



Interactive Financial Statement Analysis

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Instructor Handbook

The Interactive Financial Statement Analysis Module: Instructor Handbook

The IFSA module is a teaching system with four major goals:

- Developing familiarity with the contents of company financial reports, including what is in what statements the terminology employed
- Developing an understanding of the conceptual framework through which financial information can be analyzed
- Developing an understanding of how ratios and other measures of performance are calculated and, finally,
- Learning how they are used to evaluate and compare company performance

The module provides built in resources for instructors, simplifying the task of assigning problem sets and exams, and grading student submissions. While it is straightforward to produce your own problem sets and assignments, we provide two data sets. One is available for students to practice on, and the second is a test bank that you can assign.

The module has two distinct elements:

- The “exploratory” element
- The “construction” element

The exploratory element lets students explore actual company filings as well as concepts. We cover the filings of more than 3500 companies at the time of this writing. They can examine the reports and plot time trends. They can explore differences between 10-Q, 10-K's, and 10-F's. They can conduct common size analysis. Conceptually, they can explore concepts, investigate what they mean, and learn how they are used. We divide the concepts into two categories: line items, which are reported by companies, and calculated concepts, such as ratios, that are used to evaluate and interpret the data. The exploratory capabilities also serve as a glossary and quick reference.

The construction element requires students to integrate the theory and the practice. We think of this as “taking the practice to the theory.” This makes the relationship between the conceptual framework and the practical application very concrete.

Another important feature of the module is that it allows for self-study. Students can repeat exercises as many times necessary. The built-in information system provides ready access to the meaning of terms and concepts. For example, “concept mode” lets them learn how different measures are calculated, both in theory and in practice.

The layout and table of contents are:



Key Features:

- Unique integration of theory and practice
- Develops the conceptual framework for FSA
 - “Concept check” feature allows students to test their understanding
- Uses real world financial statements
 - Lets student explore and understand the content of financial reports
 - “Self Assessment” feature lets students test their ability to calculate ratios from the actual filings of companies
 - Tremendous ability to practice with the statements of different companies
- Enhances and retains student interest
- Improves course management and teaching efficiency
 - Simplifies grading of homework and exams
 - Empowers the student and reduces tutoring time
 - Allows clear assessment of learning

Teaching with the IFSA module

You can use the module to accompany an existing textbook or use it with your own lecture notes. We have laid out the conceptual development in a particular order, but the system is designed so that each topic is self contained. We also provide a summary definition of each concept, both online and in the Student's Guide.

The Student' Guide describes features of the module, including:

- how to view financial reports, understand line items, how certain line items are calculated, and common size analysis;
- how to take data from filings to conduct profitability analysis, analyze operations, risk, earnings quality, and finally price ratios.

In this guide, we describe the instructor-specific features only.

Applicable Courses

You can use it in any course that requires the analysis of financial statements, including:

- Financial Statement Analysis
- Corporate Financial Reporting
- Corporate Finance
- Managerial Finance
- Investments
- Financial Accounting
- Managerial Accounting
- Security Valuation

It can be used in conjunction with your existing textbook, with our student guide as a practical “how-to” accompaniment. You can use very specific parts (e.g. “conduct a DuPont Analysis”) or use it to comprehensive fundamental analysis of a company and compare it to others.

Using the Self-Assessment Dataset

In terms of a course, the Self-Assessment Dataset is simply a collection of worked examples. Students can work through these at their own pace, and analyze several different companies. The Student's Guide has a description of how to use this feature. The web site www.FSAmodule.com has videos explaining how to use the self-assessment to learn.

Using the test bank

The test bank dataset is available (on request) for instructors, and is not meant to be distributed to students. It contains complete constructions (“solutions”) for a set of companies. You would simply assign one or more topics and one or more companies covered in this dataset. The students would construct their solutions and submit them to you (through whatever means you use for electronic submission, such as a course management system or email). You simply put all student files into a folder

on your computer. On the Instructor tab, read in the solutions in the test bank dataset, specify the folder with the student submissions, click a button, and get a report on what every student did correctly or incorrectly. You can compare final results only or get a detailed report on everything the students did in their submission.

Creating and Assigning your own worked examples

This is easy: pick a topic (or multiple topics), select one or more companies, and go through the construction as described in the How To and the Videos on this site. Save your work in a file, and distribute the file to your students, by email, posting it on a web site, or through a course management system like Blackboard. Students read in this “Self-Assessment” file, and then work through the problem as many times as they need and with as much or as little help as they want.

With the unique drag-drop constructions, it literally only takes a few minutes to create a data file. Also, the creation is cumulative, so if you have already constructed some variables, you can re-use those that are needed by a new topic.

Creating your own test bank

This is simple: construct your file as with a worked example, but don’t distribute it to students. Then, read it in as the solution file and evaluate the student submissions against it, just as you would do with our test bank file.

Creating and Assigning Problems

We show you how to construct your own solutions by working through a complete example. The description here is based on the worked example under the How To section of this site. As in that example, we will use Coca Cola as the company, and work through the topic “Fundamental (Sustainable) Growth.” This topic illustrates some of the main uses of the Cell Editor.

