Chapter 2. Introduction to financial statements

Course focus = principles behind statements & how to use in analysis/valuation NOT accounting rules

🡪 USE US GAAP, not IFRS

1. FORM OF FINANCIAL STATEMENTS

Distinguishing Form from Content

**Form**

= describes how FS are organized

= way in which statements x component parts fit together  
🡪 How can FS components be expressed in terms of other components

🡪 3 primary financial statements: balance sheet, IS & CF statement

**Content**

= describes how line items (assets, liabilities, earnings,…) dictated by the form, are measured

= quantifies line items that are reported within the component parts of financial statements

1. Balance sheet

= lists 3 elements

1. Assets  
   = investments expected to generate payoffs
   1. Divided in current (<1y) & long-term (>1y)
2. Liabilities  
   = claims to payoffs by others than owners
   1. Divided in current (<1y) & long-term (>1y)
3. Equity  
   = claims to payoffs by firm’s owners

Accounting equation/ Balance sheet equation

**Shareholders’ equity = assets – liabilities**

2. Income statement

= report show shareholders’ equity increased/decreased as result of bs activities

Compute net income (net profit, earnings)

**Net income = revenues – expenses**

**Income statement lay-out**

* Net revenue = sales – estimated sales returns  
  - COGS
* Gross margin  
  - Operating expenses
* EBIT = operating income before interest and taxes  
  - Interest expenses + Interest income (investments)
* Income before taxes  
  - Income taxes
* Income after taxes (and before extraordinary items)  
  + Extraordinary items
* Net Income  
  - preferred dividends
* Net Income Available to Common

**Earnings per share (EPS)**

= earnings after preferred dividends for common (ordinary sh)

1. **Basic EPS**  
   = Net income available to common/weighted average of common shares outstanding during year
2. **(Fully) Diluted EPS**  
   = Net income available to common/weighted average of common shares that WOULD be outstanding if contingent claims on shares were executed  
   e.g. convertible bonds, warrants, stock options,…
3. **Basic EPS > Fully diluted EPS**

! Any value ∆ has to be shown in IS, even if not sold

3. Cash flow statement

= describes how firm generated & used cash

**3 types**

1. CF from operating activities  
   = cash generated from selling products – cash used to do so
2. CF from investing activities  
   = cash spent on purchasing assets – cash received from selling assets
3. CF from financing activities  
   = cash transactions with claimants on firm

🡪 Sum of 3 = change in cash   
(effect of exchange rate changes!)

4. Statement of shareholders’ equity

= explains how equity changed over year  
= “Stocks & flows equation for equity”

