

## **“Fundamental Analysis for Investors, Managers and Entrepreneurs” B8010**

**Class meetings:** MONDAYS - Full Term, 9-12.15 pm except on Sep 8, Fri, same time, Geffen 420

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### **Course Description and Objectives**

Most of the decisions of analysts, consultants, entrepreneurs, investors and managers require us to look ahead and assess an uncertain future. In this class, you will learn a unique approach to decision making that will help you consider the fundamentals of enterprises and how to link these fundamentals to underlying measures, which in turn will help you make better investment or management decisions. Students who have taken this course often comment on how it has transformed their thinking and understanding of companies. It also serves as a useful “capstone” to the MBA program as we draw on what was taught in most core courses.

In developing this line of reasoning and performing the analysis, we consider how to think about a new business as well as a publicly traded company. Having considered the basic building blocks, we next examine how the business resources and activities are translated into financial statements (whether for an early stage or public company) and consider what we learn from financial statements. We consider the extensive information increasingly available from outside sources, including various websites as well as Bloomberg and CapIQ. We also consider how certain accounting measures and practices impact the measures of the key elements of the business.

Focusing on the future, we take **a different approach** to many topics/concepts that are covered in various ways in other financial statement analysis, earnings quality, and security analysis and valuation classes. Many students take this course as well as other seemingly similar courses, and we have *never* received any feedback that the coverage in this course is redundant, irrespective of the other courses taken by students.

We will focus on understanding how entities create or destroy value for various stakeholders and what it would take to change this, how to consider uncertainty more explicitly in plans, and whether this fundamental value is reflected in the price or not (for entities that it applies to).

We will also take some time each week to address any topics that are in the financial press that bear on the subjects and the approach.

### **Graded Learning**

The only way you will internalize the information in the course is by actually preparing a forecast (plan) of the business that allows you to see the impact of different potential outcomes.

In the **assignments**, you will be asked to analyze some of the key aspects (e.g., revenue, labor, etc.) of ANY company of your choosing (following the framework provided in the class) on an individual basis. For each topic area of the assignments, you will also do a base forecast for a minimum of two years into the future. However, feel free to talk with each other or with others to help you maximize your learning.

At the end of the class, the deliverable is a **final project for your chosen company**. However, for the final project, you will make sure all the elements of your semester's work are linked appropriately in your model, and add the extra topics not covered in the assignments (e.g., taxes) plus your own individual perspective on the original forecasts (as explained in text).

The grades will be based on your engagement in the class, the assignments, weekly quizzes and the final deliverable but we have **no exams**.

### **What you will get out of this**

There is no textbook for what we teach in class. The approach we advocate is quite unique and if I may say so myself, way ahead of most of the fundamentals' work practiced on the Street. Every student **who puts in effort** should walk away with an approach and concepts that you can use in almost any business or position in which you find yourself. It is usually a fun and stimulating journey for students.

### **Why is the course hard?**

At the same time, I want to emphasize that a "30,000" foot perspective does not work in this class. This is a detail-heavy intense experience. The 10-K, proxy statement and now sustainability reports for most large companies cumulate to over 500 pages. One has to know what to speed-read and what to zoom in on and think hard about. The course helps you separate the wheat from the chaff. Moreover, understanding the fundamentals and forecasting the future takes thought, immersion and effort.

### **Is financial expertise critical?**

The course presumes that you have a solid understanding of the subject matter covered in the core accounting and finance courses. We have had many students who have no additional financial accounting or finance backgrounds, and by investing in their learning, they end up with H or even H+ grades. So, while financial analysis expertise may be helpful it is not necessary at all provided you are willing to work very hard.

High quality investment decisions in the real world are grounded in a lot of detail about the sustainability of the business model. Without careful analysis, we cannot hope to ferret out price moving information that the market has overlooked. Following that objective, this is a detail-heavy class that gets deep into financial and non-financial data to assess the business.