So: select Coca Cola (KO) as the company, and then select the latest 10-K (which at the time of this writing was the Feb 2012 filing), and select Fundamental (Sustainable) Growth as the topic of study:

The screenshot displays the OS Financial Trading System interface. At the top, a dropdown menu shows 'COCA COLA CO (KO)' selected. Below it, a search bar with a magnifying glass icon and a 'Search Tickers' checkbox is visible. To the right, a toolbar contains icons for a graduation cap, left and right arrows, a trash can, a red 'X', a circular arrow, a document, and a lightbulb.

The main content area is divided into two panels. The left panel, titled 'Return on Assets, Return on Equity', lists various financial metrics and topics. The 'Growth' section is expanded, showing 'Fundamental (Sustainable) Growth' selected. Other topics include 'DuPont Analysis', 'DuPont Burden Analysis', 'Analyzing Operations', 'Analyzing Risk', and 'Analyzing Earnings Quality'.

The right panel, titled 'KO', lists various financial metrics and topics. The 'Fundamental (Sustainable) Growth' topic is selected. Other topics include 'Consolidated Net Income', 'Net Income Attributable to NCI', 'Net Income Attributable to Shareholders', 'Average Shareholders Equity', 'Dividends Paid', 'Dividend Payout Ratio', 'Retention Ratio', and 'Return on Equity'.

Below these panels, a 'Filing Date' dropdown menu is open, showing a list of filing dates. The '23 February 2012 10-K' filing is selected. The 'Statement' dropdown menu is also open, showing a list of statements. The '23 February 2012 10-K' statement is selected. The 'Filing Date' dropdown menu is also open, showing a list of filing dates. The '23 February 2012 10-K' filing is selected. The 'Statement' dropdown menu is also open, showing a list of statements. The '23 February 2012 10-K' statement is selected.

Statement	Filing Date	Consolidated Net Income (USD \$)	Net Income Attributable to NCI	Net Income Attributable to Shareholders	Average Shareholders Equity	Dividends Paid	Dividend Payout Ratio	Retention Ratio	Return on Equity	Fundamental (Sustainable) Growth
23 February 2012 10-K	23 February 2012 10-K	10154	8449	732	10154	8449	732	10154	8449	732

We will calculate the ROE and sustainable growth for Coca Cola on the date Dec 31, 2011, which is the latest period in the Feb 2012 10-K filing, as shown, for example, in the Consolidated Statements of Income:

Filing Date	23 February 2012 10-K		
Statement	CONSOLIDATED STATEMENTS OF INCOME (USD \$)		
A	B	D	F
CONSOLIDATED STATEMENTS OF INCOME (USD \$)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2011	Dec. 31, 2010	Dec. 31, 2009
Other operating charges	732	819	313
OPERATING INCOME	10154	8449	8231
Interest income	483	317	249
Interest expense	417	733	355
Equity income (loss) - net	690	1025	781

So: Drag and Drop the Date Dec. 31, 2011 (with the orange background) and drop it into the blue area of the calculator. You should see:

KO	31 Dec 2011
Consolidated Net Income	0.00000
Net Income Attributable to NCI	0.00000
Net Income Attributable to Shareholders	0.00000
Average Shareholders Equity	0.00000
Dividends Paid	0.00000
Dividend Payout Ratio	0.00000
Retention Ratio	1.00000
Return on Equity	N/A
Fundamental (Sustainable) Growth	N/A

You can see the default value of every input field (green background) is zero.

The first field needed is the Consolidated Net Income. This is reported on the income statement, outlined in black here:

Filing Date	23 February 2012 10-K		
Statement	CONSOLIDATED STATEMENTS OF INCOME (USD \$)		
A	B	D	F
CONSOLIDATED STATEMENTS OF INCOME (USD \$)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2011	Dec. 31, 2010	Dec. 31, 2009
Income taxes	2805	2384	2040
CONSOLIDATED NET INCOME	8634	11859	6906
Less: Net income attributable to noncontrolling interests	62	50	82
NET INCOME ATTRIBUTABLE			

So just drag and drop the number into the cell in the calculator, to get:

KO	31 Dec 2011
Consolidated Net Income	8,634.00
Net Income Attributable to NCI	0.00000
Net Income Attributable to Shareholders	8,634.00
Average Shareholders Equity	0.00000
Dividends Paid	0.00000
Dividend Payout Ratio	0.00000
Retention Ratio	1.00000
Return on Equity	N/A
Fundamental (Sustainable) Growth	N/A

Coca Cola reports its Net Income to NCI (Non Controlling Interest) on the next line (outlined in red above), so drag and drop that into the appropriate cell. The calculator now looks as follows:

KO	31 Dec 2011
Consolidated Net Income	8,634.00
Net Income Attributable to NCI	62.00000
Net Income Attributable to Shareholders	8,572.00
Average Shareholders Equity	0.00000
Dividends Paid	0.00000
Dividend Payout Ratio	0.00000
Retention Ratio	1.00000
Return on Equity	N/A
Fundamental (Sustainable) Growth	N/A

