I. CONTACT DETAILS

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Office hours (604 Uris): By appointment

II. COURSE DESCRIPTION

Financial reporting provides a window into the operational and financial workings of a company. However, translating this information into actionable insights is anything but straightforward. It requires an understanding of Generally Accepted Accounting Principles (GAAP), the quality of financial information, and the adjustments and analyses required to accurately measure and evaluate profitability, exposures, growth prospects, and value.

The course starts with a review of financial reporting and then focuses on various modules of fundamental analysis, including performance evaluation, earnings quality, risk assessment, forecasting, and valuation (for a detailed outline, please see topics 1 through 4 in Section VII below). The final part of the course (topic 5 in Section VII) is devoted to a deeper dive into the reporting and analysis of selected line items from the financial statements.

While the course covers the theoretical underpinning of the various analyses, it focuses on implementation and practical uses. Many real-world examples will be analyzed, including using Excel tools that will be provided to the students.

The primary objective of the course is to acquire a deep understanding of accounting information and how to intelligently use it in making investment, credit, and similar resource allocation decisions. Such knowledge is required of executives, consultants, bankers, analysts, investment managers, and other users of financial information.

In a review conducted in 2011, the committee for evaluating elective courses concluded that “this is an excellent, carefully constructed course which provides students with valuable insights and lasting concepts.” In the same year, Professor Nissim won the “Dean’s Award for Teaching Excellence” for developing and teaching this course.
III. COURSE ADMINISTRATION

Class Material

The course material consists of detailed presentations, excel workbooks, practice exercises, and required readings (Section V). These items cover all the course content. For those interested in additional readings, Section VI provides a text recommendation. A good preparation for each class would be to read the assigned readings and skim through the presentation. Reviewing the presentation carefully after class and solving the practice exercises would help reinforce the material. This is important especially because for some topics we will not have sufficient class time to discuss all the points and examples contained in the presentations.

All items will be made available electronically before class, saved in an acrobat version that allows for the addition of comments to the electronic documents. You may use a laptop or tablet during class to help you follow the discussion, to take notes, or to add comments to the electronic documents as needed (please use the laptop/tablet for those purposes only – otherwise, it may negatively impact your learning experience and that of your peers). One objective of the class is that you will each obtain a detailed, familiar, and customized (through your additions) set of notes that you will be able to use in your careers.

Class Meetings

<table>
<thead>
<tr>
<th>Section</th>
<th>Days</th>
<th>Time</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>B8008-01</td>
<td>M, W</td>
<td>9:00-10:30</td>
<td>Uris 142</td>
</tr>
<tr>
<td>B8008-02</td>
<td>M, W</td>
<td>10:45-12:15</td>
<td>Uris 142</td>
</tr>
</tbody>
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First class: January 24; Additional class: January 26 (Friday); last class: April 25. Final exam: May 3, 9:00-12:00pm.

Class attendance is not required, but if you do attend, you are expected to arrive to class on time and behave in a way that does not distract your peers.

Grade

The course grade will be based on an open-book Final exam (open books: including laptop, but laptop use is restricted to accessing electronic copies of course material; no communication or listening devices). Finals from previous years are available on Canvas.

While the grade is determined based on the Final, if you attend class and solve the practice exercises, you should expect to receive at least a High Pass (HP) grade. In fact, I expect (hope?) that most of you will get a High (H) grade.

IV. CONNECTION WITH THE CORE AND OTHER ELECTIVES

This course builds on knowledge from the core courses Financial Accounting (B6000) and Corporate Finance (B6300), which introduce students to basic financial reporting and analysis concepts. In particular, B8008 requires a basic understanding of the following:
• Financial statements, including the balance sheet, income statement, and cash flow statement
• How accrual accounting differs from cash accounting, including revenue recognition (realization principle), expense recognition (matching principle), and asset and liability measurement (historical cost, selective fair value)
• Time value of money and present value calculations

In B8008, students acquire a deep understanding of accounting information and how to intelligently use it in making investment, credit, and similar resource allocation decisions.

V. READINGS

Required readings include selected sections from the following studies (to be identified prior to the relevant class meeting):

