

Earnings Quality & Multiple-Based Analysis

with LLM as Co-Pilot

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Overview

- 1 Big Picture: Multiple Based Analysis
- 2 Earnings Quality: Transitory Items
- 3 Multiple Based Analysis: Conceptual Framework
- 4 Multiple Based Analysis: Practice

Multiples valuation: your first model

Multiple valuation in one line

- ▶ Comparable firms trade at similar *prices per unit* of performance.
- ▶ So the target's value can be approximated by applying that market-implied "price per unit" to the target's own performance measure:

$$\text{Value} \approx \text{Multiple} \times \text{Denominator.}$$

Interpretation: a rate times a quantity

- ▶ **Multiple** = market-implied *price per \$1* of the denominator.
- ▶ **Denominator** = a performance metric from the statements (EPS, EBIT, EBITDA).

Why the multiple moves (intuition)

$$\text{Value} \approx \text{Multiple} \times \text{Denominator.}$$

The multiple is a compressed fundamentals story

- ▶ The multiple rises when earnings are expected to **grow and persist**, and falls when earnings are **riskier** or require heavier **reinvestment** to sustain.
- ▶ In that sense, multiples are a compact shorthand for DCF fundamentals: **growth, margins, reinvestment, risk.**

A higher multiple means investors are willing to pay more today for each dollar of current performance because they expect that performance to be **more durable** and **less risky**. A lower multiple reflects weaker expected durability, higher risk, or higher reinvestment needs.

Why earnings quality matters: denominators drive the result

Multiples are denominator-sensitive by construction

- ▶ In multiples valuation, you typically do *not* forecast cash flows year by year.
- ▶ You anchor on a near-term denominator (EPS / EBIT / EBITDA) and import a peer multiple.
- ▶ If the denominator is distorted, the valuation can look precise while resting on a weak foundation.

Two distortion channels (what usually breaks comparability)

- ▶ **Transitory items:** one-time gains/losses, restructuring, litigation, impairments.
- ▶ **Timing/estimation noise:** accruals and working-capital timing move earnings vs cash.

Quick intuition: when P/E lies to you

Fragile P/E: mechanical effects

- ▶ If EPS is temporarily **inflated** (e.g., one-time gain), P/E looks **artificially low**.
- ▶ If EPS is temporarily **depressed** (e.g., one-time charge), P/E looks **artificially high**.
- ▶ Either way, the multiple is reacting to **measurement noise**, not necessarily economics.

Takeaway for this chapter

- ▶ Earnings quality work turns *reported* performance into a **defensible denominator**.
- ▶ That means: identify transitory items, test recurrence, and normalize with documentation.

Earnings quality is not a moral claim

Low earnings quality \neq fraud

- ▶ Low earnings quality does not imply wrongdoing.
- ▶ Many business models are **estimate-heavy** by design: banks, insurance, long-cycle projects, subscription firms with contract estimates.

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Non-recurring items: the next valuation question

From Chapters 4–5 to this section

- ▶ Chapter 4: earnings vs cash can diverge due to **timing** (working capital).
- ▶ Chapter 5: earnings presentation can diverge due to **measurement** (capitalization).
- ▶ Now: even if measured correctly, are earnings **repeatable**?

Multiples are denominator-sensitive

- ▶ Multiples use a near-term denominator (EPS / EBIT / EBITDA).
- ▶ If the denominator is inflated or depressed by transitory items, valuation looks “precise” but unstable.

Normalization: what it is (and what it is not)

A useful mental model

- ▶ Reported earnings \approx **Sustainable core** + **Transitory items** + **Noise/reclassification**.
- ▶ Accrual/CFO work targets **noise**; this section targets **transitory items** (and tests if they are truly transitory).

Normalization is not “maximize earnings”

- ▶ Normalization is a **forecasting discipline**, not a marketing exercise.
- ▶ Remove or baseline items that distort the period as a proxy for sustainable performance.
- ▶ But keep the information: removing an item from the **denominator** does not erase it from the **narrative**.