Moreover, forecasting, by definition, is difficult and requires the analyst to (i) be creative and open to various traditional and new data sources, especially with the vast amount of detailed data likely to be available via big data; (ii) be comfortable with uncertainty as the best we can do is come up with a range of forecasted earnings, not an exact number or a “right” answer.

You may want to take the class only if (i) you feel that you can devote enough time to the class assignments and the final project; (ii) you have an appetite for detailed data; and (iii) you believe you will be comfortable with the uncertainty inherent in forecasting.

## Required Text and Readings

1. Weekly handouts/posts on Canvas substitute for a course packet
2. There is no required text. I am in the early stage of writing one for the class. In the meanwhile, Business Planning, Financial Statement Analysis and Valuation texts can be helpful but in certain topics each of them will argue for approaches that are sometimes at odds with what I am teaching. Here are a few texts you can refer to (note these don't deal with forecasting, so these are references for students who need the comfort of looking back at a text for more the basic/intermediate level concepts):

Basic book Financial and Managerial Accounting for MBAs Hardcover – 2014 by Peter D. Easton, Robert F. Halsey, Mary Lea McAnally, Al L. Hartgraves, and Wayne J. Morse. An older edition is fine.

Intermediate book: Financial Reporting and Analysis, 5th Edition 5th Edition by Lawrence Revsine, Daniel W. Collins, W. Bruce Johnson and H. Fred Mittelstaedt. An older edition works just fine.

3. There will also be additional references provided for those students who want to get more background and a deeper understanding of some of the technical accounting aspects of any topic, but this is **not required**. I am more interested in the willingness to learn and less in prior technical accounting backgrounds. Some of my best students in the past have surprisingly had nothing more than introductory accounting. But they probably worked the hardest they ever had on this course.

## Grading

You have three sets of deliverables with different grading components as follows:

1. In class 1, I would like you to submit your forecast of Home Depot's financial statements for the year ended January 30, 2024 (see detailed assignment enclosed). We will follow Home Depot (and Netflix) throughout the class. Hence, it is useful to start thinking about the company at the beginning. This assignment is mandatory and counts for 5% of your final grade.
2. There will be approximately seven other written assignments during the semester. All these assignments relate to the understanding and forecasting of the specific line items on the income statement and balance sheet for an actual company of your

choosing from the list of five firms I provide below. These assignments will be done by you using the Type B assignment scheme (see below) and cover 55% of the grade.

3. The remaining 40% of your grade will be based on short in-class quizzes based on the material covered in previous classes, your attendance at class in general and my perception of your preparation and understanding of the class.

#### How are the seven weekly assignments graded?

TAs grade each assignment looking for whether the team has satisfactorily covered the checklist we assign for evaluating every important line item on the financial statements: revenue, capacity, labor costs, supply chain and other operating expenses, funding and capital structure and taxation. Note that the taxation assignment is voluntary.

#### How is the project related to the company of your own choosing graded?

The grading scheme for the project is based on individual components of the project. Last year, we graded students' projects on the following 11 categories.

<i>Component</i>
Revenue
Capacity
Labor
Material
Other operating expenses
Funding
Taxes
Linkage of these components
Write up
Valuation
Scenario: bull/bear/base
<i>Total</i>

A few qualitative comments:

- We look for supporting spreadsheets for any of the above modules. Please don't turn in just a text-based report. We were looking for  $p^*q^*FX$  times model for revenue and a decomposition of costs into fixed and variable, as will be discussed in class.
- Under the component-based grading scheme, excellence in one component cannot completely offset weaknesses in the other components.
- Some of you will take management guidance as a given and that's fine but we want to see what kind of  $p^*q^*FX$  analyses can support that guidance. Failing that, it is hard to know what the management is assuming while giving us the guidance.

