CMA PART 2

STRATEGIC FINANCIAL MANAGEMENT

# SECTION B
## CORPORATE FINANCE

*Rapid Revision Compendium*

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Aligned to the ICMA Content Specification Outline | B.1 – B.6

# HOW TO USE THIS BOOK

This is **not a study book**, it is built for the point after a topic has already been learned, when Section B needs to be revised quickly before the exam.

### Structure

- Content is organised **B.1 through B.6**, following the ICMA Content Specification Outline, the actual exam blueprint.
- Every unit follows the same flow: concept → formula → comparison table → exam-critical point.
- The book ends with a **Formula Sheet** and **Confusion Killers**, read only those two sections in the final hour before the exam.

### Signposts

- **Shaded box**, a point the exam tests repeatedly, or a mistake candidates make again and again. Don't skip these.
- **Ruled formula band**, a formula that must be memorised.
- **Comparison table**, used wherever two concepts get confused (forward vs future, spin-off vs split-off, SML vs CML).

### Suggested last-day sequence

1. **B.1** first, the risk-return logic underlies everything that follows.
2. **B.2** deserves the most time, it is the largest and most heavily tested area.
3. **B.4** for calculation practice, the cost of forgoing a trade discount and the effective interest rate especially.
4. **B.3, B.5, B.6** last, these lean more on concepts and distinctions, less on calculation.
5. Final hour: **Formula Sheet + Confusion Killers only**.

> **HONEST ADVICE**
>
> This book will help you **revise**, not **learn**. If a topic is genuinely new here, go back to the main material first, otherwise application-level questions in the exam won't come together.

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*This is an independently written revision resource, prepared from the ICMA Content Specification Outline and standard corporate finance principles.*

CHAPTER B.1

# FINANCIAL RISK & RETURN

Every finance decision comes down to a trade-off between two things: **how much you get** (return) and **how sure you can be of getting it** (risk). The whole of Section B turns on this one axis, which is why this unit comes first and matters most.

## 1. Measuring Return

### Holding Period Return (HPR)

The total benefit an investor received over a period, income plus price change, expressed as a percentage of the beginning value.

$$\text{HPR} = [\text{Income} + (\text{Ending Value} - \text{Beginning Value})] \div \text{Beginning Value}$$

*Income = dividend / interest received during the period*

- The numerator must include **both** components, using only the dividend yield is a common mistake.
- If ending value is below beginning value, the capital-loss term is negative and HPR can be negative.
- For multi-year comparisons, HPR must be annualised, otherwise holding periods of different lengths are not comparable.

### Expected Return, Probability-Weighted

When future outcomes are uncertain, expected return is the sum of each outcome's return multiplied by its probability.

$$E(R) = \sum P_i \times R_i$$

*$P_i$ = probability of outcome i; $R_i$ = return in outcome i; $\sum P_i = 1$*

> **EXAM TRAP**
>
> Probabilities **must sum to 1.00**. If a question gives three scenarios summing to 0.90, there is a missing scenario, assign it 0.10, don't ignore it.

### Required vs Expected vs Realised Return

- **Required return**, the minimum return an investor **demands** for bearing risk. This becomes the discount rate.
- **Expected return**, what the asset is **forecast** to deliver.
- **Realised return**, what actually happened (a historical fact).
- Expected > Required → asset is **undervalued**, buy.
- Expected < Required → asset is **overvalued**, sell.
- Equal → fairly priced, equilibrium.

## 2. Understanding Risk

Risk does not mean "loss", it means the **actual outcome differing from the expected outcome**, in either direction. Statistically it is measured through dispersion.

### Measures of Risk

| Measure | What it tells you | When to use it |
|---|---|---|
| **Standard Deviation (σ)** | Absolute dispersion of returns around the mean | When the assets being compared have the **same** expected return |
| **Variance ($\sigma^2$)** | σ squared; additive in portfolio mathematics | Portfolio calculations, covariance work |
| **Coefficient of Variation (CV)** | Risk **per unit of return**, σ ÷ E(R) | When expected returns **differ**, this is the default choice |
| **Beta (β)** | Systematic risk only, relative to the market | Adding an asset to a well-diversified portfolio |

**Coefficient of Variation = σ ÷ Expected Return**

*Lower CV = better risk-return efficiency*

MOST TESTED POINT

When comparing two investments with **different** expected returns, always use **CV**, not σ. Comparing σ alone is only valid when the returns are equal.

The lowest CV is the most attractive on a risk-per-unit-of-return basis.

## 3. Types of Financial Risk

This list is tested through definition-matching. Learn the **trigger** for each, that is the real differentiator.

| Risk | Trigger, what causes it |
|---|---|
| **Business (Operating) Risk** | Inherent uncertainty of operations, demand, pricing, cost structure. Unrelated to debt. |
| **Financial Risk** | The extra risk created by using **debt** in the capital structure. Zero debt = zero financial risk. |
| **Market (Systematic) Risk** | Factors that move the whole market, recession, war, policy shifts. Cannot be removed through diversification. |
| **Interest Rate Risk** | A change in rates changes a security's value. Two sub-types: **price risk** and **reinvestment risk** (they move in opposite directions). |
| **Purchasing Power (Inflation) Risk** | Inflation erodes the real value of a return. Long, fixed-rate bonds are most exposed. |
| **Liquidity (Marketability) Risk** | Inability to sell an asset quickly at a fair price. Thinly-traded securities, real estate. |
| **Credit / Default Risk** | Borrower fails to pay interest or principal. |
| **Foreign Exchange Risk** | Exchange-rate movements change the home-currency value of cash flows. |
| **Political / Country Risk** | Expropriation, capital controls, sudden regulatory change, instability. |
| **Industry Risk** | Factors that hit one specific industry, technology shifts, regulation. |

## Systematic vs Unsystematic, the core split

| | Systematic Risk | Unsystematic Risk |
|---|---|---|
| Also called | Market risk, non-diversifiable risk | Specific risk, diversifiable, residual, idiosyncratic |
| Source | Economy-wide factors | Company- or industry-specific events |
| Removed by diversification? | **No** | **Yes**, largely eliminated with roughly 20–30 unrelated securities |
| Measured by | **Beta (β)** | Total σ minus the systematic portion |
| Does the market compensate for it? | **Yes**, this is the only risk that earns a premium | **No**, because it could be removed at no cost |

> **THE SINGLE MOST IMPORTANT IDEA IN B.1**
>
> The market only rewards **systematic risk**. Unsystematic risk earns no premium, because an investor could remove it through diversification at no cost.
>
> That is why CAPM uses only β, not total σ.

## Investor Risk Attitudes

- **Risk-averse**, demands extra return for extra risk. This is the real-world assumption the entire theory is built on.
- **Risk-neutral**, cares only about expected return; risk is irrelevant.
- **Risk-seeking**, will accept lower return for more risk.

Being risk-averse does not mean **avoiding** risk, it means **demanding compensation** for it.

# 4. Portfolio Risk and Return

## Portfolio Return, simple weighted average

$$E(R_p) = \sum w_i \times E(R_i)$$

*$w_i$ = weight of asset i at market value; $\Sigma w_i = 1$*

Return is always a weighted average. **Risk is not**, that is the whole point of portfolio theory.

## Portfolio Risk, depends on correlation

The combined σ of two assets can be **lower** than the weighted average of their individual σ's, if they do not move perfectly together.

$$\sigma_p = \sqrt{[\, w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2w_1w_2\rho_{1,2}\sigma_1\sigma_2 \,]}$$

*ρ = correlation coefficient, ranges −1 to +1; Covariance = $\rho \times \sigma_1 \times \sigma_2$*

| Correlation (ρ) | Diversification benefit | Result |
|---|---|---|
| **+1.0** (perfectly positive) | None | $\sigma_p$ = weighted average of σ. No benefit at all. |
| **Between 0 and +1** | Partial | $\sigma_p$ < weighted average. This is what happens in the real world. |
| **0** (uncorrelated) | Substantial | Risk falls considerably |
| **−1.0** (perfectly negative) | Maximum | With the right weights, risk can reach **zero** (theoretical) |

> **KEY RULE**
>
> The diversification benefit is **larger the lower ρ is**. That's why, when adding a new asset to a portfolio, what matters is not the asset's own σ but its **correlation** with the existing portfolio.
>
> Any ρ below +1 already produces some benefit.

## The limits of diversification

- As the number of securities increases, unsystematic risk falls, but at a **decreasing rate**.
- Beyond roughly **20–30** unrelated securities, the additional benefit becomes negligible.
- No matter how many securities are added, a **systematic-risk floor** always remains, it cannot be diversified away.
- Naive (random) diversification vs efficient diversification, efficient diversification selects assets by looking at correlation.

## Efficient Frontier, quick recall

- An efficient portfolio offers the **highest return** for a given level of risk, or the **lowest risk** for a given return.
- The efficient frontier is the curve traced by all such efficient portfolios.
- Portfolios **below** the frontier are inferior; nothing **above** it is achievable.
- An investor selects a point on the frontier based on their own risk tolerance.

## 5. Capital Asset Pricing Model (CAPM)

CAPM answers a single question: given an asset's systematic risk, what return should an investor require?

$$R = R_{re} + \beta (R_m - R_{re})$$

*R = required return; $R_r^e$ = risk-free rate; $R_m$ = expected market return*

### Components

| Term | Meaning | Notes |
|---|---|---|
| $R_{re}$ | Risk-free rate | In practice, short-term government securities (T-bills). Default risk is assumed to be zero. |
| $R_m - R_{re}$ | **Market Risk Premium**, the market's extra return over the risk-free rate | The most common error is using $R_m$ alone as the market risk premium, it is **not** |
| $\beta (R_m - R_{re})$ | The stock's own risk premium | The market premium scaled by that stock's beta |
| $\beta$ | Measure of systematic risk | Covered below |

> **THE CLASSIC EXAM ERROR**
>
> The formula uses **$(R_m - R_{re})$**, not $R_m$ on its own. If a question directly states "market risk premium = 6%", do not subtract $R_{re}$ from it again, it is already the net figure.
>
> If a question instead gives "market return = 11%, risk-free rate = 5%", work out the 6% premium yourself.