“One-time” items: what they are (and why labels mislead)

Three economic buckets

- ▶ **Event-driven:** discrete events (accidents, major settlements, asset sales).
- ▶ **Strategy-driven:** generated by how the firm competes (restructuring, acquisitions).
- ▶ **Accounting catch-up:** delayed recognition of past overinvestment (impairments, re-measurements).

Restructuring / severance (strategy-driven, often baseline-worthy)

What it is

- ▶ Costs of layoffs, site exits, reorganizations, and transformation programs.
- ▶ Often shown as “restructuring charges” or included in operating expenses.

Economic intuition / treatment logic

- ▶ Can be a true discrete program *or* a recurring feature across cycles.
- ▶ If it appears repeatedly: treat as **recurring-at-irregular-intervals**.
- ▶ Typical move: exclude the **spike** but include a **baseline** (multi-year average), with sensitivity.

Litigation provisions / settlements (event-driven vs structural exposure)

What it is

- ▶ Legal expense accruals, provisions, and settlement charges (or gains).
- ▶ May appear in operating expenses, “other” items, and contingencies notes.

Economic intuition / treatment logic

- ▶ A single large case can be genuinely non-recurring (event-driven).
- ▶ Some firms have persistent legal/regulatory exposure (strategy/industry-driven).
- ▶ Base case: exclude the discrete event; sensitivity: include a **baseline legal cost** or scenario analysis.

Impairments (accounting catch-up, removable but informative)

What it is

- ▶ Write-downs of goodwill, intangibles, or PP&E when expected benefits decline.
- ▶ Typically non-cash in the current period; disclosed in impairment notes and MD&A.

Economic intuition / treatment logic

- ▶ Often a delayed recognition of past overinvestment (accounting catch-up).
- ▶ For denominator: usually **add back** (to reflect a normal-year operating level).
- ▶ For narrative: treat as a **risk signal** about strategy, integration, or demand; do not dismiss it as irrelevant.

Acquisition-related costs & acquired-intangible amortization (strategy)

What they are

- ▶ **Acquisition/integration costs:** deal fees, integration, retention, restructuring tied to M&A.
- ▶ **Acquired-intangible amortization:** allocation of purchase price into amortization.

Economic intuition / treatment logic

- ▶ If M&A is an ongoing strategy, acquisition costs are **strategy-driven** and may be recurring.
- ▶ Acquired-intangible amortization is non-cash, but comparability depends on peer acquisition intensity.
- ▶ Treatment must be **peer-consistent**: add back only if the peer multiple uses an aligned definition.

Asset sale gains/losses (event-driven, typically non-operating)

What it is

- ▶ Gains or losses from selling PP&E, businesses, or investments.
- ▶ Often reported in “other income/expense” or a separate line item; details in notes.

Economic intuition / treatment logic

- ▶ Usually not part of ongoing operations; can be large and lumpy.
- ▶ Typical move: **remove** from operating denominators (exclude gains; add back losses) to reflect normal operations.
- ▶ Keep in narrative as evidence about portfolio reallocation or distress-driven sales.

Fair value gains/losses (volatile, sometimes non-operating)

What it is

- ▶ Mark-to-market changes in investments and derivatives.
- ▶ Often appears in “other income/expense” and fair value/derivatives notes.

Economic intuition / treatment logic

- ▶ For many industrial firms: mostly **non-operating volatility** (candidate for exclusion from operating denominators).
- ▶ For financial firms: may be closer to operating performance (treatment is business-model dependent).
- ▶ Key discipline: treat consistently across **time and peers**; do not mix definitions in the multiple.

Tax one-offs (often the biggest EPS distorter)

What it is

- ▶ Discrete tax benefits/charges: valuation allowance changes, audit settlements, law changes, one-time credits.
- ▶ Often disclosed in the tax footnote and highlighted in earnings releases.

Economic intuition / treatment logic

- ▶ Can swing GAAP EPS sharply without reflecting operating performance.
- ▶ For normalized EPS: **exclude** one-offs and state a **tax-rate assumption** (effective or normalized).
- ▶ Document mechanics clearly: tax effects are a common source of silent errors.

