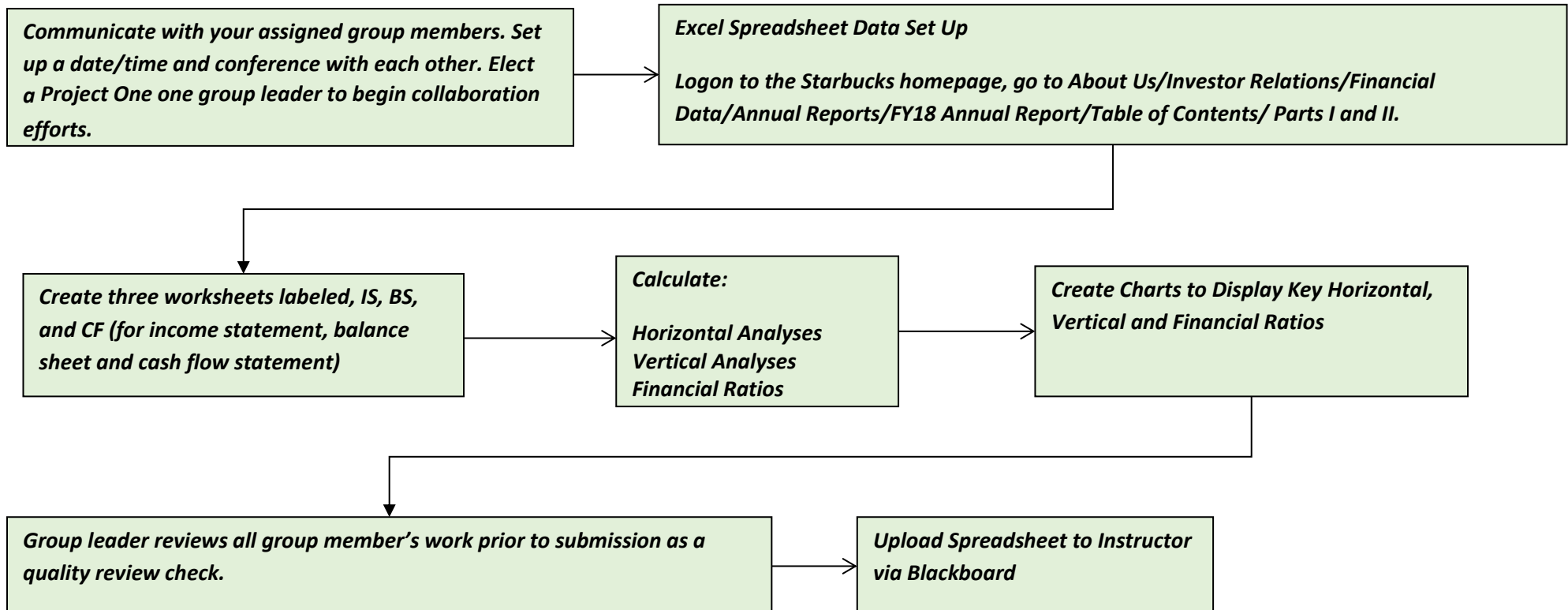


Appendix B, Process Flowcharts

Project One Process Flowchart of Tasks



[Click Here to Go back to Project One](#)

Project One: Create Excel Spreadsheet, Financial Analysis

In this first Project, you are going to work with excel spreadsheets to become familiar with the financial information published by Starbucks.

Project One Objectives:

1. Demonstrate an understanding how to use various features of excel.
2. Understand financial analytical tools to help make business decisions.
3. Demonstrate an understanding of various types of accounts public companies utilize.
4. Demonstrate how to organize data.

Project One Requirements:

1. Collaborate with other students in groups.
2. Excel spreadsheet data set up.
3. Horizontal and vertical analysis.
4. Financial ratio analysis.
5. Chart results.
6. Individually upload the document via Blackboard.

Requirement #1: Collaborate with Group

Students will continue to collaborate within their assigned groups to complete this Project, but the work product will be graded individually. You are to elect a new group leader to centralize group communications and reviews.