### Beta (β)

$$\beta = \text{Covariance}(R_i, R_m) \div \text{Variance}(R_m) = \rho_{i,m} \times \sigma_i \div \sigma_m$$

| Beta value | Interpretation |
|---|---|
| **β = 1.0** | Moves exactly with the market. Market up 10% → stock up ~10%. |
| **β > 1.0** | **Aggressive** stock, more volatile than the market. Better in a bull market, worse in a bear market. |
| **β < 1.0** (but > 0) | **Defensive** stock, less volatile than the market. Utilities, staples. |
| **β = 0** | No relationship to market movement, a risk-free asset. |
| **β < 0** | Moves opposite to the market. Rare, but strong hedging value. |

- **Portfolio beta** is simply the **weighted average** of the individual betas, a simple point that comes up often.
- Unlike σ, beta is additive by weight in a portfolio because the unsystematic portion is already assumed diversified away.

$$\beta_p = \Sigma\, w_i \times \beta_i$$

### Security Market Line (SML)

This is CAPM plotted as a graph: **beta** on the X-axis, required return on the Y-axis. The intercept sits at $R_{re}$, and the slope equals the market risk premium.

| Position | Meaning | Action |
|---|---|---|
| **Above the SML** | Expected return > required return | **Undervalued** → Buy |
| **On the SML** | Expected = required | Fairly priced, equilibrium |
| **Below the SML** | Expected return < required return | **Overvalued** → Sell |

### SML shifts vs rotations, a high-yield distinction

| What changed | Effect on the SML |
|---|---|
| **Risk-free rate** changes | The whole SML shifts **parallel**, the intercept moves, the slope stays the same |
| **Risk aversion / market premium** changes | The SML **rotates** around the intercept, the slope changes |
| Inflation expectations rise | $R_{re}$ rises → parallel **upward shift** |
| One stock's **beta** changes | The SML itself stays put, that stock simply moves **left or right along** the line |

> **SML VS CML, DO NOT CONFUSE**
>
> **SML**, X-axis is **beta** (systematic risk). Valid for every individual security and every portfolio.
>
> **CML**, X-axis is **σ** (total risk). Valid only for **efficient portfolios**, not individual securities.

### Limitations of CAPM

- Beta is estimated from historical data, the assumption that it stays stable going forward isn't always right.
- It is a single-factor model; in the real world size, value, and momentum also matter.
- The assumptions are strong, no taxes, no transaction costs, unlimited borrowing at $R_{re}$, homogeneous expectations.
- The true market portfolio isn't observable; a proxy (an index) has to be used instead.

CHAPTER B.2

# LONG-TERM FINANCIAL MANAGEMENT

The largest and most heavily tested area of Section B. Two big blocks sit here: (1) **where capital comes from and what it costs**, and (2) **the valuation and behaviour of long-term instruments, bonds, equity, derivatives**.

## 1. Capital Structure Fundamentals

Capital structure is the mix of long-term debt and equity a firm uses to finance its assets. Goal: **minimise WACC → maximise firm value**.

### Debt vs Equity, the core trade-off

| Aspect | Debt | Equity |
|---|---|---|
| Cost | **Cheaper**, lender risk is lower, and interest is **tax-deductible** | More expensive, residual claim, no tax shield |
| Obligation | Fixed interest + principal, **mandatory** | Dividend is discretionary |
| Control | No ownership dilution (though covenants may apply) | Both ownership and EPS get diluted |
| Risk to firm | Financial risk **rises**; default danger | No bankruptcy pressure |
| Bankruptcy priority | Paid before equity | Last in line, residual |
| Flotation cost | Generally lower | Generally higher |

> **WHY DEBT IS CHEAPER, ALWAYS STATE BOTH REASONS**
>
> 1. Lender risk is lower than shareholder risk (priority claim + collateral) → lenders demand a lower return.
> 2. Interest is **tax-deductible** → the effective cost falls further. Dividends are not deductible.

### Optimal Capital Structure

- Adding debt initially **lowers** WACC (a cheaper source plus the tax shield).
- Beyond a certain point, financial risk rises enough that **both** lenders and shareholders demand higher returns → WACC starts **rising** again.
- The optimal point is **where WACC is minimised**, which is also where firm value is maximised. This is the bottom of the U-shaped curve.
- The optimal structure is neither "maximum debt" nor "zero debt".

> **REMEMBER**
>
> Firm value is maximised by **minimising WACC**, not by maximising EPS. An EPS-maximising structure can be over-leveraged and ignore risk.

### Leverage, quick recall

$$\text{DOL} = \%\,\Delta\,\text{EBIT} \div \%\,\Delta\,\text{Sales} \qquad \text{DFL} = \%\,\Delta\,\text{EPS} \div \%\,\Delta\,\text{EBIT} \qquad \text{DTL} = \text{DOL} \times \text{DFL}$$

- **Operating leverage** comes from fixed **operating** costs. High fixed cost = high DOL = EBIT swings faster than sales.
- **Financial leverage** comes from fixed **financing** costs (interest). Also called "trading on the equity."
- **Total leverage** = the combined effect of both, from sales all the way to EPS.
- If business risk is already high (high DOL), a firm should generally carry **less** financial leverage. Both being high at once is dangerous.

## 2. Cost of Capital

Cost of capital is the **required return** investors demand, seen from the firm's side. It becomes the hurdle rate in capital budgeting.

### 2.1 Cost of Debt

$$\text{After-tax Cost of Debt} = k^d \times (1 - t)$$

*$k^d$ = pre-tax yield; $t$ = marginal tax rate*

- The relevant cost is always **after-tax**, because interest shields tax.
- $k^d$ is not the coupon rate, it is the bond's **yield to maturity (YTM)**, i.e. the rate new debt would carry today.
- The historical rate on existing old debt is irrelevant, the **marginal/current** cost is what matters.
- If there is a flotation cost, calculate the yield on net proceeds instead, which pushes the effective cost up slightly.

> **EXAM TRAP**
> If a firm is making a **loss** or has no taxable income, the tax shield provides no benefit, the effective cost of debt stays at the **pre-tax** rate.

### 2.2 Cost of Preferred Stock

$$k_p = \text{Annual Preferred Dividend} \div \text{Net Issue Price}$$

*Net price = market price − flotation cost*

- **No tax adjustment**, preferred dividends are not deductible. This is the most common error.
- Treated as a perpetuity because preferred stock generally has no maturity.
- Its cost sits **above** debt and **below** common equity, following priority order.

### 2.3 Cost of Common Equity, three methods

**Method 1, CAPM** (most common and most defensible):

$$k_e = R_{re} + \beta\,(R_m - R_{re})$$

**Method 2, Dividend Growth (Gordon) Model**:

$$k_e = (D_1 \div P_0) + g$$

*$D_1$ = next year's dividend = $D_0\,(1+g)$*

- Only valid when the firm pays dividends with **stable growth**.
- Do not confuse $D_0$ and $D_1$, the numerator needs **next year's** dividend.
- If there is flotation cost on a new issue, replace $P_0$ with **net proceeds** → the cost rises.

$$\textbf{New Equity: } k_e = [\, D_1 \div P_0(1-f)\,] + g$$

*f = flotation cost as % of price*

**Method 3, Bond Yield Plus Risk Premium** (a quick approximation):

$$k_e = \text{Firm's long-term bond yield} + \text{Equity risk premium (typically 3–5\%)}$$

**CRITICAL HIERARCHY**

**The cost of retained earnings is not zero.** Its cost equals the shareholders' opportunity cost = $k_e$.

Cost ordering: **Debt (after-tax) < Preferred < Retained Earnings < New Common Equity**.

New equity is the most expensive because it carries an extra flotation cost.

### 2.4 Weighted Average Cost of Capital (WACC)

$$WACC = w^d \cdot k^d(1-t) + w_p \cdot k_p + w_e \cdot k_e$$

*w = proportion of each source; Σ w = 1*

- Weights should be taken at **market value**, not book value, market value reflects the actual current cost.
- If the firm follows a target capital structure, use the **target weights**.
- Short-term/spontaneous liabilities (accounts payable, accruals) do **not** enter WACC.
- WACC is the capital-budgeting discount rate, provided the project's risk matches the firm's average risk.

**WHEN WACC IS THE WRONG RATE**

If a project's risk **differs** from the firm's overall risk, using WACC is wrong, a risk-adjusted rate is needed instead.

Using WACC anyway: high-risk projects get mistakenly **accepted**, low-risk projects get mistakenly **rejected**.

### 2.5 Marginal Cost of Capital (MCC)

- MCC is the cost of raising the **next** rupee/dollar of capital.
- Once retained earnings run out, the firm must issue new equity → the cost jumps.
- The point where this jump happens is called the **break point**.

$$\textbf{Break Point} = \text{Amount of that capital available at lower cost} \div \text{Weight of that source in structure}$$

- The MCC schedule is a **step function**, one step up at each break point.
- Plot the Investment Opportunity Schedule (IOS) against MCC, the **intersection** gives the optimal capital budget.
- Rule: accept projects as long as their return exceeds the MCC.

