

LM07 · EQUITY · COMPANY ANALYSIS: FORECASTING

Company Analysis: Forecasting

CFA Level I · 2025 Curriculum · LOS a–e

Perspective of This Module

Longer-term-oriented forecast for a **straightforward public issuer**. The analyst builds a projection of the company's financial statements — revenue, expenses, working capital, capital investment, and capital structure — in a way that is coherent, transparent, and sensitive to business risk factors.

What the Analyst Must Decide Up Front

1. Forecast objects

What exactly is being forecast? A driver, a line item, a summary measure, or an ad-hoc event.

2. Forecast approach

Historical results, base-rate convergence, management guidance, or analyst discretion.

3. Forecast horizon

Driven by investment strategy, cyclicity, company-specific factors, and employer.

Mapping the LOS

LOS	TOPIC	COVERED IN
a	Principles and approaches to forecasting a company's financial results and position	Steps 2–3
b	Approaches to forecasting revenue	Step 4
c	Forecasting operating expenses and working capital	Steps 6–7
d	Forecasting capital investments and capital structure	Step 9
e	Scenario analysis in forecasting	Step 10

Exam Tip: The CFA curriculum stresses *coherence*: revenue, cost, working-capital, and capital-structure forecasts must hang together. An aggressive revenue forecast paired with flat receivables days, for example, is internally inconsistent.

LOS A · FORECAST OBJECTS

The Four Forecast Objects

An analyst's choice of forecast object depends on **available information, efficiency, accuracy, explanatory value, and verifiability**.

1 · DRIVERS

Drivers of financial-statement lines

Lines that can be forecast from their relationships with other variables. Example: *Sales = stores opened × sales per store*. Operating expenses forecast as a *% of sales*.

2 · INDIVIDUAL LINES

Individual financial-statement lines

Used for less material lines or items without clear drivers — forecast directly from management estimates or adjustments to prior-year amounts. Example: *depreciation expense*.

3 · SUMMARY MEASURES

Summary measures

Items that combine several financial-statement lines, such as *free cash flow, EPS, or total assets*. Efficient but less transparent. Typically used when the measure is stable, predictable, and disclosures are minimal.

4 · AD HOC

Ad hoc objects

Discrete events not yet reflected in financial statements. Example: forecasting the *result of legal proceedings*.

Practical Guidance

- Use forecast objects that are disclosed regularly (e.g., gross margin by product line if disclosed).
- Avoid overly complex models — more detail is not necessarily better.

Nonrecurring Items — Exclude Them

Nonrecurring items *should not be included* in a forecast object. They are analyzed on a standalone basis.

TYPE	EXAMPLE	TREATMENT
Disclosed (easy)	FX changes, extra days/weeks in a period, acquisitions & divestitures, other unusual/infrequent items	Strip from base; may use proprietary forecasts for FX
Not quantified (judgment)	COVID-19: a large increase in e-commerce sales as a % of retail sales — will it recur? Is it a "new normal"?	Analyst judgment required

If management cites "nonrecurring" items *regularly*, analysts might reasonably expect the trend to continue and incorporate them into forecasts.

Exam Tip: Financial reporting quality is implicated here — repeated "one-time" charges are a red flag.

LOS A · FORECAST APPROACHES

The Four Forecast Approaches

For any forecast object, four general approaches can be used individually or combined.

FOUR APPROACHES — AT A GLANCE

1 · HISTORICAL RESULTS

Past is precedent

Simple, default
Industry structure
not expected to
change

Low sensitivity to
business cycle

Non-material items

2 · BASE RATES & CONVERGENCE

Converge to peer /
industry average

Discretion: object,
sample, time frame

Mature, stable
industries

Not for dominant
firms with no peers

3 · MANAGEMENT GUIDANCE

Public targets from
management

Check track record

Info advantage
vs. public

Beware shaded
ranges (rev down /
exp up)

4 · ANALYST DISCRETION

Surveys,
quantitative models,
probability distns.

Used when change
is likely

Cyclical industries,
few peers, no
guidance, or firms
in transition

Choosing an Approach

The analyst's choice depends on the **company's industry structure, sensitivity to the business cycle, and business model**, as well as the **reliability and availability of information**.