Requirement #2: Excel Spreadsheet Data Set Up

You need to gather the Income Statement, Balance Sheet and Cash Flow Statements for the past three years, which are contained in Starbucks's Form 10-K filings. A Form 10-K is an annual report that is filed with the [Security and Exchange Commission](#) (SEC). To locate these filings, logon to the [Starbucks homepage](#), scroll to the bottom and you will see a section labeled "[About Us](#)" in the lower right hand corner. Under that section, you will see a link to "[Investor Relations](#)". That link will direct you to the Starbucks Investor Relations page. In the menu across the top of the page, you will see a link labeled "Financial Data". When you hover the mouse over it, a Financial Data pop-up will appear. Select "[Annual Reports](#)". Right hand corner, you will see the latest year annual report. In our example, it states "[FY18 Annual Report](#)" (note: you will start with the latest published year available). When you click on this link, you will see the big Starbucks logo in the middle of the page and a Table of Contents in the left hand column. The Table of Contents contains Parts I-IV. Concerning our project, we focus on Parts I and II. Below is a pictorial version of how to navigate to Starbucks's Form 10-K and its Parts I and II:

Requirement #3: Horizontal and Vertical Analysis

Horizontal and vertical analysis will allow you to begin analyzing the data in each financial statement. These techniques are part of analytical procedures. If you have never performed a horizontal or vertical analysis of financial statements, the textbook provides an example. I also created a video that is uploaded into the Term Research Paper webpage that walks you through the process.

Video examples of Horizontal and Vertical Analyses in excel:

The following are links to several good videos that walk you through the horizontal and vertical analysis process.

<https://www.youtube.com/watch?v=-38sm1dzvxw>

<https://www.youtube.com/watch?v=IwCuw2Rx7v4>

<https://www.youtube.com/watch?v=Ja-boNILdb8>

Requirement #4: Financial Ratios

Using the data in the Income Statement, Balance Sheet and Cash Flow Statement you developed, you are to independently calculate all the ratios on the following table labeled **Required Common Ratios to Calculate**, for each year, over at least a two to three year period (depending on the ratio). These common ratios are found in most accounting textbooks. Ratio analysis looks at the relationships of the different parts of financial statements. Combining horizontal and vertical analyses with ratio analysis provides powerful analytical tools to expose areas of risk for decision makers. The reason that you should calculate these ratios over at least two to three years is two-fold. First, you will begin to see more meaningful patterns beyond horizontal and vertical analyses. Second, you will use the data to create charts to visualize the patterns side by side with other ratios.

Required Common Ratios to Calculate

Three Liquidity Ratios:	Formula	Ch.	Youtube video
Current ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	2	https://www.youtube.com/watch?v=BCaoQNkeoy0
Inventory turnover	$\frac{\text{Cost of Sales}}{(\text{Beginning Inventory} + \text{Ending Inventory})/2}$	6	https://www.youtube.com/watch?v=HqVWTzeVQBU
Receivables turnover	$\frac{\text{Net Sales Revenue}}{(\text{Beginning Receivables} + \text{Ending Receivables})/2}$	8	https://www.youtube.com/watch?v=Iz45aaYwnMk
Two Solvency Ratios			
Debt to total assets	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$	2	https://www.youtube.com/watch?v=vf-g51Br_l0
Debt service coverage ratio	$\frac{\text{Cash Flow from Operations}}{\text{Total Liabilities}}$	2	https://www.youtube.com/watch?v=MrlqbSDsSig
Four profitability ratios			
Gross profit margin	$\frac{\text{Gross Profit}}{\text{Net Sales}}$	5	https://www.youtube.com/watch?v=e2DI6B7BWzs youtube.com/watch?v=e2DI6B7BWzs
Profit margin ratio	$\frac{\text{Net Income}}{\text{Net Sales}}$	5	https://www.youtube.com/watch?v=uYM2YnwO-20
Return on assets ratio	$\frac{\text{Net Income}}{(\text{Beginning Assets} + \text{Ending Assets})/2}$	9	https://www.youtube.com/watch?v=fXNxXOB2CYk
Asset turnover ratio	$\frac{\text{Net Sales}}{(\text{Beginning Assets} + \text{Ending Assets})/2}$	9	https://www.youtube.com/watch?v=t0nHVLq4Fzk