Two reasons to adjust: comparability vs sustainability

Comparability adjustments

- ▶ Goal: make the target comparable to **peers**.
- ▶ Examples: remove an unusual gain; align acquired-intangible amortization treatment if peers do so.

Sustainability adjustments

- ▶ Goal: represent the firm's **steady-state** under its own strategy.
- ▶ Examples: recurring-at-irregular-intervals restructuring; baseline legal exposure; baseline integration costs.

Where “one-time” items hide in filings

Four places to look

- ▶ **Income statement / segments:** unusual gains/losses, impairments, special charges.
- ▶ **Notes:** restructuring, impairments, contingencies, business combinations, SBC, fair value, taxes.
- ▶ **MD&A:** why line items changed; whether a program is ongoing.
- ▶ **Earnings release non-GAAP:** management's adjustment list (often repeated).

The recurrence test: decide what belongs in “normal year”

Recurrence test (three-part rule)

- ▶ **Frequency:** appears at least 2 of last 3 years (or 5 of last 8 quarters)?
- ▶ **Strategy inevitability:** mechanically generated by the stated strategy?
- ▶ **Magnitude:** material (e.g., $> 5\%$ of EBIT/EBITDA)?

Decision rule

- ▶ If **2 of 3** are “yes”: treat as **likely recurring**.

Baseline vs spike: the normalization move you actually make

Most firms have baseline + spikes

- ▶ Low baseline of restructuring/legal/integration + occasional spikes.
- ▶ Full exclusion often overstates sustainable performance.

Two cases you should always show

- ▶ **Base case:** exclude the spike, include a baseline (e.g., multi-year average).
- ▶ **Sensitivity:** treat spikes as more recurring to reflect uncertainty.

Make it auditable: the normalized earnings bridge

Normalized earnings bridge (analyst-defined)

- ▶ Start with **GAAP metric** (EBIT / EBITDA).
- ▶ Apply \pm adjustments (each labeled + recurrence decision).
- ▶ End with **Analyst-normalized metric** (base + sensitivity).

Why the bridge matters for multiples

- ▶ Overstated denominator \Rightarrow multiple looks low \Rightarrow “cheap” mechanically.
- ▶ Understated denominator \Rightarrow multiple looks high \Rightarrow “expensive” mechanically.
- ▶ The bridge makes the denominator inspectable.

Mini-case: Normalizing EBIT for EV/EBIT (AsterWave)

Setup (what you are doing)

- ▶ Firm: **AsterWave Services** (IT services + vertical software; acquisitive).
- ▶ Valuation lens: **EV/EBIT** with peer multiple **12×**.
- ▶ Reported **GAAP EBIT (FY2025) = \$450m**.
- ▶ Goal: build **analyst-normalized EBIT** for a **normal year: Base + Conservative sensitivity**.

What you will produce

- ▶ Recurrence test → baseline vs spike → treatments → normalized EBIT bridge.
- ▶ Then: implied EV range at 12×

Mini-case: candidate “one-time” items (FY2025, \$m)

Candidate items and context

- ▶ Restructuring/severance: 70 (FY23:25, FY24:30) *ongoing program*
- ▶ Acquisition & integration: 60 (FY23:38, FY24:42) *2–3 deals/year*
- ▶ Patent litigation settlement: 90 (FY23–24:0) *discrete case*
- ▶ Goodwill impairment: 120 (FY23–24:0) *catch-up*
- ▶ Gain on facility sale: (40) (FY23–24:0) *non-operating*
- ▶ Amort. acquired intangibles: 55 (FY23:48, FY24:52) *comparability*

Recurrence test (solution): what is truly “one-time”?