Forecast Horizon

The appropriate forecast horizon depends on:

- Investor's or portfolio manager's **time horizon** (investment strategy)
- Whether the industry is **cyclical** — cyclical companies require multi-year forecasts that cover a full business cycle
- **Company-specific factors** — operational changes may need a long enough horizon to show their benefits
- **Employer / issuer** conventions

Exam Tip: Management guidance is typically a *range*, not a point. Do not simply take the midpoint — managers have been known to shade revenue ranges down and expense ranges up so they can later "beat" expectations.

LOS B · REVENUE FORECASTING

Forecasting Revenues: Top-Down vs. Bottom-Up

Top-down analysis starts with a macro variable (often GDP growth or market growth). Bottom-up analysis starts with the individual company or its reportable segments. Incorporating **both** highlights inconsistencies in assumptions.

TOP-DOWN

Growth Relative to GDP

1. **Forecast nominal-GDP growth** = real-GDP growth (volume) + inflation forecast
2. **Adjust for company specifics** — add/subtract bps for stage of life cycle and business cycle

Alternative: model the relationship between nominal GDP and company sales directly.

TOP-DOWN

Market Growth & Market Share

1. **Forecast growth of the company's product market** (vs. GDP if useful)
2. **Forecast market share**

*Productmarkettoday = 250bn
Forecastmarketgrowth = 10*

Bottom-Up Forecast Objects

APPROACH	DESCRIPTION / WHEN TO USE
Volumes × Average Selling Price	Useful for industries that disclose these (e.g., airlines, asset managers). Forecast quantity and price separately, then multiply.
Product-line or segment revenues	Used when segmental revenues are disclosed and segments have different economic exposures.
Capacity-based measures	Retail: number of stores × sales per store. Forecast existing locations and add a separate forecast for newly opened locations.
Return- or yield-based measures	Example: net interest income for banks — forecast balance-sheet items and the return the company will earn on them.

Choosing the Forecast Approach

Any of the **four approaches** (historical, base rates, management guidance, discretionary) can be applied to revenue — the approach is chosen based on industry structure, cyclicity, and information availability.

Exam Tip: Always separate **recurring** revenue trends from one-offs such as FX moves, an extra week in the period, and acquisition/divestiture effects before extrapolating.

QUIZ 1 · CHECKPOINT

Test Your Understanding: Objects, Approaches & Revenue

Q1. Which of the following is *most accurately* described as a "summary measure" forecast object?

Q2. The "historical base rates and convergence" approach is *least appropriate* for which of the following?

Q3. Using the growth-relative-to-GDP approach, if real-GDP growth is forecast at 2.5% and inflation at 2.0%, nominal-GDP growth is approximately:

Q4. Nonrecurring items identified by the analyst should be:

LOS C · OPERATING EXPENSES

Forecasting Operating Expenses

Disclosures about operating costs are less detailed than revenue. Analysts are often forced to use more aggregated forecast objects at the company level (rather than forecasting costs separately by region or segment) or summary measures like EBITDA margins. Forecasts for operating expenses should still be *coherent with the revenue forecast*.

Cost of Goods Sold (COGS)

Revenue is the key driver of COGS. Analysts typically estimate it as a **percent of sales** or via the **gross margin**:

$$\text{Forecast COGS} = (1 - \text{gross margin}) \times \text{estimate of future revenue}$$

COGS is typically the largest cost item — **be accurate**. Key considerations:

- **Price shocks** — hedging programs?
- **Growth of substitutes** — cheaper or more attractive substitutes pressure gross margins
- **New products without substitutes** — may allow margin expansion
- **Differing business models** — e.g., owned vs. franchised stores affect reported COGS structure

It is often worthwhile to check gross margins of competitors to sanity-check estimates. Differences often come down to business-model differences.

Why Input-Price Pass-Through Matters

WORKED EXAMPLE

Scenario: Input costs double and the increase is fully passed on to customers.

	YEAR 1	YEAR 2
Sales	100	125
COGS	(25)	(50)
Gross profit	75	75
COGS as % of sales	25%	40%

Gross margin

75%

60%

SOLUTION

Gross profit in *dollars* is unchanged, but both COGS-to-sales and gross margin shift meaningfully. A naive forecast that projects a constant gross margin would miss the input-price pass-through mechanism entirely.

