B10.2303 Financial Statement Analysis
Professor Julian Yeo

Financial Statement Analysis

Course Descriptions and Syllabus

Your instructor

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Course Descriptions

Overview

This course is all about gaining the knowledge of how financial metrics are mapped into stock prices. The stock market can be an intimidating venture for most people. The determination of stock prices often seems a black-box mystery. Understanding how accounting numbers are tied to the stock price and knowing what to look for in determining how much you think the stock is worth (i.e., intrinsic or fundamental value) are real advantages to investors.

When buying a piece of stock, you are paying for the future performance of the company and you need to be able to monetize and benchmark that performance using financial metrics. You will learn how to quantify the stock price that you are paying into digestible chunks. This course introduces a simple procedure to infer future financial metrics you need to see from the company based on what you are paying. This course also introduces you to a number of useful tools in assessing whether future performance, as implied by the current stock price, is attainable.

The course has a very practical emphasis. You will apply the tools introduced in this course in a series of class exercises, mid-term exams, and a group assignment and presentation involving listed companies.

Part I – Framework for equity valuation

In Part I of the course, we begin with a framework to think about equity valuation. We examine various accounting measures (e.g., dividends, free cash flows, book values, earnings) that can be used as anchors for equity valuations. Through the development of these valuation models from first principles (yes, in this course, we will derive all the models!), we are able to synthesize, compare and contrast the different valuation models (e.g., Dividend Discount Model, Free Cash Flows Model, Residual Income Valuation Model, Abnormal Earnings Growth Model). It is also through the derivation of these models, we are able to pinpoint the relationships (or lack of) between various accounting variables (such as book value, earnings, EBITDA, etc) and intrinsic values. To the extent that stock prices and intrinsic values deviate, we will have a better appreciation of multiples such as P/B, P/E, PEG and other ratios that involve stock prices. Part I of the course concludes with tools that enable us to quantify the stock price, infer future financial metrics we need to see from the company based on what we are paying.

Part II – Analyzing Equity Investment

In Part II of the course, we put our knowledge acquired in Part I in practice and introduce tools that enable us to make a buy/sell/hold decision on equity investment. We also examine how financial statements and specific accounting issues enhance/distort our ability to understand the fundamentals of businesses. We will highlight the need to reformulate the financial statements prepared under GAAP to provide a better depiction of business activities that are important for valuation purposes. A structured approach to identify value drivers (profitability analysis) and sustainable growth is also provided. In addition, we will explore tools that enable us to identify and quantify how changes in particular factors (e.g., business risk factors, business outlook or affiliation with related companies) will impact a company's stock price.

Course Objectives

By the end of the course, you should be able to answer the following questions:

- How financial metrics are mapped into stock price?
- How are fundamental values (or "intrinsic values") estimated?
- What is the relevance (for valuation purposes) of cash-flows? Of dividends? Of earnings? Of book values?
- What business activities determine value?
- How is "value created for shareholders" identified?
- What determines a firm's P/E ratio? How does one calculate what the P/E should be?
- What determines a firm's market-to-book (P/B) ratio? How does one calculate what the P/B should be?
- How does one pull apart the financial statements to get at the relevant information for valuing equities?
- How does ratio analysis help in valuation?
- What is growth? How does one analyse growth? How does one value a growth firm?
- What are the accounting issues that may hinder our understanding of the fundamentals of the business?
- How to utilise valuation models and analysis to facilitate good questions to ask?
- How to quantify the odds of your equity investment?
- How to quantify future payoffs from owning a company's stock into measures that we can constantly monitor?
- How to incorporate what you observe about the company and translate that knowledge into the stock price you are willing to pay?
- How to quantify factors that may potentially impact stock price?
  - How to identify related parties that may impact a company's stock price?
  - How to analyse a company's risk factors?

- How to draw inferences from a company's (and its peers') SEC filings and earnings calls?

Reading
Ultimate Edge in Beating the Market, manuscript, by Julian Yeo (available on NYU Classes)

Recommended Text
The text is *Financial Statement Analysis and Security Valuation*, 5th edition, by Stephen Penman, published by Irwin/McGraw-Hill, 2012.

Other Materials
You can also access all course-related materials on NYU Classes.

Assessments
Your final grade is calculated based on:

In-Class Assignment	5%
Individual Pop quizzes	10%
2 Open-Booked Mid-term Exams	40%
1 Group Assignment & Presentation	45%

In-Class Assignment & Individual Pop Quizzes
It is crucial that you are able to perform simple algebraic rearrangements to appreciate the materials in this course. The In-Class Assignment is designed to brush up (in some cases, showing off) your simple algebraic skills. During the course, there will be individual pop quizzes.

Open-Booked Mid-term Exams
During the semester, you have two in class 3-hour Mid-Term exams. Both exams are open-booked. You may bring any material with you; however, cell phones, lap tops, and any device with wireless connectivity are strictly prohibited during the exam.

Group Assignment & Presentation

(i) Objective
Build your own analysis product and apply the product to make an investment decision (buy, sell or hold).

(ii) Group Size
The group should consist of no more than five (5) members.

(iii)Due Date:
Investment Report and Presentation – last two classes

(iv) Grading:

Presentation 22.5% of your final grade
Investment Report (powerpoint slides of your presentation) 22.5% of your final grade

Tentative Course Schedule
Please see below for descriptions of each topic.