Profitability


Earnings Quality


Risk


Relative valuation

DCF


**VI. RECOMMENDED TEXT**


**VII. COURSE OUTLINE AND SUMMARY OF CONTENT**

1. **Financial reporting**
   1.1. *Primary financial statements*
      1.1.1. The balance sheet (statement of financial position)
      1.1.2. The income statement (statement of earnings/operations/profit or loss, P&L)
      1.1.3. The cash flow statement
   1.2. *Secondary financial statements*
      1.2.1. Statement of equity (statement of changes in equity)
      1.2.2. Statement of comprehensive income
   1.3. *The relationships among the different financial statements*
   1.4. *Other disclosures: Notes, MD&A, Risk Factors, Market Risk,* ...
   1.5. **Underlying accounting concepts**
      1.5.1. Asset and liability recognition and measurement
         - *Internally-developed versus acquired intangible assets*
         - *Executory contracts (e.g., employment, purchase commitments, leases)*
         - *Contingencies (e.g., pending law suits)*
         - *Historical cost versus fair value*
      1.5.2. Accounting conservatism
         - *For example, impaired assets are written down but assets that increase in value are not written up*
      1.5.3. Revenue recognition: Realization principle
      1.5.4. Expense recognition: Matching principle
   1.6. **Limitations and distortions of the financial statements, and implications for financial analysis and valuation**
      1.6.1. Understated assets and equity due to the omission of internally-developed intangibles, historical cost accounting, conservative accounting practices, and the realization principle
         - *The balance sheet does not reflect the value of the company*
         - *The income and cash flow statements often capture the benefits from omitted or understated assets, and therefore serve as the starting point for valuation*
      1.6.2. Overstated earnings due to historical cost accounting
- For example, depreciation based on historical cost is smaller than economic depreciation

1.6.3. Overstated profitability (relative to economic profitability) due to the above distortions
- High accounting profitability does not necessarily imply value creation
- Steady-state accounting profitability is likely to be above the cost of capital

1.6.4. Expense recognition inconsistent with matching
- Reductions (increases) in discretionary spending increase (reduce) reported profitability but do not necessarily imply improvement (deterioration) in economic performance
  - For example, start-up costs, R&D, advertising, maintenance, technology, ...
- Special / exceptional items make current profitability less representative of future profitability
  - For example, restructuring, impairment, resolution of contingencies, ...
  - Truly transitory / unrelated to operations (e.g., gain/loss from selling a financial investment) versus recurring volatile operating items, which effectively substitute for recurring items (e.g., impairment may be due to insufficient past depreciation or to earnings management to decrease future depreciation)

1.6.5. Hidden risks
- Omission of executory contracts and most loss contingencies, borrowing through affiliated companies, exposure to unconsolidated variable interest entities, ...
- Adjustments to allow the balance sheet to better reflect exposures:
  - Capitalization of operating leases, consolidation of entities to which the company is exposed, undoing the derecognition of some factored/securitized receivables, ...

1.7. Summary of line-specific GAAP and differences relative to IFRS

1.8. The concepts of earnings management and earnings quality

2. Ratio analysis

2.1. Objectives
- Ratios summarize financial information in a form that is relatively easy to understand, interpret and compare
- Used for evaluating: Profitability, earnings quality, growth prospects, risk, and market pricing

2.2. Reformulating the financial statements
- Operating versus financing versus “other” activities
  - Value is created in operations
  - The value of operations is generally estimated based on the firm’s ability to generate free cash flows from operations
  - The value of financial items is relatively easy to measure, essentially based on amounts reported on the balance sheet
  - “Other” – equity method investments, real estate not used in operations, some provisions ...
- Recurring versus transitory items
  - Differences in predictability and impact on value

2.3. Analyzing profitability
2.3.1. Controlling versus non-controlling
2.3.2. Recurring versus transitory
2.3.3. Operating profitability versus financial leverage effect versus the impact of net other assets
2.3.4. Drivers of operating profitability: Profit margin, asset turnover, operations funding ratio (leverage from operating credit)
   ▪ Turnover and expense ratios
2.3.5. Drivers of the financial leverage effect on profitability: Financial leverage, financial spread (operating profitability minus net borrowing cost)
2.3.6. Drivers of the impact of net other assets on profitability: Relative size of net other assets, excess profitability of net other assets

2.4. Evaluating earnings quality
2.4.1. Qualitative analysis
   ▪ Critical accounting policies
   ▪ Non-financial indicators of earnings quality: Capital market activities, significant related-party transactions, changes in accounting policies, departure of auditors, lawyers, executives or directors, ...
2.4.2. Comprehensive financial indicators of earnings quality
   ▪ Cash flows versus accruals
   ▪ Net operating assets relative to sales
   ▪ Discretionary expenses relative to sales
2.4.3. Key line-item indicators of earnings quality; for example,
   ▪ Revenue recognition: Receivables relative to sales, deferred revenue relative to sales, revenue mix, gross margin, ...
   ▪ Inventory and related expenses: Inventory relative to cost of goods sold, production costs relative to cost of goods sold, payables relative to operating expenditures, ...
   ▪ Fixed assets and related expenses: Estimated useful life and average age of fixed assets, asset replacement ratio (capex relative to depreciation), ...