Selling, General & Administrative (SG&A)

Relationship to sales is **less direct** than COGS:

COMPONENT	HOW ANALYSTS TYPICALLY MODEL IT
Selling & distribution	May be modeled using sales (more variable)
General & administrative	More fixed — driver may be wage inflation / a fixed growth rate plus other knowledge

SG&A is less sensitive to sales-volume changes than cost of sales. The fixed-cost component may be modeled with a growth rate reflecting expected inflation.

Using Segmental Disclosures

Companies presenting segmental disclosures typically disclose **segmental EBITDA** and **segmental operating margins**. An analyst may use these summary measures rather than forecasting COGS and SG&A separately.

WORKED EXAMPLE

Example — Segmental vs. blended forecast (5-year horizon). A company has a base-year total sales figure of **51,990** and three segments. The segmental forecast produces segment sales of 29,308, 15,203, and 15,077 and segment operating profits of 6,648, 2,666, and 2,235.

1. Blended approach: assume total sales grow at 2% annually and the overall operating-profit margin stays constant.

SOLUTION

Sales $(51,990 \times 1.025) = 57,390$

OP margin = 19.1%

Operating costs = 46,428 → Operating profit = 10,962

2. Segmental approach: apply segmental growth rates (+6%, −5%, +7%) with constant segmental operating margins.

SOLUTION

Sales = 29,308 + 15,203 + 15,077 = 59,588

Operating profit = 6,648 + 2,666 + 2,235 = 11,549

OP margin = **19.38%** (higher than blended because the faster-growing segments carry higher margins)

Exam Tip: A constant blended operating margin can *mask* mix-shift effects that a segmental approach captures.

LOS C · WORKING CAPITAL

Forecasting Working Capital

Working-capital forecasts are typically made using **efficiency ratios** as the forecast objects, combined with sales and cost forecasts to project receivables, inventories, and payables.

Three Items, Three Ratio Identities

LINE ITEM	TURNOVER FORM	DAYS FORM (TYPICAL FORECAST)
Accounts receivable	Receivables turnover = forecast revenues / forecast avg. receivables	A/R = DSO × (forecast revenues / 365)
Inventory	Inventory turnover = forecast COGS / forecast avg. inventory	Inventory = DOH × (forecast COGS / 365)
Accounts payable	Payables turnover = forecast annual purchases / forecast avg. payables	A/P = DPO × (forecast COGS / 365)

Worked Example — Efficiency Ratios

WORKED EXAMPLE

Given (Year 3): Revenue 245,866 · A/R 10,161 · COGS 209,114 · Inventory 41,671 · A/P 72,199.

Forecast Year 6 revenue: 380,292 and **forecast Year 6 COGS:** 319,445.

Step 1 — Calculate Year 3 day-ratios (base rate):

$$\text{DSO} = 10,161 / 245,866 \times 365 \approx \mathbf{15days}$$

$$\text{DOH} = 41,671 / 209,114 \times 365 \approx \mathbf{73days}$$

$$\text{DPO} = 72,199 / 209,114 \times 365 \approx \mathbf{126days}$$

Step 2 — Project Year 6 balances, holding day-ratios constant:

SOLUTION

$$\text{A/R} = 15 \times (380,292 / 365) = \mathbf{15,716}$$

$$\text{Inventory} = 73 \times (319,445 / 365) = \mathbf{63,657}$$

$$\text{A/P} = 126 \times (319,445 / 365) = \mathbf{110,292}$$

The example uses year-end balances (not averages) to simplify the computation.

Exam Tip: The days-form is usually the easier forecast path: pick a base-rate DSO / DOH / DPO and scale it by the forecast revenue (for A/R) or forecast COGS (for inventory and A/P).

Coherence Check

Working-capital forecasts should move *with* revenue and cost forecasts. If revenue is forecast to grow 20% but receivables are held flat, the implied DSO collapse is usually unrealistic and points to a modeling error.

QUIZ 2 · CHECKPOINT

Test Your Understanding: Expenses & Working Capital

Q5. An analyst forecasts revenue of \$500m next year and expects the gross margin to be 30%. Forecast COGS equals:

Q6. In modelling SG&A, which approach is *most* consistent with the curriculum?