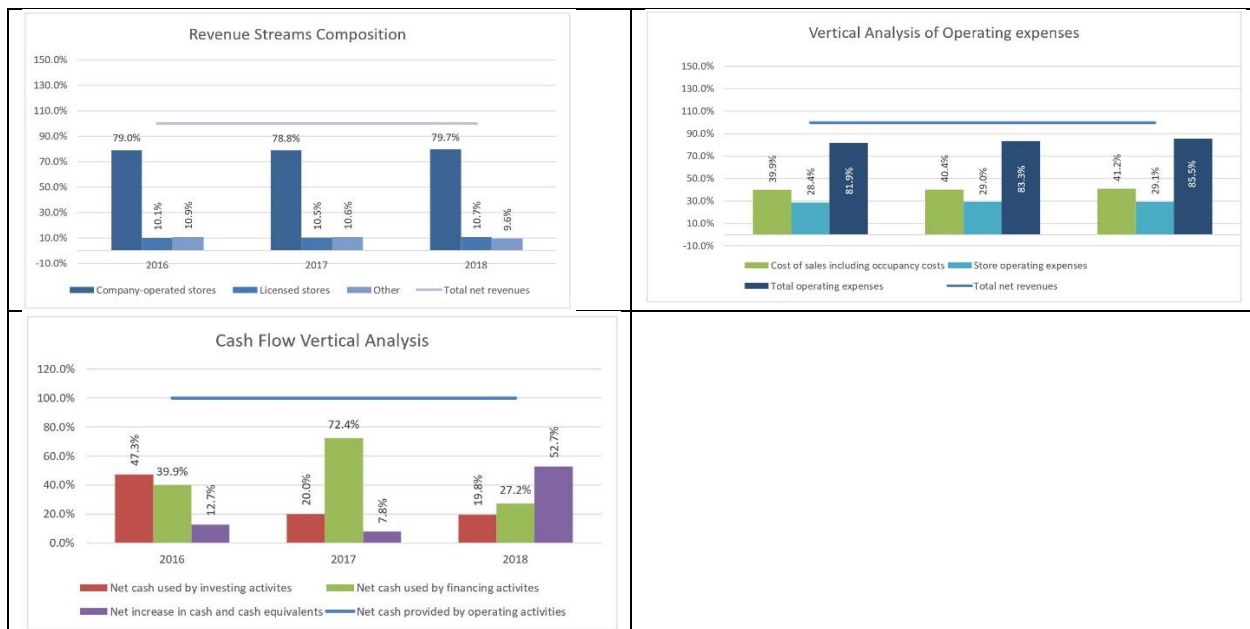
You are encouraged to use any other ratios that you deem may be useful to your analysis. I uploaded a video into the Term Research Paper webpage walks you through the ratio analysis requirement.

Requirement #5: Charting Results

You are required to chart the results of your vertical, horizontal and financial ratios. To create as few charts as possible, while still retaining the ability to analyze them, this exercise is simplified. Charting every line item in the income statement, balance sheet and cash flow statement in separate charts is a lot of unnecessary work. The volume of charts that you would be producing would make it very difficult to analyze data.

For horizontal analysis, create a two-dimensional line chart over three years and for the vertical analysis, create one bar chart over three years for each of the following balance sheet categories: current assets, long-term assets, current liabilities, long-term liabilities, and cash flows from/used by operating, investing and financing activities. For income statement items, group the different streams of revenue, and group the different categories of operating expenses. For cash flow items, separate cash flows from operating, investing and financing activities. Do not try to chart each line item within the operating, investing and financing activities (that level of analysis is outside the scope of this exercise).

The following charts are samples of vertical analysis:



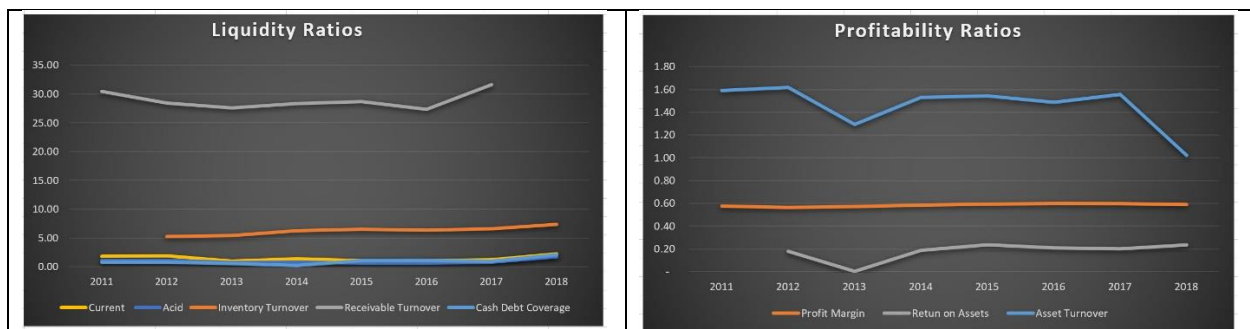
The following charts are samples of horizontal analysis:



