**CFA 4 Financial Statement Analysis**

**4.1 Introduction to Financial Statement Analysis**

**Financial statement analysis framework**

6 steps of financial statement analysis

1. State the objective and context – what the analysis seeks to answer, how many resources to commit
2. Gather data – financial statements, speak to management, etc
3. Process the data – calculate ratios, do statistical analysis, make graphs
4. Analyse and interpret the data – draw conclusions from data
5. Report conclusions – make report and communicate it
6. Update analysis – repeat

Financial statement analysis: Use info in financial statements + other info to make economic decisions

**Financial reporting bodies**

Standard-setting bodies: Organisations of accountants and auditors that establish financial reporting standards

Two main standard setting bodies

* FASB: Sets the US GAAP
* IASB: Sets the IFRS, the older standard is IAS

Regulatory authorities: Gov agencies with legal authority to enforce compliance with financial reporting standards

* E.g., SEC and FCA

Most national authorities belong to the IOSCO

* IOSCO members regulate 95% of world’s financial markets
* Not a regulatory body, but aims to make regulations more uniform around the world
* Objectives: Protect investors, Fair and efficient markets, Reduce systematic risk

In the EU:

* In EU all countries use IFRS
* European Securities Commission (ESC) advises European Commission (EC) on regulation
* European Securities and Market Authority (ESMA) coordinates regulation with EU

Proxy statements: Issued to shareholders during a vote

* Good info source

Financial statement footnotes: Provide further details about info in the primary statements

* Discusses the presentation (e.g., fiscal period, IFRS vs GAAP)
* Provides the accounting methods, estimates, assumptions
* Also audited

**SEC**

SEC enforces the Sarbanes-Oxley Act of 2002

* Prohibits an external auditor from providing certain additional paid services to the company
* Reduces conflict of interest 🡪 More auditor independence
* Company management must certify financial statements are fair and internal controls are effective 🡪 Auditor must confirm this

SEC required filings

* Form S-1: Registration before the sale of new securities
* Form 10-K: Annual report
* Form 10-Q: Quarterly report, not audited
* Form DEF-14A: Proxy statement
* Form 8-K: Disclose material events e.g., M&A, management change
* Form 144: When issuing securities to buyers without registering the securities with the SEC
* Forms 3, 4, 5: When company’s directors trade the company securities

**Segment reporting**

IFRS and GAAP both require segment reporting

Operating segment: A portion of the company that is >10% of revenue, assets, or income

* Segments reported should be >75% of firm sales
* Should be distinguishable from other segments in risk and reward

Each segment must show: Revenue, Profit, Assets and Liabilities, Interest, Capex, D&A, tax expenses, share of equity accounted investments results

Geographic segments: Has the same size criterion as Operating

* Requires a business environment different from other segments

**Management commentary (AKA MD&A)**

IFRS: Recommends discussion about objectives, past performance, etc

SEC: Requires discussion of trends, significant events and uncertainties, operational results

* Must discuss inflation, off-balance sheet obligations, accounting policies that require judgement, forward looking expenditures and divestures

**Audit**

Audit: Independent review of financial statements 🡪 See if it is fair and reliable

* Examines accounting and internal controls

3 parts of the standard auditor’s opinion

1. Independent review of financial statements
2. Follows auditing standards to provide reasonable assurance that there are no material errors
3. Confirms the accounting principles and estimates are reasonable. Explain why if accounting methods are inconsistent between periods

Auditor opinions

* Unqualified opinion: Auditor believes statements are free from material omissions and errors
* Qualified opinion: Statements have exceptions to the accounting principles, auditor explains these exceptions
* Adverse opinion: Statements are not fair or are materially non-conforming with accounting standards
* Disclaimer of opinion: Used when auditor can’t express an opinion
* Any opinion that is not Unqualified is a Modified opinion

Auditor can include a paragraph when a material loss is probable, but amount cannot be estimated

* E.g., Due to Going concern assumption, Valuation of asset values, litigation

Internal controls: Processes a company uses to ensure that it accurately presents financial statements

* Responsibility of management, auditor provides opinion of it

Audit must contain section which highlights key accounting choices

* Includes choices of significant management judgement, significant transactions, or subjective choices
* Called Key Audit Matters for international, Critical Audit Matters for US