Next, we need the Average Shareholders Equity. The average means we take the average of the beginning of year and the end of year values (i.e. the average of Dec 31, 2010 and Dec 31, 2011). The shareholders equity is reported on the balance sheet, so select that statement in a viewer and scroll down to see:

Filing Date	23 February 2012 10-K	
Statement	CONSOLIDATED BALANCE SHEETS (USD \$)	

A	B	C
CONSOLIDATED BALANCE SHEETS (USD \$)	Dec. 31, 2011	Dec. 31, 2010
Accumulated other comprehensive income (loss)	-2703	-1450
Treasury stock, at cost - 1,257 and 1,228 shares, respectively	-31304	-27762
EQUITY ATTRIBUTABLE TO SHAREOWNERS OF THE COCA-COLA COMPANY	31635	31003

We have to calculate the average of 31635 and 31003. To do this, drag them **both** into the calculator cell for Average Shareholders Equity. You should see the following in the calculator and in the cell editor:

KO	31 Dec 2011
Consolidated Net Income	8,634.00
Net Income Attributable to NCI	62.00000
Net Income Attributable to Shareholders	8,572.00
Average Shareholders Equity	31,635.00
Dividends Paid	0.00000
Dividend Payout Ratio	0.00000
Retention Ratio	1.00000
Return on Equity	0.27097
Fundamental (Sustainable) Growth	0.27097

Cell Editor

Viewer

Average Shareholders Equity: 31 Dec 2011

Field	Field Value	Field Date	Filing
EQUITY ATTRIB...	31635.00	31 Dec 2011	23 February 2012...
EQUITY ATTRIB...	31003.00	31 Dec 2010	23 February 2012...

Formula

31635.00

Σ

μ

$-$

OK

The calculator only shows the first value, but both are in the Cell Editor. The calculator actually shows whatever is shown as the *formula* in the Cell Editor. When you drop a value into a calculator cell, the first this you drop becomes the formula. If you drop multiple things, like we have done, you have to edit the formula. You can type in arithmetic formulas, including parentheses, and click OK when you are done to enter the formula value into the cell editor.

Here, we will use the shortcut button, marked μ . Clicking this will automatically create the average and transfer it to the calculator. The result of clicking μ is:

KO	31 Dec 2011
Consolidated Net Income	8,634.00
Net Income Attributable to NCI	62.00000
Net Income Attributable to Shareholders	8,572.00
Average Shareholders Equity	31,319.00
Dividends Paid	0.00000
Dividend Payout Ratio	0.00000
Retention Ratio	1.00000
Return on Equity	0.27370
Fundamental (Sustainable) Growth	0.27370







Cell Editor Viewer

Average Shareholders Equity: 31 Dec 2011

Field	Field Value	Field Date	Filing
EQUITY ATTRIB...	31635.00	31 Dec 2011	23 February 2012...
EQUITY ATTRIB...	31003.00	31 Dec 2010	23 February 2012...

Formula

(31635.00+31003.00)/2

The formula has been adjusted to the average, and the result, 31319, transferred.

Next, we need the field Dividends Paid. These are reported on the cash flow statement:

Filing Date	23 February 2012 10-K		
Statement	CONSOLIDATED STATEMENTS OF CASH FLOWS (USD \$)		
A	B	C	D
CONSOLIDATED STATEMENTS OF CASH FLOWS (USD \$)	12 Months Ended		
In Millions, unless otherwise specified	Dec. 31, 2011	Dec. 31, 2010	Dec. 31, 2009
Payments of debt	-22530	-13403	-12326
Issuances of stock	1569	1666	664
Purchases of stock for treasury	-4513	-2961	-1518
Dividends	-4300	-4068	-3800
Other financing activities	45	50	-2

You can see that Coca Cola reports dividends as a negative number; other companies report this as a positive number. The software expects a positive number, so after dragging and dropping the value to the calculator cell, we have to fix the sign in the Cell Editor; this is easily done by clicking the minus sign in the cell editor; it simply changes the formula to the negative of the formula and adds parentheses. In our case, the result of clicking the minus sign is:

KO	31 Dec 2011
Consolidated Net Income	8,634.00
Net Income Attributable to NCI	62.00000
Net Income Attributable to Shareholders	8,572.00
Average Shareholders Equity	31,319.00
Dividends Paid	4,300.00
Dividend Payout Ratio	0.50163
Retention Ratio	0.49837
Return on Equity	0.27370
Fundamental (Sustainable) Growth	0.13640

Cell Editor **Viewer**

Dividends Paid: 31 Dec 2011

Field	Field Value	Field Date	Filing
Dividends	-4300.00	31 Dec 2011	23 February 2012...