For ratio analysis, group ratios by liquidity, solvency and profitability ratios and create two-dimensional line charts over two or three years for each category, depending on whether the ratio you created covers a two or three year period. Whatever you present, it has to be readable and clear to other users of the information that you produce. Placing more than three or four ratios on one chart over at least three years starts to look a little busy. Make sure you space them adequately for easy reading. If your ratios are too busy looking, your group mates should let you know so you can redo them before submission.

Visually, there is a difference between the charts you create for vertical, horizontal and ratio analysis. The vertical analysis will produce a chart for each year for each group of items analyzed, as opposed to the horizontal and ratio analysis which will produce one chart for all the years for each group of items analyzed.

Make sure that your all graphs have meaningful labels, which will include years and appropriately spaced number increments on the y-axis to avoid bunching of lines. Below are some samples of visual representations of how your bar charts and two dimensional charts should appear over the three years:



This is a sample of a two-dimensional chart that has line bunched together (the bottom two lines sit on top of each other too much), something you want to avoid.

This is a sample of a two-dimensional chart that has lines separated nicely, something you want to present.

Required Charts to Create

<i>Required Charts to Create</i>				
Financial Statement	2-yr Horizontal Analysis: Two-Dimensional Line Charts	3-yr Vertical Analysis: Bar Charts		2-yr/3-yr Ratio Analysis: Two-Dimensional Line Charts
Balance Sheet	- Current assets. - Long-term assets. - Current liabilities. - Long-term liabilities.	- Current assets. - Long-term assets. - Current liabilities. - Long-term liabilities.		- Liquidity - Solvency - Profitability
Income Statement	- Group the different streams of revenue. - Group the different categories of operating expenses.	- Group the different streams of revenue. - Group the different categories of operating expenses.		
Cash Flow Statement	Cash flows from/used by operating, investing and financing activities (separate cash flows from operating, investing and financing activities).	Cash flows from/used by operating, investing and financing activities (separate cash flows from operating, investing and financing activities).		

If you do not know how to work with charts in excel, go through excel tutorials found on YouTube to create and edit charts. There are dozens of videos that have been created.

Video examples of charting in excel:

<https://www.youtube.com/watch?v=3MUMOesp3fg>

<https://www.youtube.com/watch?v=b0EB7i8gJ4g>

<https://www.youtube.com/watch?v=J-PaQymHkhg>

but not taken full advantage of. As one of my former students once commented, “What we can do as a team is to share tricks and effective way of doing things in excel.”

Q14: *Teammates may not work or live near me. Can't I do the project by myself?*

A14: This is part of time management in group work that is crucial in the work force. In the business world, there is a growing trend that your colleagues at work often do not work or live near each other. This project gives you an opportunity to explore better ways to deal with distance issues within your group to align the pace of each group member more closely. Although almost impossible to achieve total pace alignment, it is skill that needs to be developed in order to help make better business decisions.

Additional Questions Concerning Project One: Spreadsheets and Data

Q15: *I may have underestimated the magnitude of data we would be analyzing. Do I really have to analyze all this data?*

A15: This is often the case with these types of projects. However, many jobs requiring interaction with accounting functions are underestimated in terms of time and commitment. This project helps to expose this reality to newbies to the accounting world, and reinforcing it with the more experienced accountants.

Q16: *For Project One, can I use ratios other than the ones that are required?*

A16: You have to calculate the required ratios. This allows your group members to discuss outcome where everyone can participate in a discussion. You are allowed to calculate other ratios if you believe they are interesting to you.

Q17: *Starbucks reported \$750.9 for other long-term liabilities in 2017 for the balance sheets in 2018 form 10-k, and \$755.3 in the 2017 form 10-k. Which amount should we use?*

A17: This is always an interesting observation. When comparing the 2017 and 2016 financial statements, data on some balance sheet accounts are different for the same line items. In other words, the ending balance for some balance sheet accounts reported in the 2016 10-K did not carry over to same 2016 balance sheet accounts reported in the 2017 10-K. This is not an infrequent occurrence. Here is an example to help you understand this phenomenon. Let us say that ABC Company's form 10-K for 2017 may report accounts receivable for \$10,000 in 2016 and \$11,000 for 2017. However, for the 10-K filed in 2018, the 2017 accounts receivable may be reported at \$10,900. There is an obvious discrepancy between the reported amounts for the same year.

