**Private Equity Valuation**

**Project Guidelines**

Prof. Nisan Langberg

*Part A*

**A1:** *Forming teams and choosing industry, firms, and deal*

Form teams of up to four students. Each team should choose an **industry** to focus on. The industry you choose should be a “simple” one so do not choose banking, financial, insurance or utility. (Firms in these industries are hard to evaluate because of their complex assets and liabilities and the fact that they are heavily regulated). Each team should identify a major corporate **deal** (merger, acquisition, or buyout) that took place in the industry. You will require deal-specific information for later sections (see part A2 last bullet point).

Each student should choose a publicly traded firm within the team’s industry that meets the following criteria:

* US based company (not ADR)
* Market Capitalization of at least $100 million
* You can locate stock price data and financial reports for the last five to ten years
* Leverage ratio D/E below 2.5 (that is, a ratio of the “book value of debt” to the “market value of equity” below 2.5).

You can use the company’s YahooFinance page or any other financial website you feel comfortable with in order to verify that the above restrictions are met.

* + Market Cap represents the total market value of equity
  + The book value of debt is calculated by adding “Long-term debt” and “Short/Current Long Term Debt” as they appear in the Balance Sheet.

Each team shall email me to let me know the **industry** the team wants to work on, the **deal** they have identified, and the **firms** chosen by the team members. I will go over the list and let you know if it is approved - my goal here is that you will choose industries and firms that you can successfully work on.

**A2:** *Industry background*

Prepare an industry summary report (up to three pages) with the emphasis on the following issues to the extent they are applicable. This list is provided in order to help you but if you feel that other issues not listed below are of importance to your industry then feel free to include these issues in our industry summary.

Points to cover in the industry analysis:

* Main products/services
* Central players (top five by market share or size)
* Competitive environment:
  + Potential entry/exit/consolidation
  + Identify barriers to entry
  + Importance of property rights and patents
  + Level product-market substitutability
  + Present the distribution of market share for the top five players in your industry
  + Calculate the Herfindahl Index as a measure of the level of concentration in your industry (see instructions below). How competitive is the industry?
* Opportunities and Challenges going forward
  + List three central challenges that the firms in your industry face
  + List three main opportunities that exist in your industry
  + How is the firm that you have selected taking advantage of, or dealing with, the aforementioned challenges and opportunities in the industry? What evidence supports your view?
* Important recent events relevant to your industry, such as new legislation, M&A deals, events of bankruptcy, and new regulation (mention up to three such events).
* Provide details on the deal your team has chosen.
  + Acquirer, target, price, stock or cash deal
  + Motivation, source of value, synergies for the deal
  + Changes that took place in the target firm following the deal
  + Deal multiples (V/Sales, V/EBITDA, E/NetIncome) where V stands for total enterprise value (V = MarketCap + Total Debt), and E stand for the total value of equity or MarketCap.

Herfindahl Index

The Herfindahl index is a measure of concentration in an industry. In order to calculate this index you shall ideally include the market share of all firms in the industry. For the purpose of our class you are asked to use the market share of the top five corporations operating in your industry. The index is calculated by squaring the market share of each firm competing in a market, and then summing the resulting numbers. You should end up with a number between 1/N and 1 (for our case 1/N = 20%). The lower the index, the less concentrated is the industry.

**A3:** *Gathering financial data and forecasting cash flows*

Prepare an Excel spreadsheet that includes past Income Statement data (five to ten years) alongside your forecast of future performance for the next ten years.

Students shall provide for this part:

* **Table** representing a condensed Income-Statement for past realized and forecasted years
* Three plots or **graphs** representing the past realized and forecasted series for (1) Sales, (2) EBITDA, and (3) Unlevered Free-Cash-Flows (we denote by FCF).

To calculate FCF use the following formula:

FCF = Sales – Operating Expenses – Taxes – Capital Expenditures – Change in NWC

*Operating Expenses* = COGS + SG&A

*Taxes* = (Sales – Operating Expenses – Depreciation) x (Average Corporate Tax Rate)

The average tax rate can be estimated from past financial reports of the company.

*NWC* = Inventory + Receivables – Payables

Example of a condensed “Income-Statement” table:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Past data | | | *Forecast years* | | |
|  |  |  | 2010 | … | 2016 | *2017* | *…* | *2027* |
| 1 | Sales |  |  |  |  |  |  |  |
| 2 | Operating Expense |  |  |  |  |  |  |  |
|  |  | *Operating margin* |  |  |  |  |  |  |
|  |  | *EBITDA* |  |  |  |  |  |  |
|  | Depreciation |  |  |  |  |  |  |  |
|  |  | *EBIT* |  |  |  |  |  |  |
|  |  | *Implied tax rate* |  |  |  |  |  |  |
| 3 | Tax payment |  |  |  |  |  |  |  |
| 4 | Cap Ex |  |  |  |  |  |  |  |
|  |  | *Net Working Capital* |  |  |  |  |  |  |
| 5 | Change in WC |  |  |  |  |  |  |  |
|  | FCF (1-2-3-4-5) |  |  |  |  |  |  |  |

**What will Teams Present in Class?**

Teams are required to present part A during a regular class meeting as indicated in the syllabus. Teams will have about 15 minutes each in order to present their work. The presentation should contain three main parts: Industry analysis, Details of the deal chosen by the team, and Cash Flow Forecasting for a single firm chosen by one of the team members.

**What to submit for Part A?**

* Each *team* should submit part A2 (up to three pages).
* Each *student* should independently submit Part A3.