

FREEFELLOW

FORMULA SHEET

CMA PART 2

IMA · Strategic Financial Management

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FORMULAS

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TOPICS

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Current ratio

Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Measures short-term liquidity. Rule of thumb 2:1, but industry-dependent. High current ratio can indicate inefficient use of assets (excess inventory or AR).

Cash ratio and working capital

Cash Ratio = $\frac{\text{Cash} + \text{Marketable Securities}}{\text{Current Liabilities}}$

Working Capital = Current Assets – Current Liabilities

Negative working capital is not always bad (e.g., retailers with fast inventory turn and supplier float).

Inventory turnover and DIH

Inventory Turnover = $\frac{\text{COGS}}{\text{Avg Inventory}}$

DIH (Days Inventory Held) = $\frac{365}{\text{Inventory Turnover}}$

High turnover means efficient inventory management. Very high may indicate stockouts.

Cash conversion cycle

CCC = DIH + DSO – DPO

Days from cash outflow for inventory to cash inflow from collection. Lower (or negative) CCC frees up working capital and reduces financing needs.

Equity multiplier and financial leverage

Equity Multiplier = $\frac{\text{Total Assets}}{\text{Equity}}$

Equivalent: 1 + Debt-to-Equity (using book values). Used in DuPont decomposition to isolate the leverage effect on ROE.

Profit margins (gross, operating, net)

Gross Margin = $\frac{\text{Revenue} - \text{COGS}}{\text{Revenue}}$

Operating Margin = $\frac{\text{EBIT}}{\text{Revenue}}$

Net Margin = $\frac{\text{Net Income}}{\text{Revenue}}$

Gross reflects unit economics; operating adds OpEx; net adds financing and taxes.

ROA, ROE, ROIC

ROA = $\frac{\text{Net Income}}{\text{Avg Total Assets}}$

ROE = $\frac{\text{Net Income} - \text{Preferred Div}}{\text{Avg Common Equity}}$

ROIC = $\frac{\text{NOPAT}}{\text{Invested Capital}}$ where NOPAT = EBIT(1 – t) and Invested Capital = total debt + total equity.

DuPont 5-step (extended)

ROE = $\frac{NI}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{Sales} \times \frac{Sales}{Assets} \times \frac{Assets}{Equity}$

Further splits net margin into tax burden (NI/EBT), interest burden (EBT/EBIT), and operating margin (EBIT/Sales).

Quick (acid-test) ratio

Quick Ratio = $\frac{\text{Cash} + \text{Marketable Securities} + \text{Net AR}}{\text{Current Liabilities}}$

Excludes inventory and prepaid expenses. More conservative than current ratio; useful when inventory is illiquid or slow-moving.

Accounts receivable turnover and DSO

AR Turnover = $\frac{\text{Net Credit Sales}}{\text{Avg AR}}$

DSO (Days Sales Outstanding) = $\frac{365}{\text{AR Turnover}} = \frac{\text{Avg AR}}{\text{Net Credit Sales}/365}$

High turnover and low DSO indicate efficient collection. Industry benchmarks vary widely.

Accounts payable turnover and DPO

AP Turnover = $\frac{\text{Purchases (or COGS)}}{\text{Avg AP}}$

DPO (Days Payable Outstanding) = $\frac{365}{\text{AP Turnover}}$

High DPO conserves cash but excessive DPO may damage supplier relationships and forfeit early-payment discounts.

Debt-to-equity and debt-to-assets

$\frac{\text{Debt}}{\text{Equity}} = \frac{\text{Total Liab}}{\text{Total Equity}}$

$\frac{\text{Debt}}{\text{Assets}} = \frac{\text{Total Liab}}{\text{Total Assets}}$

Leverage ratios. Higher = more financial risk + tax shield. Sector context matters (utilities high; tech low).

Times interest earned and fixed charge coverage

TIE = $\frac{\text{EBIT}}{\text{Interest Expense}}$

FCC = $\frac{\text{EBIT} + \text{Lease Payments}}{\text{Interest Expense} + \text{Lease Payments}}$

Covenant-style coverage ratios. Lenders typically require TIE ≥ 2x or 3x.

EBITDA and EBIT

EBIT = Net Income + Interest + Tax

EBITDA = EBIT + Depreciation + Amortization

EBITDA strips out non-cash charges; useful for cross-firm comparisons with different capital intensities. Not a GAAP measure.