**IFRS vs GAAP**

US GAAP

* Developed by FASB
* Rules based
* Inventory valuation: FIFO, LIFO, weighted average
* Product development costs: Expensed
* Interest paid: CFO
* Reversal of inventory write downs: Prohibited

IFRS

* Developed by IASB
* Principles based
* Inventory valuation: LIFO prohibited
* Product development costs: May be capitalised
* Interest paid: CFO or CFF
* Reversal of inventory write downs: Allowed

Need to be mindful when making comparisons of the two

**Additional info sources for financial statement analysis**

Issuer sources: Earnings calls, presentations, press releases, communications with management and IR

Public third party sources: Industry reports, whitepapers, trade journals, gov statistics, social media

Proprietary third party sources: Analyst reports, data platforms like Bloomberg, consultancies

Proprietary primary research: Own studies, hands-on experience, advice from own employees

**4.2 Analysing Income Statements**

**a) Revenue recognition**

Revenue is recognised in the period it was earned in

* Recognition of revenue is not dependent on receiving cash payment

Revenue is reported net of any returns and allowances in the income statement

* E.g., Estimated warranty provisions, customer discounts

Unearned/Deferred revenue: A liability that is created when payment is received before the transfer of goods or services

* This liability is reduced (sometimes called amortised) over time – systematically recognise a portion of that liability as revenue

Principle: Revenue is recognised when goods are transferred to the buyer

* IFRS and GAAP both take the principle based approach to revenue recognition

**Revenue recognition process**

5 step revenue recognition process

1. Identify the contract with customer
2. Identify the performance obligations
3. Determine the price
4. Allocation the price to the performance obligations in the contract
5. Recognise revenue when a performance obligation is satisfied

Contract: Agreement between two or more parties that specifies obligations and rights

* Collectability must be probable
* Probable is defined differently under IFRS and GAAP

Performance obligation: Promise to deliver a distinct good or service

* Distinct good or service: Customer can benefit from it and promise to transfer can be identified separately from other promises

Transaction price: Amount a firm expects to receive from a customer for transferring the good or service

Revenue should only be recognised if it is highly probably it will not be reversed

Revenue is recognised when the performance obligation is satisfied

* Evidence includes: Acceptance, physical possession, taking the risk of ownership, legal title, seller having right of payment (though revenue is not necessarily the payment amount)

**Revenue recognition - Long term contracts**

For long term contracts, revenue is recognised on the progress toward completing the performance obligation over a period of time

* Can be measured using input costs (% of completion), or using total output

A performance obligation is satisfied over a period of time if any of the 3 criteria are met:

1. Customer receives and benefits from the good/service over time
2. Supplier enhances or creates an asset that the customer controls
3. Asset has no alternative use for supplier and supplier can enforce payment for work to date

Costs to secure a long term contract are capitalised

* Expensed over the life of the contract

**b) Expense recognition**

Expenses: Decreases in economic benefits during the period in the form of outflows, depletion of assets, or incurrence of liabilities, that result in decreases in equity, other than those relating to distributions to equity holders

Remember it must decrease equity to be an expense

Accrual accounting: Expense recognition is in the period in which the economic benefits of the expenditure are consumed

* 3 different methods: Matching principle, Expensing as incurred, Capitalisation

Matching principle

* Expenses used to generate revenue are recognised in the same period as the revenue
* E.g., COGS are recognised when the revenue is recognised

Capitalisation

* Costs can be capitalised as assets on the balance sheet and then expensed using D&A to the income statement
* E.g., PPE and intangibles

Period costs: An expense which cannot be tied to revenue generation

* Expensed during the period incurred
* E.g., Administrative costs

More conservative accounting recognises expenses sooner rather than later

* Expensing is more conservative than capitalisation

**Capitalisation vs Expensing**

Expenditures can either be capitalised as an asset or expensed in the income statement in the period incurred

To be capitalised: Expected to provide economic benefit over multiple periods

* If future economic benefit is unlikely or highly uncertain, the it should be expensed in the period incurred

Capitalised expenditures are initially recorded at cost (fair value + other costs)

* Other costs: Any costs necessary to prepare the asset for use (e.g., installation, transport)

The cost is then allocated to the income statement over the asset’s life as depreciation, depletion (for natural resources), or amortisation

* Exception is for land and indefinite life intangibles
* DD&A reduces the carrying value (net book value) of the asset
* The expenses reduces net income

