

## Cost Behaviour — High-Low Method

VC/unit = (High cost – Low cost) ÷ (High units – Low units)

Fixed cost = Total cost – (VC per unit × Units)

## Inventory Management

$$EOQ = \sqrt{\frac{2C_oD}{C_h}}$$

$C_o$  = order cost ·  $D$  = annual demand ·  $C_h$  = holding cost/unit/year

## Contribution & Marginal Costing

Contribution = Selling price – Variable costs

C/S ratio = Contribution ÷ Sales revenue

Absorption profit – Marginal profit =  $\Delta$ Inventory × FOAR

## Breakeven Analysis

BEP (units) = Fixed costs ÷ Contribution per unit

BEP (revenue) = Fixed costs ÷ C/S ratio

MoS % = (Budgeted – BEP sales) ÷ Budgeted sales × 100

Target profit units = (FC + Target profit) ÷ Contribution/unit

## Absorption Costing

OAR = Budgeted overhead ÷ Budgeted activity level

Under/over absorption = Absorbed OH – Actual OH

## Material & Labour Variances

Mat. price = (Std price – Actual price) × Actual qty purchased

Mat. usage = (Std qty for AO – Actual qty used) × Std price

Labour rate = (Std rate – Actual rate) × Actual hours paid

Labour eff. = (Std hrs for AO – Actual hrs worked) × Std rate

AO = actual output

## Overhead Variances

Var OH exp. = (Actual hrs × Std rate) – Actual variable OH

Var OH eff. = (Std hrs for AO – Actual hrs) × Std rate

Fixed OH exp. = Budgeted FOH – Actual FOH

Fixed OH vol. = (Actual output – Budgeted output) × Std FOH/unit

Fixed OH cap. = (Actual hrs – Budgeted hrs) × Std FOH rate

Fixed OH eff. = (Std hrs for AO – Actual hrs) × Std FOH rate

## Sales Variances

Sales price = (Actual price – Std price) × Actual volume sold

Sales volume = (Actual vol – Budgeted vol) × Std contribution/unit

## Labour Ratios

Efficiency = (Std hrs for actual output ÷ Actual hrs) × 100

Capacity = (Actual hrs ÷ Budgeted hrs) × 100

Activity = (Std hrs for actual output ÷ Budgeted hrs) × 100

## Investment Appraisal

Payback = Initial investment ÷ Annual cash inflow

NPV =  $\Sigma$  discounted cash flows – Initial investment

$$IRR \approx L + \left[ \frac{NPV_L}{NPV_L - NPV_H} \right] (H - L)$$

$L$  = lower rate ·  $H$  = higher rate

$$\text{Annuity factor} = \frac{1 - (1 + r)^{-n}}{r}$$

Perpetuity =  $1 \div r$

## Performance Measurement

ROI = Divisional profit ÷ Divisional net assets × 100

Residual income = Divisional profit – (Net assets × Cost of capital)

## Forecasting

Regression:  $y = a + bx$

$a$  and  $b$  values provided or derived from data given in the question

Additive: Forecast = Trend ± Seasonal variation

Multiplicative: Forecast = Trend × Seasonal variation

## Summarising Data

Mean (ungrouped) =  $\Sigma x \div n$     Mean (grouped) =  $\Sigma fx \div \Sigma f$

$$\sigma = \sqrt{\frac{\Sigma (x - \bar{x})^2}{n}}$$

$$\sigma = \sqrt{\frac{\Sigma fx^2}{\Sigma f} - \left( \frac{\Sigma fx}{\Sigma f} \right)^2} \quad (\text{grouped})$$

Coeff. of variation = std dev ÷ mean

Expected value =  $\Sigma px$