Formula

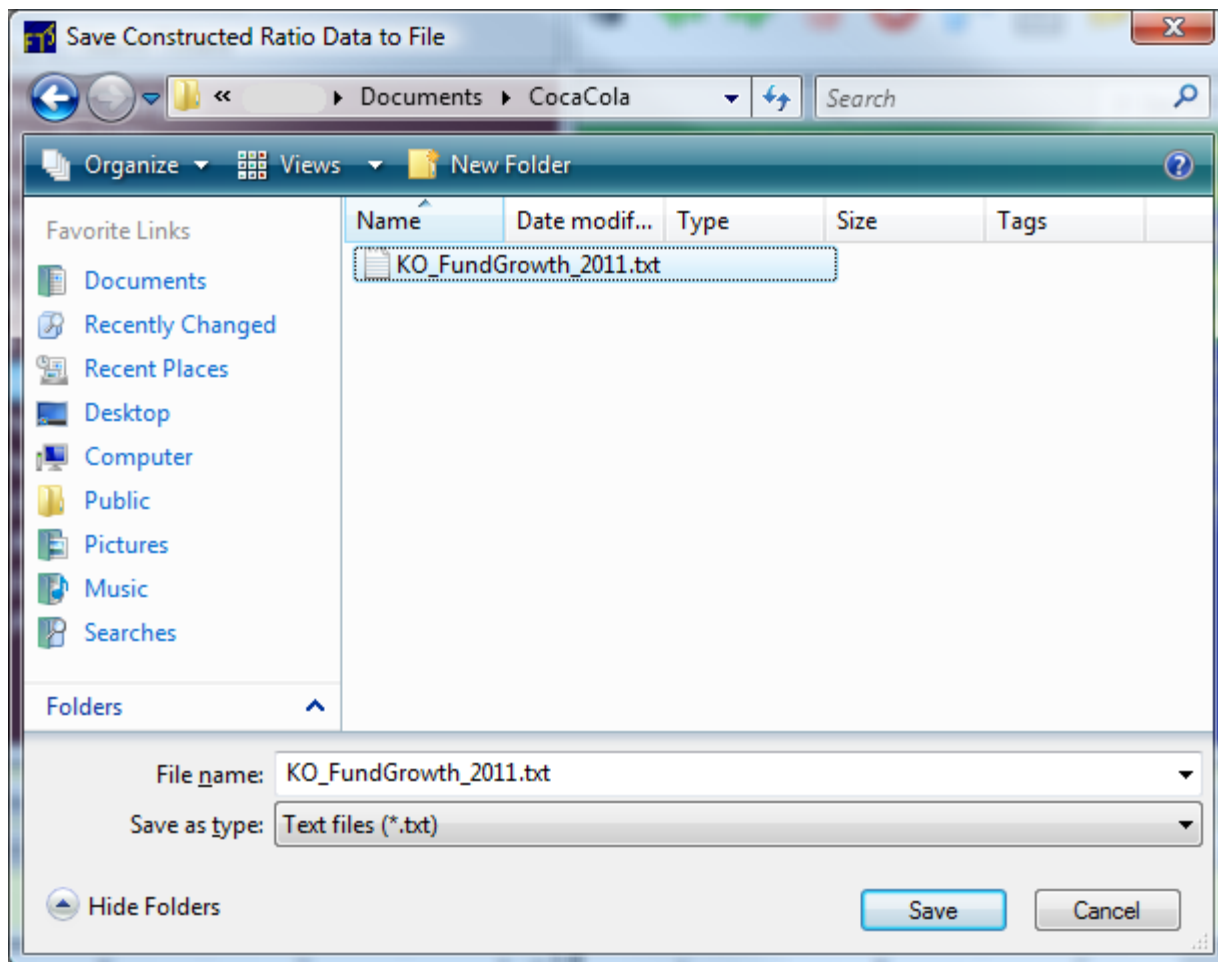
-(4300.00)

And we are done: the sustainable growth for Coca Cola is 13.64%, and the return on equity is 27.37%

Now, save your construction, using either the File menu or by clicking the Save icon in the toolbar:



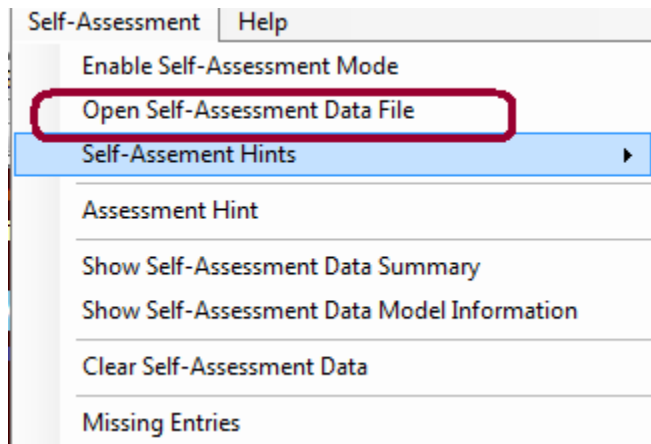
You will be prompted for a file name and will be able to choose a folder where you save the file. For this example, we will save it as follows, where we put in a description of the company and the topic in the file name to be able to easily identify it:



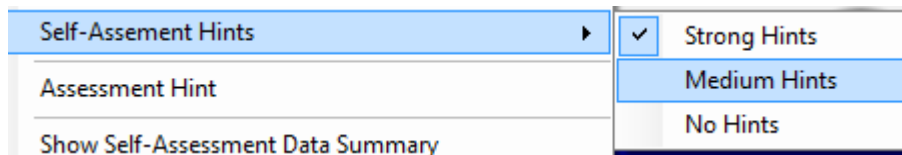
Now, this file with your construction can be used as a self-assessment (equivalently, worked example) file for your students, or you can use it to grade student submissions of the same problem.

