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**INSTRUCTIONS AND ACRONYMS**

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# 1. How to read the spreadsheets and the supporting documents

We start by describing the layout of the spreadsheets and their supporting documents. One should purview the spreadsheets, especially FSA1, and their supporting documents while reading the instructions below.

## 1.1. The spreadsheets

Each spreadsheet consists of "blocks", separated by blank rows. These blocks highlight the inputs needed, the intermediate takeaways, and the key outputs. Together, they convey the big picture.

Each spreadsheet requires inputs that must be provided by the user from the financial statements and market data such as stock price. *These inputs are shown as green italic numbers for positive numbers and (red italic number in parentheses) for negative numbers.* Year 0 refers to the current year; Year-1 refers to the prior year and Year 1 refers to the forthcoming year. Inputs that are usually zero in financial statements are shown with tan shading.

When you open a spreadsheet, you will find that the inputs are prefilled. These provide a ready example that you can follow before you input your numbers. Once you start to examine real cases, then you should replace ALL inputs by numbers from the financial statements.

Some spreadsheets have step numbers listed in the far right column. The step numbers can differ from the sequence per rows. Clicking any step number takes you to the next one. Following this sequence allows you to see better the inherent logic in the spreadsheet. Moreover, each step number is cross-referenced to its description in "Detailed steps" section of the supporting document, which elaborates on the nature of the line item.

[Technical point that users can ignore: Some cells should not be copied across to the right because they have formulas that differ in structure from the cells to their right. To prevent accidental copying, these cells have been shaded gray, and a warning comment has been added.]

## 1.2. The supporting documents

Each spreadsheet has a textual "Overview," and, when necessary, a "Detailed Steps" section referred above.

The "Overview" section does the following:

- lists key takeaways of the spreadsheet,

- states the core concepts that the spreadsheet relies upon, and

- states the required inputs that describe the historical data or judgments needed.

## 1.3. The sequence in which you should read the spreadsheets and the documents

- Purview the overall structure of the spreadsheet

- Read the overview section of the supporting document.

- Familiarize yourself with the inputs needed by the spreadsheet

- Study the sequence of formulas that connect inputs to outputs by clicking the step numbers if they are present. As you click each step, read the "Detailed Steps" section of the supporting document.

- Apply the spreadsheet to a real company by replacing the inputs with data from financial statements.

# 2.  Terminology and frequently used acronyms

## 2.1.  Terms

Practical FSA, and textbooks on FSA, use terms that are not standardized. To communicate effectively, our spreadsheets and supporting documents use terms consistently. This strict "one language" approach could be a small initial hurdle to those used to different terms.

The new terminology centers on the separation of *enterprise vs. financial activities*. Enterprise activities are often referred to as operating activities, but we stick to the former term because the latter is often used for all sorts of other meanings. To minimize confusion, the first spreadsheet, FSA1, provides a terminology "lexicon": It states the common synonyms for terms that we use.

## 2.2.  Acronyms

Acronyms keep the spreadsheets compact, which makes it easier to see the big picture. We summarize the acronyms used below. This dichotomy between enterprise and financial activities gives rise to the following acronyms.

| | |
|---|---|
| FA = Financial assets<br>EA = Enterprise assets | FL = Financial liabilities<br>EL = Enterprise liabilities<br>EQ = Equity |
| NEA = Net enterprise assets [aka NOA] = EA – EL | NFL = Net financial liabilities = FL – FA<br>EQ = Equity |
| NEA = Net enterprise assets [aka NOA] = EA – EL | IC= Invested capital or enterprise capital = EQ + NFL |

The above dichotomy extends to an enterprise level analysis and an equity level analysis. To get a sense of the difference, note that:

- Enterprise (or unlevered) analysis focuses on the creation of wealth as measured by the enterprise profit margin after tax. The creation of such wealth requires an investment in net enterprise assets, which is financed by invested capital. An increase in net enterprise assets is subtracted from enterprise profit after taxes to arrive at the cash flows generated by the enterprise.

- Equity (or levered) analysis consists of both enterprise and financial activities – as one package. Earnings measure the "bottom line" creation of wealth, that is, after financial expense and financial income. The difference between earnings and the (net) distribution of wealth shows up as a net increase in the shareholders' equity.

The table presented next contrasts the enterprise view with the equity view. It does not account for the difference between net income and comprehensive income. Most of the concepts will be clear only after the spreadsheets and their supporting documents have been read. Someone unfamiliar with FSA and valuation can skip the table for now and return to it later for review.

| | Unlevered or enterprise-level | Levered or equity-level |
|---|---|---|
| Net worth | Net enterprise assets or invested capital | Equity |
| Turnover | $1/a$ = ATO = Net enterprise asset turnover = Sales/NEA | |
| Income | EPAT = Enterprise profit after taxes [aka NOPAT, unleveraged NI, EBIAT, EBIT*(1-t)] | NI = Net Income = EPAT – Net financial expense after tax [NFEAT] |
| Margin | m = Enterprise profit margin after tax = EPAT/Sales | Net margin = NI/Sales |
| Cash flows | ECF = Enterprise cash flows [aka free cash flows] = EPAT – Change in NEA | Net dividends = NI – Change in equity = ECF – NFEAT + Change in NFL |
| Change in net worth | Change in invested capital = Comprehensive EPAT – Enterprise cash flows | Change in equity = NI – Net dividends |
| Return on investment | ROIC = Return on IC = EPAT/IC = RNEA = Return on NEA = EPAT/NEA | ROE = Return on EQ = NI/EQ |
| Cost of capital: Discount rate | Weighted average cost of capital (WACC) = Enterprise cost of capital; depends on risk-free rate and enterprise risk; growth comes with risk. | $r_e$ = cost of equity; depends on wacc and leverage |
| Value | Enterprise value = MV of NEA = PV of ECF Discounted cash flow (DCF) model | Equity value = PV of future dividends (DDM) Enterprise value – MV of NFL |
| Relative valuation | "Enterprise cash flow yield": Expected ECF/EV | Expected dividends/Equity value: Dividend growth model |
| | "Price to book": EV/NEA | Equity value/Book value of equity: Book value growth model or residual income model (RIV) |
| | "Price to forward earnings": EV/Expected EPAT | Equity value/Expected NI: Earnings growth model (AEG) |
| Cash flow drivers | ECF = EPAT – Change in NEA = NEA * (RNEA – growth rate in NEA) = Sales * (m – a * growth rate in NEA) Drivers: Sales and sales growth, margin (m), and NEA intensity (a) | Financial policy and ECF drivers |