Item	Freq.	Strategy	Mag.	Recurrence conclusion
Restructuring / severance	Y	Y	Y	Recurring-at-irregular-intervals (baseline + spike).
Acquisition & integration costs	Y	Y	Y	Recurring-at-irregular-intervals (baseline + spike).
Amortization of acquired intangibles	Y	Y	Y	Recurring by design (comparability decision).
Patent litigation settlement	N	N	Y	Likely non-recurring (base); consider baseline legal exposure sensitivity.
Goodwill impairment	N	N/M	Y	Accounting catch-up (exclude from denominator; keep as risk signal).
Gain on facility sale	N	N	Y	Non-recurring, non-operating (remove from EBIT).

Solution: baselines and spikes (what gets added back)

Baseline vs spike (FY23–FY24 averages)

- ▶ Restructuring baseline = $(25 + 30)/2 = 27.5 \approx 30 \Rightarrow \text{spike} = 70 - 30 = 40$
- ▶ Integration baseline = $(38 + 42)/2 = 40 \Rightarrow \text{spike} = 60 - 40 = 20$

Interpretation

- ▶ Strategy-driven costs are not “one-time”: include a **baseline**.
- ▶ Normalization adds back only the **FY2025 spike** above baseline.

Solution: normalized EBIT (Base case)

Normalized EBIT (Base)

- ▶ Start GAAP EBIT = 450
- ▶ +90 litigation (non-recurring)
- ▶ +120 impairment (catch-up)
- ▶ +40 restructuring spike
- ▶ +20 integration spike
- ▶ -40 remove facility-sale gain
- ▶ +55 add back acquired-intang amort. (peer EBIT excludes it)
- ▶ **Normalized EBIT (Base) = 735**

Solution: conservative sensitivity + EV range

Normalized EBIT (Conservative)

- ▶ Start GAAP EBIT = 450
- ▶ +70 litigation (assume \$20 baseline legal cost is recurring)
- ▶ +120 impairment (catch-up)
- ▶ +0 restructuring (treat as fully recurring at FY25 level)
- ▶ +0 integration (treat as fully recurring at FY25 level)
- ▶ -40 remove facility-sale gain
- ▶ +0 no amort add-back (peer uses GAAP EBIT)
- ▶ **Normalized EBIT (Conservative) = 600**

Valuation impact: EV implied by the denominator choice

Implied EV at $12\times$ EV/EBIT

- ▶ GAAP EBIT: $12 \times 450 = 5,400$ (\$5.4B)
- ▶ Normalized EBIT (Base): $12 \times 735 = 8,820$ (\$8.8B)
- ▶ Normalized EBIT (Conservative): $12 \times 600 = 7,200$ (\$7.2B)

One-sentence takeaway

- ▶ A multiples valuation can swing by billions because “one-time” labeling changes the denominator.

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Multiples (“comps”): intuition (what the multiple is really saying)

Core identity (big picture)

$$\text{Value} \approx \text{Multiple} \times \text{Denominator.}$$

Intuition: a multiple is a compressed valuation model

- ▶ **Multiples = price per unit of performance.** The unit (denominator) must be comparable across firms.
- ▶ **High multiple** typically reflects: \uparrow growth, \uparrow profitability, \downarrow reinvestment burden, and/or \downarrow risk.
- ▶ **Low multiple** points in the opposite direction.

Multiples (“comps”): simplified workflow (what you do)

Workflow

- ▶ **1. Define the object:** equity (P/E) vs enterprise ($EV/EBIT$, $EV/Sales$); set an as-of price date.
- ▶ **2. Pick peers:** similar business model + value drivers; document key differences.
- ▶ **3. Compute peer multiples:** consistent definitions and window (LTM/NTM); consistent EV build rules.
- ▶ **4. Apply to the target:** use an admissible denominator \Rightarrow implied value range.
- ▶ **5. Interpret & decide:** compare to market price; state what must be true (growth, margins, reinvestment, risk).