## 3. Debt Financing, Bonds

### Bond Basics

| Term | Meaning |
|---|---|
| **Par / Face Value** | The amount repaid at maturity. Typically 1,000. |
| **Coupon Rate** | The annual interest rate on par value, stays **fixed** after issue. |
| **Maturity** | The date the principal is returned. |
| **Indenture** | The bond contract, terms, covenants, trustee rights. |

| Term | Meaning |
|---|---|
| **Covenant** | A restriction on the borrower. **Affirmative** = what must be done; **Negative** = what must not be done. |
| **Sinking Fund** | A requirement to periodically retire part of the principal. **Lowers** default risk. |
| **Call Provision** | Issuer can redeem before maturity, **favours the issuer**, so investors demand extra yield. |
| **Put Provision** | Investor can force early redemption, **favours the investor**, so yield is **lower**. |

## Types of Bonds

- **Debenture**, unsecured, backed only by the issuer's general creditworthiness. **Subordinated debentures** rank even lower.
- **Mortgage bond**, secured by specific real property.
- **Collateral trust bond**, secured by another company's securities.
- **Zero-coupon**, no interest, issued at a deep discount, pays par at maturity. Highest interest-rate sensitivity.
- **Convertible**, can convert into equity. The conversion option allows a **lower** coupon.
- **Income bond**, pays interest only when there is profit.
- **Serial bonds**, staggered maturities across different dates.
- **Floating rate**, coupon resets with a benchmark; very low price risk.

## Bond Valuation

$$\text{Bond Price} = \text{PV of coupons (annuity)} + \text{PV of par value (lump sum)}$$

*Discount rate = market yield, not the coupon rate*

| Relationship | Bond trades at |
|---|---|
| Coupon rate **>** Market yield | **Premium** (price > par) |
| Coupon rate **=** Market yield | **Par** |
| Coupon rate **<** Market yield | **Discount** (price < par) |

**INVERSE RELATIONSHIP, FOUNDATION RULE**

Interest rates **rise** → existing bond prices **fall**. Rates **fall** → prices **rise**. This relationship always runs in reverse.

Reason: an old bond's coupon is fixed; if a new bond offers a better rate, the old one will only sell once its price falls.

## Yield Measures

- **Coupon (Nominal) Yield** = coupon ÷ par. Stays fixed.
- **Current Yield** = annual coupon ÷ **current market price**.
- **Yield to Maturity (YTM)**, the discount rate that makes the present value of all future cash flows equal the current price. This is the **true** return if held to maturity and coupons are reinvested at that same rate.
- **Yield to Call (YTC)**, the same idea, but through the call date and call price. Relevant for callable premium bonds.
- Discount bond: **Coupon < Current Yield < YTM**

- Premium bond: **Coupon > Current Yield > YTM**

### Bond Refunding Decision

Rates have fallen, should an old high-coupon callable bond be called and replaced with a cheaper new bond? This is an **NPV decision**.

1. Work out the **initial outlay**: the after-tax call premium + flotation cost of the new issue + interest during the overlap period, minus the tax benefit of the old unamortised flotation cost.
2. Work out the **annual savings**: old after-tax interest − new after-tax interest, plus the net tax effect of flotation amortisation.
3. Discount the savings at the **after-tax cost of the new debt** (the cash flows are relatively certain).
4. A positive NPV means **refund**.

> **KEY POINTS**
>
> The discount rate is **not** WACC, it is the **after-tax cost of the new debt**, because this is a financing decision.
>
> The call premium is **tax-deductible**, so take it after-tax.
>
> Refunding only makes sense once rates have fallen enough, because the call premium and flotation cost are large upfront costs.

### Convertible Bonds

$$\text{Conversion Ratio} = \text{Par Value} \div \text{Conversion Price} \qquad \text{Conversion Value} = \text{Conversion Ratio} \times \text{Market Price of Share}$$

- A convertible bond's market price always sits **above whichever is higher, conversion value or straight bond value**, the gap between the two is the **option premium**.
- **Straight (investment) value** is what the bond would be worth without the conversion feature. This acts as a price **floor**.
- The conversion option lets the issuer set a **lower** coupon, this is the issuer's main benefit.
- On conversion, debt becomes equity → leverage falls, but **EPS gets diluted**.
- Issuers often **call** the bond to force conversion once the share price has risen well above the conversion price.

### Bond Ratings

- **Investment grade**, BBB−/Baa3 and above. **Speculative / junk / high-yield**, below that.
- The lower the rating, the higher the default risk, and so the higher the demanded yield.
- A ratings downgrade → market yield rises → bond price falls.
- Ratings look at debt-servicing capacity, coverage ratios, leverage, cash flow stability, collateral.

### Term Structure of Interest Rates

The yield curve is the relationship between yield and maturity for a given credit quality.

| Curve shape | What it shows |
|---|---|
| **Normal (upward)** | Long-term yields > short-term. Most common. Signals expected economic expansion. |
| **Inverted (downward)** | Short-term > long-term. Often a **signal of recession**. |
| **Flat** | Roughly equal across all maturities, a transition phase. |
| **Humped** | Medium-term yields are the highest. |

### Three theories, you should be able to tell these apart

| Theory | Core argument |
|---|---|
| **Expectations Theory** | The long rate is the average of expected future short rates. An upward curve means the market expects rates to **rise**. No risk premium involved. |
| **Liquidity Preference Theory** | Investors prefer short-term holdings (lower price risk). Holding long-term requires a **liquidity premium**, so the curve is naturally upward-sloping. |
| **Market Segmentation Theory** | Each maturity has its own separate market with its own supply and demand. One segment's rate is independent of another's, so any curve shape is possible. |

### Bond Duration

Duration measures a bond's price sensitivity to interest-rate changes, expressed in years, the weighted average time until cash flows are received.

$$\% \Delta \text{ Price} \approx - \text{Modified Duration} \times \Delta \text{ Yield}$$

| Factor | Effect on duration |
|---|---|
| **Longer** maturity | **Higher** duration → more sensitive |
| **Higher** coupon rate | **Lower** duration → less sensitive (cash returns sooner) |
| **Higher** yield | **Lower** duration |
| **Zero-coupon bond** | Duration = **exactly the maturity**, maximum sensitivity |

> KEY POINTS
>
> Expect rates to fall → hold **long-duration** bonds (price will rise more).
>
> Expect rates to rise → hold **short-duration** bonds (price will fall less).
>
> Duration is a linear approximation; for large rate moves, error creeps in due to **convexity**.

## 4. Equity Financing

### Common Stock

- Residual ownership, the last claim, but with **unlimited upside**.
- Rights: voting, dividends (if declared), residual assets, and often a **preemptive right** (first offer to maintain an existing ownership %).
- Voting: **statutory** (one vote per share per director) vs **cumulative** (votes can be concentrated, lets a minority secure a board seat).
- Par value has no economic meaning, it is only legal capital.

### Preferred Stock, a hybrid

| Feature | Detail |
|---|---|
| **Cumulative** | Missed dividends go into **arrears**; common stockholders get nothing until arrears are cleared |
| **Participating** | Gets an extra share of profit above the fixed dividend |

| Feature | Detail |
|---|---|
| **Convertible** | Can be converted into common stock |
| **Callable** | Can be redeemed by the issuer |
| Voting | Normally **none**, sometimes granted after a dividend default |
| Tax | Dividend is **not deductible** for the issuer |

### Stock Rights

- The right given to existing shareholders to buy new shares **below** market price, to honour the preemptive right.
- **Rights-on**, the right is attached to the share; **Ex-rights**, the right has been detached, and the price falls accordingly.

$$\textbf{Rights-on: Value of right} = (\text{Market price} - \text{Subscription price}) \div (N + 1)$$

$$\textbf{Ex-rights: Value of right} = (\text{Market price} - \text{Subscription price}) \div N$$

*N = rights needed to buy one new share*

### Warrants

- A long-term option issued by the **company itself** to buy shares at a fixed price.
- Often attached to bonds as a "sweetener", this allows a **lower** coupon rate.
- On exercise, the company issues **new shares** → causes dilution. (This does not happen with a call option.)
- Detachable warrants can trade separately.

### ADRs, American Depositary Receipts

- A certificate for foreign shares held by a US bank; trades in USD on US exchanges.
- Gives US investors foreign exposure without trading on a foreign exchange.
- **FX risk is not eliminated**, the underlying share is still denominated in the foreign currency.

## 5. Valuation of Shares

A share's intrinsic value is the present value of its future cash flows (dividends), discounted at the required return.

### Zero-growth (perpetuity)

$$P_0 = D \div k_e$$

*Also applies to preferred stock*

### Constant Growth, Gordon Growth Model

$$P_0 = D_1 \div (k_e - g)$$

*$D_1 = D_0 (1 + g)$; valid only when $k^e > g$*

- The model **breaks down** if $g \geq k_e$, it becomes mathematically meaningless. Such a constant-growth assumption isn't sustainable.
- The numerator needs **next year's** dividend, if given $D_0$, multiply by (1+g).
- The model is **highly sensitive** to g; a small change swings the value a lot.
- The model does not work for companies that don't pay dividends.

**Sustainable Growth $g$ = ROE × Retention Ratio**

*Retention ratio = 1 − payout ratio*

### Multi-stage (Supernormal) Growth

1. Work out the individual dividends for the high-growth years and discount each one separately.
2. At the **year before** stable growth begins, apply the Gordon model to get the **terminal value**.
3. Discount the terminal value back to the present, using **the discount factor for the year** it belongs to.
4. Add up all the present values.

> MOST COMMON MISTAKE HERE
>
> The terminal value $P_n = D_{n+1} \div (k - g)$ is the **value at year n**, not year n+1. So it must be discounted for **n periods**, not n+1.

### Relative Valuation

**P/E Ratio = Market Price per Share ÷ EPS** **Estimated Price = Industry P/E × Company EPS**

- A high P/E → the market expects high growth (or earnings are temporarily depressed).
- P/E comparisons are only meaningful within the **same industry**.
- P/E is useless for a loss-making company.