Additional expenditures once asset is capitalised:

* Subsequent related expenditures that provide more future economic benefits are also capitalised
* Subsequent expenditures to merely sustain the usefulness of the asset are expensed when incurred

**Capitalisation vs expensing effect on financial statements**

Whether the expenditure is capitalised or expensed can affect:

* Cash balance (as D&A affects net income, which affects tax due)
* Retained earnings (as D&A affects net income)
* PPE
* Operating and Investing cash flow (under capitalisation the expenditure is investing cash flow, under expenses the expenditure is operating cash flow)

Note: At the end of the asset’s life, both methods give identical results in the balance sheet, only during the periods where the asset is still in use are results different

Total asset turnover:

* If costs are capitalised: Lower due to higher balance sheet assets
* Converges at the end of the asset’s life

Net profit margin:

* If costs are capitalised: Higher in year 1 as there is only D&A expense, and not the full asset expense
* If costs are capitalised: Lower in subsequent years as there is D&A expense, while the other option has no expense

**Summary of capitalisation and expensing effects**

|  |  |  |
| --- | --- | --- |
|  | **Capitalising** | **Expensing** |
| Assets & Equity | Higher initially, though converges at the end of useful life | Higher initially, though converges at the end of useful life |
| Net income | Higher in 1st year, lower in subsequent years | Lower in 1st year, higher in subsequent years |
| Income variability | Lower | Higher |
| ROA, ROE | Higher in 1st year, lower in subsequent years | Lower in 1st year, higher in subsequent years |
| Debt ratio | Lower initially, though converges at the end of useful life | Higher initially, though converges at the end of useful life |
| Operating Cash Flow | Higher | Lower |
| Investing Cash Flow | Lower (cost is put here) | Higher (no contribution to it) |

**Capitalised interest**

When a firm construct’s its own assets, the interest that accrues during the capitalisation period is capitalised as part of the asset’s cost

Capitalised interest is not in interest expense in the income statement

* The capitalised interest cost is allocated to the income statement through depreciation expense (if held for use) or COGS (if held for sale)

Capitalising interest means it is an outflow in Investing Cash Flow

* Usually interest paid is Operating or Financing Cash Flow

Both capitalised and expensed interest should be used when calculating interest coverage ratios

* Add the capitalised interest to the interest expense
* Should also adjust income by adding back any depreciation of capitalised interest

**Research and Development Costs**

Research costs: Costs from the discovery of new knowledge

Development costs: Translate research findings into a plan or product

To recognise the intangible asset, the firm needs to show it can complete it, and either use or sell it

Under IFRS:

* Research costs: Expensed as incurred
* Development costs: Can be capitalised

Under GAAP

* Both: Generally expensed as incurred
* For software for sale, it is similar to IFRS

**Bad debt expense and Warranty expense recognition**

If a firm sells goods on credit or provides a warranty:

* Need to estimate bad debt expense or warranty expense

The expense is recognised in the period of sale

**c) Nonrecurring items**

Non-recurring items include:

* Unusual or infrequent items, Discontinued operations

Unusual or infrequent items:

* E.g., gains/losses from sale of assets, impairments, restructuring costs
* Included in Income from continuing operations, and reported before tax

**Discontinued operations**

Discontinued operations:

* Management has decided to dispose this, but has either not done it yet, or disposed of it after generating income/losses in the current year

Must be physically and operationally distinct from the rest of the firm

Measurement date: When a formal plan for disposing is made

* Estimate is made for loss during phaseout period and loss on sale of business

Phaseout period: Time between Measurement date and actual disposal date

Income/loss from discontinued operations is reported net of tax, after income from continuing operations

* This is separate from income/loss from continued operations

Past income statements presented must be restated, separating the income/loss from discontinued operations

Discontinued operations should be excluded from forecasting future earnings

* They do not affect continuing operations

**Changes in accounting policies and estimates**

Accounting changes: Changes in policies, estimates, restatements

Retrospective application: Prior period financial statements are restated, applying the new policy

Prospective application: Prior period statements are not restated, new policies apply to future only

Modified retrospective application: Doesn’t require prior period restatement, however beginning values of affected accounts are adjusted

Change in accounting estimates: Usually due to new info

* Only needs prospective application
* Typically doesn’t affect cash flow

Prior period adjustment: Correction of an accounting error made in previous financial statements