DuPont 3-step decomposition

ROE = Net Margin × Asset Turnover × Equity Multiplier

= $\frac{NI}{Sales} \times \frac{Sales}{Assets} \times \frac{Assets}{Equity}$

Decomposes ROE into profitability, efficiency, and leverage drivers.

Free cash flow to firm (FCFF) and to equity (FCFE)

FCFF = NOPAT + D&A – ΔWC – Capex

FCFE = FCFF – Interest(1 – t) + Net Borrowing

FCFF discounted at WACC for enterprise value; FCFE discounted at cost of equity for equity value.

P/E, P/B, and PEG ratios

$$P/E = \frac{\text{Price per Share}}{\text{EPS}}$$
$$P/B = \frac{\text{Price per Share}}{\text{Book Value per Share}}$$
$$PEG = \frac{P/E}{\text{Earnings Growth Rate}}$$
 (PEG < 1 often signals undervaluation given growth).

Sustainable growth rate (SGR)

$$SGR = ROE \times \text{Retention Ratio} = ROE \times (1 - \text{Payout})$$

Maximum growth achievable without new external equity, holding capital structure constant. Higher actual growth requires additional financing.

Quality of earnings indicators

High quality signals: stable accruals, recurring (not one-time) items, conservative revenue and expense recognition, cash earnings track reported earnings.

Low quality signals: rising accruals, large one-time gains, aggressive revenue recognition, EBITDA disconnect from operating cash flow, declining cash conversion.

Dividend yield and payout ratio

$$\text{Dividend Yield} = \frac{\text{Annual Dividends per Share}}{\text{Price per Share}}$$
$$\text{Payout Ratio} = \frac{\text{Dividends}}{\text{Net Income}}$$

Retention ratio = 1 – Payout. Mature low-growth firms have high payout; growth firms retain to fund reinvestment.

Common-size and trend (horizontal) analysis

Common-size income statement: each line as percent of revenue.

Common-size balance sheet: each line as percent of total assets.

Horizontal (trend) analysis: each line indexed to a base year (base = 100) to show growth over time.

Useful for cross-firm and cross-period comparison normalized for scale.

Off-balance-sheet financing

- Items historically kept off-balance-sheet that may obscure leverage:
1. Operating leases (now capitalized under ASC 842 / IFRS 16).
 2. Unconsolidated joint ventures and equity-method investees.
 3. Receivables sold with recourse / factoring.
 4. Special-purpose entities (must consolidate if variable interest).

Expected return and variance of returns

$$E[R] = \sum_i p_i R_i$$
$$\sigma^2 = \sum_i p_i (R_i - E[R])^2$$
$$\sigma = \sqrt{\sigma^2} \text{ (standard deviation = volatility).}$$

For a sample: $s^2 = \frac{\sum (R_i - \bar{R})^2}{n - 1}$.

Beta and CAPM

$$\beta_i = \frac{\text{Cov}(R_i, R_m)}{\sigma_m^2} = \rho_{i,m} \cdot \frac{\sigma_i}{\sigma_m}$$
$$E[R_i] = R_f + \beta_i (E[R_m] - R_f)$$

The Security Market Line (SML) plots expected return against beta.
Equilibrium assets lie on the SML.

Cost of debt (after-tax)

$$k_d^{at} = k_d (1 - t)$$

Use the yield to maturity on outstanding debt (or current market rate for new debt), not the coupon rate. Tax shield applies only to extent firm is profitable enough to use the deduction.

Cost of common equity (three approaches)

CAPM: $k_e = R_f + \beta (R_m - R_f)$
Gordon (DDM): $k_e = \frac{D_1}{P_0} + g$ where g is sustainable dividend growth
Bond yield plus risk premium: $k_e = k_d + \text{Equity Risk Premium (rule-of-thumb 3-5\%)}$

Modigliani-Miller propositions

No tax: capital structure irrelevant. Firm value is independent of debt/equity mix. $V_L = V_U$.
With tax: $V_L = V_U + tD$. Debt creates a tax shield equal to the marginal tax rate times debt outstanding.