## 6. Dividend Policy, Splits and Treasury Stock

### Key Dates, remember the order

| Date | What happens |
|---|---|
| **Declaration Date** | The board announces a dividend → a **liability** is booked |
| **Ex-Dividend Date** | Anyone buying on or after this date does **not** get the dividend. The price **falls** by roughly the dividend amount on this day. |
| **Record Date** | Whoever is a registered shareholder on the books gets the dividend |
| **Payment Date** | Actual cash is sent out |

### Dividend Policies

- **Stable / constant amount**, predictable, investors favour it; a cut sends a negative signal.
- **Constant payout ratio**, dividend fluctuates with earnings; volatile.
- **Residual policy**, fund all positive-NPV projects first, whatever is left becomes the dividend. Most volatile.
- **Regular plus extra**, a small safe regular payment, with extras in good years.

### Theories, a quick contrast

| Theory | Position |
|---|---|
| **Dividend Irrelevance** (M&M) | In perfect markets, dividend policy has no effect on firm value. Investors can create "homemade dividends". |
| **Bird-in-the-Hand** | Investors value a certain dividend today more than an uncertain future capital gain → a |

| Theory | Position |
|---|---|
| | higher payout raises value. |
| **Tax Preference** | Capital gains are tax-advantaged (deferral + often a lower rate) → a lower payout is preferable. |
| **Signalling** | A dividend change signals management's expectations. An increase = confidence; a cut = trouble. |
| **Clientele Effect** | Different investor groups are attracted to different payout policies; changing policy disturbs the existing clientele. |

### Stock Dividend vs Stock Split

| | Stock Dividend | Stock Split |
|---|---|---|
| Shares outstanding | Increase | Increase |
| Par value per share | **Stays the same** | **Falls proportionately** |
| Retained earnings | Capitalised → **falls** | **No entry** |
| Total equity | Unchanged | Unchanged |
| Shareholder's % ownership | Unchanged | Unchanged |
| Cash outflow | **None** | **None** |
| Typical size | Small (2–25%) | Large (2-for-1, 3-for-1) |

> **THE POINT OF BOTH**
>
> In both cases the shareholder's **wealth stays the same**, the pizza is just cut into more slices. The price falls proportionately.
>
> Purpose: bring the share price into an attractive trading range and improve liquidity.
>
> A **reverse split** does the opposite, fewer shares, higher price. Often used to avoid delisting; generally a negative signal.

### Treasury Stock

- Shares a company has bought back from its own stockholders. This is **not an asset**, it is a **contra-equity** account.
- Effect: shares outstanding **fall** → EPS **rises** → often supports the price.
- Treasury shares carry **no voting rights and no dividend**.
- Reasons: signal undervaluation, support EPS, provide shares for stock-option plans, return excess cash (more tax-efficient than dividends), or defend against a takeover.

## 7. Derivatives

A derivative is an instrument whose value is derived from an **underlying** (a commodity, currency, rate, index, or security). Used for two purposes: **hedging** (reducing risk) or **speculation** (taking on risk).

### Forwards vs Futures

| | Forward | Future |
|---|---|---|
| Traded | OTC, private | **Organised exchange** |
| Terms | Fully **customised** | **Standardised** (size, date, quality) |
| Counterparty risk | **Higher**, direct counterparty | **Very low**, clearinghouse guarantee |
| Settlement | Generally at maturity | **Daily mark-to-market** |
| Margin | Usually none | **Initial + maintenance margin** required |
| Liquidity / exit | Difficult | Easy, via an offsetting trade |
| Delivery | Often physical | Mostly cash-settled / closed out |

- **Margin call**, if the account falls below the maintenance margin, it must be topped up to the initial margin.
- A long position is a commitment to buy (profits when price rises). Short is a commitment to sell.
- Both contracts carry an **obligation**, not an option, this is the key difference from options.

### Swaps

- **Interest rate swap**, two parties exchange cash flows, often **fixed vs floating**. The notional principal is **not** exchanged, only net interest is settled.
- Use: a floating-rate borrower who fears rising rates swaps into fixed.
- **Currency swap**, **both** principal and interest are exchanged in different currencies. Here principal is actually exchanged.
- Use: lowering the cost of foreign-currency debt and hedging long-term FX exposure.
- Swaps are OTC → counterparty/credit risk remains.

## 8. Options

### Basic Definitions

- **Call**, the right (not the obligation) to **buy** the underlying at the strike price.
- **Put**, the right to **sell** the underlying at the strike price.
- The buyer (holder) has the **right**; the writer (seller) has the **obligation**.
- **Premium** = the price of the option, paid by the buyer to the writer. The buyer's **maximum loss = the premium**.
- **American**, can be exercised any time up to expiry. **European**, only at expiry.

### Moneyness

| Condition | Call option | Put option |
|---|---|---|
| **In-the-money** | Market price > Strike | Market price < Strike |
| **At-the-money** | Market = Strike | Market = Strike |
| **Out-of-the-money** | Market price < Strike | Market price > Strike |

### Option Value = Intrinsic + Time

$$\text{Call intrinsic value} = \text{Max}(\text{Market} - \text{Strike}, 0) \qquad \text{Put intrinsic value} = \text{Max}(\text{Strike} - \text{Market}, 0)$$

$$\text{Time Value} = \text{Option Premium} - \text{Intrinsic Value}$$

- Intrinsic value is never **negative**, the floor is zero, because exercising is optional.
- Time value **decays** as expiry approaches; it becomes **zero** at expiry.
- So at expiry: Option value = intrinsic value.

### Factors affecting option value

| Factor increases | Call value | Put value |
|---|---|---|
| Underlying price | **Rises** | Falls |
| Strike price | Falls | **Rises** |
| Time to expiry | **Rises** | **Rises** |
| Volatility | **Rises** | **Rises** |
| Risk-free rate | **Rises** | Falls |

> REMEMBER
>
> **Volatility raises the value of both.** Higher volatility means a greater chance of finishing deep in-the-money, while the downside is capped at the premium.
>
> More time generally also raises the value of both, more time means more possibility.

### Payoff Profiles

| Position | Maximum Gain | Maximum Loss | View |
|---|---|---|---|
| **Long Call** | **Unlimited** | Premium paid | Bullish |
| **Short Call** | Premium received | **Unlimited** | Bearish / neutral |
| **Long Put** | Strike – Premium (large, capped) | Premium paid | Bearish |
| **Short Put** | Premium received | Strike – Premium (large) | Bullish / neutral |

> THE SINGLE MOST DANGEROUS POSITION
>
> **Naked (uncovered) short call**, theoretically **unlimited loss**, since a stock price can rise without limit. This answer comes up repeatedly in exams.

### Hedging Strategies

| Strategy | What it is | When to use it |
|---|---|---|
| **Protective Put** | Own the stock **+** buy a put | Want to keep the stock but need downside insurance. Sets a floor on losses. |

| Strategy | What it is | When to use it |
|---|---|---|
| **Covered Call** | Own the stock **+** sell a call | Neutral/mildly bullish. Earns premium income, but caps the upside. |
| **Straddle** | Buy a call **and** a put at the same strike | Expecting a big move but **not sure which direction**. A volatility play. |
| **Strangle** | OTM call + put at different strikes | Like a straddle but cheaper; needs an even bigger move to profit. |
| **Collar** | Stock + protective put + covered call | Protects downside, sacrifices upside, the call premium funds the cost of the put. |

**QUICK DECISION RULE**

Worried about downside, want to keep the stock → **Protective Put**.

Market looks flat, want extra income → **Covered Call**.

Expecting a big move, direction unknown → **Straddle**.

CHAPTER B.3
# RAISING CAPITAL

Two questions sit here: where does a private company raise money from, and where does a public company. Plus the market-efficiency theory portion.

## 1. Raising Capital, Privately Held Companies

### Bank and Finance Company Loans

- Term loan, fixed maturity, scheduled repayments, often with collateral and covenants.
- The primary source for small/young companies; but the lender demands **collateral and a track record**.
- Finance companies are willing to take **more risk** than banks, but charge a **higher rate** for it.

### Lease Financing

| Type | Nature |
|---|---|
| **Operating Lease** | Short-term, cancellable, lessor handles maintenance. Essentially a rental. |
| **Finance / Capital Lease** | Long-term, non-cancellable, effectively financing a purchase. Both an asset and a liability get booked. |
| **Sale-and-Leaseback** | Sell the asset, then lease it back. **Unlocks cash** while use continues. |
| **Leveraged Lease** | Three parties, lessee, lessor, and a third-party lender who funds most of the asset. |

- Advantages of leasing: **100% financing** (no down payment), obsolescence risk shifts to the lessor, flexibility, and often less-restrictive covenants.
- Disadvantage: total cost is generally **higher than buying**; no ownership/residual value in the asset.

### Lease vs Purchase, decision framework

1. Work out the **after-tax incremental cash flows** for both options.
2. On the purchase side, include the **depreciation tax shield** and the interest tax shield on borrowing; on the lease side, include the **tax shield on the lease rental**.
3. On the purchase side, include the asset's **after-tax salvage value**.
4. Discount both at the **after-tax cost of debt**, because this is a financing decision, not an investment decision (the cash flows are relatively certain).
5. Choose whichever option has the **lower PV of cost**.

> **WHY AFTER-TAX COST OF DEBT, NOT WACC**
> Lease vs buy is a **financing** decision. The cash flows are contractual and predictable, so WACC (which reflects business risk) would be the wrong rate, it would understate the true cost.

### Venture Capital

- Equity investment in high-growth, high-risk startups, with **active involvement** (a board seat, strategy input, network access).

- VCs demand very high returns because most portfolio companies fail.
- Cost to the founder: significant **ownership dilution and loss of control**.
- Staged financing is common, the next round arrives once a milestone is met.
- Exit routes: **IPO** or a **strategic sale/acquisition**.