* Needs retrospective application

Adjustments may indicate weakness in internal controls

**Changes in scope and exchange rates**

Accounting standards do not require disclosure of impact of scope or exchange rates

**d) Earnings per share**

Simple capital structure: Contains no potentially dilutive securities

* Only need to report basic EPS

Complex capital structure: Contains potentially dilutive securities (e.g., stock options, warrants, covertibles)

* Need to report basic EPS and diluted EPS

**Basic EPS**

Gives the per share earnings for common shareholders:

Preferred dividends are subtracted to show what is available to common shareholders

* Common dividends are NOT subtracted

Weighted avg no. of common shares

* Weighted by the portion of the year they were outstanding

**Stock dividends and stock splits**

Stock dividend: Distribution of additional shares to each shareholder in an amount proportional to their current number of shares

* E.g., A 10% stock dividend will give 10 new shares to a holder of 100 shares

Stock split: Old shares are split into new shares

* E.g., a 2 for 1 split means each 1 old share turns into 2 new shares

Essentially 2 ways of doing the same thing

Proportional ownership is unchanged

* However, EPS will change

When calculating EPS, we apply stock dividends and splits retroactively to the beginning of the year to all shares

* Need to adjust prior years’ WASO to stop EPS looking like it is declining

**Weighted avg shares calculation**

The monthly approximation method will be used in the exam

* Each collection of shares is weighted by how many months they have seen for the year (the shares from the beginning period see 12/12 months)

Shares issued enter the computation from the date of issuance

Shares reacquired are excluded from the computation from the date of reacquisition

A stock split/dividend is applied to all shares outstanding before the event and to the beginning of period weighted average shares

* It is not applied to shares issued or repurchased after the split date

**Diluted EPS**

Dilutive securities decrease EPS

Antidilutive securities increase EPS

* We only use Dilutive securities for Diluted EPS, not Antidilutive

If converted method: Looks at EPS if all the securities were converted at the start of the accounting period, regardless of whether or not they can be converted during the period

The diluted EPS equation is:

We only add back because interest on bonds is typically tax deductible, but if the convertible bonds are converted to stock, the firm saves the interest but loses the tax deduction

Each security should be individually examined to see if it is dilutive!

* This way you don’t accidentally include an antidilutive one!!!
* Quick way to see if its dilutive or antidilutive is to isolate the income effect / share effect

**Dilutive EPS – treasury stock method**

Stock options and warrants are only dilutive when their exercise prices < market price over the year

Treasury stock method:

* Assumes the funds received by the company from the exercising of options would hypothetically purchase shares in the market at the avg price for the year

Net increase in shares outstanding is given by:

Quick way to calculate net increase in common shares:

is the average market price over the year

is the exercise price of the options/warrants

is the number of common shares the options/warrants can be converted into

**e) Ratios and Common size income statements**

Common size income statement: Expresses each category as a % of revenue

* Allows for comparison regardless of size

**4.3 Analysing Balance Sheets**

**a) Intangible assets**

Identifiable intangible assets: Can be acquired separately, or are the results of rights conveyed to the owner

* E.g., Patents, trademarks, copyrights

Unidentifiable intangible assets: Cannot be acquired separately, may have an unlimited life

* E.g., Goodwill

Purchase of intangibles:

* IFRS: Identifiable intangible assets that are purchased can be put on the balance sheet using the cost or revaluation model
* GAAP: Only the cost model is allowed

Creating intangibles internally:

* IFRS: Must expense Research costs, but can capitalise Development costs if the project is technically feasible, can be completed, the market exists, and the firm can sell it
* GAAP: R&D all expensed as incurred

IFRS Development costs that can be capitalised:

* Materials, labour, production overhead, etc

Finite life intangibles: Amortised and tested for impairment

Indefinite life intangibles: Not amortised but tested for impairment

The following must be expensed as incurred in IFRS and GAAP:

* Start-up and training costs
* Administrative overhead
* Advertising and promotion costs
* Relocation and reorganisation costs
* Termination costs

**Goodwill**

Goodwill: Purchase price of company minus fair value of acquired company’s net assets

* For synergies and non-reported assets

Companies are willing to pay more than fair value of net assets as the targets may have assets that are not reported on the balance sheet

* E.g., Reputation, customer loyalty, R&D

If the purchase price < fair value of net assets, it is recognised as a gain in the acquirer’s income statement