Therefore, for analytical purposes, a question arises. Which figure is the correct figure to use when analyzing a company? Should you use the originally reported figure in the earlier year, or use the adjusted reported figure in the later year? I have no definitive answer. It is probably worth an academic article to research. However, there is some guidance to help you understand why that phenomena occurs. In the Term Project Folder,

you will find an article, "A Closer Look at Financial Statement Restatements", which explains these phenomena and will help you make a final decision on what numbers to use.

Two schools of thought come to mind to decide what number to use. Some people may argue to use the original figures because these were the figures reported at the time investors/creditors made decisions. Others may argue that although at the time that investors/creditors made decisions, adopting that thought process waters down the predictive value of the financial statements. In the end, as someone making a business decision, you have to make the choice which figures you are using and if ever called into question, defend your decision. Reading through the article may help you understand how to potentially defend a decision. One could argue that there is no right or wrong answer, just preference anchored to a purpose.

This may not be the answer that you may want to hear, but not everything is clear cut in accounting.

Q18: *It would have been beneficial to download the Financial Statements in excel format. That would have saved plenty of time. However, I do believe by entering the data we became more familiar with the accounting terms.*

A18: It would have been beneficial to download an excel file containing the income statement, balance sheet and cash flow statement. However, doing so impedes most people from developing familiarity with public firm's actual accounting classification terminology, especially newbies to accounting who do not deal with public company data on a regular basis. Transferring data manually to develop familiarity is one of the primary purposes of Project One. As one of my former students once commented, "You need to touch and feel the numbers, build the statements, and it makes you want to understand your creation."

Q19: *I found creating the charts a bit difficult as I haven't done that exercise in a long time. Do I really have to create charts? I never use them in my current job.*

A19: As far as the charting is concerned, it is critical that you learn data visualization. Besides excel, I encourage you to learn the basics of Microsoft Power BI and Tableau. At the Data and Analytics conference sponsored by the American Accounting Association in June 2019, there were 263 accounting professors there from all over the country and internationally. All of them were learning the latest in data gathering and visualization techniques. These techniques are being incorporated in accounting and business programs at a faster and faster rate. High level managers from EY and Deloitte were also present and all they talked about was the pressing need for their employees to be able to visualize data. This is the future of accounting and business. Graphing in excel should be second nature to you. If it isn't, make it so. It has become a basic skill almost every employer will demand of you.

Q20: *For the charts in Project One, can I use whatever type of chart that I want?*

- A20:** This is a common question regarding charting. Which type of chart should you use? For horizontal and ratio analysis, two-dimensional (2D) line graphs are effective visualization tools. For vertical analysis, bar graphs are effective visualization tools. However, it is important that lines are not bunched together in your chart.
- Q21:** *When I create a two-dimensional line chart for horizontal and ratio analysis, my lines are bunched together (one line appears to sit on top of another line), and I cannot clearly see which line is which.*
- A21:** To avoid bunching of your lines in the chart, you have to increase the increments between numbers on the y-axis of the chart. For example, instead of labeling numbers on the y-axis 1, 2, 3, etc., consider labeling them 1.5, 2.0, 2.5, 3.0, etc. If that does not work, label them with even greater increments until the lines do not sit on top of each other.
- Q22:** *Why do I have to submit Project One on an excel spreadsheet and not a pdf file? I am good converting excel spreadsheets into pdf's.*
- A22:** An excel spreadsheet will contain the formulas and other information that you used to create your spreadsheet. When converting to a pdf, the audit trail of how formulas were used and how they tied into other areas of the spreadsheet is lost. Some students attempt to create a pdf from an excel spreadsheet, but do not possess the skill to do so and formatting is off. The most common problems are the data is cut off from one page and does not appear on another, or data bleeds into other pages without appropriate column headings to understand what the data relates to. In order to avoid readability issues, only an excel spreadsheet is acceptable. While it is appreciated that some students may have knowledge to properly format an excel spreadsheet so it is readable in a pdf, an audit trail must be maintained.