## 2. Raising Capital, Publicly Held Companies

### IPO, Initial Public Offering

1. Select an investment bank (underwriter).
2. Due diligence and regulatory registration/prospectus filing.
3. Decide valuation and price range; build institutional demand through a **roadshow**.
4. Final pricing, allotment, and listing on the secondary market.

| Underwriting type | Who bears the risk |
|---|---|
| **Firm Commitment** | The underwriter buys the **entire issue itself** and resells it → **risk sits with the underwriter**. The issuer is guaranteed the proceeds. |
| **Best Efforts** | The underwriter only tries to sell the issue, with no guarantee → **risk sits with the issuer**. |
| **Standby** | In a rights issue, the underwriter takes up whatever remains unsubscribed. |

- **Underpricing**, IPOs are often priced intentionally a little low so the issue gets fully subscribed and pops on listing. For the issuer this is an implicit cost ("money left on the table").
- **Private placement**, a direct sale to a small group of institutional investors. Cheaper and faster, but **less liquid**.
- **Secondary / subsequent offering**, an additional issue by an already-public company.
- Shelf registration lets a company register once and then issue in tranches timed to the market.

### Debt Issues, Primary Market

- A public bond issue involves an underwriter, a rating agency, and a trustee, an expensive, time-consuming process.
- Private placement of debt is faster but requires a somewhat higher yield (for illiquidity).
- Issue costs are heavily fixed → smaller issues are more expensive per unit raised.

### Debt vs Equity, summary for the exam

| | Debt | Equity |
|---|---|---|
| **Advantages** | Cheaper; interest is tax-deductible; no ownership dilution; inflation reduces the real burden of a fixed obligation | No repayment obligation; financial risk doesn't rise; permanent capital; preserves future borrowing capacity |
| **Disadvantages** | Fixed obligation, default risk; covenants reduce flexibility; financial leverage makes EPS volatile | Expensive; dividends aren't deductible; ownership and EPS dilution; higher flotation cost |

## 3. Financial Markets and Efficiency

- **Primary market**, new securities are issued; the money goes **to the company**.
- **Secondary market**, existing securities trade between investors; the company receives no proceeds. Its job is **liquidity and price discovery**.

- **Money market**, maturities under 1 year (T-bills, commercial paper, CDs). **Capital market**, long-term (bonds, stocks).

## Efficient Market Hypothesis (EMH)

| Form | Prices reflect | What becomes useless |
|---|---|---|
| **Weak** | All **historical price and volume** data | **Technical analysis**, past patterns yield no abnormal return |
| **Semi-Strong** | All **publicly available** information (weak form + financials, news, announcements) | **Both technical and fundamental analysis** |
| **Strong** | All information, public **and private/insider** | Everything, **even insider trading** yields no abnormal return |

**KEY IMPLICATIONS**

Each higher form **includes** the one below it. Strong ⊃ Semi-strong ⊃ Weak.

Empirically, the **semi-strong form** has the most support; the strong form is generally rejected (which is exactly why insider trading is both illegal and profitable).

If markets are efficient, securities are **fairly priced** → the NPV of buying a security ≈ zero, and active management provides no edge.

## Insider Trading

- Trading on material non-public information, illegal.
- **Material** = information that would change a reasonable investor's decision. **Non-public** = not yet available to the market.
- It damages market **fairness and confidence**, which is why disclosure rules and trading windows exist.

CHAPTER B.4

# WORKING CAPITAL MANAGEMENT

This is the **most calculation-heavy** area of Section B. The focus: optimise short-term assets and liabilities so that liquidity is maintained without leaving cash idle.

## 1. Foundations

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

### Operating Cycle and Cash Cycle

$$\text{Operating Cycle} = \text{Days Inventory (DIO)} + \text{Days Receivable (DSO)}$$

$$\text{Cash Conversion Cycle} = \text{DIO} + \text{DSO} - \text{Days Payable (DPO)}$$

- **Operating cycle**, the total time from buying inventory to collecting the receivable.
- **Cash cycle**, the time from cash actually going out to cash coming back in. Payable days are subtracted because the supplier financed the firm for that many days.
- The **shorter** the cash cycle, the better, less financing is needed.
- The cash cycle can even be **negative** (pay the supplier later, collect from the customer earlier), common in retail, and a very strong position to be in.

### Working Capital Policies

| | Aggressive | Conservative |
|---|---|---|
| Current assets level | Kept **low** | Kept **high** |
| Financing mix | More **short-term** debt | More **long-term** debt/equity |
| Cost | **Lower** (short-term is cheaper, no idle assets) | **Higher** |
| Return | **Higher**, same sales on fewer assets | Lower |
| Risk | **Higher**, stockout, illiquidity, refinancing risk | **Lower** |

> **CORE TRADE-OFF, APPLIES TO EVERY B.4 TOPIC**
>
> **Liquidity vs Profitability.** More current assets → safer, but lower return (idle resources). Fewer current assets → higher return, but shortage/stockout risk.
>
> **Maturity matching (hedging) principle**, finance permanent assets with long-term sources, and temporary/seasonal assets with short-term sources.

## 2. Cash Management

Objective: hold the cash operations actually need, and **put every rupee above that to work**, idle cash earns zero return.

### Reasons to hold cash

- **Transaction motive**, for routine payments.
- **Precautionary motive**, a cushion for unexpected needs.
- **Speculative motive**, to seize good opportunities.
- **Compensating balance**, a requirement under a bank loan agreement.

### Float

| Type | Meaning | Firm's objective |
|---|---|---|
| **Collection (Positive) Float** | A customer's cheque has been sent but hasn't yet reached the firm's account | **Minimise** it, cash is needed sooner |
| **Disbursement (Negative) Float** | The firm has written a cheque that hasn't yet cleared its account | **Maximise** it (legally), keep cash on hand longer |
| **Net Float** | Disbursement float − Collection float | A positive net float is favourable |

### Speeding up collections

- **Lockbox system**, customer payments go directly to a local PO box that the bank processes immediately. Cuts both mail float and processing float.
- **Concentration banking**, collect at local banks and sweep into one central account.
- **Electronic transfer / EFT / preauthorised debit**, float is nearly eliminated.
- A lockbox is only worth it when **savings exceed cost**, a classic exam calculation.

$$\text{Benefit of lockbox} = (\text{Days saved} \times \text{Daily collections}) \times \text{Interest rate}$$

*Compare this against the system's annual cost*

### Cash Budget

A practical cash-management tool, it forecasts when there will be a surplus and when a shortage.

$$\text{Beginning Cash} + \text{Cash Receipts} - \text{Cash Disbursements} = \text{Ending Cash (before financing)}$$

- If ending cash is below the **minimum required balance**, plan **borrowing** to cover the gap.
- If ending cash is well above the minimum, **invest the surplus** in marketable securities.
- A cash budget includes only **actual cash movements**, **not depreciation or accruals**, since those are non-cash. This is the most common error.
- Credit-sales collections follow a **lag pattern**, not the month of the sale itself.

### Cash Management Models

| Model | Assumption | Answers |
|---|---|---|
| **Baumol Model** | Cash outflows are **steady and predictable**. The cash version of EOQ. | Optimal size of each cash transfer from securities |
| **Miller-Orr Model** | Cash flows are **random and fluctuating** | An upper limit, a lower limit, and a **return point**, trade when the balance crosses a limit |

- Both models solve the same trade-off: **transaction cost** (of buying/selling securities) vs **opportunity cost** (lost interest on idle cash).
- Higher volatility in Miller-Orr → **wider** limits.

## 3. Marketable Securities

- A place to park temporary excess cash. Priority of criteria: **safety → liquidity → yield**. Yield is **last**, since this isn't an investment portfolio.
- Maturities are generally kept short to reduce price risk.

| Instrument | Nature |
|---|---|
| **Treasury Bills** | Government, issued at a discount, **safest and most liquid**. Effectively free of default risk. |
| **Commercial Paper** | An unsecured short-term note from large, creditworthy corporations; typically up to 270 days. Yields more than T-bills. |
| **Negotiable CDs** | A bank deposit certificate that can trade in the secondary market. |
| **Banker's Acceptance** | A bank-guaranteed time draft; common in trade financing. |
| **Repurchase Agreement** | An agreement to sell securities and buy them back, effectively a very short-term collateralised loan. |
| **Money Market Funds** | Pooled short-term instruments, instant diversification and liquidity. |

## 4. Accounts Receivable Management

Extending credit boosts sales, but it comes at a cost: tied-up funds, collection costs, and **bad debts**. The goal is finding the balance.

### Credit Policy, 4 levers

- **Credit standards**, what quality of customer qualifies for credit. Looser standards mean more sales but also more bad debts.
- **Credit terms**, the period and any discount, e.g. **2/10, net 30**.
- **Collection policy**, how aggressive reminders and follow-up are.
- **Discount policy**, an incentive for early payment.

> **THE DECISION RULE**
> Only loosen credit policy when the **incremental contribution margin exceeds the incremental costs** (extra carrying cost of receivables + extra bad debts + extra collection cost).

### Cost of offering a cash discount

$$\text{Cost to firm} = \text{Discount \%} \div (1 - \text{Discount \%}) \times 365 \div (\text{Full period} - \text{Discount period})$$

The same formula, seen from the customer's side, is the **cost of forgoing** the discount, B.4 tests it from both sides.

### Monitoring tools

- **DSO / Average collection period** = Receivables ÷ (Credit sales ÷ 365). A rising trend means collections are slowing.
- **Ageing schedule**, sorts receivables into days-outstanding buckets. Better than DSO because it shows the **distribution**, not just an average.
- **Receivables turnover** = Credit sales ÷ Average receivables.

## 5. Inventory Management

### Costs involved

- **Carrying (holding) cost**, storage, insurance, obsolescence, opportunity cost of funds. **Rises** as inventory rises.
- **Ordering / setup cost**, the cost of placing each order. Larger orders **lower** the per-unit cost.
- **Stockout cost**, lost sales, halted production, damage to customer goodwill.