Session		**Topics**	**Readings**
Part I – The Set-up: Choosing a Valuation Model			
1		Introduction & Course Overview: 1. Stock price - a black-box mystery 2. Our benchmarks for performance – accounting metrics	Mandatory: Chapters 1, 2 (Yeo, 2013) Background: Chapters 1, & 2 (Penman, 2012)
2		3. Show me the money – unraveling the blackbox - Methods of comparables, Multiple Screening, Asset-Based Valuation - Dividend Discount Model; In-Class Assignment	Mandatory: Chapter 3 (Yeo, 2013) Optional: Chapters 3 & 4 (Penman, 2012)
3		4. What to bet on – choosing an anchor to gain an edge (i) Discounted Cash Flow Model; (ii) Pricing Book Values	Mandatory: Chapter 4 (Yeo, 2013) Optional: Chapter 5 (Penman, 2012)
4		What to bet on – choosing an anchor to gain an edge (cont.) (iii)Pricing Earnings	Optional: Chapter 6 (Penman, 2012)
5		5. Quantifying your bet – building blocks 6. Know your odds – inferring expectations from your bet (from the stock price you are willing to pay)	Mandatory: Chapters 5, 6 (Yeo, 2013)

Part II: How to apply the "edge" - Analysis of Financial Information; Forecasting and Valuation			
6		Application of what we've learned so far – Review of Sample Mid-Terms	
7		**Mid-Term Exam I**	
8		7. What worked in the past? Assessing your odds – benchmarking against past performance - Operations vs Fundings - The Needs to Reformulate Financial Statements - The Value of Operations: Residual Operating Income Model & Abnormal Operating Income Growth Model Enterprise P/B and P/E ratios 8. Let it all hang out – constructing future statements and how each metric is mapped into stock price	Mandatory: Chapters 7 & 8 (Yeo, 2013) Optional: Chapters 7,13 & 15 (Penman, 2012)
9		9. Potential roadblocks – analysis of quality of financial statements 10. Sharpening my new "edge" - Related parties - Risk factors Business Outlook (MD&A & earnings calls)	Mandatory: Chapters 9 & 10 (Yeo, 2013) Optional: Chapters 16 (Penman, 2012)
10		**Mid-Term Exam II**	
11&12		11. Group Presentations – Buy/Sell/Hold	

Topic Outline and Descriptions

Part I. The Set-up: Choosing a Valuation Model

1. Stock price - a black-box mystery

We may have some idea of what financial metrics are important in determining how much an investment is worth; however, we are unable to pinpoint the exact relation between accounting variables and stock price. Without an understanding of the relationship between accounting variables and stock prices, we may mistakenly see a relationship between that accounting variable and stock price upon seeing a correlation between certain factors and the stock price. How many times have you heard "I am willing to buy stock at P/E below X or P/EBITDE of X times? Such thinking often leads to ill-conceived valuation model that leads you to paying too much for your investment. A real edge comes only when you demystify the black box and gain a true understanding of how things work.

2. Our benchmarks for performance – accounting metrics

In order to employ accounting metrics in valuing our investment, we need to be first introduced to various accounting metrics and how we can employ them in quantifying the company's performance.

3. Show me the money – unraveling the blackbox

You can talk as much as you want but if you can't deliver what you've promised, stop talking. This premise – the expectation that we'll receive what we've been promised – is the basis for our thinking when we are determining how much we are willing to pay for an investment. In unraveling the blackbox, we are quantifying what we need to see from our investments – tangible and measurable payoffs. We develop a framework to begin appreciating how equity valuation can be conducted.

4. What to bet on – choosing an anchor to gain an edge

We explore various commonly cited valuation models such as the dividend discount model, the discounted cash flows model, the residual income model and the abnormal earnings growth valuation model. We compare, contrast and synthesize the various models and choose the one most likely to produce the best value estimate given our constraints.

Part II: How to Apply the "edge"

5. Quantifying your bet – building blocks

We quantify price into building blocks as our way to decipher price information into digestible chucks. We learn how to quantify the stock price we are paying into (i) stockholders' claim of asset value, (ii) earnings power, and (iii) speculative growth. We also better understand P/B and P/E ratios and their implication for future financial metrics.

6. Know your odds – inferring expectations from your bet (from the stock price you are willing to pay)

Rather than speculative on future performance, we'll apply the art of reverse engineering, using what's available, to quantify future performance into measurable benchmarks. We learn a simple three-step-procedure to infer future performance from a stock's current price. We also further appreciate the stream of expected earnings that we are paying for each building block from topic 5.

7. What worked in the past? Assessing your odds – benchmarking against past performance

How do we assess management performance? We learn how to separate management's operating activities from the company's financing activities. We also focus on ratios of management performance (RNOA, PM and ATO) that directly impact stock price. After we infer future performance monetized in terms of expected financial metrics that we need to observe from the company, we ask whether the implied metrics based on our price and expected rate of return are attainable based on past performance.

8. Let it all hang out – constructing future statements and how each metric is mapped into stock price

We will construct what future financial statements would look like as implied by stock price. We further focus on the implied future sales and earnings we expect from the company.

9. Potential roadblocks – analysis of quality of financial statements

We examine how specific accounting issues enhance/distort our ability to understand the fundamentals of businesses.

10. Sharpening my new "edge"

We examine information contained in SEC filings, specifically the qualitative information, We will identify, examine, and quantify how changes in particular factors (e.g., business risk factors, business outlook or affiliation with related companies) will impact a company's stock price.

11. Group Presentation – Buy/Sell/Hold

The course has given you the edge to understand the moving variables that determine stock price and quantify these variables into observable financial metrics. You are able to do your own diligence on the stock tips you receive, articulate the future financial metrics you can expect to see from the company. More importantly, you now are able to substantiate your investment decision using financial metrics.