Effective cost of trade credit

$$\text{Effective Annual Cost} = \left(1 + \frac{\text{Discount}}{1 - \text{Discount}} \right)^{365/(N-D)} - 1$$

N = payment period, D = discount period. Example: '2/10 net 30' = $(1 + 0.02/0.98)^{365/20} - 1 \approx 44.6\%$. Almost always worth taking the discount.

FX exposure (transaction, translation, economic)

Transaction: gain or loss from settling existing receivables / payables denominated in foreign currency.
Translation: balance sheet conversion of foreign subsidiary financials (current rate vs temporal methods).
Economic: long-run impact of FX changes on PV of future cash flows (operating exposure).

Purchasing power parity and Fisher effect

PPP: $\frac{E[S_1]}{S_0} = \frac{1 + \pi_d}{1 + \pi_f}$ where π are inflation rates.
Fisher: $(1 + i) = (1 + r)(1 + \pi)$; i = nominal, r = real, π = expected inflation.
International Fisher: nominal rate differential $\approx$ expected currency depreciation.

Two-asset portfolio variance

$$\sigma_p^2 = w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \rho_{12} \sigma_1 \sigma_2$$

Covariance: $\sigma_{12} = \rho_{12} \sigma_1 \sigma_2$. When $\rho < 1$, diversification reduces portfolio risk below the weighted average of individual standard deviations.

Sharpe and Treynor ratios

Sharpe = $\frac{R_p - R_f}{\sigma_p}$
Treynor = $\frac{R_p - R_f}{\beta_p}$
Sharpe uses total risk; Treynor uses systematic risk only. Use Sharpe for undiversified portfolios, Treynor for well-diversified portfolios.

Cost of preferred equity

$$k_{ps} = \frac{D_{ps}}{P_{ps}}$$

Perpetuity formula since preferred dividends are typically fixed and indefinite. No tax adjustment for issuer (dividends not tax-deductible).

Weighted average cost of capital (WACC)

$$\text{WACC} = \frac{D}{V} k_d (1 - t) + \frac{P}{V} k_{ps} + \frac{E}{V} k_e$$

Use market-value weights, not book. WACC is the appropriate discount rate for projects with risk similar to the firm's existing assets.

Hamada equation (lever and unlever beta)

$$\beta_L = \beta_U \left[1 + (1 - t) \frac{D}{E} \right]$$

Unlever: $\beta_U = \frac{\beta_L}{1 + (1 - t) D/E}$
Use to compare betas across firms with different leverage, or to estimate beta for a new capital structure.

Cost of bank loan with compensating balance

$$\text{Effective Rate} = \frac{\text{Interest}}{\text{Loan} - \text{Compensating Balance}}$$

Compensating balance reduces usable proceeds, raising the effective rate above the stated rate. Discount loans (interest deducted upfront) similarly raise the effective rate.

Interest rate parity (covered IRP)

$$\frac{F}{S} = \frac{1 + r_d}{1 + r_f}$$

Forward rate F, spot rate S, domestic rate r_d , foreign rate r_f . Currency with higher interest rate trades at a forward discount.
If IRP violated, arbitrage opportunity exists via the carry trade.

Dividend discount model (single-stage Gordon growth)

$$P_0 = \frac{D_1}{k_e - g}$$

Valid only when $g < k_e$ and growth is expected to be constant in perpetuity. $D_1 = D_0(1 + g)$.
Multi-stage variants use different growth rates by period plus a terminal value.

Working capital financing strategies Conservative: long-term financing for both permanent AND temporary current assets. Low risk, higher cost. Matching (maturity): long-term for permanent, short-term for temporary current assets. Aggressive: short-term financing for some permanent current assets. Higher risk (rollover), lower cost.	Float types Collection float: time between customer payment and funds available (mail, processing, clearing). Disbursement float: time between writing a check and funds clearing the firm's account. Net float = disbursement float – collection float (positive net float means more cash available than book shows).
Optimal cash balance (Baumol model) $C^* = \sqrt{\frac{2TF}{k}}$ T = annual cash need, F = fixed transaction cost per conversion, k = opportunity cost (interest forgone on cash held). Square-root inventory model applied to cash. Miller–Orr extends this to stochastic cash demands.	Capital structure trade-off theory Optimal debt balances tax shield benefits against costs of financial distress. $V_L = V_U + \text{PV of Tax Shield} - \text{PV of Bankruptcy Costs} - \text{Agency Costs}$ Pecking order theory (Myers): firms prefer internal financing, then debt, then equity (signal effects). No precise optimal structure.
Stock dividends, splits, and repurchases Stock dividend: distributes additional shares pro rata. Reduces book value per share; total equity unchanged. Stock split: same effect mechanically (e.g., 2-for-1 halves price, doubles shares).	Bond pricing and duration Price: $P = \sum_{t=1}^n \frac{C}{(1+y)^t} + \frac{F}{(1+y)^n}$ Macaulay duration: weighted-avg time to cash flows (years). Modified duration: $\frac{D_{Mac}}{1+y}$; approximates percent price change for a 1% yield change. $\% \Delta P \approx -D_{mod} \times \Delta y.$