### Economic Order Quantity (EOQ)

$$EOQ = \sqrt{(2 \times D \times O \div C)}$$

*D = annual demand (units); O = cost per order; C = carrying cost per unit per year*

- EOQ is the quantity at which **total ordering cost = total carrying cost**, total cost is minimised.
- Assumptions: demand is **constant and known**, lead time is constant, no quantity discounts, no stockouts allowed.
- If demand quadruples, EOQ only rises by a factor of **2** (a square-root relationship), this shows up as a conceptual question.

$$\text{Reorder Point} = (\text{Average daily usage} \times \text{Lead time in days}) + \text{Safety stock}$$

- **Safety stock** is a buffer against uncertainty in demand or lead time.
- Raising safety stock **increases** carrying cost but **decreases** stockout cost. The optimum is where the total is minimised.

### Other systems

- **JIT (Just-in-Time)**, materials arrive exactly when needed. Inventory and carrying cost fall **drastically**, but the firm becomes fully dependent on supplier reliability, raising stockout risk. Strong supplier relationships are essential.
- **ABC Analysis**, sorts inventory into A/B/C by value. A items (low quantity, high value) get the tightest control.
- **MRP**, plans material requirements by working backward from the production schedule.
- **Safety stock + kanban**, pull-based replenishment.

## 6. Short-Term Financing

### 6.1 Trade Credit

Credit from a supplier, the largest, and often **"free"-looking**, short-term source. It is free up to the discount period; after that, it is **very expensive**.

$$\text{Cost of forgoing discount} = [\, d \div (1 - d) \,] \times [\, 365 \div (N - D) \,]$$

*d = discount rate; N = net period days; D = discount period days*

**WORKED LOGIC, 2/10, NET 30**

The discount is 2%. In effect, you are paying 2% for an extra **20 days** (30 − 10).

Cost = (0.02 ÷ 0.98) × (365 ÷ 20) ≈ **37.2% annualised**.

Conclusion: if the borrowing rate is below 37%, **borrow to take the discount**. This is the most frequently tested calculation in Section B.

- **Stretching payables** (paying after the net period) effectively lowers the cost, but it damages supplier relationships and credit rating.

## 6.2 Bank Loans, the effective rate is everything

**Effective Annual Rate = Net Interest Cost ÷ Net Usable Funds**

| Arrangement | What happens | Effect on the effective rate |
|---|---|---|
| **Simple interest** | Interest paid at maturity, full principal used | Effective ≈ stated rate |
| **Discounted loan** | Interest is deducted **upfront** | Usable funds fall → effective rate **rises** |
| **Compensating balance** | A % of the loan must stay in the account | Usable funds fall → effective rate **rises** |
| **Installment loan** | Principal repaid in equal installments | Average outstanding is roughly half → effective rate roughly **doubles** |

> **THE UNIVERSAL RULE**
>
> Any arrangement that **reduces usable funds** or **speeds up repayment** pushes the effective rate **above the stated rate**.
>
> So always work out: (interest actually paid) ÷ (funds actually available for use).

- **Line of credit**, an informal, pre-approved limit; a commitment fee may apply to the unused portion.
- **Revolving credit agreement**, a **legally binding** commitment, which is why it carries a commitment fee. This is the key difference from a line of credit.
- **Prime rate**, the bank's best-customer rate; everything else is priced as a spread over it.

## 6.3 Commercial Paper

- An unsecured short-term promissory note that only large companies with a **high credit rating** can issue.
- **Cheaper** than a bank loan; but it is not a committed facility, if the market freezes up, there is rollover risk.
- Issuers therefore keep a bank line of credit as backup.

## 6.4 Receivables and Inventory Financing

| Method | Mechanics | Key point |
|---|---|---|
| **Pledging receivables** | Receivables serve as collateral; the firm still collects them | The firm retains **recourse**, bad-debt risk stays with the firm |
| **Factoring** | Receivables are **sold** to a factor (at a discount) | If **without recourse**, credit risk shifts to the factor, who also handles collection |
| **Inventory: floating lien** | A general claim over the entire inventory | Weak lender control → the weakest form of security |
| **Trust receipt** | A claim on specific identifiable items | Common with auto/equipment dealers |
| **Warehouse receipt** | Inventory is held under third-party control | **Strongest** security from the lender's perspective |

**FACTORING, REMEMBER**

Factoring is not just financing, it also **outsources credit checking and collection**. That is why it looks more expensive, but it saves the firm the cost of running its own collections department.

Always factor in that saved administrative cost when comparing options.

CHAPTER B.5

# CORPORATE RESTRUCTURING

## 1. Business Combinations

### Types by relationship

| Type | Meaning | Primary motive |
|---|---|---|
| **Horizontal** | Same industry, **same stage**, acquiring a competitor | Market share, economies of scale. Faces the most antitrust scrutiny. |
| **Vertical** | **Up or down** the supply chain, a supplier or a distributor | Supply security, margin capture, cost control |
| **Congeneric** | A related industry, not a direct competitor | Related capabilities, cross-selling |
| **Conglomerate** | A completely **unrelated** business | Diversification, earnings stability |

### Merger vs Acquisition vs Consolidation

- **Merger**, two companies combine into one; one entity survives.
- **Consolidation**, both are dissolved and a **new** entity is formed.
- **Acquisition**, one company takes control of another; the two may remain legally separate (parent-subsidiary).
- **Tender offer**, an offer made **directly** to the target's shareholders, bypassing management. The standard route for a hostile takeover.
- **LBO (Leveraged Buyout)**, an acquisition funded mostly with borrowed money; the target's own assets/cash flows service the debt. An **MBO** is the same thing when it's the management buying.

### Motives, and which ones are questionable

| Sound motives | Questionable motives |
|---|---|
| **Synergy**, combined value > sum of parts | **Diversification**, a shareholder can diversify themselves, more cheaply |
| Economies of scale / scope | Management **empire building** and ego |
| Tax benefits (using loss carryforwards) | **EPS bootstrapping**, a high-P/E firm buying a low-P/E firm for a cosmetic EPS boost |
| Buying an undervalued target below fair value | Managerial compensation tied to firm size |
| Supply security via vertical integration | |

**SYNERGY, THE EXAM FORMULA**

Synergy = Value(Combined firm) − [ Value(A alone) + Value(B alone) ]

**Net gain to acquirer = Synergy − Premium paid.**

Many deals fail because the **premium paid exceeds the synergy** created. This is the single most important conceptual point here.

- Payment method: **cash** (certainty for the target, acquirer keeps all the risk/reward) vs **stock** (risk is shared, but the acquirer's shareholders get diluted).
- An acquirer's share price often **falls** on announcement (fear of overpayment); the target's **rises** (the premium).

## 2. Takeover Defenses

| Defense | How it works |
|---|---|
| **Poison Pill** | Existing shareholders (excluding the raider) can buy shares at a discount → the acquisition becomes **very expensive and dilutive**. The most effective defense. |
| **Golden Parachute** | Large severance payments to senior management upon a takeover → raises the cost of acquiring |
| **White Knight** | Find a **friendly** acquirer to step in instead of the hostile bidder |
| **White Squire** | Sell a large minority stake to a friendly party who will block the hostile bid |
| **Crown Jewel** | Sell off the company's most valuable asset → the target becomes unattractive |
| **Pac-Man** | Turn around and try to take over the acquirer instead |
| **Greenmail** | Buy back the raider's shares at a premium so they go away |
| **Staggered (Classified) Board** | Only a few directors are elected each year, taking control requires several years |
| **Supermajority Provision** | A very high percentage of votes is required to approve a merger |
| **Shark Repellent** | A general term for charter/bylaw amendments that make a takeover harder |
| **Leveraged Recapitalisation** | Take on heavy debt to pay a large special dividend, makes the company less attractive |

**CONFLICT OF INTEREST**

Takeover defenses can entrench management and prevent shareholders from capturing a good premium. This criticism is strongest for greenmail and golden parachutes.

## 3. Divestitures

| Type | Mechanics | Cash generated? |
|---|---|---|
| **Sell-off / Divestiture** | A division or asset is **sold** to someone else | **Yes** |
| **Spin-off** | Shares of a subsidiary are distributed **pro-rata** to existing shareholders; becomes a new independent company | **No** |
| **Split-off** | Shareholders **exchange** their parent shares for shares of the subsidiary | **No** |

| Type | Mechanics | Cash generated? |
|---|---|---|
| **Split-up** | The parent is **entirely dissolved** into several independent companies; the parent ceases to exist | **No** |
| **Equity Carve-out (IPO)** | A **minority stake** of the subsidiary is sold to the public; the parent retains control | **Yes** |
| **Tracking Stock** | A separate class of stock that tracks one division's performance; **no** legal separation | Yes (if issued) |
| **Liquidation** | Assets are sold to settle claims, and the entity ceases to exist | Yes |

> **FASTEST WAY TO REMEMBER**
>
> **Cash comes in** → Sell-off, Carve-out. **No cash comes in** → Spin-off, Split-off, Split-up.
>
> **Spin-off** = shares received free (pro-rata). **Split-off** = shares exchanged for shares. **Split-up** = the parent itself ceases to exist.

- Reasons for a divestiture: refocusing away from a non-core business, eliminating **negative synergy**, raising cash, a regulatory requirement, or removing a "conglomerate discount".

## 4. Valuation for Restructuring

### Discounted Cash Flow (DCF)

1. Project the **Free Cash Flows** for the forecast period.
2. Choose the appropriate discount rate, **WACC** for FCFF, **cost of equity** for FCFE.
3. Calculate the terminal value (often using the perpetuity growth model).
4. Bring all cash flows and the terminal value to present value and sum them.

$$\text{FCFF} = \text{EBIT}(1-t) + \text{Depreciation} - \text{Capital Expenditure} - \Delta\,\text{Working Capital}$$

$$\text{Terminal Value} = \text{FCF}_n(1+g) \div (\text{WACC} - g)$$

> **MATCHING RULE, NEVER MIX THESE UP**
>
> **FCFF** (for all of the firm's capital providers) → discount at **WACC** → gives **Enterprise Value**. Subtract net debt to get equity value.
>
> **FCFE** (for shareholders only) → discount at **cost of equity** → gives **Equity Value** directly.
>
> Discounting FCFE at WACC is a classic error.