P/E: price per dollar of equity earnings

Definition + when it works best

- ▶ **Definition:** $\frac{P}{E} = \frac{\text{equity price per share}}{\text{EPS}}$.
- ▶ **Best use:** positive, reasonably stable earnings *and* peers with broadly similar leverage/tax profiles.
- ▶ **Why:** P/E is measured *after* interest and taxes \Rightarrow financing differences can dominate.

toy example (how it becomes a decision)

- ▶ Example: peer IQR = $[15, 22] \times$, target EPS = \$5

$$P_{\text{implied}} \in [15, 22] \times 5 = [\$75, \$110].$$

- ▶ If P_0 is inside the range \Rightarrow broadly consistent; far below/above \Rightarrow potential under-/overvaluation vs peers.

EV/EBIT: why EV (enterprise value) is the right numerator

What is EV? (definition)

- ▶ **Enterprise value (EV)** = market value of the **operating business** (claims of all capital providers).
- ▶ **EV build:** $EV = \text{Mkt cap} + \text{debt-like} + \text{other senior claims} - \text{cash}$.

Why use EV in comps? (motivation)

- ▶ **Buying the firm** means financing debt-like claims *and* acquiring the firm's cash.
- ▶ EV multiples price operations “above financing” \Rightarrow **less distorted by leverage** than equity multiples.
- ▶ $EV/EBIT = \text{price per dollar of operating profit}$ (a clean operating-unit comparison).

EV/EBIT: toy example (EV \rightarrow Equity \rightarrow Price)

Step 1: Apply peer multiple distribution to target EBIT

- ▶ Peer IQR = $[16, 24] \times$, target EBIT = \$10B

$$EV_{\text{implied}} \in [16, 24] \times 10 = [\$160B, \$240B].$$

Step 2: Convert to decision-ready output (equity value \rightarrow price)

- ▶ Stock prices are **equity** values \Rightarrow convert EV to equity:

$$\text{Equity}_{\text{implied}} = EV_{\text{implied}} - \text{net claims (debt-like} + \text{senior} - \text{cash)}.$$

- ▶ Divide by diluted shares \Rightarrow implied price range to compare to P_0 .

EV/Sales: scale multiple

Definition + when analysts use it

- ▶ **Definition:** $\frac{EV}{Sales} = \frac{\text{enterprise value}}{\text{revenue}}$.
- ▶ **Best use:** earnings are volatile/negative but revenue is meaningful and comparable.
- ▶ **Caution:** “Sales” must be comparable (business model + revenue recognition).

toy example (EV range + decision question)

- ▶ Example: peer IQR = $[4.5, 7.5] \times$, target Sales = \$50B

$$EV_{\text{implied}} \in [4.5, 7.5] \times 50 = [\$225B, \$375B].$$

- ▶ Convert $EV \rightarrow Equity \rightarrow$ implied price; compare to P_0 .

Ratios & DuPont → multiple choice (the bridge)

Why start with DuPont?

- ▶ **Ratios answer:** where performance comes from (operations vs financing).
- ▶ **Multiples answer:** what the market pays for that performance.

How DuPont informs the multiple

- ▶ If ROE is **leverage-driven** (high equity multiplier) $\Rightarrow P/E$ can confound ops with financing \Rightarrow anchor on **EV multiples**.
- ▶ If **capital intensity differs** \Rightarrow EBITDA hides reinvestment \Rightarrow prefer $EV/EBIT$ as anchor or mandatory cross-check.

Multiple selection decision tree: goal + structure

Objective

- ▶ Choose **one primary** multiple that matches the business model and data quality.
- ▶ Add **two cross-checks**.

Decision tree = five gates

- ▶ Step 1: Is operating profit admissible?
- ▶ Step 2: Where does reinvestment “live” (measurement layer)?
- ▶ Step 3: Are leverage/taxes comparable?
- ▶ Step 4: Are revenue quality / cash conversion concerns material?
- ▶ Step 5: Are earnings-quality concerns material?

Decision tree Step 1: Is operating profit positive and stable?

What this step is testing

- ▶ Are EBIT/EBITDA **admissible denominators** (positive, not wildly volatile)?
- ▶ If profit is negative/unstable, profit multiples can become **nonsensical** or hyper-sensitive.

