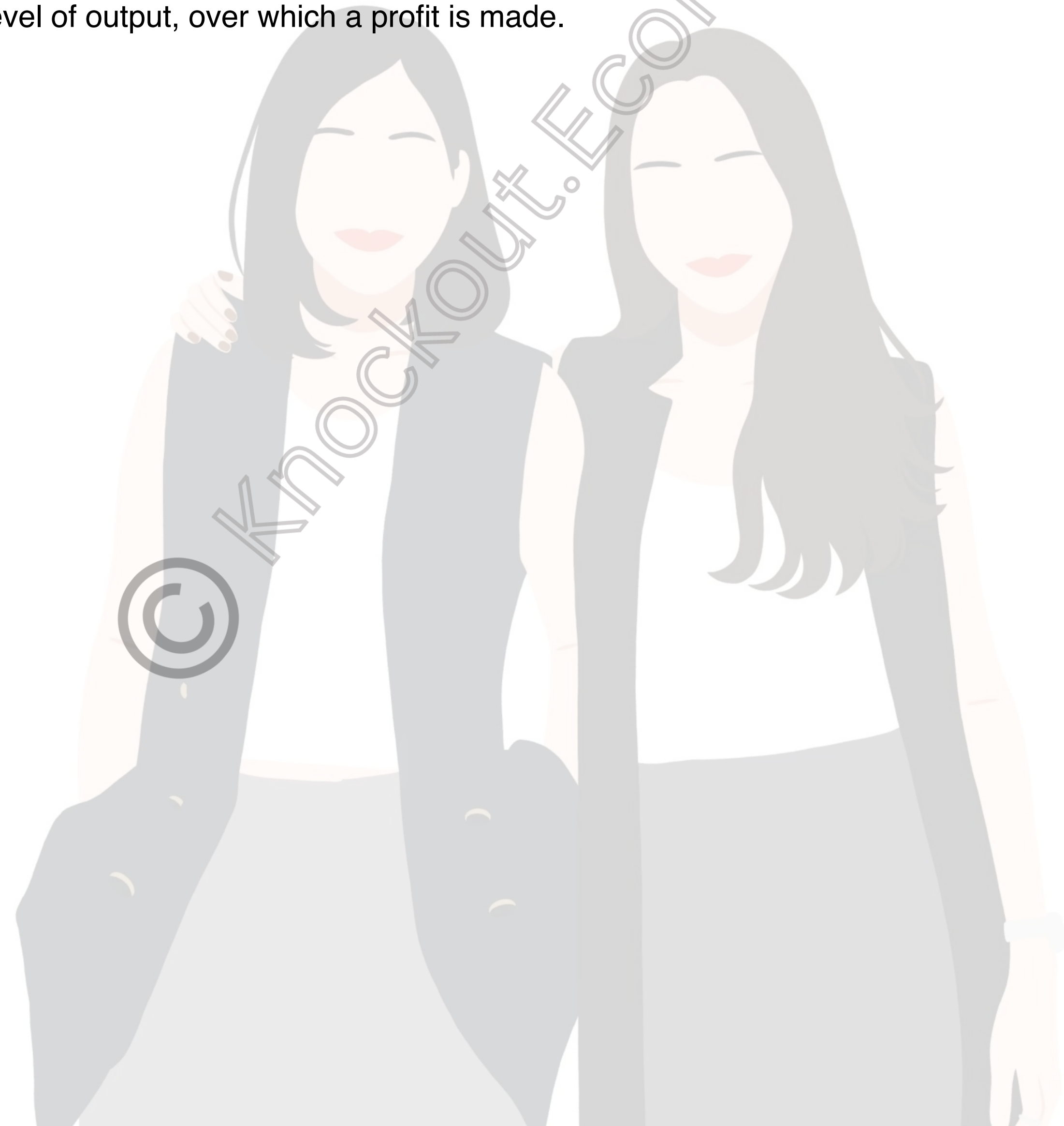
Chapter 31 Break-Even

Key terms

1. Break-even: when a business generates just enough revenue to cover its total cost.
2. Break-even chart: a graph containing the cost and total revenue lines, illustrating the break even output.
3. Break-even output: the output a business needs to produce so the cost and total revenue are the same.
4. Break-even point: the point at which total revenue and total costs are the same.
5. Contribution: the amount of money left over after variable cost have been subtracted from revenue. The money contributes towards fixed cost and profit.
6. Margin of safety: the range of output between the break even level and the current level of output, over which a profit is made.



- **Break-even;** when a business generates just enough revenue to cover its total costs
- **Contribution;** the amount of money left over after variable costs have been subtracted from revenue. The money contributes toward fixed cost and profit.

e.g. selling price of a pen = 30$, variable cost=20$

↳ 10$ will contribute to fixed cost of the business and profit.

Contribution per unit and total contribution.

Contribution per unit = selling price - Average Variable cost

Total contribution = total revenue - total variable cost

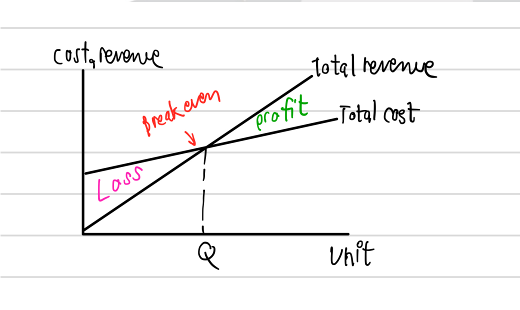
Profit = total contribution - fixed cost

Break-even point

- Break-even : when a business generates enough revenue to cover its total cost
- Break-even output; the output a business needs to produce so that total revenue and total cost are the same.

$$\textbf{Break-even output} = \frac{\textbf{Fixed cost}}{\textbf{Contribution margin(price-AVC)}}$$

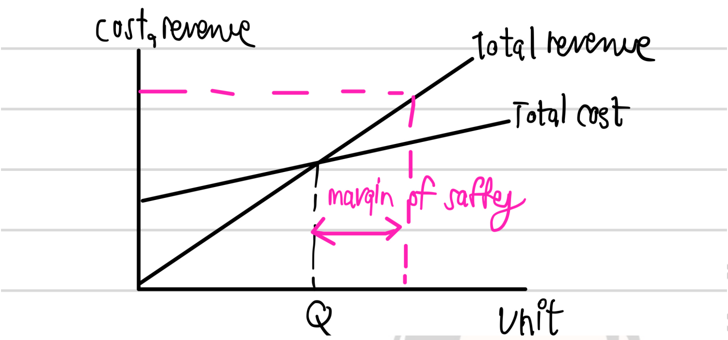
Break even chart: a graph containing the total cost and total revenue line illustrating the break-even output.



Margin of safety

- The range of output between the break-even level and the current level of output, over which a profit is made.
- Businesses prefer to operate with a large margin of safely. his means that if sales drop they still might make some profit. with a small margin of safety, there is a risk that the business is more likely to make a loss if sales fall.

Margin of safety = Current output - Break-even output



<u>Using break-even analysis</u>

Example

1. If the price went up, what would happen to the break-even point?
2. If the business introduced a new product line how many would the new product have to sell to at least break-even?
3. If the business is just starting up, what has to be the level of output to prevent a loss being incurred.
4. What will happen to the break-even point if costs are forecast to rise?

Limitation of break even analysis

1. Output and stocks are assumed that all output is sold, so that output equals to sales
2. The break-even chart cannot cope with a sudden increase in wages and prices or changes in technology.
3. The effectiveness of break-even analysis depend on the quality and accuracy of the data used to construct cost and revenue functions.