Distributing it as a Self Assessment File

To use it as a self-assessment file, upload the file through e.g. Blackboard or other course management software, or email it as an attachment to your class. The students download and save the file, and then open it from the Self-Assessment in as follows:



They can now practice the steps contained in your solution, using different levels of hints:



The steps the students would now follow are described in the How To section of this site.

Using it as solution for grading

This is extensive enough that we describe it in a separate item on this site, Grading under the Instructors menu.

Grading

Grading requires two things:

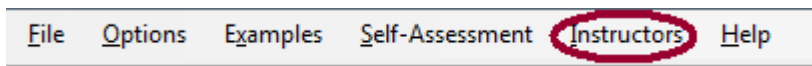
- A solution file (one that you created or the test bank file we provide)
- A folder with student submissions

As an example, we use the file created in the Assigning Problems part of this site, where we created a file called KO_FundGrowth_2011.txt. This file contains our solution.

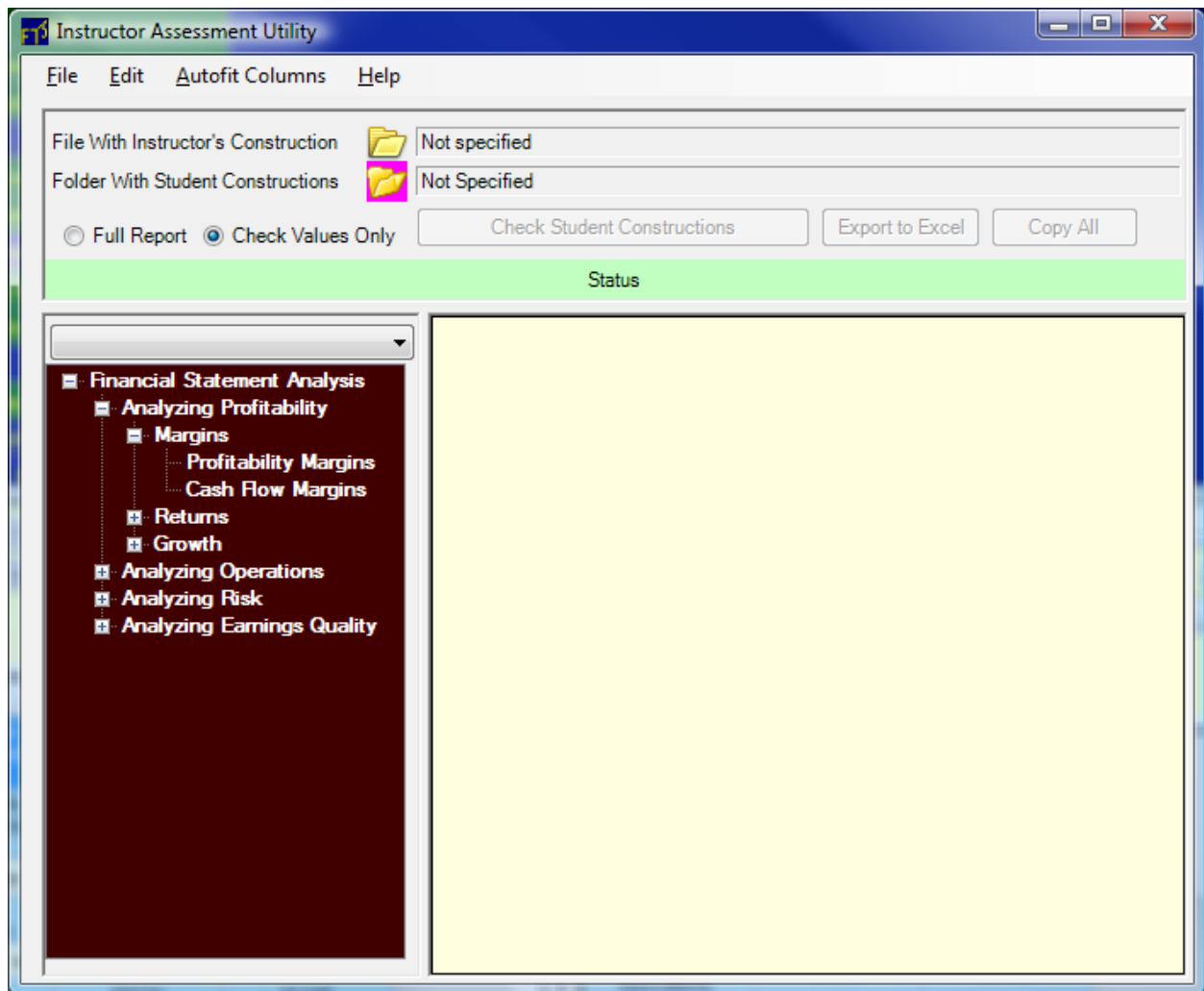
Download the student submissions into a folder; the easiest thing to do is to download them into the same folder where you saved your solution file (the software will be able to distinguish between them, as you will see). If you use course management software, it most likely lets you download all submissions into a folder you select and adds identifying student information to the file name.