Implication for multiple choice

- ▶ If EBIT/EBITDA is **negative or extremely volatile**:
 - ▶ Primary \rightarrow *EV/Sales* (revenue still defined)
- ▶ If EBIT/EBITDA is **positive and reasonably stable**:
 - ▶ Primary \rightarrow profit-based multiples become informative: *EV/EBIT* or *EV/EBITDA*

Decision tree Step 2: Where does reinvestment “live”?

Key idea (the “growth bill”)

- ▶ Some businesses reinvest via **visible** capex/working capital.
- ▶ Others reinvest via **less visible** channels: leases, content/software capitalization, acquisition amortization, SBC-heavy cost structures.

Implication for $EV/EBIT$ vs $EV/EBITDA$

- ▶ If reinvestment is **heavy or heterogeneous across peers**:
 - ▶ EBITDA can be a noisy proxy (it strips D&A even when economically meaningful)
 - ▶ Anchor → $EV/EBIT$; use $EV/EBITDA$ only with explicit reinvestment discussion
- ▶ If reinvestment is **moderate and measured similarly**:
 - ▶ $EV/EBITDA$ can be a reliable primary multiple
 - ▶ Cross-check → $EV/EBIT$

Decision tree Step 3: Are leverage and taxes broadly comparable?

Why this step matters

- ▶ P/E is measured **after** interest and taxes \Rightarrow sensitive to financing and tax profiles.
- ▶ EV multiples price operations “above financing” \Rightarrow cleaner across different leverage.

Implication for P/E usage

- ▶ If leverage/taxes are **broadly similar** across peers:
 - ▶ P/E can be a useful **cross-check** on EV-based conclusions
- ▶ If leverage/taxes **differ materially**:
 - ▶ Keep P/E secondary; rely on **EV-based** multiples to avoid capital-structure distortion

Decision tree Step 4: Revenue quality / cash conversion concerns?

What this step is testing

- ▶ Reported growth can be **cash-fragile** (working-capital pull-forward).
- ▶ Weak cash conversion can make sales-based and forward denominators **riskier to transfer**.

Implication for comps

- ▶ If cash conversion is **weak** (e.g., persistent CFO/NI or CFO/EBITDA weakness):
 - ▶ Be cautious with aggressive *EV/Sales* and forward multiples
 - ▶ **Widen the valuation range** and tighten peers to similar cash-conversion models
- ▶ If cash conversion is **strong and comparable**:
 - ▶ Sales-based and forward multiples become more credible cross-checks

Decision tree Step 5: Earnings-quality concerns material?

What this step is testing

- ▶ Is the denominator a clean proxy for sustainable performance?
- ▶ Red flags: heavy adjustments, recurring “special” items, accrual-heavy earnings.

Implication for denominator choice + range

- ▶ If earnings quality is **weak**:
 - ▶ Avoid single-year denominators; use **normalized** (and sometimes multi-year) measures
 - ▶ **Widen the valuation range** to reflect uncertainty (avoid false precision)
- ▶ If earnings quality is **strong**:
 - ▶ Profit-based multiples can carry more weight with tighter ranges

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AsterWave Mini-Case (Part B): why we do this

How this connects to Part A

- ▶ Part A: built **admissible EBIT** (GAAP \rightarrow normalized; base + conservative).
- ▶ Part B: convert that denominator into a **decision-ready output**:

$EV \rightarrow Equity \rightarrow Price \text{ per share.}$

- ▶ Key point: comps becomes useful only when you can compare P_{implied} to the market price P_0 .

AsterWave Mini-Case (Part B): case inputs (as-of Feb 3, 2026)

Inputs you will use

- ▶ Multiple: **EV/EBIT** = $12\times$ Units: \$ millions (unless noted).
- ▶ Market price: $P_0 = \$38$ Diluted shares: 160m^a

^a**Diluted shares** include current shares plus potential shares from in-the-money options/RsUs/convertibles. We use diluted shares because market prices reflect equity value *including expected dilution*, and because equity value must be translated into a per-share value comparable to P_0 .