Relevant cost framework

Relevant: future, differential (avoidable), cash flows. Considered in the decision.

Irrelevant: sunk costs (already incurred, unrecoverable), unavoidable allocations, common costs that persist either way.

Opportunity cost of resources is always relevant. Book values are usually sunk and irrelevant.

Make-or-buy analysis

Compare:

Make cost: variable cost + avoidable fixed cost + opportunity cost of facility use.

Buy cost: purchase price + freight + receiving and inspection costs.

Favor make when make cost < buy cost AND quality, capacity, or strategic factors aligned.

Special order decision

Accept if: incremental revenue > incremental cost AND no displacement of regular business AND no long-term price impact on regular customers.

Incremental cost typically = variable cost only (assuming spare capacity).

If capacity-constrained, opportunity cost of displaced sales must be added.

Sell-or-process-further decision

Process further only if: incremental revenue from further processing > incremental cost of further processing.

Joint costs incurred up to the split-off point are SUNK and irrelevant. Use sales value at split-off only for cost allocation, not decision-making.

Drop-or-keep segment decision

Drop only if: contribution margin lost < avoidable fixed costs.

Unavoidable allocated fixed costs (e.g., headquarters overhead) persist after dropping and are irrelevant.

Consider lost complementary sales (cross-product synergies) when segments share customers or distribution.

Constrained resource (bottleneck) decisions

Maximize: CM per unit of constraint, NOT CM per unit of output.

Example: machine hours scarce. For each product compute CM / machine hour; produce highest-ratio products first until constraint exhausted or demand satisfied.

Cost-plus pricing

Price = Cost Base × (1 + Markup)

Cost base can be variable cost, full absorption cost, or total cost (including SG&A).

Markup must cover non-included costs plus target profit. Simple but ignores demand elasticity and competitor prices.

Target costing

Target Cost = Market Price – Required Profit Margin

Reverse engineering: starts with what the market will bear; designs product and process to hit the cost target. Common in automotive and consumer electronics where competitive prices are externally given.

Markup vs margin

Margin (on sale): $\text{Margin}\% = \frac{P - C}{P}$

Markup (on cost): $\text{Markup}\% = \frac{P - C}{C}$

Convert: $\text{Margin} = \frac{\text{Markup}}{1 + \text{Markup}}$; $\text{Markup} = \frac{\text{Margin}}{1 - \text{Margin}}$. Example: 25% markup = 20% margin.

Marginal revenue equals marginal cost

Profit-maximizing quantity: produce until $MR = MC$.

MR = derivative of total revenue. For linear demand $P = a - bQ$: $MR = a - 2bQ$.

MC = derivative of total cost. Higher-than-MC pricing reduces output; lower-than-MC subsidizes loss-making units.

Price elasticity of demand

$$E_p = \frac{\% \Delta Q_d}{\% \Delta P}$$

If |E_p| > 1: elastic (price increase lowers revenue).

If |E_p| < 1: inelastic (price increase raises revenue).

If |E_p| = 1: unit elastic (revenue unchanged at margin).

Optimal pricing balances elasticity and marginal cost.

Differential analysis framework

1. Identify the alternatives.
2. Identify relevant (differential) costs and revenues for each.
3. Compute the difference (alternative A – alternative B).
4. Consider qualitative factors (employee morale, customer perception, strategic fit).
- 5.

Multi-product break-even (sales mix)

Weighted-Avg CM Ratio = $\sum \text{Sales Mix}_i \times \text{CM Ratio}_i$

BE Sales Dollars = $\frac{\text{Fixed Costs}}{\text{WACM Ratio}}$

Allocate BE sales dollars by mix percentages to get per-product BE sales.