2.5. Assessing risks
2.5.1. Qualitative analysis
2.5.2. Quantitative analysis
   ▪ Capital structure and related ratios: Balance sheet composition, off-balance sheet exposures, financial leverage, debt service ratios, coverage ratios
   ▪ Liquidity: Current ratio, quick ratio, cash flow ratios, working capital ratios
   ▪ Operating volatility: Sales volatility, operating leverage, profit margin “buffer”, profit volatility, cash flow volatility, ...
   ▪ Other risk-related ratios: Size, market risk measures

3. Relative valuation
3.1. Basics of relative valuation
   3.1.1. Value = Fundamental × Multiple
   ▪ Fundamental = The firm’s earnings, book value, cash flow, sales, or other financial metric
   ▪ Multiple = Average of (Price / Fundamental) for a group of comparable companies
3.1.2. Assumptions

- Value is proportional to the fundamental used
- A similar proportionality holds for “comparable” companies, that is, firms from the same industry and/or with similar characteristics (e.g., size, leverage, expected growth)
- Comparable firms are, on average, fairly priced

3.2. Uses of relative valuation

3.2.1. As the primary method of valuation
- Common in sell-side, less so in buy-side

3.2.2. As an alternative valuation approach
- Quite common – given the many assumptions involved in DCF, it is important to conduct a price-multiple analysis as a plausibility check of the DCF valuation

3.2.3. Method of choice in sum-of-the-parts valuation
- For example, by business or geographic segment

3.2.4. Integrated into DCF
- To calculate the terminal value or as a check on the reasonableness of the terminal value (“exit multiple” or “terminal multiple”)
- To value investments in associates (equity method investees) or non-controlling interests
- To derive price-based forecasts (e.g., implied cost of capital, implied growth, implied future profitability)

3.3. Linking price multiples to fundamentals

3.3.1. Identifying and measuring the key determinants of common price multiples
- For example, for P/E the key determinants are: Earnings growth, earnings quality, earnings retention, equity risk, and long-term interest rates

3.3.2. Industry-specific and other considerations

3.4. Implementing relative valuation

3.4.1. Which fundamental to use (e.g., EPS, EBITDA, BVPS, revenue) and how to measure it (e.g., net versus recurring, dealing with accounting distortions, actual versus forecast, annual versus trailing, changes in invested capital, share count issues)

3.4.2. Which value measure to use (e.g., price per share, equity value, enterprise value)

3.4.3. How to select peers (e.g., industry classification, relevant characteristics)

3.4.4. How to calculate the multiple (mean versus median versus harmonic mean; dealing with outliers; tiering; adjusting for differences across companies)

3.5. Conditional price multiples

3.5.1. Instead of using the average (unconditional) multiple across the peers, use the (conditional) fitted value from a regression of the multiple (e.g., price/book) on relevant characteristics (e.g., ROE)
- Simultaneous extraction of information from more than one fundamental (e.g., book value and earnings)
- Incorporates information from dissimilar peers (e.g., by explicitly controlling for differences in ROE)
- On the other hand, greater potential for estimation error ...

3.6. Time-series versus cross-sectional analysis
4. **DCF valuation**

4.1. **Basics of fundamental valuation**

4.1.1. The value of any investment or asset (e.g., project, business, company, stock, bond) is the present value of the net cash flow that the asset is expected to generate or save

- **Forecast the net cash flow**
- **Estimate the discount rate**
  - Time value of money
  - Risk premium
  - The two components of the discount rate should be consistent with the cash flows: Pattern (duration, convexity, etc.), basis (nominal or real), currency, tax status (after/before tax)
- **Implementation considerations**
  - The dividend discount model as an example

4.2. **The discounted cash flow (DCF) model for equity valuation**

4.2.1. **Synopsis of the model**

- **Enterprise value** = Present value of free cash flow (FCF) discounted at the weighted average cost of capital (WACC) + value of net other assets
  - Net other assets = other asset – other liabilities, where “other assets” are non-financial assets whose value is not captured by the PV of FCF (e.g., investments in unconsolidated affiliated companies, real estate not used in operations), and “other liabilities” are non-financial liabilities with the related cash outflows excluded from FCF (e.g., unusual litigation contingencies)

- **Equity value** = enterprise value – value of net debt
  - Net debt = debt - financial assets, where debt includes preferred stock but excludes the value of conversion features of convertible bonds and convertible preferred stock

- **From equity value to value per share:** parent equity versus non-controlling interests, common equity versus contingent claims (options, conversion features of convertibles)

4.2.2. **Defining and measuring FCF and cash flows to the various claim holders** (equity holders, debt holders, other stakeholders)

- **FCF** = **NOPAT** - ∆Net operating assets
- **Measuring FCF as EBIT×(1-t) + Dep&Amort** – capex - ∆working capital, as is often done, results in a biased FCF measure and therefore biased valuation
  - Operating assets other than working capital assets and cash-acquired fixed assets
  - Operating liabilities other than working capital liabilities