Goodwill is tested for impairment annually

* Impairment suggests the acquired business is worth less than what it was purchased for
* Goodwill can be considered the PV of excess returns the acquired company is expected to contribute

Acquiring firms can manipulate net income upwards by putting more of the acquisition price into goodwill

* Leads to less future depreciation

Eliminating goodwill and goodwill impairment makes ratios more comparable

**b) Marketable securities**

Financial instruments: Contracts that create a financial asset in one company, and a financial liability in another

* E.g., Stocks, derivatives, loans, receivables

**US GAAP treatment of marketable securities**

Held-to-maturity securities: Debt securities with the intent to hold to maturity under GAAP

* Measured at amortised cost – original price minus principal payments, plus amortised discounts/premium, market value is ignored

Mark-to-market accounting: Measured at fair value

Trading securities: Securities acquired with the intent to sell in the near term

* Reported at fair value, with unrealised gains/losses in the income statement (aka holding period gains/losses)

Derivative instruments: Treated the same as trading securities

Available-for-sale securities: Debt securities not expected to be held to maturity or traded in the near term

* Reported at fair value
* Unrealised gains/losses not recognised in income statement, but are reported in other comprehensive income in shareholder’s equity

For all financial securities:

* Dividend income, interest income, realised gains/losses are recognised in the income statement

US GAAP measurement basis:

* Historical cost: Unlisted equity investments, loans and notes receivable
* Amortised cost: Held to maturity securities
* Fair value: Trading securities, available-for-sale securities, derivatives

**IFRS treatment of marketable securities**

Three treatments of investment securities – essentially the same as GAAP

1) Measured at amortised cost

* Same as held-to-maturity

2) Measured at fair value through other comprehensive income

* Same as available-for-sale securities

3) Measured at fair value through profit and loss

* Same as trading securities

**Differences between IFRS and GAP marketable securities**

Securities are classified differently

Measured at (amortised) historical cost

* GAAP: Loans, notes receivables, held-to-maturity securities, unlisted equity securities
* IFRS: Same

Measured at fair value through other comprehensive income

* GAAP: Available-for-sale debt securities, equity can’t be included
* IFRS: Same, but equity can be included at time of purchase (though the choice is irrevocable)

Measured at fair value through profit and loss

* IFRS: Any asset that doesn’t fit into the other two go here. Any financial asset can be put here by choice (though the choice is irrevocable)
* GAAP: Choice is not available

**Long term financial liabilities**

Includes bank loans, notes payable, bonds payable, some derivatives

If not issued at face value, they are reported at amortised cost

* If the issuance value differs from face value, any premium/discount is amortised through interest expense
* Amortised cost = Issue price – Principal payments + Amortised discount/premium

Some financial liabilities are reported at fair value

* E.g., Held-for-trading liabilities (short position), derivative liabilities

**Deferred tax liabilities**

Deferred tax liabilities: Income taxes payable in future periods due to timing differences between financial accounting and tax accounting

Created when income tax expense > tax payable

Can occur when:

* Expenses or losses are tax deductible before they are recognised in the income statement
* Revenues are recognised in the income statement before they are taxable

Are reversed when the tax is paid

**c) Common size balance sheets**

Common size balance sheet: Expresses each item as a % of total assets

* Eliminates the effect of size

**Liquidity ratios**

Shows ability to fulfil short term obligations

**Solvency rations**

Shows ability to fulfil long term obligations:

Debt is considered any interest bearing obligation

The Financial leverage ratio captures interest bearing and non-interest bearing obligations

**4.4 Analysing Statements of Cash Flows 1**

**a) Cash flow introduction and Direct method CFO**

Cash flow statement

* Shows cash receipts and payments, quality of earnings
* Shows liquidity, solvency, and financial flexibility

Reconciles the beginning and ending balances of cash

Operating cash flow

+/- Investing cash flow

+/- Financing cash flow

= Change in cash balance

+ Beginning cash balance

= Ending cash balance

Earnings are high quality if operating cash flows are close to or higher than reported earnings

Operating activities – generally relate to the firm’s current assets and current liabilities

Investing activities – generally relate to the firm’s noncurrent assets

Financing activities – generally relate to the firm’s noncurrent liabilities and equity

Accounts receivable is given by:

Sales are on the income statement

Cash collections are on the cash flow statement

Increase in an asset account = Use of cash

Decrease in an asset account = Source of cash

Increase in a liability account = Source of cash

Decrease in a liability account = Use of cash

Sources of cash are positive numbers

* Cash inflow

Uses of cash are negative numbers

* Cash outflow

**Direct method vs Indirect method**

Operating cash flow can be presented using the direct or indirect method

* Result is the same
* Indirect method useful to show earnings quality by comparing differences between net income and CFO

Investing cash flow and Financing cash flow have one method only

**b) Direct method for operating activities**

Direct method: Shows only cash payments and cash receipts over the period

* Sum of these inflows and outflows is CFO

Gives more information than the indirect method

Common components

* Cash collected from customers
* Cash used in production (cash inputs)
* Cash operating expenses (e.g., salaries)
* Cash paid for interest
* Cash paid for taxes

**Calculating direct method**

1) Start with revenue

2) Look in the balance sheet for any assets/liabilities relating to the income statement item

3) Calculate the change in the balance sheet asset/liability

4) Adjust the income statement for the change in the balance sheet amount

* Assets: Subtract uses of cash (increase in asset) and add sources of cash (decrease in asset)
* Liabilities: Add sources of cash (increase in liability) and subtract uses of cash (decrease in liability)
* Need to treat expense items as negative numbers

5) Do this for all the income statement items

6) Ignore non-cash charges (e.g., D&A, gains/losses on asset disposals)

* These only exist because of accrual accounting

7) Once all items have been adjusted for accruals, total to get the operating cash flow

**c) Indirect method for operating cash flow**

Start with Net income and adjust for non-cash items (either non-cash charges or working capital investment)

* Add back D&A as it is non cash
* Subtract gains and add back losses on asset disposal as this is investing cash flow
* Adjust for change in balance sheet accounts (similar to direct method)

Investment in Working capital: Net change in company’s total operating assets and liabilities

Operating cash flow:

Add back:

* Depreciation, depletion, amortisation
* Loss on asset disposal
* Impairments
* Losses on early retirement of debt
* Amortisation of bond discounts
* Increases in deferred tax liabilities, decreases of deferred tax assets
* Losses of equity accounted associates

Subtract

* Gains on asset disposals
* Gains on early retirement of debt
* Reversals of impairments
* Amortisation of bond premiums
* Increases in deferred tax liabilities, increases of deterred tax assets

**Non-cash working capital**

For WC, ignore the non-operating current assets/liabilities

* Ignore: Cash, short term investments (except trading securities), dividends payable, short term debt
* Note: The definition of WC is different in the Ratios module

Add back

* Decreases in current operating assets
* Increases in current operating liabilities

Subtract

* Increases in current operating assets
* Decreases in current operating liabilities

**Calculating the indirect method**

1) Start with net income

2) Make the adjustments:

* Add back non-cash charges to income (e.g., D&A)
* Subtract all non-cash components of revenue
* Subtract gains/add losses from financing/investing cash flows (e.g., gains from sale of land)

3) Adjust for WC

* Operating assets: Subtract uses of cash (increase in asset) and add sources of cash (decrease in asset)
* Operating liabilities: Add sources of cash (increase in liability) and subtract uses of cash (decrease in liability)

Most companies use the indirect method

**d) Investing and financing cash flows**

Investing cash flow: Cash inflows/outflows from acquiring/disposing long term assets and certain investments

Financing cash flow: Cash inflows/outflows that change a firm’s capital structure

* E.g., Borrowing, repaying debt, issuing equity securities

**US GAAP Cash flow classifications**

Operating activities

* Inflows: Cash collected from customers, interest received, dividends received, sale of trading securities
* Outflows: Cash paid to employees and suppliers, cash paid for other expenses, buying trading securities, interest paid, taxes paid

Investing activities

* Inflows: Sales of PPE and intangibles, sales of debt and equity investments, principal received from loans made to others
* Outflows: Buying PPE and intangibles, buying debt and equity investments, loans made to others

Financing activities

* Inflows: Principal amounts of debt issued, proceeds of issuing stock
* Outflows: Principal paid on debt/leases, payments to require stock, dividends paid

Key things to note about GAAP:

* Debt and equity investments are CFI, but interest and dividends received are CFO
* Principal amounts borrowed at CFF, but interest paid is CFO
* Dividends paid is CFF