- In capacity analysis, we definitely want to see, at a minimum, a discussion of (i) what is the level of PPE the firm expects to need to meet its revenue projections; (ii) operating leases, if any, the capitalization thereof and what that does to capacity and debt; (iii) an aging of PPE, assumptions about age and how depreciation schedules might reflect the aging of PPE (as will be discussed in class).
- In the labor analysis, we look for a p\*q analysis relating labor at various levels to their wage rates from Glassdoor or other sources.
- Absent a spreadsheet, it is somewhat hard for us to verify how each of these components articulate with one another into a comprehensive whole. We look for forecasted income statements for two years at a very minimum.
- We like to see a bull/bear/base scenario in the underlying p\*q\*FX and the fixed/variable cost decomposition to understand how sensitive the valuation is to changes in assumptions.

## **Company selection**

I STRONGLY suggest you pick a relatively simple company that you can handle the analysis for. Unless you have a strong interest in a complex company and have some expertise in how the business is managed, I'd suggest that you stick with a single segment company without a massive international footprint.

## **Seeking Alpha**

Students with outstanding project reports could consider sending their case for shorting or longing a stock to the website "Seeking Alpha" <http://seekingalpha.com/>. I encourage you to shoot for such a publication at the end of the class. Well written and well analyzed articles get thousands of page views in Seeking Alpha and might represent a credible way to get noticed in the analysis world.

## **Audits**

I do not encourage auditing/observing the class. The only way you learn the material is by actually working through the assignments and quizzes.

## **TA**

The TA for the class is MJ Song ([MSong26@gsb.columbia.edu](mailto:MSong26@gsb.columbia.edu)).

You can communicate with MJ via email to discuss the course and assignments.

**Office Hours:** By appointment.

I will give you as much personal attention as feasible to maximize the benefit from your work. You are expected to meet with me at least once during the semester to talk about your project and the difficulties encountered as you work through the questions week after week. As people come in with different expertise, we can (partially) tailor the output to your strengths and expertise. I appreciate constructive feedback during the course to help

optimize your learning, but I have to consider the class as a whole, so individual needs are best dealt with by me or MJ/Anthony one-on-one.

### **Relation to the Core:**

This course incorporates elements of every core class.

**This course adheres to the Columbia Core Culture. Students are expected to be:**

#### **Present:**

- On time and present for every session
- Attendance tracked

#### **Prepared:**

- Complete pre-work needed, expect cold calls
- Bring nameplates and clickers

#### **Participating:**

- Constructive participation expected and part of grade
- No electronic devices unless explicitly called for by the instructor (look under “tablets/computers” below)

### **Code of Conduct: aka our Contract**

The value of the course will depend on how much effort you are willing to put in, and on attendance and participation in the lectures and assignments.

You are expected to treat the class as you would your job, i.e., as a business professional, demonstrating mutual respect, and performing as if it is an important business assignment. This means you need to be prepared, be on time, and be attentive during the class.

### **Grading scheme:**

Type	Designation	Discussion of Concepts	Preparation of Submission	Grade
B	Group/Individual	Permitted with anyone	Individually (No sharing of any portion of the submission.)	Individual

## **Student advice on FAIME**

To level-set expectations with you, I summarize feedback that past students would like to pass on to future students of FAIME. Please consider these comments carefully before you sign up for the class. I am passionate about my way of deconstructing business models, but the workload and level of detail expected can be hard for some students. Hence, the unusual decision to publicize these comments. My responses are in italics below.

- Heavy lecture and a lot of self-work and discovery. This is by no means an easy class and takes a lot of effort to understand the content. Keep in mind before signing up.
- Not a conventional accounting class. More like a management discussion with an accounting focus.
- You get out of this what you put into it, not for the faint of heart.
- The professor and material taught in this course are outstanding. The course requires a huge time commitment outside of class, so if your schedule allows for that, take it - if not, I wouldn't recommend it.
- This is an intense course. Be ready to dig into the details of company's reporting.
- What you put in is what you get out of it.
- It is a hard course. I would not recommend to someone without some knowledge on accounting.
- Comprehensive dive into evaluating a firm's business sustainability anchored on accounting information. Highly insightful course that combines strategy, corporate finance, accounting, marketing.
- This was honestly one of the best classes I've taken at CBS. I learned more in this class than most of my core courses. The material is a great way to holistically understand a business and put everything together. I think more people should take this class, not just finance backgrounds. While some of the material focuses on the complexities of accounting principles and CFAs get a lot of speaking time, I think it is incredibly valuable. It is a lot of work, which I don't mind.
- Professor Rajgopal really has a passion for the material, and it comes out in his notes and the way he teaches the class. It's a fresh approach to fundamental investing and I learned a lot.