Why EV/EBIT is the leading multiple here

Business context (AsterWave)

- ▶ Acquisitive firm \Rightarrow meaningful **debt-like claims** (debt + leases).
- ▶ Equity multiples (e.g., P/E) can be distorted by **interest & taxes**.

Implication for multiple choice

- ▶ **EV-based multiples** price operations “above financing” \Rightarrow cleaner across leverage.
- ▶ $EV/EBIT$ keeps more of the reinvestment/asset-intensity signal than EBITDA.
- ▶ This case goal: show how **denominator admissibility** moves value \Rightarrow then move value to **price per share**.

Exhibit 1: EBIT denominators from Part A (imported)

Admissible denominators (what we will price)

- ▶ GAAP EBIT (FY2025): 450
- ▶ Normalized EBIT (Base): 735
- ▶ Normalized EBIT (Conservative): 600

Interpretation

- ▶ Same multiple \Rightarrow different denominators \Rightarrow different implied values.
- ▶ Part B will show how these differences propagate into P_{implied} .

Exhibit 2: EV build snapshot (as-of Feb 3, 2026)

Inputs (USD millions)

- ▶ $P_0 = \$38$, diluted shares = 160m \Rightarrow Market cap = 6,080
- ▶ Debt = 2,000; Leases = 300; Minority interest = 120; Cash = 200

EV build (claims-based)

$$EV = \text{Mkt cap} + \text{Debt} + \text{Leases} + \text{Minority} - \text{Cash}.$$

- ▶ EV is the price of operations; equity is EV **net of claims**.

Step 1: Build current EV (as-of discipline)

Compute EV (USD millions)

$$EV = 6,080 + 2,000 + 300 + 120 - 200 = 8,300.$$

Interpretation

- ▶ Current *EV* (\$8.3B) is the market's price for AsterWave's operating business.
- ▶ Next: apply peer multiple to EBIT to get *implied* EV under different denominators.

Step 2: Implied EV under $12\times$ EV/EBIT

Compute implied EV (USD millions)

$$EV_{\text{implied}} = 12 \times EBIT.$$

- ▶ GAAP: $12 \times 450 = 5,400$
- ▶ Base: $12 \times 735 = 8,820$
- ▶ Conservative: $12 \times 600 = 7,200$

Interpretation

- ▶ Normalization changes the priced unit \Rightarrow large changes in implied EV.
- ▶ But investors trade **equity** \Rightarrow we must convert $EV \rightarrow Equity \rightarrow Price$.

Step 3: Convert implied EV \rightarrow implied equity value

Conversion formula (same claims for all cases)

$$Equity_{\text{implied}} = EV_{\text{implied}} - \text{Debt} - \text{Leases} - \text{Minority} + \text{Cash}.$$

Compute implied equity (USD millions)

- ▶ GAAP: $5,400 - 2,000 - 300 - 120 + 200 = 3,180$
- ▶ Base: $8,820 - 2,000 - 300 - 120 + 200 = 6,600$
- ▶ Cons: $7,200 - 2,000 - 300 - 120 + 200 = 4,980$

Step 4: Convert equity \rightarrow implied price; compare to P_0

Price per share (diluted shares = 160m)

$$P_{\text{implied}} = \frac{\text{Equity}_{\text{implied}}}{160}$$

- ▶ GAAP: $3,180/160 \approx 19.9$
- ▶ Base: $6,600/160 = 41.25$
- ▶ Conservative: $4,980/160 \approx 31.1$

Decision read (vs $P_0 = \$38$)

- ▶ Base implies modest upside; conservative implies modest downside.
- ▶ The **range** is the output: uncertainty comes from **denominator admissibility**.

Discipline check: EV is *not* equity value

Common mistake

- ▶ Wrong: $P_{\text{implied}}^{\text{wrong}} = EV_{\text{implied}}/\text{shares}$.
- ▶ Correct: convert $EV \rightarrow Equity$ first (net of claims).