4.2.3. **Deriving the model**

- **To derive the DCF model, the following ratios are assumed to remain constant over time:** Required rate of return on debt, corporate tax rate, required rate of return on equity, and leverage (measured using market values)

- **Important implication:** When measuring the discount rate (WACC), one should use the expected long-term values of the above ratios
4.3. Template for DCF valuation
   4.3.1. PV of FCF: Historical information, explicit forecasts, steady-state assumptions, transition/convergence forecasts, WACC, and terminal value
   4.3.2. From the PV of FCF to value per share

4.4. Forecasting Free Cash Flow (FCF)
   4.4.1. Information for forecasting
   4.4.2. Forecasting revenue
     - Extrapolating from past growth rates
     - Time-series models
     - Investments and asset growth effects
     - Contracted future revenue: Unearned revenue, orders backlog, other contracts
     - Sales-generating units: Stores, drugs, ships, ...
     - Firm characteristics
     - Analysts’ forecasts
     - Market size and market share forecasts
     - Growth decomposition
     - Segment disclosures and related analyses
     - Non-financial metrics: Customers, employees, patents, governance, ...
   4.4.3. Forecasting expenses
     - Extrapolating from past margins
     - Considering peer information
     - Analysts’ forecasts
     - Forecasting expense line items
     - Cost structure implications
     - Growth implications
     - Macro predictors
   4.4.4. Forecasting operating assets
     - Extrapolating from past asset turnover ratios
     - Considering peer information
     - Forecasting asset line items
     - Macro predictors
     - Firm characteristics
   4.4.5. Forecasting operating liabilities
     - Extrapolating from past funding ratios
     - Considering peer information
     - Forecasting operating liabilities line items
   4.4.6. Checking the forecasts
     - Earnings quality indicators
     - Alternative extrapolation assumptions
     - Quarterly information
     - Profitability patterns

4.5. Steady-state ratios
   4.5.1. Steady-state growth
   4.5.2. Steady-state profitability

4.6. Estimating WACC
   4.6.1. Basics
   4.6.2. Leverage
4.6.3. Cost of debt
- Pretax cost of debt
  - Short- versus long-term debt
- Tax shield
4.6.4. Cost of equity capital
4.6.5. Special issues
- WACC and “net other assets”
- WACC and inflation
- WACC and fundamental risk
- WACC in segment DCF

4.7. Terminal value
4.7.1. Constant growth/Gordon formula
4.7.2. Exit/continuing value multiples

4.8. From PV of FCF to value per share
4.8.1. From present value (PV) of free cash flow (FCF) to enterprise value
4.8.2. From enterprise value to equity value
4.8.3. From equity value to parent equity value
4.8.4. From parent equity value to value per share

4.9. Sensitivity and scenario analyses
4.9.1. How sensitive is the intrinsic value estimate to changes in key assumptions?
4.9.2. How much loss would be incurred if the “bad” scenario metalizes?
4.9.3. How big is the potential gain if the “good” scenario occurs?
4.9.4. How significant is the value effect of real options?
4.9.5. What are the likely value effects of alternative courses of actions?

4.10. Capital structure and payout policy
4.10.1. Leverage
- Costs and benefits of leverage and interactions with operations
  - Asset-backed financing
  - Lines of credit versus holding liquid funds
  - Leasing and other off-balance sheet financing
  - Hybrid equity/debt
4.10.2. Earnings retention and payout policy
- Dividends
- Share repurchases
4.10.3. Forecasting financing activities and constructing pro forma financial statements

4.11. Alternative valuation models
4.11.1. Adjusted present value
4.11.2. Capital cash flow
4.11.3. Net equity flow
4.11.4. Residual income

4.12. Valuation settings
4.12.1. Investments in projects
4.12.2. Investments in companies
4.12.3. Initial Public Offering (IPO)
4.12.4. Mergers and acquisitions
4.12.5. Leverage buyouts
   Divestitures and other restructuring activities

5. **Line-item analysis**

5.1. **Objective**
   5.1.1. For selected key line item from the financial statements, we will
   - *Conduct an advanced level study of GAAP, earnings quality issues, red flags, and related analyses*
   - *Review the primary differences between International Financial Reporting Standards (IFRS) and US GAAP*
   - *Discuss real world examples of financial disclosures and accounting abuses*

5.2. **Structure**
   5.2.1. Depending on time left and other considerations, we will cover topics such as
   - *Revenue recognition*
   - *Leases*
   - *Income taxes*
   - *Pension and other post-retirement benefits*
   - *Business combinations*
   - *Financial instruments*
   - *EPS*