*I encourage folks without an accounting background to consider this course because some of my best students have actually been non-accounting types (e.g., a museum curator, a surgeon, a corporate lawyer). Having said that, they probably worked their tail off during the semester.*

<b>B 8010: Preliminary Course Outline</b>			
<b>Date</b>	<b>Class #</b>	<b>Subject matter</b>	<b>Specific Topics</b>
<b>Sep 8, Fri</b>	<b>1</b>	<p>Overview - Approach to Fundamental Analysis of any Business</p> <p>HD FORECAST ASSIGNMENT DUE</p> <p>IDENTIFY COMPANY YOU WANT TO WORK ON</p>	<ul style="list-style-type: none"> <li>• A general framework for understanding and then forecasting a business and its potential value in an uncertain environment</li> <li>• The “Cycle of Life” of a business</li> <li>• Relating this to financial statements, other information and intrinsic value</li> <li>• A critical review of what we see in practice by companies (early stage and established) and analysts</li> </ul>
<b>Sep 11 and Sep 18</b>	<b>2 and 3</b>	<p>Understanding Revenue</p> <p>Sep 11: OP FIN CUT and OP CYCLE DUE</p>	<ul style="list-style-type: none"> <li>• Understanding the product or service</li> <li>• To whom, how and where is it being sold</li> <li>• Pricing</li> <li>• What are the market size and the competitive situation?</li> <li>• How is the revenue recognized?</li> <li>• How and when are customers paying?</li> </ul>
<b>Sep 25 and Oct 2</b>	<b>4 and 5</b>	<p>Understanding Productive Capacity, R&amp;D and Intangibles.</p> <p>Sep 25: REVENUE ANALYSIS DUE</p>	<ul style="list-style-type: none"> <li>• What property and equipment (including technology) do they need to sustain the revenue and/or grow (match to the revenue expectations)?</li> <li>• How much does this cost and how will it be financed?</li> <li>• Where and How are(/should) the physical and financing needs (be) reflected in the financial statements?</li> <li>• Considering IP and patents, what R&amp;D or other intangibles are needed, how are they “acquired” and paid for, and how are/should they be reported?</li> <li>• How do these all compare to competitors?</li> </ul>
<b>Oct 9 and Oct 23</b>	<b>6 and 7</b>	<p>Understanding Human Resources and Labor Costs</p>	<ul style="list-style-type: none"> <li>• What type of talent do you need to sustain and/or grow the business, how many and where are they located?</li> </ul>



