued on next page**

1. WACC and Growth

Pull the data necessary (listed in the labels) so you can compute WACC. Make sure everything you “pull” is as of your time 0 (data of 10-K or the latest date prior to this date). Write formulas in B6 through B17; put 0% as your growth rate; all other items are referencing (pulling) data from other sheets. The shares outstanding you need at those from the balance sheet, not weighted!

1. DCF Analysis

Change your terminal value formula (Cell F15) to reference the WACC that is now computed in the WACC and growth sheet. Also reference the growth rate in the WACC and Growth sheet. Change your formula for value of the firm (Cell D19) to reference the new WACC that you just computed. Change your debt value in cell D20 to the market value of debt (pull from WACC and Growth) LESS the 2020 cash balance (from the balance sheet)!.

Recall for case #2: You hardcoded the growth and WACC (for terminal value and value of the firm). You also used book value of debt less cash as proxy for market value. We are updating this now!

1. WACC and Growth

Using What if analysis, do a sensitivity analysis on the stock price if you were to change the growth rate and the WACC. This should be done in WACC and Growth. The placement of the table is already in this worksheet, so use the WACCs and growth rates already there.

1. Analysis Write-up

Please write a page (approximately 2 – 3 paragraphs) analysis of the sensitivity analysis on WACC and growth. What does this analysis tell you? How sensitive is your analysis to changes in these inputs? If you were an analyst for Campbell Soup, would you issue a BUY, SELL or HOLD recommendation? Explain your rationale.

**Instructions continued on next page**

**Part 2**

Use the file named “VBA\_Macros\_Examples\_Student\_Version.xlsm

**Worksheets that you will need for Part 2 of this case:**

Retirement

Instructions: Replicate the VBA code shown in the videos for Week 15. In order to do this, you must also replicate the worksheet named “Retirement.” You need to test your code as shown in the videos with Z = 0.

Once your change the value of Z, your values will not match the numbers in the videos!

**Submission information:**

**You will submit 3 files (an Excel file and a Word file for part 1 and an Excel file for part 2)**

**Part 1 Excel**: **For cases, only one person per group will submit! Please name the file upon completion:**

**Case\_4\_Group\_number.xlsm**

**If you are group 3, your file should be named**

**Case\_4\_Group\_3.xlsm.**

As with other assignments, anything in gray needs a formula unless otherwise stated above. Given the new corporate tax rate, use 25% for the corporate tax rate (an estimate of federal plus state).

**Part 1 Write-up:**

For the analysis file: Name your file as follows:

**Case\_4\_Group\_number.docx**

**Part 2 Excel:**

For the retirement VBA code, name your file as follows:

**Retirement\_Case\_4\_Group\_number.xlsm**

**REMINDERS:**

Remember to name your files as indicated above!

Save both excel files as macro enabled files!

**END OF INSTRUCTIONS**