

Chapter 6

MANAGEMENT OF WORKING CAPITAL (4) – CASH

1. Introduction

The purpose of this chapter is to discuss the reasons for the holding by a company of short-term cash balances, and to consider ways of managing these cash balances effectively.

2. Reasons for holding cash:

- Transaction motive
- Precautionary motive
- Speculative motive

3. Methods of dealing with cash shortages:

- Reduce inventories
- Defer capital expenditure
- Defer or reduce dividends
- Chase receivables to pay earlier
- Postpone the payment of payables
- Use short-term borrowing (overdraft)
- Sell surplus assets
- Sale and leaseback



4. Cash surpluses

A cash surplus may arise over the short term, medium term, or long term.

Possible uses of surplus cash include:

4.1. Short term

- Reduce overdraft
- Invest in short-term Treasury Stock
- Invest in bank deposit account
- Invest in 'blue-chip' shares

4.2. Long term:

- Invest in new projects
- Acquire other companies
- Increase dividends
- Buy back shares
- Repay long term loans



5. Cash Management models

5.1. Cash budgets

Cash budgets are probably the most important tool in practice for the management of any company's cash position. They are vital to identifying in advance a likely deficit or surplus in order that appropriate action can be taken to avoid any problem or profit from any opportunity.

6. Cash budgets

6.1. Proforma

<i>Period</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
	\$	\$	\$	\$	\$
Receipts					
Cash sales	x	x	x	x	x
Receipts from credit customers	x	x	x	x	x
Other income		x			x
	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Payments					
Cash purchases	x	x	x	x	x
Payments for credit purchases	x	x	x	x	x
Rent and rates	x			x	
Wages	x	x	x	x	x
Light and heat		x			x
Salaries	x	x	x	x	x
Telephone	x			x	
Insurance			x		
	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>
Surplus/(deficit)	(x)	(x)	x	x	x
Balance b/f	—	(x)	(x)	(x)	x
Balance c/f	<u>(x)</u>	<u>(x)</u>	<u>(x)</u>	<u>x</u>	<u>x</u>

Additionally, cash flows relating to fixed assets or financing should be included as appropriate.



Example 1

You are presented with the following flow forecasted cash flow data for your organisation for the period November 20X1 to June 20X2. It has been extracted from functional flow forecasts that have already been prepared.

	NovX1	DecX1	JanX2	FebX2	MarX2	AprX2	MayX2	JuneX2
	\$	\$	\$	\$	\$	\$	\$	\$
Sales	80,000	100,000	110,000	130,000	140,000	150,000	160,000	180,000
Purchases	40,000	60,000	80,000	90,000	110,000	130,000	140,000	150,000
Wages	10,000	12,000	16,000	20,000	24,000	28,000	32,000	36,000
Overheads	10,000	10,000	15,000	15,000	15,000	20,000	20,000	20,000
Dividends		20,000						40,000
Capital expenditure			30,000			40,000		

You are also told the following.

- Sales are 40% cash 60% credit. Credit sales are paid two months after the month of sale.
- Purchases are paid the month following purchase.
- 75% of wages are paid in the current month and 25% the following month.
- Overheads are paid the month after they are incurred.
- Dividends are paid three months after they are declared.
- Capital expenditure is paid two months after it is incurred.
- The opening cash balance is \$15,000.

The managing director is pleased with the above figures as they show sales will have increased by more than 100% in the period under review. In order to achieve this he has arranged a bank overdraft with a ceiling of \$50,000 to accommodate the increased inventory levels and wage bill for overtime worked.

- Prepare a cash flow forecast for the six-month period January to June 20X2.**
- Comment on your results in the light of the managing director's comments and offer advice.**



6.2. The Baumol model

The Baumol model is very similar to the EOQ model for managing inventory, and uses the same formula.

Suppose that a company has forecast that its cash requirement over the coming year is \$1.5m and that the cash use is constant throughout the year. They have the cash available, but it is currently invested and is earning interest. To transfer the entire amount immediately would lose interest for the whole year and it would therefore be more sensible to transfer amounts throughout the year as required. However, each time cash is transferred there is a fee payable (to sell investments) and therefore the more transfers the greater the cost.

The Baumol model gives a formula for the optimum amount to be transferred each time:

$$\text{Economic quantity of cash} = \sqrt{\frac{2 \times \text{Annual cash required} \times \text{cost of ordering cash}}{\text{Net interest cost of holding cash}}}$$

Example 2

Next year a company forecasts a cash requirement of \$1,500,000, the use being constant throughout the year.

The company has investments in excess of this amount which are earning 9.5% p.a..

The company earns interest of 5% on their current account bank balance.

