Advanced Financial Modelling

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Session 3

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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

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Review of Assignment Two

Individual Assignment Two

Transparency, limited number of inputs and consistency with theory makes DCF a primary valuation tool.

If discount rate = WACC remember that cash flows need to be unlevered!

- Feeding in relevant cash flows
  - EBITDA, Working Capital, CAPEX, Non-recurring items, if known
- Building Un-levered Tax Schedule
  - EBIT plus any non-financial adjustments
- Discounting Cash Flows to a valuation date
  - Discount factors are additive (mid year convention plus valuation date)
  - Views on exit value (multiples vs. PGR)
- Calculating Equity Value Calculation
  - Plugging in adjusted debt (accrued to valuation date) and any "cash-debt like" items
- Working out a FD Share Price
  - Only convert securities if in-the-money

DCF - Concluding Remarks

There is a number of mechanical errors which would invalidate NPV

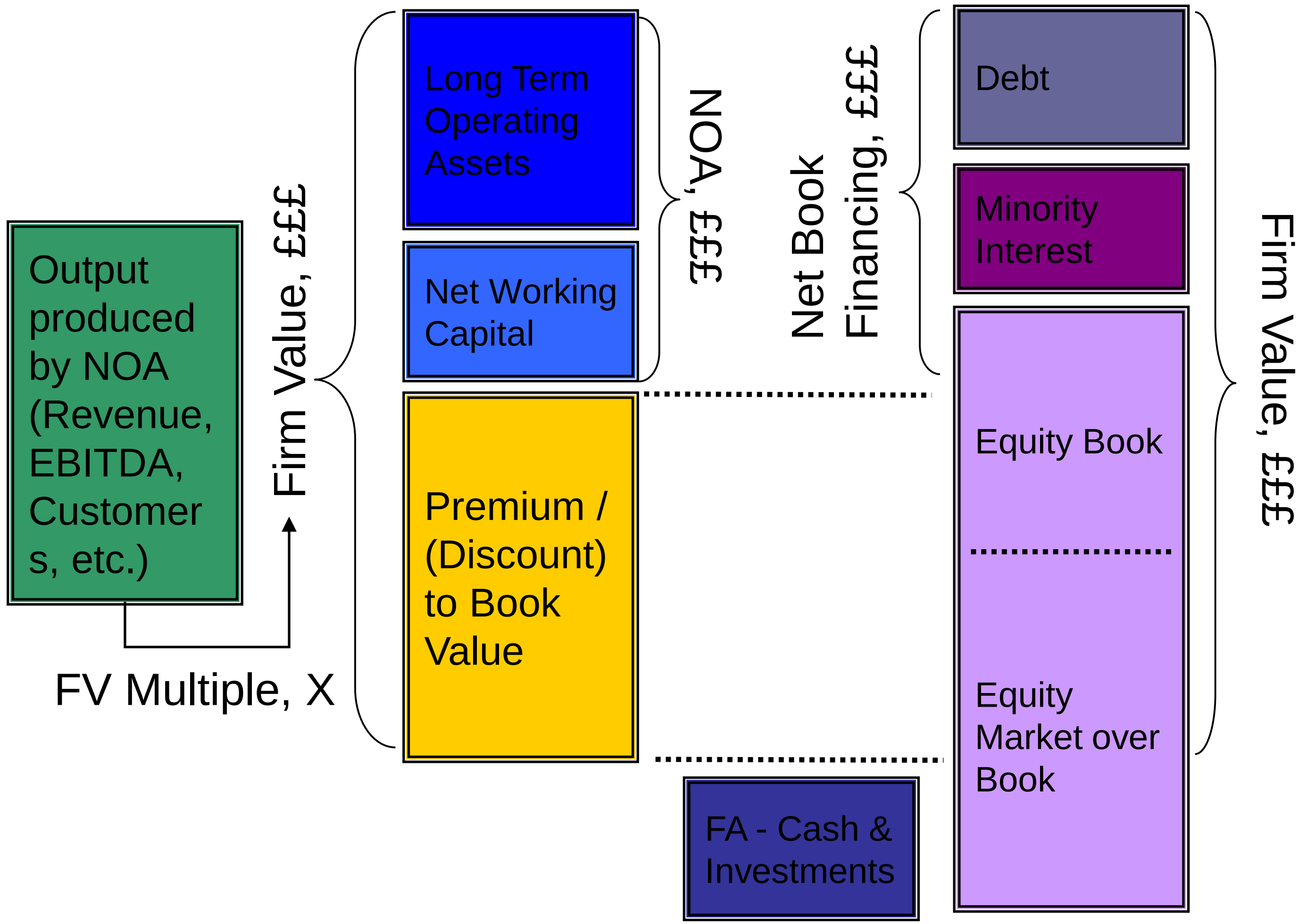
Computational errors in tax, discount factors and firm value adjustments are most common in real life