**Ending equity = beginning equity + total (comprehensive) income – net pay-out to shareholders**

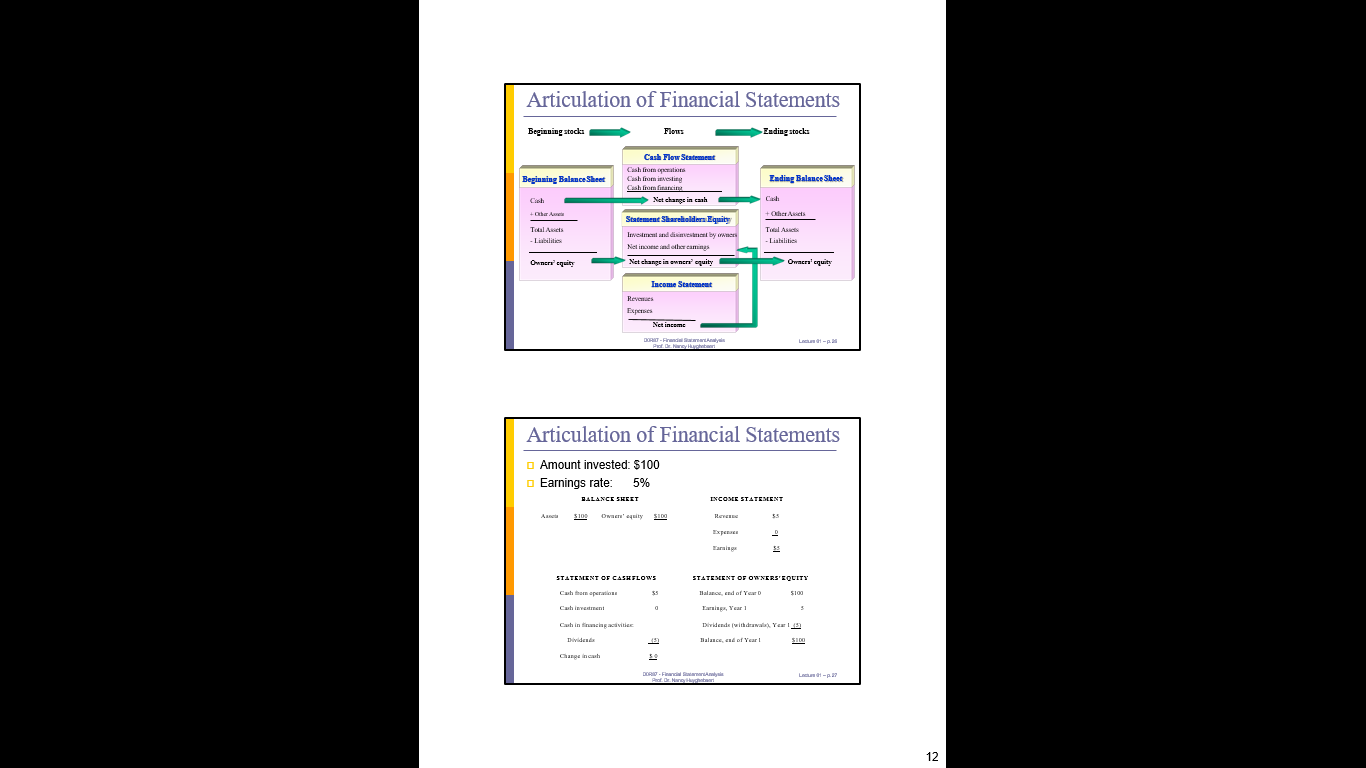
* Total comprehensive income  
  = net income + other comprehensive income
  + Other comprehensive income  
    = 5 additional income items   
    = dirty surplus accounting
    - Foreign currency translation
    - Net gain on CF hedges
    - Net gain on net investment hedges
    - Reclassification to net income of previously deferred net gains related to hedge derivatives
    - Reclassification of ineffective hedge gains to net income
* Net pay-out to sh  
  = dividends + share repurchases – share issues

5. Footnotes & supplementary info

= contains important info to interpret statements

* Annual 10-K report & quarterly 10-Q report
  + Background discussion of firm
  + Regulations applying to firm
  + Details of executive compensation
  + Details on pension plan
  + Off-balance sheet obligations x SPVs
  + Management’s discussion x analysis

Articulation of financial statements

* **Balance sheet**  
  = stock (at one point in time)
* **IS & CF-statement**  
  = flows  
  = ∆ stock between t1 and t2
  + Income statement  
    = part of change in owners’ equity
  + CF statement  
    = change in cash
* **Articulation**   
  = how statements are related
  + IS & BS  
    = Statement of shareholders’ equity & CF statement  
    

2. MEASUREMENT IN FINANCIAL STATEMENTS

* BS equation
  + Sh equity = assets – liabilities
* Value equation: value of firm = value equity + value of debt
  + Value of equity = value of firm – value of debt

🡪 Balance sheet equation & value equation have same form but different measurement!  
🡪 Book value of equity typically does NOT reflect intrinsic value

🡪 Difference = intrinsic premium

* Intrinsic premium  
  = fundamental (intrinsic) value of equity – book value of equity
* Market premium   
  = market value of equity – book value of equity
* Negative premium   
  = discount
* Positive premium  
  = unrecorded goodwill  
  e.g. because of unrecorded assets (brand name) not on balance sheet or tangible assets

Price-to-Book ratio (P/B)

* **(Market) P/B ratio**   
  = market value/book value  
  = multiple of book value at current market price
* **Intrinsic P/B ratio**   
  = Intrinsic value/book value   
  = multiple off book value that equity is fundamentally worth
  + Estimate intrinsic P/B and see whether it indicates that market P/B is mispriced
* To analyse  
  = need to know how book values are measured
  + Can be measured in BS or in IS