Q7. Forecast COGS for next year is \$600m and DOH is assumed to stay at 60 days. Forecast inventory is approximately:

Q8. A company is gaining market share by introducing a differentiated new product with few substitutes. According to the curriculum, the *most likely* impact on gross margin is:

LOS D · CAPITAL INVESTMENT & STRUCTURE

Forecasting Capital Investment and Capital Structure

Source data: forecasts for long-term assets are based on the *cash flow statement* (capital expenditures and disposals) and the *income statement* (depreciation and amortization).

Property, Plant & Equipment (PPE)

PPE increases from

- **Maintenance capex** — anchored to historical depreciation plus an inflation adjustment
- **Growth capex** — more discretionary; tied to management's expansion plans and revenue-growth strategy

PPE decreases from

- **Depreciation** — typically forecast using net book value of PPE and estimated useful lives
- Asset disposals

Worked Example — Year 4 Fixed Assets

WORKED EXAMPLE

Assumptions for Year 4 (forecast revenue = 290,122):

- PPE capex = % of revenue (held at Year 3 level, $\approx 1.2\%$)
- Intangible capex = % of revenue (held at Year 1 level, $\approx 0.2\%$)
- Goodwill unchanged from Year 3
- D&A = % of beginning net PPE / intangibles (Year 3 level)

SOLUTION

PPE: opening 6,306 + capex ($1.2\% \times 290,122 = 3,481$) – depreciation ($7\% \times 6,306 = 441$) = **9,346**

Intangibles: opening 4,013 + capex ($0.2\% \times 290,122 = 580$) – amortization ($47\% \times 4,013 = 1,866$) = **2,727**

Goodwill: 253

Total fixed assets in Year 4 = 12,326

Capital Structure — Leverage Ratios

Forecasted capital structure is typically based on **leverage ratios**. Analysts should note any borrowing requirements caused by expected capital expenditures, and management may provide information about a **target capital structure**.

WORKED EXAMPLE**Example — Year 4 gross-debt forecast:**

- Assumed EBITDA margin = 6% of revenue
- Assumed gross-debt-to-EBITDA ratio = 1.25×

SOLUTION

$$\text{EBITDA} = 6\% \times 290,122 = \mathbf{17,407}$$

$$\text{Gross debt} = 1.25 \times 17,407 = \mathbf{21,759}$$

Two Capex Categories — Important Distinction

CATEGORY	FORECAST BASIS
Maintenance capex	Usually starts with <i>historical depreciation</i> , adjusted for expected inflation
Growth capex	Linked to the company's <i>strategy, expansion plans, and revenue-growth forecast</i>

Exam Tip: D&A can be forecast using net book value of PPE and estimated useful life. Growth capex is not mechanically tied to depreciation — it requires understanding management's growth strategy.

LOS E · SCENARIO ANALYSIS

Scenario Analysis: The Final Step

Forecasts should not result in a single point estimate. The analyst should produce a *range of scenarios* with multiple alternative assumptions, to examine the sensitivity of the forecast to changes in its key drivers.

Risk Factors to Stress

Business cycle

Cyclical industries need
multi-year horizons
covering a full cycle

Inflation / Deflation

Input-price pass-through
and pricing power

Competition

Substitutes, new
entrants, pricing

Technology

Sustaining vs. disruptive
innovation

Illustrative — Cannibalization Scenario

WORKED EXAMPLE

The curriculum illustrates scenario thinking with an assessment of the impact of **tablet sales on PC sales**.

- Cannibalization factor (consumer) = **40%**
- Cannibalization factor (non-consumer / business) = **15%**
- Average selling price — consumer PC = **USD 85**; non-consumer PC = **USD 155**

SOLUTION

The analyst varies cannibalization rates (e.g., 20% / 40% / 60%) and ASP paths to produce a *range* of revenue outcomes, rather than a single "point" revenue line. Investors then compare these scenarios to other analysts' forecasts and to the forecasts implied by current market prices.

Putting It All Together — Forecast-Build Checklist

- 1 Choose forecast objects** (drivers / lines / summary measures / ad hoc) based on available information, efficiency, accuracy, explanatory value, and verifiability.
- 2 Pick an approach per object:** historical results, base-rate convergence, management guidance, or analyst discretion.
- 3 Set the horizon** to match investment strategy, industry cyclicity, and company-specific factors.