- Common sense should prevail
  - E.g. change in working capital is typically negative and should stay that way
  - Getting the level of opportunity at exit (e.g. your exit EBITDA and multiple) is more important that fiddling with the growth trajectory across the forecast period
- Other things to remember about doing a DCF
  - Segment-by-segment is better than consolidated
  - If using public data, does your DCF value translates into the research analysts' targets?

Thoughts on Firm Value

Firm Value Schematic

FV is an abstract concept representing collective claims of all stakeholders (equity, debt, unfunded pensions, etc. whatever) on cash generating assets



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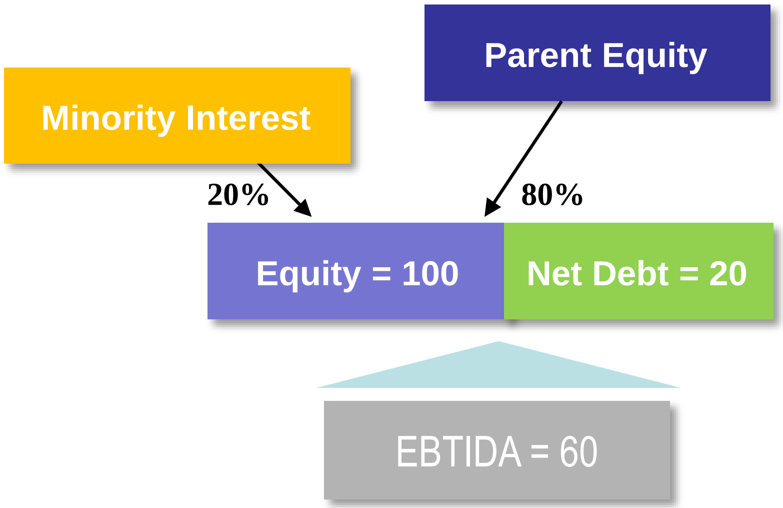
Firm Value - Accounting Impact



Full Consolidation

<u>EQUITY VALUE = 80</u>
NET DEBT = 20
MINORITY INTEREST = 20
<u>FIRM VALUE = 120</u>

EBITDA = 60

<u>FV / EBITDA = 2.0X</u>

Proportionate Consolidation

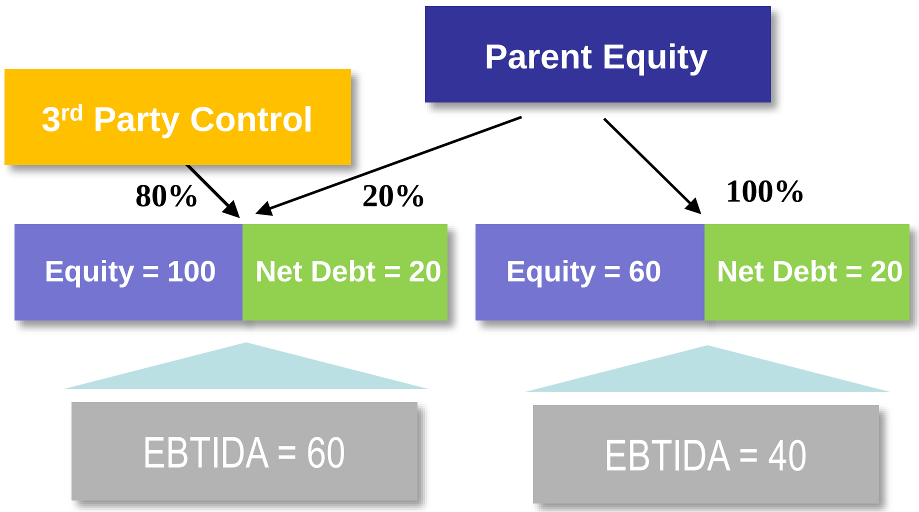
<u>EQUITY VALUE = 80</u>
NET DEBT = 20 * 80% = 16
MINORITY INTEREST = 0
<u>FIRM VALUE = 96</u>