The cost of selling investments is \$150 per transaction

- (a) **If the company sells \$150,000 of investments each time, calculate the total cost p.a. to the company.**
- (b) **What is the optimal economic quantity of cash to transfer each time in order to minimise costs?**
- (c) **At the EOQ, what is the total cost p.a. to the company?**

6.3. The Miller Orr model

The Miller Orr model does manage to achieve a reasonable degree of realism without being too elaborate.

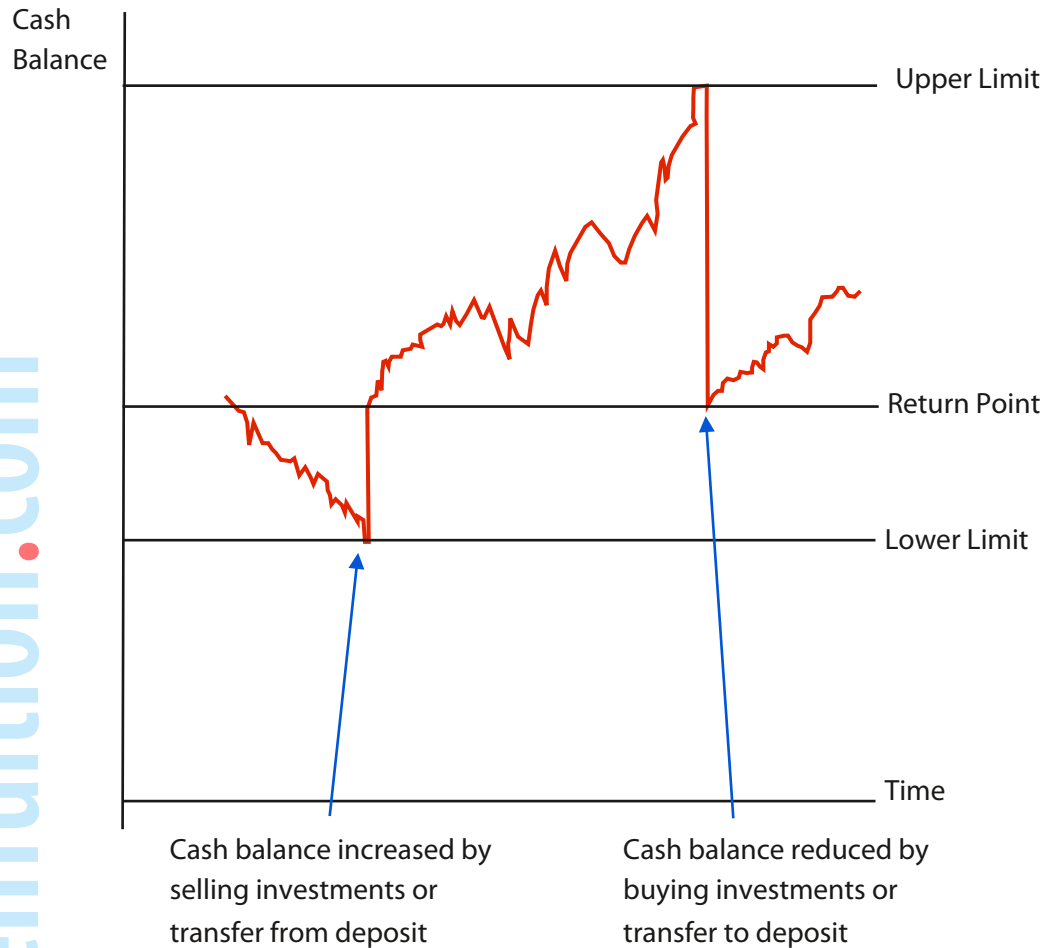
In practice cash flows are likely to fluctuate considerably from day-to-day. There is also a likelihood that the balances are likely to 'wander' upwards or downwards over a period.

The Miller Orr model fixes limits on the upper and lower levels.

The basic steps involved are as follows:

1. A safety level or lower limit of cash is decided upon.
2. A statistical calculation is made based on the variations of the cash flows, in order to agree an allowable range of fluctuations.
3. Using this calculated range, an upper limit of cash is fixed.
4. The cash balance is managed to ensure that the balance is always kept between the upper and lower limits.





Miller Orr produced formulae as follows:

Return point = Lower limit + $(\frac{1}{3} \times \text{spread})$

$$\text{Spread} = 3 \left(\frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}} \right)^{\frac{1}{3}}$$

(these formulae are given in the examination)

Example 3

A company has decided it needs a minimum balance of \$10,000. The transaction cost (of making transfers to/from deposit) is \$5 per transaction. The standard deviation of cash flows is \$2,000 per day, and the interest rate is 5.11% p.a. (or $5.11/365 = 0.014\%$ per day)

What should be the upper and lower limits, and the return point?

When you finished this chapter you should attempt the online F9 MCQ Test