Measurement in balance sheet

🡪 Some assets & liabilities are on balance at **fair value**

= mark-to-market accounting, do NOT contribute to premium over book value

🡪 Many items: on balance at **historical cost**  
= Historical cost accounting  
= CAN contribute to premium over book value

Measurement in Income statement

* **Shareholder value added (VA)**  
  VA = ending value – beginning value + Div
* **Shareholder market value added (MVA)**  
  Market VA = ending price – beginning price + Div  
  (Equals return on stock: Pt – Pt-1 +dt)
* **If market prices intrinsic value correctly**Market VA = Intrinsic VA

**In general  
=** accounting measure of VA in income statement (=earnings) ≠ MVA

🡪 Because accounting rules for measuring revenues x expenses

* Revenues  
  = **revenue recognition principle**
  + Add value when has been earned (e.g. when sale is made)
* Expenses  
  = **matching principle**
  + Match expenses against revenue for which they are incurred

**Stock market contrast**

= stock market is pricing earnings from current operations & anticipated earnings from future operations

e.g. firm announces new product, accountant waits until sales are realized, stock market tries to anticipate sales & corresponding profits

Good matching

1. COGS matched to revenues  
   = not full costs of producing/buying inventory  
   = gross margin (revenues – COGS) measures value added from trading with customers
   1. COG not sold: reported in BS as inventory, matched with revenue future periods when sold
2. Costs buying plant not expensed when incurred  
   = cost capitalized on BS & depreciated over years when plant produces revenue
   1. Depreciation   
      = method of matching cost of plant to revenues plant generates
3. Employee pension costs expense in period that employee generates revenues, not when paid in retirement

Poor matching

1. R&D expensed when incurred ipv matched to revenues they generate
2. Ad costs expensed when incurred ipv matched to revenues
3. Estimating useful lives for plant assets that are too long  
   = depreciation understated
4. Overestimating restructuring charge

**Note**

* Accounting recognition of value (value added), typically lags intrinsic value
* Fundamental analysis tries to forecast value, not yet recognized in financial statement, but will be recognized in future financial statements, once sales made
* Leads to Price-earnings ratio

Price-Earnings Ratio (P/E)

= compares current price with earnings  
= do forecast of future earnings justify this multiple?

**Interpretation**

* Price  
  = market’s expectation of value to be added in future
* Earnings  
  = value added from current earnings

P/E ratio **compares forecast of future earnings with current earnings**

🡪 Reflects anticipated earnings growth

* P/E high   
  = one expects more future earnings than current earnings
* P/E low (still higher than 1!)  
  = one expects less future earnings than current earnings

🡪 Compute intrinsic P/E to be compared with market P/E

* Trailing P/E ratio = P/current earnings
* Forward P/E ratio = P/ forecast earnings
* Company in good shape: Forward P/E < Trailing P/E because expect earnings to grow

Reliability criterion: the accountant

= accounting numbers should be based on objective evidence, free of opinion and bias

* BS  
  = items recognized only if can be measured with reasonable precision
* IS  
  = revenues recognized when actually take place
* Conservative accounting  
  = practice of understating/omitting assets from BS
* Analyst pleased with reliability criterion
  + Starts from hard number (=anchor)
  + No mixing of what is known & what is unknown

**Fair-value accounting**

= firm writes assets up or down to market price  
**= mark-to-market accounting**

! When \* bubble, \* speculation into FS

🡪 Fundamental analyst should be wary of fair-value accounting, it is NOT something on which to anchor

Tensions in Accounting

🡪 Reliability criterion comes into play when matching revenues & expenses

🡪 \* tension

* GAAP: investments in R&D & brand names expensed immediately
* ↔ future revenues from R&D and advertising are recorded later  
  = mismatch btw revenues and expenses (matching principle)
* Reliability criterion NOT absolute  
  = sometimes estimates needed
  + Bad debt (%customers not paying)
  + Depreciation (useful life of assets)

🡪 Be aware of tensions & mismatching btw revenues x expenses

🡪 Later: diagnostics to check quality of financial statements