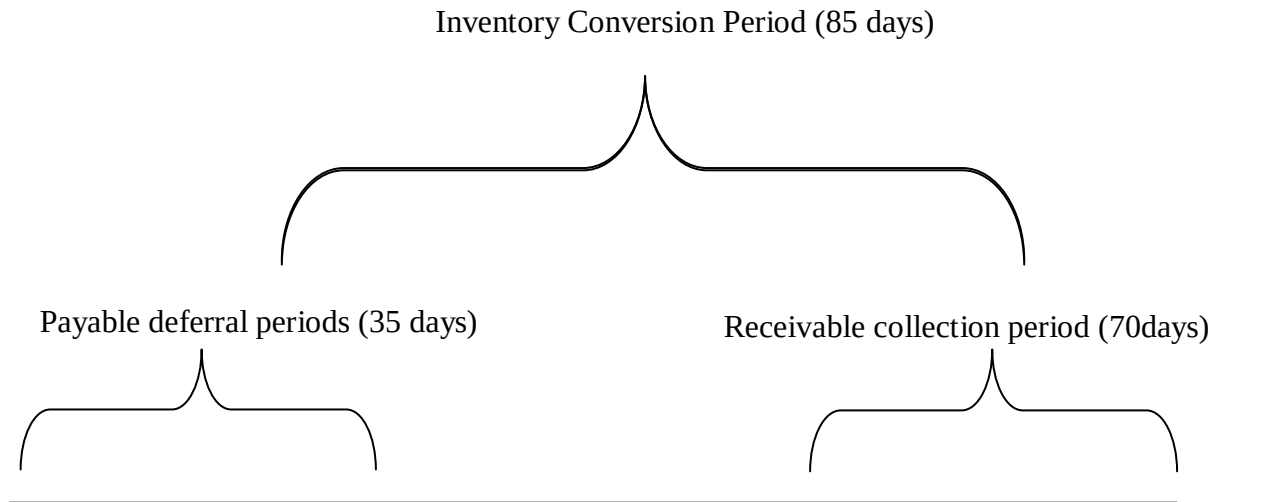


The following chart can help understand the question



Purchase of
Raw materials

Payment of the
Raw materials

Sale of finished
goods

Collection of the
Receivable goods

The cash conversion cycle is given by

Cash conversion cycle (CCC) = inventory conversion period + receivable collection period – payable deferral period

i.e. $85 + 70 - 35 = 120$ days

Its assumed an year has 360days

$$\text{Cash turnover} = \frac{360}{\text{CCC}} = \frac{360}{120} = 3 \text{ Times}$$

NB: Alternative formula:

$$\text{CCC} = \left\{ 360 \frac{\text{Inventory}}{\text{cost of sales}} + \frac{\text{Receivable s}}{\text{sales}} - \frac{\text{Payable + Actuals}}{\text{cash operating expenses}} \right\}$$

The highest limit, H, is given by: $H = 3z - 2L$

The average cost balance = $\frac{4Z-L}{3}$

Where Z = target cash balance

H = upper limits

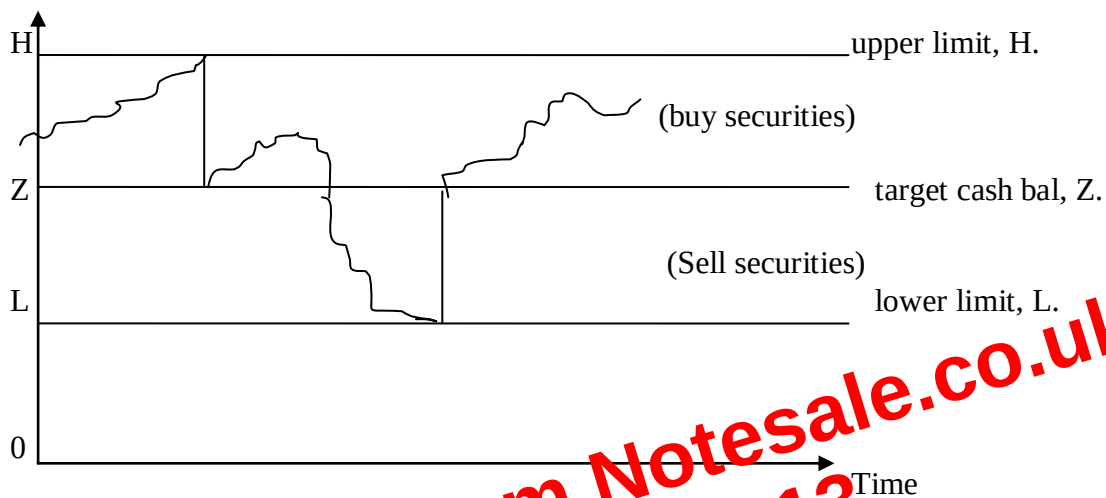
L = lower limit

B = fixed transaction cost

i = opportunity cost of daily basis

δ^2 = variance of net daily cash flows

Cash Balance (Shs)



Illustration

ZYZ: Management has set the minimum cash balance to be equal to sh10000. The standard deviation of daily cash flows is sh. 2,500 and the interest rate in marketable securities is 9% p.a. the transaction cost for each sale or purchase of securities is sh. 20

Required: calculate;

- The target cash balance
- Upper limit
- Average cash balance
- The spread

Solution

$$a) \quad Z = \left[\frac{3B\delta^2}{4i} \right]^{1/3} + L = \left(\frac{3 \times 20 \times 2500^2}{4 \times \frac{9\%}{360}} \right)^{1/3} + 10000$$

$$b) \quad H = 3Z - 2L = 3 \times 17,211 - 2 \times 10000 = \text{sh. } 31,933$$

$$c) \quad \text{Av. Cash balance} = \frac{4Z-L}{3} = \frac{4 \times 17211 - 10000}{3}$$