

Exercise walk-through

Marketing analysis ■ 8.1

eXercise

You must be able to

- explain trend and seasonal variation and calculate a forecast
- interpret correlation (and know it is not causation)
- analyse and evaluate the usefulness of marketing analysis tools

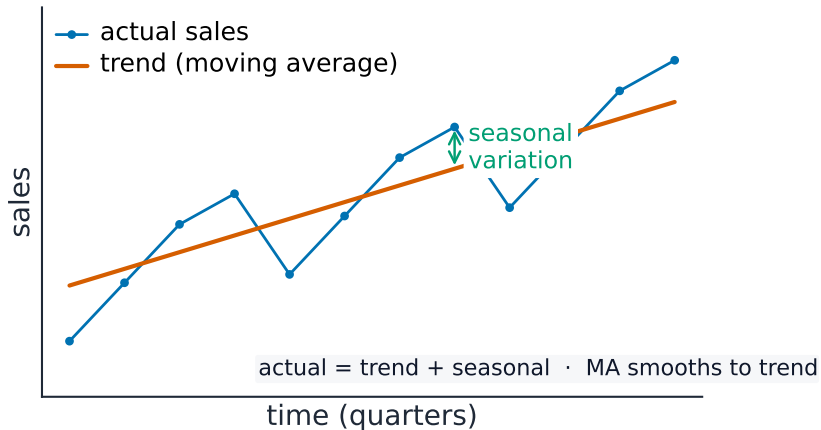
Method — Forecasting from a time series

seasonal variation = actual value – trend value forecast = trend + seasonal variation

- **Worked:** trend 500, actual 560 → seasonal variation = +60. Next year's forecast for that quarter = trend + 60.
- **Correlation:** positive (rise together) or negative (one rises, other falls); strong correlation predicts but does **not** prove cause.
- **Elasticity:** PED guides price; YED plans for booms/recessions; XED predicts a rival's price move.

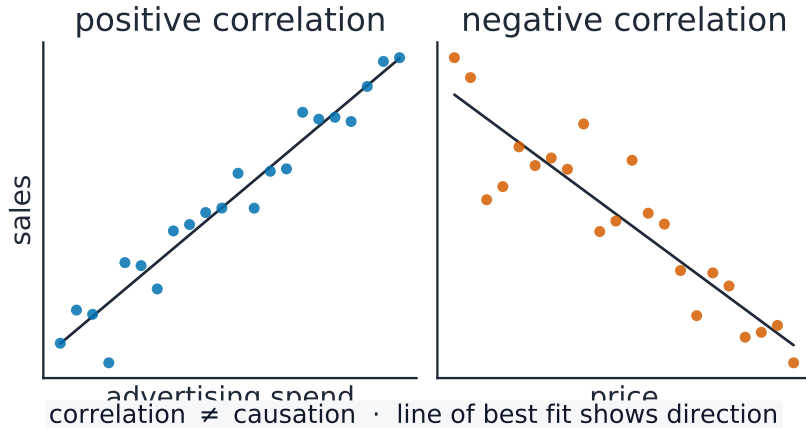
Answer shapes: AO1 + AO2 + AO3 (reasoning chain) + AO4 (a supported judgement *in context*).

Method — Forecasting from a time series



Actual sales wobble seasonally around a smooth underlying trend

Method — Forecasting from a time series



Positive correlation: points rise together. Negative: one rises as the other falls

Practice 2.1 ■ 2 marks

Define the term *sales forecasting*.

Solution 2.1

Method: Forecasting from a time series

Worked steps

predicting future sales from past data and market knowledge (2 for a clear definition; 1 for a partial idea).

Practice 2.2 ■ 2 marks

A quarter has a trend value of 500 units and actual sales of 560 units. Calculate the seasonal variation.

Solution 2.2

Method: Forecasting from a time series

Worked steps

$560 - 500 = +60$ units (2; award 1 for a correct method with the wrong figure).

Practice 2.3 ■ 2 marks

State the difference between *positive* and *negative* correlation.

Solution 2.3

Method: Forecasting from a time series

Worked steps

positive correlation: as one variable rises, the other rises too; negative correlation: as one rises, the other falls (2 for a clear difference; 1 for a partial idea).

Exam-style 3.1 ■ 3 marks

Explain one benefit to a business of accurate sales forecasting.

Solution 3.1

Method: Forecasting from a time series

Worked steps

[3] **AO1** 1 — name a benefit (better planning of production, staff, stock or cash).
AO2 up to 2 — develop it, e.g. a good forecast lets the firm order the right amount of stock → no shortage or waste → lower costs (2 developed / 1 limited).

Exam-style 3.2 ■ 2 marks

A firm forecasts a **trend** of 800 units for next quarter. The average **seasonal variation** for that quarter is -120 units.

- (a) Calculate the forecast sales for the quarter.
- (b) Analyse one limitation of relying on this forecast.

Solution 3.2

Method: Forecasting from a time series

Worked steps

(a) forecast = $800 + (-120) = 680$ units (2; award 1 for a correct method with the wrong figure). (b) [4] AO1/AO2 1–2 + AO3 up to 2 — e.g. the forecast assumes past patterns continue → a new competitor or changed tastes could break the trend → the actual figure may differ a lot → production based on it could be too high or too low.

Exam-style 3.3 ■ 12 marks

Evaluate the usefulness of time-series analysis to a business that is planning production.

Solution 3.3

Method: Forecasting from a time series

Worked steps

[12] **AO1** 2 / **AO2** 2 / **AO3** 2 / **AO4** up to 6. **Useful:** smooths out noise to show the trend, reveals seasonality, and supports planning of output, stock and staff. **Limited:** it assumes past patterns continue (extrapolation), ignores sudden change, and the forecast is only as good as the data. **Judgement:** time-series analysis is a helpful planning guide, especially for a seasonal product, but it should be combined with market knowledge — its value depends on how stable the market is.