- The terminal value is often a **large share** of total value, so the assumed g is highly sensitive.
- g cannot exceed the economy's long-term growth rate, otherwise the firm would eventually outgrow the entire economy.

### Other approaches

- **Market Multiples / Comparable Companies**, apply the P/E, EV/EBITDA, or P/B of similar listed companies. Fast, but genuinely comparable companies can be hard to find.
- **Comparable Transactions**, multiples from recent similar deals; already includes a control premium.
- **Asset-based / Liquidation value**, net asset value. Gives a **floor** value for distressed or asset-heavy businesses.
- In practice, **triangulate**, don't rely on a single method.

CHAPTER B.6

# INTERNATIONAL FINANCE

## 1. Foreign Direct Investment

- FDI is investment with a **lasting interest and control** in foreign operations (a subsidiary, plant, JV), not just portfolio investment.
- Motives: new markets, cheaper labour/raw materials, bypassing tariffs and trade barriers, access to natural resources, tax advantages, staying close to the customer.

### Entry modes, the trade-off between risk and control

| Mode | Control | Risk / Investment |
|---|---|---|
| **Exporting** | Low | Lowest |
| **Licensing / Franchising** | Low-medium | Low, but with technology-leak risk |
| **Joint Venture** | Shared | Medium, gains local partner knowledge, but shares control and profit |
| **Wholly-owned Subsidiary** | **Full** | **Highest**, greenfield or acquisition |

### Additional risks in international operations

- **Political / Country risk**, expropriation, nationalisation, capital controls, sudden policy change, civil unrest.
- **Exchange rate risk**, the home-currency value of cash flows fluctuates.
- **Repatriation restrictions**, limits or withholding taxes on repatriating profit.
- **Legal, cultural, and accounting differences**, contract enforcement, labour rules, reporting standards.
- Mitigation: political risk insurance, a local partner/JV, local borrowing (a natural hedge), phased investment.

## 2. Foreign Currency Exchange Rates

### Quotations

- **Direct quote**, home currency per unit of foreign currency (US perspective: $1.10 per €1).
- **Indirect quote**, foreign currency per unit of home currency (€0.909 per $1).
- The two are **reciprocals** of each other: Direct = 1 ÷ Indirect.
- **Spot rate**, immediate delivery. **Forward rate**, fixed today for a future date.
- **Cross rate**, the rate between two currencies derived through a third (usually USD).

**APPRECIATION VS DEPRECIATION, GET THE DIRECTION RIGHT**

A currency has **appreciated** when it has become more expensive, one unit of it now buys more foreign currency.

A stronger home currency → **exports become more expensive** (competitiveness falls), **imports become cheaper**.

A weaker home currency → **exports become more competitive**, imports become more expensive.

### Forward premium / discount

$$\text{Forward Premium (Discount) \%} = [(\text{Forward} - \text{Spot}) \div \text{Spot}] \times (12 \div \text{months}) \times 100$$

- A **positive** result → the currency is trading at a forward premium (expected to strengthen).
- A **negative** result → a forward discount (expected to weaken).
- This interpretation only holds directly if using the direct-quote convention, confirm the convention first.

## 3. Parity Relationships

These three relationships describe how inflation, interest rates, and exchange rates connect to each other. Exams mostly test the direction of the relationship.

### Purchasing Power Parity (PPP)

$$\text{Expected } \Delta \text{ in Spot Rate} \approx \text{Inflation (Home)} - \text{Inflation (Foreign)}$$

- An extension of the **law of one price**, identical goods should cost the same everywhere once converted into one currency.
- The country with **higher** inflation will see its currency **depreciate**.
- Holds reasonably well over the long run; not over the short run.

### Interest Rate Parity (IRP)

$$\text{Forward Rate} = \text{Spot} \times [(1 + i_{home}) \div (1 + i^{i}_{orei}{}^{gn})]$$

- The currency with the **higher** interest rate will trade at a forward **discount** (and vice versa).
- Logic: otherwise **covered interest arbitrage** would create a risk-free profit, which the market would quickly eliminate.
- IRP holds quite accurately in practice over the short run.

### International Fisher Effect

$$\text{Nominal Interest Rate} \approx \text{Real Rate} + \text{Expected Inflation}$$

- Real rates are assumed roughly equal across countries; the difference in nominal rates is mainly driven by differing **inflation expectations**.
- So a currency with a high nominal interest rate is expected to depreciate.

**ONE LINE TO TIE IT TOGETHER**

**Higher inflation → higher nominal interest rate → currency depreciation → forward discount.** All three parity conditions are different faces of this same chain.

## 4. Foreign Exchange Exposure

| Exposure | What it is | Nature |
|---|---|---|
| **Transaction Exposure** | The value of already-committed foreign-currency transactions (receivable/payable) changes before settlement | Short-term, affects **actual cash flow**. The most heavily hedged. |
| **Translation (Accounting) Exposure** | Value changes when consolidating a foreign subsidiary's financials into the parent currency | A **book/accounting** effect only, not cash flow. Lower urgency. |
| **Economic (Operating) Exposure** | The long-term effect of exchange-rate movements on a firm's **future competitiveness and cash flows** | Long-term, strategic, and the hardest to hedge |

> **CLASSIC DISTINCTION QUESTION**
>
> Transaction and economic exposure affect **cash flow**. Translation exposure affects only the **reported financial statements**.
>
> That is why most firms don't actively hedge translation exposure.

## 5. Hedging Techniques

### Financial (external) hedges

| Tool | How it's used | Trade-off |
|---|---|---|
| **Forward contract** | Locks in a future exchange rate today | Customised and simple, but carries an **obligation**, no benefit from a favourable move |
| **Futures contract** | A standardised, exchange-traded version | Liquid with low counterparty risk, but amount/date may not match exactly |
| **Currency option** | The right to buy (call) / sell (put) at a fixed rate | **Protects the downside while keeping the upside open**, but costs a **premium** |
| **Currency swap** | Exchanges long-term cash flows in another currency | Best for long-dated exposure |
| **Money market hedge** | Borrow/invest in the foreign currency to offset exposure today | Same result as a forward, but requires a borrowing facility |

> **FORWARD VS OPTION, THE DECISION**
>
> Exposure is **certain** and certainty is wanted → **Forward** (no premium).
>
> Exposure is **contingent** (e.g. payment only if a bid is won) or upside benefit is also wanted → **Option** (flexibility at the cost of a premium).

### Operational (internal) hedges

- **Natural hedge**, generate both revenue and cost in the same currency, or borrow in the foreign currency.
- **Leading and lagging**, speed up (lead) or delay (lag) payments based on expected currency movement.
- **Netting**, offset receivables and payables between group companies and settle only the **net** amount.
- **Currency of invoicing**, bill in the home currency, shifting the exposure onto the customer.

- **Matching**, match foreign-currency inflows with outflows in the same currency.
- **Diversification**, spread operations across multiple currencies and markets.

## 6. Financing and Settling International Trade

### Financing sources

- **Eurocurrency market**, a currency deposit held outside its home country (e.g. Eurodollars = USD deposits outside the US). Less regulation, so more competitive rates.
- **Eurobond**, a bond issued outside the country of its currency. A **foreign bond**, a foreign issuer issuing in a domestic market's local currency.
- **Local borrowing**, a subsidiary borrows in the local currency, a natural hedge plus lower political risk.
- **Export credit agencies**, government-backed financing and guarantees for exporters.

### International payment instruments, a risk ladder

| Method | How it works | Where the risk sits |
|---|---|---|
| **Cash in Advance** | The buyer pays before shipment | **Safest for the exporter**, hardest for the buyer |
| **Letter of Credit (LC)** | The buyer's bank guarantees payment once documents are presented | Risk shifts to the **bank**, balanced for both. The most common international method. |
| **Documentary Collection / Draft** | Banks handle the documents but do **not guarantee** payment | Some risk remains with the exporter |
| **Open Account** | Goods are shipped first, payment follows later | **Riskiest for the exporter**, best for the buyer |
| **Consignment** | Payment only once the buyer resells the goods | Highest risk for the exporter |

- **Sight draft**, payment due immediately on presentation. **Time draft**, payment due on a specified future date.
- Once a bank accepts a time draft, it becomes a **Banker's Acceptance**, which can then trade at a discount.
- **Confirmed LC**, the exporter's own domestic bank adds its guarantee too → covers country risk as well.
- **Irrevocable LC**, cannot be changed without the consent of all parties; exporters always ask for this.

> **THE ORDERING TO MEMORISE**
>
> Risk for the exporter, **lowest to highest**: Cash in Advance → Confirmed LC → LC → Documentary Collection → Open Account → Consignment.
>
> For the buyer, the order is exactly **reversed**. That's why an LC is usually the balanced middle-ground in negotiation.

CHAPTER B.7

# LAST HOUR TOOLKIT

Every formula from Section B, in one place. In the hour before the exam, read only these two pages.