Base case error (numerical)

$$P_{\text{Base}}^{\text{wrong}} = 8,820/160 = 55.1 \quad \text{vs} \quad P_{\text{Base}} = 41.25.$$

- ▶ Error ≈ 13.9 per share \Rightarrow claims matter.

Takeaway lessons (what to remember)

Mechanics that prevent false precision

- ▶ **EV build is not optional:** EV prices operations; equity is EV net of claims.
- ▶ **Denominator choices propagate:** small-looking normalization choices \times multiple \Rightarrow big price moves.
- ▶ **Ranges are decision tools:** compare implied price range to P_0 and state the key uncertainty driver.

Decision use (one-line template)

- ▶ “At $P_0 = \$38$, implied range \approx [\$31, \$41]; conclusion depends on whether Base or Conservative EBIT is the right unit to price.”

Integrated comps workflow

Core idea: comps is a gated pipeline, not a one-step calculation

- ▶ Each stage reuses a prior chapter output → produces a concrete artifact → feeds the next stage.
- ▶ Goal: implied value → **implied price range** → decision vs market price.

Map of the book into comps

- ▶ Ch. 2: blueprint + driver tree → peer criteria, comparability logic
- ▶ Ch. 3: ratio dashboard + DuPont → multiple choice + leverage optics check
- ▶ Ch. 4: revenue-to-cash + working capital → cash-conversion screen → range width
- ▶ Ch. 5: measurement layer → consistent claims + denominator comparability
- ▶ Ch. 6: recurrence test → admissible (normalized) denominator + sensitivity

Stage 0 (Setup gate): define the object + align dates

Stage 0: valuation object + date alignment

- ▶ State **Equity vs Enterprise** (e.g., P/E vs $EV/EBIT$, $EV/Sales$).
- ▶ Lock **as-of price date + denominator window** (LTM/NTM).
- ▶ Record a one-page **definition ledger** (GAAP vs adjusted; EV build conventions).
- ▶ **Gate:** a reader can reconstruct what is being valued and what each metric means.

Stages 1–2: pick peers → choose the multiple

Stage 1 (Peer-design gate): Chapter 2 → core/extended peers

- ▶ Use Ch. 2 blueprint + driver tree to define comparability (growth, margins, reinvestment, risk).
- ▶ Build **core peers** (tight match) + **extended peers** (robustness).

Stage 2 (Multiple-choice gate): Chapters 3 & 5

- ▶ Ch. 3 (DuPont): leverage-driven ROE \Rightarrow prefer EV multiples; P/E as cross-check only.
- ▶ Ch. 5 (measurement layer): reinvestment/leases/cap-intensity \Rightarrow $EV/EBIT$ vs $EV/EBITDA$ choice.
- ▶ Output: **1 primary multiple** + **2 cross-checks** (each with a purpose).

Stages 3–5: build numbers → normalize → cash screen

Stage 3–5 (construction gates)

- ▶ **Stage 3 (Ch. 5 + Ch. 3):** consistent EV build (claims) + consistent denominators (definitions/window).
- ▶ **Stage 4 (Ch. 6):** recurrence test + adjustment ledger ⇒ **admissible denominator** (base + sensitivity).
- ▶ **Stage 5 (Ch. 4):** cash conversion + working capital ⇒ **OK/Caution** flag ⇒ range width.

Stages 6–8: estimate multiples → value → check the story

Stage 6–8 (valuation & coherence)

- ▶ **Stage 6:** compute peer multiples ⇒ **median + IQR** (diagnose outliers).
- ▶ **Stage 7:** apply range to target denominator ⇒ implied *EV* → implied **equity** → implied **price range**.
- ▶ **Stage 8 (Ch. 2):** implied expectations check: does the valuation imply a plausible growth/margin/reinvestment/risk story?
- ▶ Final output: **price range vs P_0** + the **one biggest uncertainty** driving the range.

Lab Assignment 4

- ▶ Assigned Reading: Chapter 6.3-6.6.
- ▶ Assigned Reading: Chapter 7.1-7.3.
- ▶ Lab Assignment 4 (due **Feb 11-Wed**).