		Oct 9: CAPACITY ANALYSIS DUE	<ul style="list-style-type: none"> <li>• What are(/should) they (be) paid?</li> <li>• How are(/should) they (be) compensated Cash vs Benefits (pensions and health/opecb) vs share-based compensation (shares vs employee stock options)?</li> <li>• Where and How is the cost reflected in financial statements?</li> </ul>
<b>Oct 30</b>	<b>8</b>	Understanding Material and other costs  LABOR ANALYSIS DUE	<ul style="list-style-type: none"> <li>• What are primary materials/components needed?</li> <li>• How are they sourced (supply chain) and what do they cost?</li> <li>• What are key sales and marketing approaches and costs?</li> <li>• Where and how are these reflected in financial statements?</li> </ul>
<b>Nov 13 (Nov 6, no classes)</b>	<b>8-9</b>	Funding, Capital Structure  MATERIALS AND OTHER EXP DUE	<ul style="list-style-type: none"> <li>• Funding choices (equity vs debt) for different types of entity (early stage, high growth and steady state; small vs large)</li> <li>• How much and when is funding needed?</li> <li>• How are these reflected in financial statements and performance measures?</li> </ul>
<b>Nov 20</b>	<b>10</b>	Funding: Financial Investments, Strategic and M&A and Intangibles from Acquisition  CAP STRUCTURE DUE	<ul style="list-style-type: none"> <li>• Considering liquidity and financial investments and how they are reflected in financial statements</li> <li>• Impacts of strategic investments, mergers and acquisitions, and minority stakes.</li> <li>• How do we interpret the related growth and acquisition related assets?</li> </ul>
<b>Nov 27</b>	<b>11</b>	The Impact and Understanding of Taxation	<ul style="list-style-type: none"> <li>• Tax considerations: what is taxed, where is it taxed, when is it taxed and at what rate?</li> <li>• How is tax reflected in the financial statements and what can we learn from this?</li> </ul>
<b>Nov 27</b>	<b>11</b>	Understanding the Basics of Currency Impacts	<ul style="list-style-type: none"> <li>• Transactions vs translation and impact on margins, cash flow, ratios and capital</li> </ul>

<b>Dec 4</b>	<b>12</b>	<p>Catch up, valuation and putting it all together.</p> <p>VOLUNTARY TAX ASSIGNMENT DUE</p> <p>DEC 11: FINAL PROJECT DUE (NO EXTENSIONS PLS.)</p>	<ul style="list-style-type: none"> <li>• Bringing all the pieces together and relating them to forecasts and valuation analysis</li> <li>• Considering the trade-offs of various valuation approaches for managers and different investors.</li> </ul>
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Summary of Assignments		
Assignment #	Topic	Due Date
1	<i>Forecast for Home Depot</i>	First class on Sep 8
2	<i>Drawing-describing the “Operating and Funding Cycles of a Business” (small, but investing time in this step will pay off)</i>	Sep 11
3	<i>Revenue analysis and 2-year forecast (large)</i>	Sep 24
4	<i>Capacity analysis and 2-year forecast (large)</i>	Oct 9
5	<i>Labor analysis and 2-year forecast (large)</i>	Oct 30
6	<i>Materials and Other Costs and 2 –year forecast (small)</i>	Nov 13
7	<i>Capital structure analysis and 2-year forecast (small)</i>	Nov 20
7A	<i>Taxation analysis and 2-year forecast (voluntary)</i>	Dec 6
8	<i>Write-up and Valuation</i>	Dec 11

## Assignment 1: due on the first day of class

The objective of this assignment is to get you into a forecasting mindset. Enclosed you will find the income statement of Home Depot, the company we will study in great depth during the class, for the year ended January 30, 2023 (fiscal year 2022) and for one/two years prior.

Your job is to forecast as best as you can the line items in the income statement for the next year, which is fiscal year 2023 (year ended January 31, 2024). You may use any data source you like. Please indicate the logic you used to come up with the forecasted numbers.

**The assignment must be placed on Canvas by the start of class.** No late assignments can be accepted.

CONSOLIDATED STATEMENTS OF EARNINGS			
<i>in millions, except per share data</i>	Fiscal 2022	Fiscal 2021	Fiscal 2020
Net sales	\$ 157,403	\$ 151,157	\$ 132,110
Cost of sales	104,625	100,325	87,257
Gross profit	52,778	50,832	44,853
Operating expenses:			
Selling, general and administrative	26,284	25,406	24,447
Depreciation and amortization	2,455	2,386	2,128
Total operating expenses	28,739	27,792	26,575
Operating income	24,039	23,040	18,278
Interest and other (income) expense:			
Interest income and other, net	(55)	(44)	(47)
Interest expense	1,617	1,347	1,347
Interest and other, net	1,562	1,303	1,300
Earnings before provision for income taxes	22,477	21,737	16,978
Provision for income taxes	5,372	5,304	4,112
Net earnings	\$ 17,105	\$ 16,433	\$ 12,866