For our example, we have constructed two student submissions, called student1.txt and student2.txt and stored them in the same folder as the solution file we constructed.

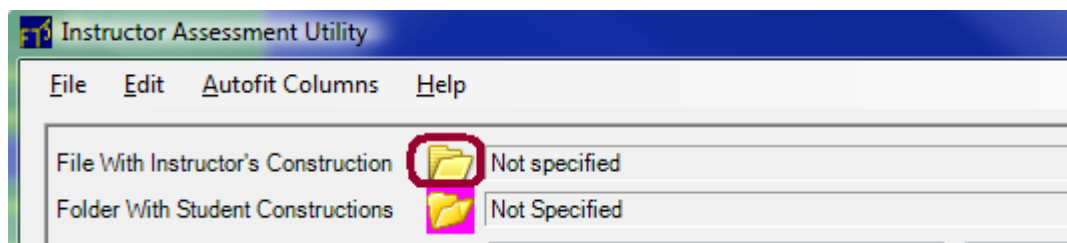
To grade the students, click the Instructors menu item:



The Instructors window will pop up:

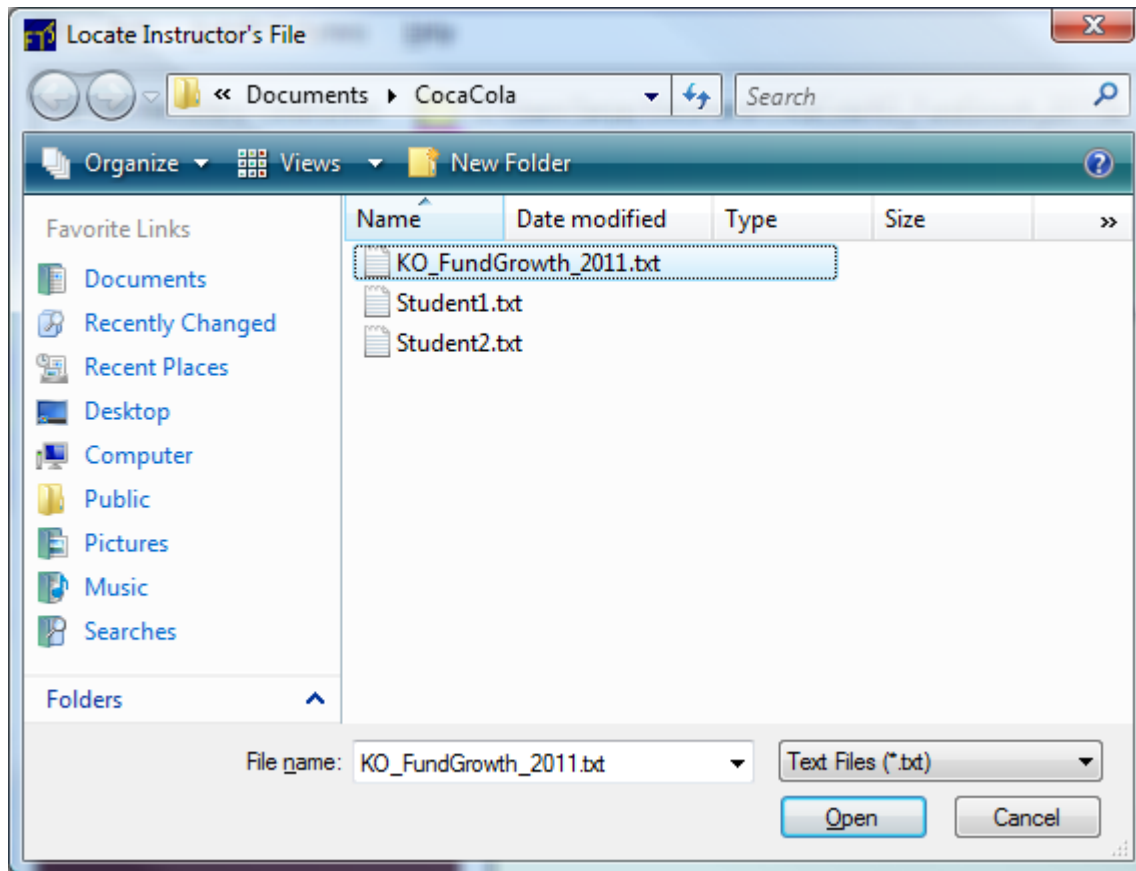


Select the file with the solutions you constructed by clicking the icon:



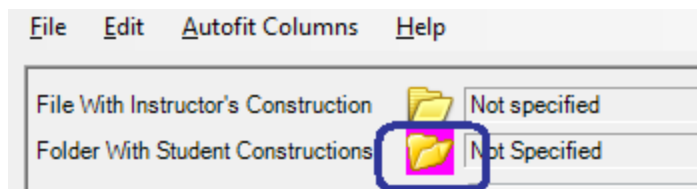
(You can also specify the file from the File menu).