EBITDA = 60 * 80% = 48

<u>FV / EBITDA = 2.0X</u>

- Depending on the approach taken, consolidated or proportionate, Firm Value may come out to be a different number
- However, if we are measuring comparable underlying assets Firm Value multiple should not differ!
- In any event we should not arrive at different views on Equity Value

Firm Value - Accounting Impact 2



Full Consolidation	Proportionate Consolidation
EQUITY VALUE = 80	EQUITY VALUE = 80
NET DEBT = 20	NET DEBT = 20 + 20 * 20% = 24
INVESTMENTS = (20)	INVESTMENTS = 0
FIRM VALUE = 80	FIRM VALUE = 104
EBITDA = 40	EBITDA = 40 + 60 * 20% = 52
FV / EBITDA = 2.0X	FV / EBITDA = 2.0X

- If underlying subsidiaries are identical in their relative value, e.g. trade on the same multiples, consolidation principles have no effect on the implied or observed value metric (multiple) of their parent
- The choice of computing consolidated or proportionate Firm Value may be dictated by availability of information, e.g. proportionate debt vs. consolidated, value of minorities, etc.

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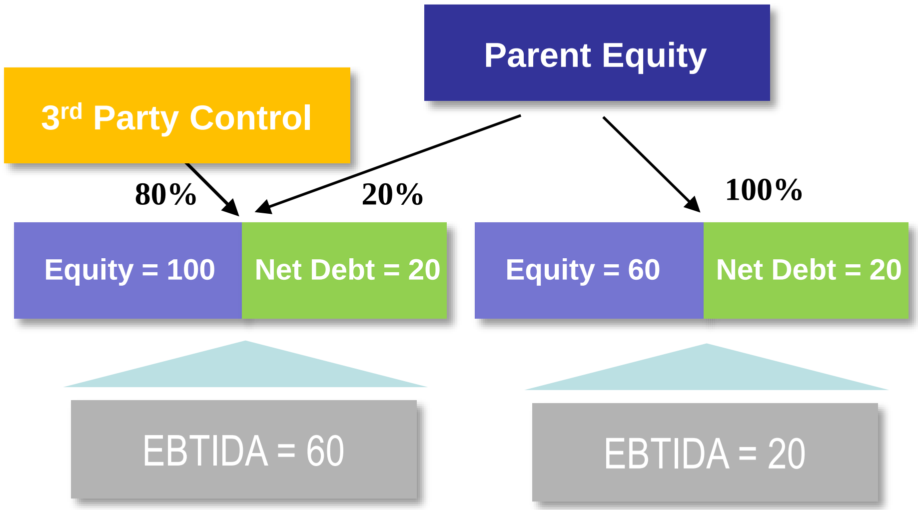
Firm Value - Accounting Impact 3



Full Consolidation	Proportionate Consolidation
EQUITY VALUE = 80	EQUITY VALUE = 80
INVESTMENTS = (20)	INVESTMENTS = 0
NET DEBT = 20	NET DEBT = 20 + 20 * 20% = 24
MINORITY INTEREST = 0	MINORITY INTEREST = 0
FIRM VALUE = 80	FIRM VALUE = 104
EBITDA = 20	EBITDA = 20 + 60 * 20% = 32
FV / EBITDA = 4.0X	FV / EBITDA = 3.75X

- If underlying subsidiaries are different in their relative value, e.g. growth story, profitability, capital intensity, etc., the choice of consolidation principles will have an effect on the implied trading multiple of their parent
- When comparing companies with more than one business, consolidated or not, think real hard about comparability of the parent company with its peers!