## B.1 Risk and Return

| Concept | Formula |
|---|---|
| Holding Period Return | HPR = [ Income + (End − Begin) ] ÷ Begin |
| Expected Return | $E(R) = \Sigma P_i R_i$ |
| Coefficient of Variation | CV = σ ÷ E(R) → lower is better |
| Portfolio Return | $E(R_p) = \Sigma w_i E(R_i)$ |
| Two-asset Portfolio Risk | $\sigma_p = \sqrt{[ w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2w_1w_2\rho\sigma_1\sigma_2 ]}$ |
| Covariance | $Cov = \rho \times \sigma_1 \times \sigma_2$ |
| Beta | $\beta = Cov(R_i,R_m) \div \sigma^2_m = \rho\, \sigma_i \div \sigma_m$ |
| Portfolio Beta | $\beta_p = \Sigma w_i \beta_i$ |
| CAPM / SML | $R = R_{re} + \beta (R_m - R_{re})$ |

## B.2 Cost of Capital and Valuation

| Concept | Formula |
|---|---|
| After-tax Cost of Debt | $k^d (1 - t)$ |
| Cost of Preferred | $k_p = D_p \div$ Net price (**no tax adjustment**) |
| Cost of Equity, CAPM | $k_e = R_{re} + \beta (R_m - R_{re})$ |
| Cost of Equity, DGM | $k_e = (D_1 \div P_0) + g$ |
| Cost of New Equity | $k_e = [ D_1 \div P_0(1-f) ] + g$ |
| Bond Yield + Premium | $k_e$ = Bond yield + 3–5% |
| WACC | $w^d k^d(1-t) + w_p k_p + w_e k_e$ |
| Break Point | Amount at lower cost ÷ Weight of that source |
| Sustainable Growth | g = ROE × Retention ratio |
| Zero-growth Share Value | $P_0 = D \div k_e$ |
| Gordon Growth | $P_0 = D_1 \div (k_e - g)$, valid only if $k_e > g$ |
| P/E Valuation | Price = Industry P/E × EPS |

| Concept | Formula |
|---|---|
| Duration Effect | % Δ Price ≈ − Modified Duration × Δ Yield |
| Leverage | DOL = %ΔEBIT ÷ %ΔSales; DFL = %ΔEPS ÷ %ΔEBIT; DTL = DOL × DFL |
| Rights (rights-on) | (Market − Subscription) ÷ (N + 1) |
| Rights (ex-rights) | (Market − Subscription) ÷ N |
| Call Intrinsic Value | Max (Market − Strike, 0) |
| Put Intrinsic Value | Max (Strike − Market, 0) |
| Time Value | Premium − Intrinsic value |

## B.4 Working Capital

| Concept | Formula |
|---|---|
| Net Working Capital | Current Assets − Current Liabilities |
| Operating Cycle | DIO + DSO |
| Cash Conversion Cycle | DIO + DSO − DPO |
| DSO | Receivables ÷ (Credit sales ÷ 365) |
| DIO | Inventory ÷ (COGS ÷ 365) |
| DPO | Payables ÷ (COGS ÷ 365) |
| EOQ | EOQ = √( 2 D O ÷ C ) |
| Reorder Point | (Daily usage × Lead time) + Safety stock |
| Cost of Forgoing Discount | [ d ÷ (1−d) ] × [ 365 ÷ (N − D) ] |
| Effective Annual Rate | Net interest cost ÷ Net usable funds |
| Lockbox Benefit | (Days saved × Daily collections) × Interest rate |

## B.5 Restructuring

| Concept | Formula |
|---|---|
| Synergy | V(AB) − [ V(A) + V(B) ] |
| Net Gain to Acquirer | Synergy − Premium paid |
| FCFF | EBIT(1−t) + Depreciation − CapEx − ΔWC |
| Terminal Value | $FCF_n(1+g) \div (WACC - g)$ |
| Equity Value from EV | Enterprise Value − Net Debt |

## B.6 International Finance

| Concept | Formula |
|---|---|
| Direct ↔ Indirect Quote | Direct = 1 ÷ Indirect |
| Forward Premium / Discount | [(Forward − Spot) ÷ Spot] × (12 ÷ months) × 100 |
| Purchasing Power Parity | Expected Δ spot ≈ Inflation(home) − Inflation(foreign) |
| Interest Rate Parity | Forward = Spot × [(1+$i_{home}$) ÷ (1+$i^{i}_{or}$)] |
| Fisher Effect | Nominal ≈ Real + Expected inflation |

# CONFUSION KILLERS

These are the pairs students slip on most often in the exam. Learn the **differentiator** in each row, not the full definition.

## Risk and Return

| Confusion | The one-line fix |
|---|---|
| σ vs **CV** | Expected returns **differ** → use CV. They are equal → σ works. |
| Systematic vs Unsystematic | Systematic **cannot be diversified away** and **earns compensation**. Unsystematic is the opposite. |
| **SML vs CML** | SML's X-axis is **beta**, valid for all securities. CML's X-axis is **σ**, only for efficient portfolios. |
| $R_m$ vs **market risk premium** | Premium = ($R_m$ − $R_{re}$). If a question already gives the premium, don't subtract $R_{re}$ again. |
| SML **shift vs rotation** | $R_{re}$ changes → parallel shift. Risk aversion changes → rotation. Beta changes → the stock moves along the SML; the SML itself doesn't move. |

## Cost of Capital

| Confusion | The one-line fix |
|---|---|
| Tax adjustment on debt | Debt gets **(1−t)**. **Preferred does not**, dividends aren't deductible. |
| Cost of retained earnings | **Not zero.** Opportunity cost = $k_e$. It just skips flotation cost, which is why it's cheaper than new equity. |
| $D_0$ vs $\mathbf{D_1}$ | The Gordon model always needs $\mathbf{D_1}$, if given $D_0$, multiply by (1+g). |
| Book vs **market** weights | WACC uses **market value** weights, not book value. |
| WACC vs risk-adjusted rate | If a project's risk differs from the firm's, WACC is the **wrong** rate. |

## Instruments

| Confusion | The one-line fix |
|---|---|
| **Forward vs Future** | Forward = OTC, customised, counterparty risk. Future = exchange-traded, standardised, daily mark-to-market, margin. |
| **Warrant vs Call option** | A warrant is issued by the **company** → exercise creates **new shares** → dilution. A call option trades between investors → no dilution. |
| **Call vs Put provision** (bonds) | Call = the **issuer's** right → investors demand extra yield. Put = the **investor's** right → yield is lower. |
| Coupon vs Current Yield vs **YTM** | Discount bond: Coupon < CY < YTM. Premium bond: Coupon > CY > YTM. |
| **Duration** direction | Longer maturity → higher duration. **Higher coupon → lower duration.** A zero-coupon bond's duration equals its maturity. |
| Stock dividend vs **split** | Dividend: par value **stays the same**, retained earnings **falls**. Split: par value **falls**, no entry made. |

## Working Capital

| Confusion | The one-line fix |
|---|---|
| Operating vs **Cash** cycle | The cash cycle **subtracts DPO**. The operating cycle does not. |
| **Aggressive vs Conservative** | Aggressive = **lower** current assets + **more short-term** debt = higher return, higher risk. |
| Collection vs **Disbursement** float | **Minimise** collection float. **Maximise** disbursement float. |
| **Baumol vs Miller-Orr** | Baumol = steady, predictable outflows. Miller-Orr = **random** flows, with upper/lower limits plus a return point. |
| **Pledging vs Factoring** | Pledging = collateral, the firm collects itself, has **recourse**. Factoring = receivables are **sold**, the factor collects. |
| Effective rate **> stated rate** | Whenever usable funds are reduced (discounted loan, compensating balance) or repayment is accelerated (installment loan). |

## Restructuring and International

| Confusion | The one-line fix |
|---|---|
| **Spin-off vs Split-off vs Split-up** | Spin-off = shares **free, pro-rata**. Split-off = shares **exchanged** for shares. Split-up = **the parent ceases to exist**. |
| Which divestitures generate **cash** | Only **Sell-off and Carve-out**. Not the other three. |
| **FCFF vs FCFE** | FCFF → **WACC** → Enterprise Value. FCFE → **cost of equity** → Equity Value. Never mix the two. |
| **Transaction vs Translation** exposure | Transaction = **real cash flow**. Translation = **books/consolidation** only, no cash impact. |
| **Forward vs Option** hedge | Exposure certain → **Forward** (free, but an obligation). Contingent or upside wanted → |

| Confusion | The one-line fix |
|---|---|
| | **Option** (costs a premium). |
| **Direct vs Indirect** quote | Direct = home currency per **1 unit of foreign currency**. The two are reciprocals. |
| Effect of currency **appreciation** | A stronger home currency → **exports get more expensive**, imports get cheaper. |
| **PPP vs IRP** | PPP = rate moves with the **inflation** difference. IRP = the forward rate moves with the **interest rate** difference. |

## FINAL 30-MINUTE CHECKLIST

If you can answer every one of these in a sentence, Section B is revised.

### B.1

- Which risk does the market reward, and why only that one?
- The CAPM formula, and the most common mistake in applying it?
- What does a beta of 1.4 mean in business terms?
- How much diversification benefit exists at correlations of +1 and −1?
- Is a stock above the SML overvalued or undervalued?

### B.2

- Why is debt cheaper, both reasons?
- What is the ascending order of the cost of capital?
- Should a firm minimise WACC or maximise EPS, and why?
- What happens to bond price when interest rates rise, and which bond is affected most?
- When does the Gordon model fail?
- What is the maximum loss on a naked short call?
- Protective put vs covered call, when do you use each?

### B.3

- Firm commitment vs best efforts, who bears the risk?
- If semi-strong efficiency holds, what happens to fundamental analysis?
- Which discount rate is used in a lease-vs-buy analysis, and why?

### B.4

- What does a negative cash conversion cycle mean?
- What is the annualised cost of 2/10 net 30, and what decision follows?
- If demand quadruples in the EOQ formula, by what factor does EOQ rise?
- Does a compensating balance raise or lower the effective rate, and why?
- What is the priority order for choosing marketable securities?

### B.5

- What is the formula for net gain to the acquirer, and why do deals fail?
- How does a poison pill work?
- What is the exact difference between a spin-off and a split-off?

- What rate is used to discount FCFF?

### B.6

- Will a high-inflation currency appreciate or depreciate?
- Will a high-interest-rate currency trade forward at a premium or a discount?
- Of the three exposures, which one does not affect cash flow?
- What is the risk ordering for an exporter?

**ONE LAST THING**

Section B is **20%** of Part 2, and it overlaps with Section E (Capital Investment Decisions), cost of capital, WACC, and DCF are used there too.

So time spent on B.2 pays off twice.