- 4 **Forecast revenue** top-down (GDP, market growth $\times$ share) and/or bottom-up (price $\times$ volume, segments, capacity, yield-based).
- 5 **Forecast operating expenses** — COGS as % of revenue or via gross margin; SG&A by splitting the variable (selling/distribution) and fixed (G&A) components.
- 6 **Forecast working capital** using DSO / DOH / DPO as base rates, scaled by forecast revenue or COGS.
- 7 **Forecast capex and capital structure:** separate maintenance vs. growth capex; use leverage ratios to project debt.
- 8 **Exclude nonrecurring items** from forecast objects; analyze them on a standalone basis.
- 9 **Run scenarios** over the key risk factors — business cycle, inflation, competition, technology. Compare to other analysts and to market-implied forecasts.

Exam Tip: Scenario analysis is the *final* step. A good forecast is a *range*, and the value of a forecast is in how it compares with other analysts' views and with the forecast implicit in market prices.

QUIZ 3 · CHECKPOINT

Test Your Understanding: Capex, Structure & Scenarios

Q9. An analyst forecasts **maintenance** capital expenditure by:

Q10. Forecast revenue is 290,122. Assumed EBITDA margin is 6% and target gross debt / EBITDA is 1.25×. Forecast gross debt is approximately:

Q11. According to the curriculum, the appropriate *end-product* of a forecasting exercise is:

Q12. A company discloses segmental revenues and margins, and the segments have *different* growth rates and margins. Compared with forecasting a single blended operating margin, using the segmental approach is most likely to:

MODULE COMPLETE

Your Scorecard

0 / 12

LM07 Key Takeaways — Exam-Ready Cheat Sheet

Principles & Approaches (LOS a)

- 1 **Four forecast objects:** drivers of lines · individual lines · summary measures (FCF, EPS, total assets) · ad hoc objects (e.g., legal outcomes).
- 2 **Four forecast approaches:** historical results · base rates & convergence · management guidance · analyst discretion. They can be combined.
- 3 **Forecast horizon** depends on investor time horizon, industry cyclicalities, company-specific factors, and employer/issuer conventions.
- 4 **Nonrecurring items** are excluded from the forecast object and analyzed on a standalone basis. Question management's "nonrecurring" classification if it recurs every year.

Revenue (LOS b)

- 5 **Top-down:** growth relative to GDP (nominal-GDP = real GDP + inflation, adjusted for firm specifics) OR market growth × market share.
- 6 **Bottom-up:** volume × ASP · product-line / segment · capacity-based (stores × sales/store) · return- or yield-based (net interest income for banks).
- 7 **Use both when possible** — mismatches between top-down and bottom-up highlight inconsistencies.

Expenses & Working Capital (LOS c)

- 8 **COGS** = $(1 - \text{gross margin}) \times \text{forecast revenue}$. Watch for price-shock pass-through, substitutes, new products, and business-model differences.
- 9 **SG&A**: split into selling/distribution (variable with sales) and G&A (more fixed, wage-inflation driven).
- 10 **Working capital (days form)**: $A/R = DSO \times (\text{Rev}/365)$; $\text{Inventory} = DOH \times (\text{COGS}/365)$; $A/P = DPO \times (\text{COGS}/365)$.

Capital Investment & Structure (LOS d)

- 11 **Maintenance capex** $\approx$ historical depreciation adjusted for inflation. **Growth capex** is tied to management's strategy and revenue-growth plans.
- 12 **Capital structure** forecast uses leverage ratios (e.g., gross debt / EBITDA); note borrowing requirements from future capex and any management-disclosed target capital structure.

Scenario Analysis (LOS e)

- 13 **Forecast a range, not a point**. Stress business cycle, inflation/deflation, competition, and technology. Compare to other analysts' forecasts and to the forecast implied by current market prices.

Last-Minute Exam Checklist

COGS forecast: $(1 - \text{GM}) \times \text{revenue}$

A/R forecast: $DSO \times \text{Rev} / 365$ | **Inventory**: $DOH \times \text{COGS} / 365$ | **A/P**: $DPO \times \text{COGS} / 365$

Nominal GDP: real GDP + inflation (then adjust for firm specifics)

Maintenance capex: historical D&A + inflation | **Growth capex**: strategy-driven

Capital structure: leverage ratios (e.g., Debt / EBITDA)

Nonrecurring: strip out, analyse standalone

End-product: a *range of scenarios*, not a point estimate

Step 1 of 12