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