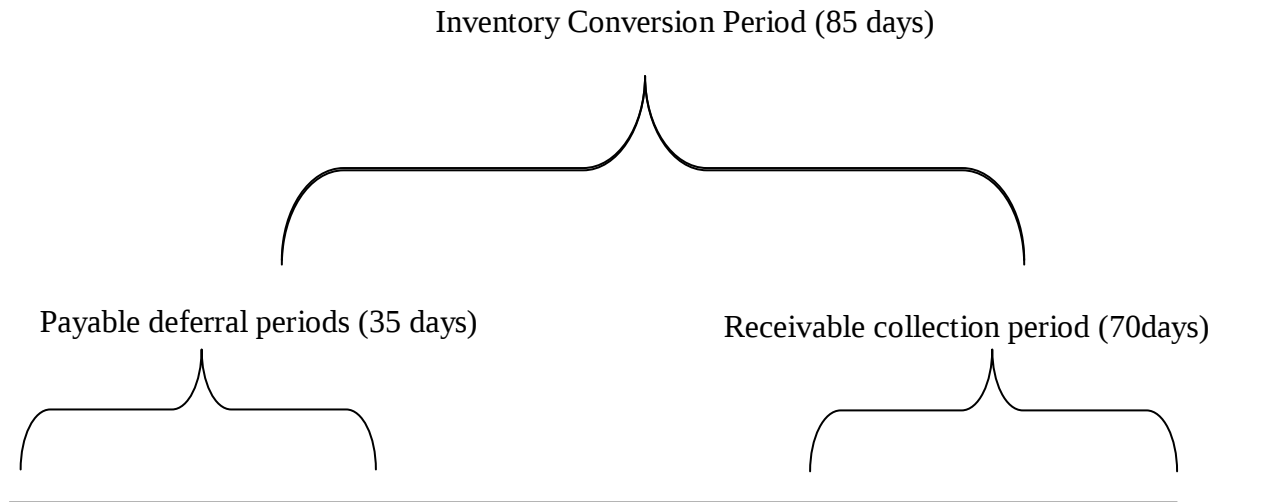


The following chart can help understand the question



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

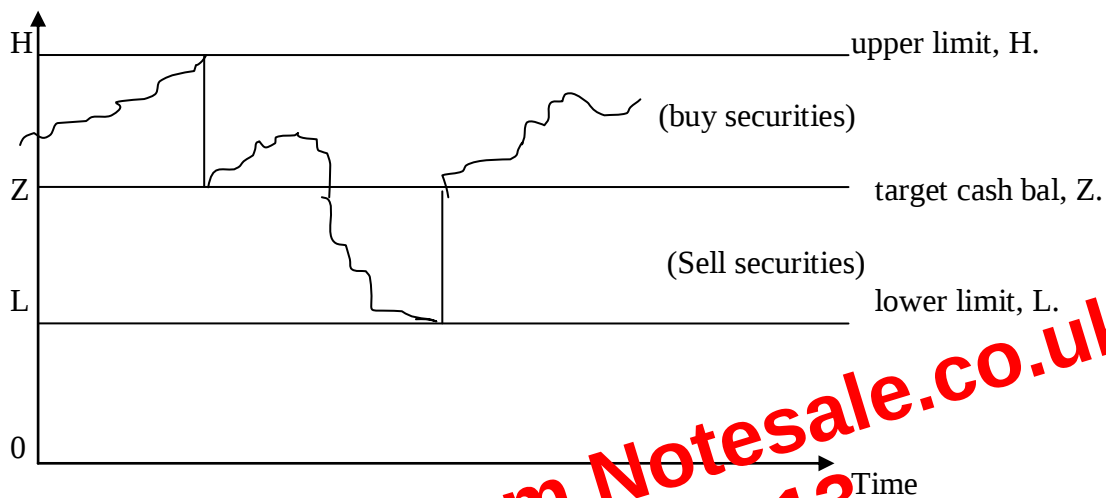
L = lower limit

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

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

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

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