Advanced Financial Modelling

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Session 2

October 2013

London Business School

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Course Outline

1
- Introduction to modelling in Excel
- Key principles of financial modelling
- Setting up a model – basic principles and useful functions

2
- Review of Assignment #1 – Financial Statement
- Nuts and bolts of DCFs

3
- Review of Assignment #2 - DCF
- Revisiting Firm Value in the context of financial modelling
- Introduction to M&A structuring and modelling

4
- Review of Assignment #3 – Merger Model
- Modelling debt and credit analysis
- Introduction to inner world of leverage buy-outs

5
- Review of Assignment #4 – LBO Model
- Combining IB valuation approaches and techniques
- Final Q&A

Review of Assignment One

Model One – looking under the hood

Model One is a standard template used to jump-start a financial model for pretty much anything

Design allows to run off a fully functioning engine and output statements within hours

- Reviewing the model design
  - Global settings, supporting schedules and outputs
  - Avoiding parallel calculations with Sumif
- Depreciation schedules
  - Use of VBD and Offset formulas
- Constructing PIK interest calculations
- Setting up a cash sweep – revolver facility
- Building tax schedules and loss carry forwards
- Dealing with interest / tax circularity
  - "REFs" and a circuit breaker

Revolver and Debt Financing - Tools

For companies with complex balance sheet or little disclosure of terms, revolver or a cash sweep is a good modelling proxy for all debt. Modelling debt requires more care if debt has non-cash servicing terms or accruals.

- Exclusive long term debt financing requires debt amortisation tested against operating cash flows
  - Otherwise risk of negative "carry" and/or unrealistic repayment profile
- If the real funding picture is complex or multi tiered, may not be practical to model every debt element
  - Assuming all debt is revolving is optimistic but would help "stabilise" balance sheet
- Watch out for PIK or similar non-cash terms (discount bonds, grace periods, etc.)
  - P&L interest charge = cash interest + PIK deferrals

Model One - Other Things to Consider

Model One structure allows for easy customisation of existing set-up to suit various modelling objectives

- Use of the "bridge" tab for multiple operating cases (function Choose)
- Working Capital – target vs. average ratios
- "Cash Waterfall" vs. Cash Flow Statement
- Direct vs. Indirect Cash Flow Statements
- Exceptionals – Cash vs. Book
- Issuing Equity and Paying Dividends

Model One - Concluding Remarks

If Model One is not suitable for your modelling objectives as a whole it is still helpful to pick bits and pieces to save time and effort.

- Most common off-the-shelf tool
- Formats do not require much modification
- Waste of time to build basic calcs from scratch (Revolver, Depr'n, Tax, Debt…etc.)
- Straightforward to flex/source from operating models
- Easy to feed into specific analysis tools
- Try and keep in store what you are comfortable with
  - You are welcome to use Model One or its modules as it suits you

Modelling DCFs

DCF Valuation Considerations

DCF is one of the primary valuation tools used by strategic investors.

Key Attractive Features

- Fundamentally consistent with CAPM
- For some companies the only way to value
- For all companies, represents their theoretical value, a proxy for private market value

- Unlike public comps does not change every day
- Unlike precedent transactions always represents forward looking data
- Transparent and easy to use as it rests on a relatively small number of assumptions:
  - Projected financial data
  - WACC / Discount rate
  - Terminal multiple / Growth rate

DCF Common Pitfalls – Part One

Understanding theoretical (textbook) framework is a prerequisite but is not sufficient to produce a correctly functioning DCF valuation schedule.

- Based on un-levered cashflow
  - Levered cashflow not consistent with WACC
  - Requires separate tax schedule (or tax shield adjustments)
- Everything else is sourced from Financials
- Use of mid year discounting convention
  - Think and adjust for seasonality if appropriate
- Match discount factors for # years of forecast
  - Not an intuitive mistake to spot when using prefabricated schedules

DCF Common Pitfalls – Part Two

Perpetuity growth method is text book favourite for terminal value calculation. However, bankers prefer exit multiples.

There are several reasons as to why

- For Terminal Value use of exit multiple may be preferable to perpetuity growth rate approach
  - EBITDA is more stable and easier to forecast than Operating Cash Flow
  - EBITDA multiples would yield tighter valuation range
  - Best if the two methods are cross checked
- How to make a quick check if DCF makes sense

DCF Common Pitfalls – Part Three

It is important to keep in mind that whilst DCF result is expressed in terms of Firm Value, the end result of any valuation exercise is to get a view on Equity Value.

- Need consistency between NPV result and adjustments applied to equity calculation
  - Assets / liabilities not accounted for in cashflows should be captured in equity calculation
  - FV (DCF) – (Net Debt + Other Adjustments) = Equity Value
- Use of historic net debt may be misleading
  - E.g. cash gaps between forecasts and latest actuals

DCF Common Pitfalls – Part Four

After equity adjustments are applied to DCF the resulting equity is on fully diluted basis. Hence, need to check for any options and/or convertible instruments

- Valuing options: BS fundamentally vs. TSM in practice
  - All in-the-money derivatives are converted (whether exercisable or not!)
  - Share Price = (FD Equity + Options Proceeds) / FD Shares
- May need to solve a circular equation
  - "Rich" options may inflate price per share
  - When options are clearly in-the-money – possible to eyeball
  - Otherwise, do not convert if resulting price per share is NOT decreasing

Assignment Two

For Assignment Two DCF tab is added to Model One. Your task is to wire the new tab to the rest of the Model and fill in missing formulae.

- DCF Valuation of by now familiar ABC Industries
- Your tasks for next week
  - Feed in appropriate cash flow items from financials statements of Model One
  - Make required adjustments to get to unlevered tax cash outflow
  - Calculate Equity Value by adjusting Firm Value based on the template provided
  - Calculate price per share taking into account dilution from options, if in-the-money
- For next class submit one page printout of the DCF Schedule