Introduction to M&A Modelling

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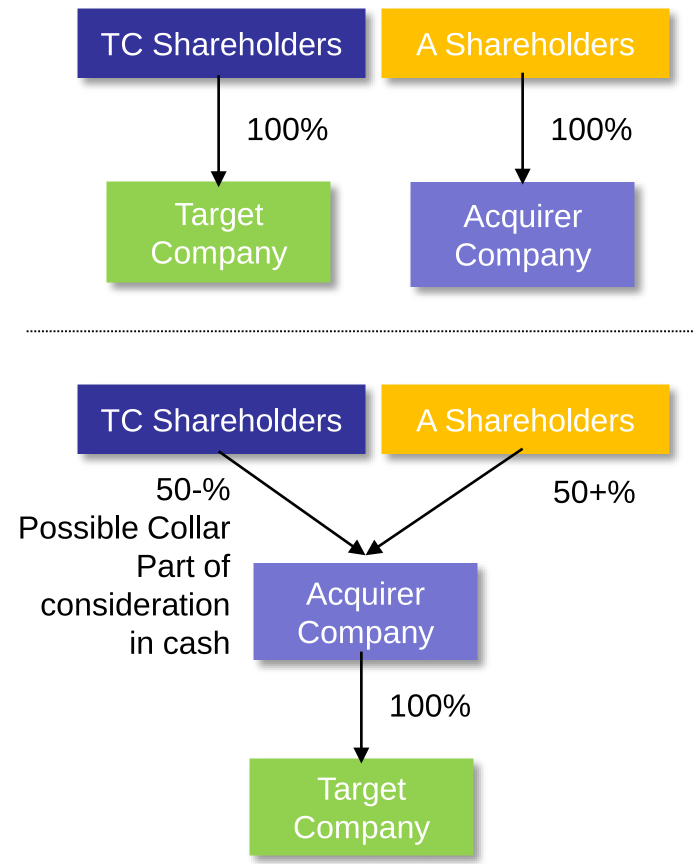
Mergers and Acquisitions - Definition

Merger is the fusion of two or more companies, or

- Merger is a combination of two or more companies into a single company where one survives and others loose the corporate identity
- The survivor acquires the assets and liabilities of the rest

Pre- and Post Deal Schematic



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Mergers and Acquisitions Considerations

Driven by a deal's structure M&A corporate finance framework is wider in scope than pure modelling.

A few things to consider and keep in mind

- Type of consideration paid
  - Relative valuation in all equity deal!
  - Cash is exit
  - Stock is retained upside, but risks of stock overhang, liquidity of future exit
  - Collars (e.g. Put / Call on Acquirer's stock)
- Economic contribution and post merger ownership split:
  - Asset Value vs. Level of Indebtedness
- Other Structuring Issues:
  - Bid Strategy (Tender vs. Consent)
  - Surviving Entity (e.g. Reverse Merger)
  - Tax basis
  - Domicile and Listing

What are Merger Models for?

In short, merger model is amalgamation of assets / cash flows contributed by two (or more) standalone entities, merger partners (simply A + B) fed into <u>one pro forma</u> set of financial statements

- Perceived to be the coolest modelling task… junior bankers fight to work on merger related assignments ☺
  - Maps transaction’s structure: cash or equity, fees, funding and refinancing, etc.
  - Shows optics of combined entity: combined financials, credit ratios, accretion, etc.
  - Provides some limited insight on relative valuation of deal participants

Modelling Framework for Mergers

Merger model is normally analysed from acquirer shareholders' / acquiring entity perspective.

Modelling a merger requires overlaying controls to drive pro forma balance sheets and forecasts

- Modelling combined entity requires
  - Assumption which entity survives
  - Mapping Pro Forma Capitalization
    - Target's Equity is wiped out
    - New Equity / Debt added
    - Existing Debt refinanced if required
    - Transaction GW = Consideration – Target's NW -/+ Asset Adjust.
  - Feed combined operating forecasts
  - Overlay with forecast synergies, if any
- Output is fed into standard Financial Model
- Check for financial viability = credit ratios

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Merger Model – Contribution Analysis

Contribution analysis is an add-on analysis tool present in a merger model

- Contribution analysis based on –
  - Revenues / EBITDA / EBIT: *Firm Value Basis*
  - EBT / NI / Market Caps: *Equity Value Basis*
- Firm Value contribution can meaningfully translate into ownership / per share exchange ration if
  - No valuation re-rating (pre deal = post deal value) for merging companies
- Firm Value for target is fixed at certain price
  - E.g. acquisition price assumes "fair value"

Assignment #3

In Assignment Three ABC Industries considers bidding for XYZ Services for combination of cash and stock. To simplify – the amount of pro forma debt is fixed as given.

- Your task is to repair cells marked with red background:
  - Fix pro forma ownership table
  - Work out maximum premium to offer XYZ shareholders in order for ABC shareholders to retain control (~ 50.1% of common)
  - Fix pro forma balance sheet adjustments (Merger Control tab) – pro forma balance sheet should balance
  - Fix contribution analysis table (shows relative contribution to combined entity for each co)
- For next class submit summary transaction page and forecast balance sheets for the combined entity