**Example for CFI**

Example for PPE:

Disposals are given by:

Investing cash flow:

**Example for CFF**

Cash flow from bonds:

Cash flow from issuing or redeeming equity shares:

Cash flow from dividends paid:

CFF is given by:

**Amortised premiums/discounts bonds in CFF**

For bonds issued at premiums/discounts, the difference relative to par is amortised

Amortisation of discount bond - Will increase interest expense and carrying value

Amortisation of premium bond - Will decrease interest expense and carrying value

**Conversion of cash flows from indirect to direct for CFO**

Three step process converting indirect to direct:

1) Aggregate all revenues and gains and all expenses and losses

* Find Total revenues and gains, Total expenses and losses, Net income

2) Remove all non-cash charges by subtracting and disaggregate the remaining items

* Do for both Total revenues and gains, and Total expenses and losses
* Total revenues and gains – e.g., gain on asset disposal
* Total expenses and losses – e.g., D&A, loss on disposal, change in deferred tax liability
* Remaining items – e.g., COGS, wages, interest, tax payable

3) Convert from accruals to cash flows by adjusting for the change in working capital

* Convert all items to cash flows

**IFRS vs GAAP cash flow statements**

|  |  |  |
| --- | --- | --- |
|  | **GAAP** | **IFRS** |
| Interest received | CFO | CFO or CFI |
| Interest paid | CFO | CFO or CFF |
| Dividends received | CFO | CFO or CFI |
| Dividends paid | CFF | CFO or CFF |
| Bank overdraft | Treated as balance sheet debt | Treated as balance sheet cash |
| Taxes | CFO | Can be split between CFO, CFI, and CFF according to the nature of the transaction |
| Presentation of CFO | Direct preferred, but indirect allowed (must show indirect too if direct is shown) | Direct preferred, but indirect allowed |

**4.5 Analysing Statements of Cash Flows 2**

Sources and uses of cash change over a firm’s life cycle

* Early stage: May have negative operating cash flow to increase inventory, receivables
* Long term: Operating cash flows must be above capex

Generating operating cash flow:

* Earnings related activities should provide it
* Can generate operating cash flow through decreasing non-cash working capital (e.g., liquidating inventory, increasing payables) – can’t be done infinitely

Stable relationship between operating cash flow and net income is an indication of quality earnings

* Earnings which significantly exceed operating cash flow may show aggressive accounting

Increasing Capex can show growth

* Need to consider replacement of older fixed assets for future capex

**Common size analysis**

Cash flow statement can be converted to common size format by expressing each line item as a % of revenue

* Each inflow of cash can be % of total cash inflow
* Each outflow of cash can be % of total cash outflow

**Free cash flow**

Free cash flow: Cash available for discretionary use, after a firm has covered its capex

**Free Cash Flow to the Firm:** Cash available to both equity-holders and debt-holders

Which is essentially:

is net income

is non-cash charges (e.g., D&A)

is cash interest paid

is fixed capital investment (net capex)

* Not the same as CFI, as net capex is only capex minus cash from selling fixed assets, whereas CFI has investments in securities and repaid principal from loans made too

is working capital investment

FCFF under IFRS

* May not need to adjust for interest
* May need to adjust for dividends

**Free Cash Flow to Equity:** Cash flow available for distribution to common shareholders

is debt issued – debt repaid

FCFE under IFRS

* May need to add back dividends (if it was subtracted in calculating CFO)

**Performance cash flow ratios**

**Cash flow to revenue:** Amount of operating cash flow for each dollar of revenue

**Cash return on assets:** Return of operating cash flow to all capital providers

**Cash return on equity:** Return of operating cash flow to shareholders

**Cash to income:** Ability to generate cash from firm operations

**Cash flow per share:** Variation of EPS using CFO instead of net income

**Coverage ratios**

**Debt coverage:** Shows leverage

**Interest coverage:** Shows ability to meet interest obligations

Note: If interest paid is in CFO as a financing activity under IFRS, no adjustment is needed

**Reinvestment ratio:** Ability to acquire long term assets with CFO

**Debt payment ratio:** Ability to satisfy long term debt with CFO

**Dividend payment ratio:** Ability to make dividend payments from CFO

**Investing and financing ratio:** Ability to purchase assets, pay debt, and pay dividends