A file dialog box will ask you to locate the file:

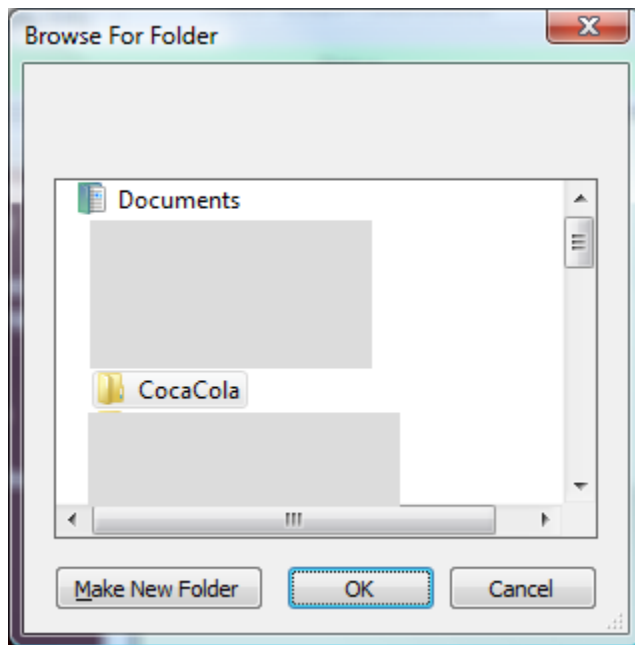


And we have selected the file we created earlier. You can see that we have downloaded the two student submissions into the same folder. Click Open.

Now, specify the folder with the student submissions by clicking on the icon highlighted below:

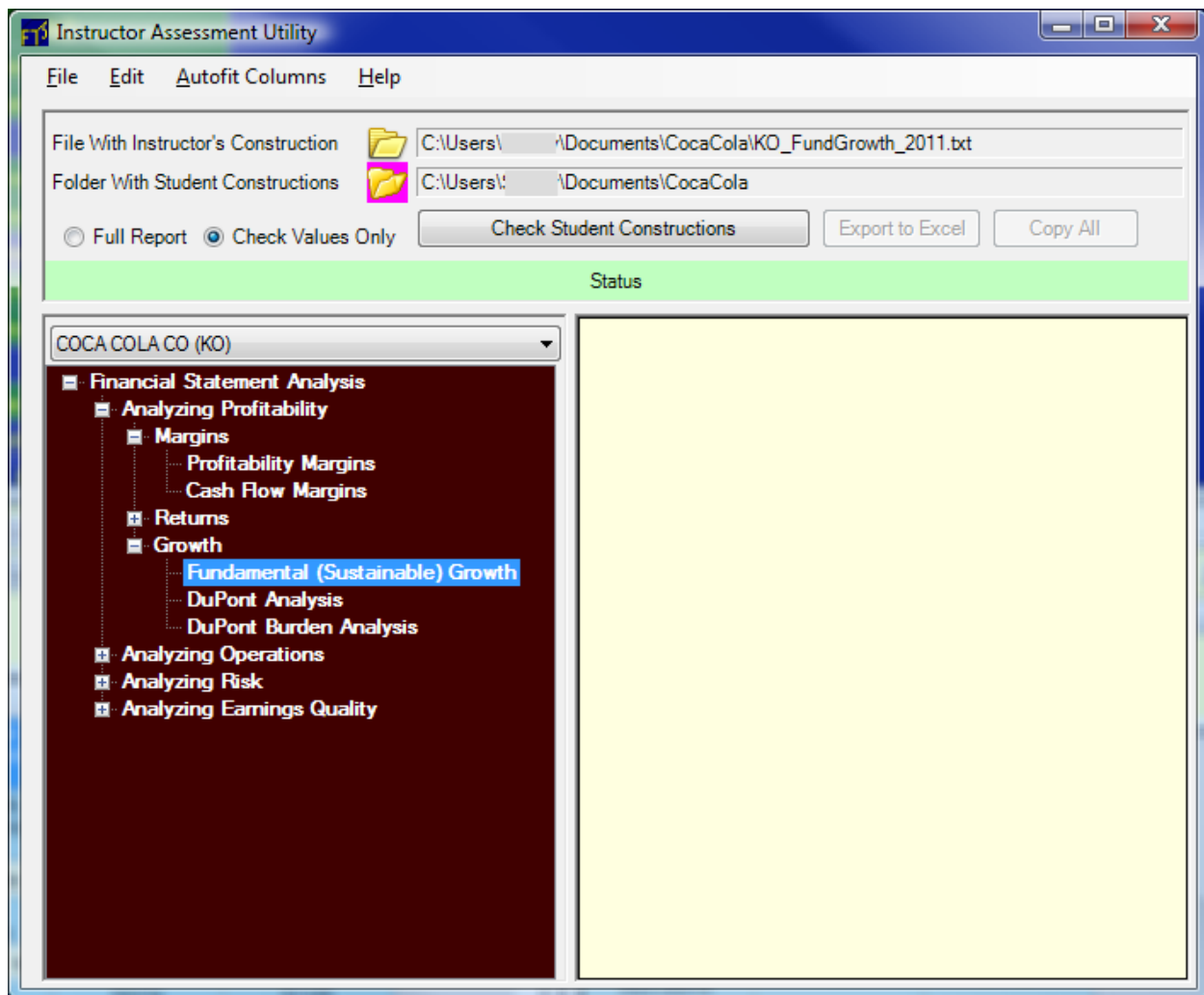


The program uses the folder with the solution as the default, but lets you select another folder if you did not put the student submissions in the same folder:



Select the folder and click OK.