Assumes constant sales mix.

Margin of safety and DOL (review for Part 2)

MoS = Actual Sales – Breakeven Sales

MoS Ratio = $\frac{\text{MoS}}{\text{Actual Sales}} = \frac{1}{\text{DOL}}$

DOL = $\frac{\text{CM}}{\text{Op Income}}$

DOL and MoS are reciprocals: high DOL implies thin MoS and vice versa.

Pricing under uncertainty (expected payoff)

For pricing decision under uncertain demand:

$$E[\text{Profit}_{\text{price}}] = \sum_i p_i (\text{Price} \times Q_i - VC \times Q_i - FC)$$

Choose price with highest expected profit. Sensitivity test against best- and worst-case scenarios.

Yield (revenue) management

Segment customers by willingness to pay and capacity constraint timing.

Common in airlines, hotels, rental cars: higher prices when capacity scarce, discounts when excess capacity. Uses historical demand patterns and real-time booking velocity to update prices.

Goal: maximize revenue per available unit (RevPAU).

Equation method vs CM method for BE Equation: $P \cdot Q = V \cdot Q + F + \pi$ solved for Q. CM: $Q = \frac{F + \pi}{P - V}$ or for sales dollars $S = \frac{F + \pi}{(P - V)/P}$. Both give identical answers. CM is faster once memorized; equation is more general.	Operating leverage and risk $\text{DOL} = \frac{\text{Contribution Margin}}{\text{Operating Income}}$ High fixed costs (capital-intensive) = high DOL = amplified profit swings with sales changes. Service firms with low FC have low DOL and steadier income through cycles. Risk-return trade-off in cost structure design.
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ENTERPRISE RISK MANAGEMENT 7 items	
Risk appetite, tolerance, capacity Risk appetite: amount of risk a firm is WILLING to accept in pursuit of strategy. Risk tolerance: variation from appetite the firm will accept on specific objectives (operational level). Risk capacity: maximum risk the firm could absorb before failing (constrained by capital, liquidity, regulation).	Four risk responses 1. Avoid: stop the activity creating the risk (exit the business line). 2. Reduce (mitigate): controls, training, redundancy to lower likelihood or impact. 3. Share (transfer): insurance, hedging, joint ventures, outsourcing. 4.
Risk heat map (likelihood and impact) 2D matrix: likelihood (rare to almost certain) vs impact (insignificant to catastrophic). Typical bands: low (green), medium (yellow), high (red), extreme (dark red). Visualizes risk portfolio for board reporting. Re-plot after treatment shows residual risk.	Value at Risk (VaR) Maximum expected loss over a horizon at a confidence level. Example: '1-day 99% VaR = \$10M' means 99% confident the loss will not exceed \$10M in one day. Methods: variance-covariance (normal assumption), historical simulation (use historical returns directly), Monte Carlo (simulate from assumed distribution).
Expected shortfall (CVaR) Expected loss conditional on loss exceeding the VaR threshold. $ES_{\alpha} = E[L \mid L > VaR_{\alpha}]$ Addresses VaR's silence on tail-loss magnitude. Coherent risk measure (subadditive). Increasingly required by regulators (e.g., FRTB).	Stress testing and scenario analysis Stress testing: extreme but plausible adverse scenarios applied to portfolio or business model (e.g., 30% equity drop, doubling default rates). Scenario analysis: defined cohesive scenarios (e.g., 2008-like, pandemic, geopolitical shock).
Business continuity and crisis management BCP elements: business impact analysis (BIA), recovery time objective (RTO), recovery point objective (RPO), disaster recovery plan, crisis communications, testing. RTO = max acceptable downtime. RPO = max acceptable data loss. Lower RTO/RPO = higher cost (more redundancy, hot sites).	

Net present value (NPV)

$$NPV = \sum_{t=0}^n \frac{CF_t}{(1+r)^t}$$

Accept if NPV > 0. r = required return (often WACC for projects of average firm risk).
Mutually exclusive projects: pick highest NPV.
NPV accounts for time value and project scale.

Internal rate of return (IRR)

IRR is the discount rate that makes NPV = 0.
$$0 = \sum_{t=0}^n \frac{CF_t}{(1+IRR)^t}$$

Accept if IRR > hurdle rate. Issues: multiple IRRs when cash flows change sign more than once; scale-insensitive; reinvestment assumption (at IRR, not WACC).