You should now see:



(We have grayed out part of the file names in the picture).

Above the tree, select the stock; in our case, we only have one stock, Coca Cola, so that is automatically selected. In the tree, select the topic, which in our case is Fundamental growth.

Just above the stock selection dropdown, you will see two grading options. The first says "Full Report" and the second says "Check Values Only." If you select "Check Values Only," you will see, for each student, whether the calculator inputs agree with your solution. If you select "Full Report," you will get a detailed report on every field: how the student constructed it and how it compared to your construction.

For our two test student files, we made some errors in student1.txt and no errors in student2.txt so you can see what the reports look like.

The result of clicking the button "Check Student Constructions" yields:

Instructor Assessment Utility

File With Instructor's Construction: C:\Users\...\Documents\CocaCola\KO_FundGrowth_2011.txt

Folder With Student Constructions: C:\Users\...\Documents\CocaCola

☐ Full Report ☒ Check Values Only

Buttons: Check Student Constructions, Export to Excel, Copy All

Status

Student	Construction Date	Calculator Field	Error Type	Instructor Value	Student Value
Student1.txt	31 Dec 2011	Consolidated Net Income	Correct Cell Value	8,634.0000	8,634.0000
Student1.txt	31 Dec 2011	Net Income Attributable to NCI	Incorrect Cell Value	0	62.0000
Student1.txt	31 Dec 2011	Average Shareholders Equity	Incorrect Cell Value	31,635.0000	31,319.0000
Student1.txt	31 Dec 2011	Dividends Paid	Incorrect Cell Value	-4,300.0000	4,300.0000
Student2.txt	31 Dec 2011	Consolidated Net Income	Correct Cell Value	8,634.0000	8,634.0000
Student2.txt	31 Dec 2011	Net Income Attributable to NCI	Correct Cell Value	62.0000	62.0000
Student2.txt	31 Dec 2011	Average Shareholders Equity	Correct Cell Value	31,319.0000	31,319.0000
Student2.txt	31 Dec 2011	Dividends Paid	Correct Cell Value	4,300.0000	4,300.0000

You can see that student1 has several incorrect answers. If you select “Full Report” and click the button “Check Student Constructions,” you will see the details of the student constructions, in our case:

Instructor Assessment Utility

File With Instructor's Construction: C:\Users\...\Documents\CocaCola\KO_FundGrowth_2011.txt

Folder With Student Constructions: C:\Users\...\Documents\CocaCola

☒ Full Report ☐ Check Values Only

Buttons: Check Student Constructions, Export to Excel, Copy All

Status

Student	Calculator Field	Error Type	Instructor Value	Student Value	Filing	Statement
Student1.txt	Consolidated Net Income	Correct Cell Value	8,634.0000	8,634.0000		
Student1.txt	Consolidated Net Income	Item Correct			23 February 2012 10-K	CONSOLIDA
Student1.txt	Net Income Attributable to NCI	Field Not Constructed	62.0000			
Student1.txt	Net Income Attributable to NCI	Item Missing			23 February 2012 10-K	CONSOLIDA
Student1.txt	Average Shareholders Equity	Incorrect Cell Value	31,635.0000	31,319.0000		
Student1.txt	Average Shareholders Equity	Item Correct			23 February 2012 10-K	CONSO
Student1.txt	Average Shareholders Equity	Item Missing			23 February 2012 10-K	CONSO
Student1.txt	Dividends Paid	Incorrect Cell Value	-4,300.0000	4,300.0000		
Student1.txt	Dividends Paid	Item Correct			23 February 2012 10-K	CONSOLIDA
Student2.txt	Consolidated Net Income	Correct Cell Value	8,634.0000	8,634.0000		
Student2.txt	Consolidated Net Income	Item Correct			23 February 2012 10-K	CONSOLIDA
Student2.txt	Net Income Attributable to NCI	Correct Cell Value	62.0000	62.0000		
Student2.txt	Net Income Attributable to NCI	Item Correct			23 February 2012 10-K	CONSOLIDA
Student2.txt	Average Shareholders Equity	Correct Cell Value	31,319.0000	31,319.0000		
Student2.txt	Average Shareholders Equity	Item Correct			23 February 2012 10-K	CONSO
Student2.txt	Average Shareholders Equity	Item Missing			23 February 2012 10-K	CONSO
Student2.txt	Average Shareholders Equity	Item Correct			23 February 2012 10-K	CONSO
Student2.txt	Dividends Paid	Correct Cell Value	4,300.0000	4,300.0000		
Student2.txt	Dividends Paid	Item Correct			23 February 2012 10-K	CONSOLIDA

You can see that student1 did not enter anything for the field “Net Income Attributable to NCI,” did not change the sign on Dividends Paid, and did not calculate the Average Shareholders Equity correctly. Student2, on the other hand, got everything correct.

You can copy and paste the results, and you can also export the results into an Excel workbook.