Modified IRR (MIRR)

$$MIRR = \left(\frac{\text{FV of positive CFs at reinvestment rate}}{|\text{PV of negative CFs at finance rate}|} \right)^{1/n} - 1$$

Fixes IRR's multiple-IRR and reinvestment-assumption issues by using a stated reinvestment rate (often WACC).

Payback period and discounted payback

Payback: years until cumulative undiscounted cash flows recover the initial investment.
Discounted payback: same but using discounted cash flows.
Ignores cash flows after payback. Used as a liquidity / risk supplement to NPV, not a primary decision criterion.

Profitability index (PI)

$$PI = \frac{\text{PV of Future Cash Flows}}{\text{Initial Investment}} = 1 + \frac{NPV}{\text{Initial Investment}}$$

Accept if PI > 1. Useful for capital rationing: rank projects by PI when budget is constrained.

After-tax cash flow with depreciation tax shield

$$ATCF = (\text{Rev} - \text{Op Cost})(1 - t) + \text{Depr} \times t$$

Depreciation isn't a cash flow but generates a tax shield equal to $\text{Depr} \times t$.
Initial investment is pre-tax. Salvage value at year n is taxed on the gain over remaining book value.

MACRS depreciation (US tax)

Property classes (recovery periods): 3, 5, 7, 10, 15, 20, 27.5 (residential), 39 (nonresidential).
Half-year convention default: half-year depreciation in year 1 and year n+1.
Double-declining-balance with switch to straight-line in year that maximizes deduction. No salvage value used.

Terminal value in capital budgeting

Two common approaches:
Growing perpetuity: $TV_n = \frac{CF_{n+1}}{r - g}$ (must have $g < r$).
Exit multiple: $TV_n = \text{Multiple} \times \text{Metric}_n$ (e.g., $8 \times \text{EBITDA}$).
Discount TV back to time 0 with $(1 + r)^n$.

Real options in capital budgeting

Embedded flexibilities that traditional NPV misses:
1. Option to expand (call-like; value rises with volatility).
2. Option to abandon (put-like).
3. Option to delay (defer investment until uncertainty resolves).
4. Option to switch inputs/outputs.

Capital rationing

When total positive-NPV projects exceed budget, select the subset that maximizes total NPV subject to the budget constraint.
Rank by PI (NPV per dollar invested) when projects are divisible; use integer programming for indivisible projects. PI ranking can produce suboptimal sets when projects differ in size.

PROFESSIONAL ETHICS

6 items

IMA Statement of Ethical Professional Practice (4 principles)

1. Honesty
2. Fairness
3. Objectivity
4. Responsibility

And 4 standards: Competence, Confidentiality, Integrity, Credibility.

Members must maintain professional competence, refrain from conflicts of interest, communicate information fairly and objectively, and disclose all relevant information.

Resolution of ethical conflict (IMA process)

1. Follow established policies of the organization.
2. Discuss with immediate supervisor (unless supervisor is involved).
3. Submit to higher levels of management or audit committee.
4. Consult an objective adviser (attorney, IMA Ethics Helpline) to clarify issues.
- 5.

Foreign Corrupt Practices Act (FCPA)

Two provisions:

1. Anti-bribery: prohibits paying or offering anything of value to foreign officials to obtain or retain business.
2. Books and records / internal accounting controls: applies to issuers (SEC-registered); requires accurate records and adequate internal controls.

Anti-money-laundering (AML) framework

Three stages of money laundering: placement (inserting cash into the financial system), layering (concealing the source via complex transactions), integration (using the laundered funds legitimately).

Whistleblower protections (SOX §806 and Dodd-Frank)

SOX §806: protects employees of public companies who report securities fraud, mail fraud, wire fraud, bank fraud, or shareholder fraud from retaliation. Remedies include reinstatement, back pay, and special damages.

Dodd-Frank §922: SEC bounty program; whistleblowers receiving 10–30% of sanctions over \ \$1 million.

Fraud triangle and fraud diamond

Fraud triangle (Cressey): pressure (incentive), opportunity (weak controls), rationalization (justification).

Fraud diamond adds capability (skills to execute and conceal).

Reducing any leg lowers fraud risk.