

# Chapter 15 revision notes

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## Management of working capital

### Working capital and working capital requirement

The operating cycle of working capital (WC), the net of current assets less current liabilities, is the period of time, which elapses between the point at which cash begins to be expended on the production of a product, and the collection of cash from the customer.

Companies therefore use some of their funds to finance stocks, through the manufacturing process, from raw materials to finished goods, and also the time lag between delivery of the finished goods or services and the payments by their customers, the accounts receivable. Short-term funds, for example bank overdrafts, are needed to finance the fluctuating levels of working capital that companies requires as represented in the operating cycle.

### **Working capital requirement (WCR)**

The investment in the operating cycle is called the working capital requirement (WCR).

$$\mathbf{WCR = stocks + debtors - creditors - accruals/(prepayments)}$$

The working capital requirement is normally financed by bank overdraft because of its flexibility in accommodating the fluctuating nature of net current assets, and the general lower cost of short-term financing.

In most manufacturing companies the WCR is positive. The smaller the WCR, the smaller are the total financial resources needed, and the stronger is the company. Some businesses, for example supermarkets, may have limited stocks and zero accounts receivable, but high accounts payable. In such cases WCR may be negative and these companies are effectively able to finance acquisition of fixed assets with funds payable to their suppliers.

### **Working capital (WC)**

The difference between working capital (WC) and working capital requirement (WCR) is cash less short-term financial debt (bank overdraft).

Working capital (WC) is normally defined as:

$$\mathbf{current\ assets - current\ liabilities}$$

or

$$WC = stocks + debtors - creditors - accruals/(prepayments) - short-term\ debt + cash$$

therefore

$$\mathbf{WC = WCR - short-term\ debt + cash}$$

Since

$$\begin{aligned} \text{fixed assets} + \text{stocks} + \text{debtors} - \text{creditors} - \text{accruals}/(\text{prepayments}) \\ = \text{equity} + \text{financial debt} - \text{cash} \end{aligned}$$

and financial debt comprises two parts:

- ◆ long-term debt (payable after one year, in accounting terms)
- ◆ short-term debt (payable within one year, in accounting terms)

Then, an alternative representation of working capital is

$$\mathbf{WC = equity + long-term\ debt - fixed\ assets}$$

As a general rule, except in certain commercial circumstances WC should always be positive in the long run because if it were negative then the company would be financing its (long-term) fixed assets with short-term debt.

### Working capital policy

The working capital policy adopted will be dependent on individual company objectives that may often be influenced by the type of business and the commercial or industrial sector in which it operates. The choice of objective inevitably presents a conflict between the goals of profitability and liquidity. Working capital policies range between aggressive policies and conservative policies. The former increase profitability through holding low levels of cash and stocks, but run the risk of potential cash shortages and stock-outs. The latter provide greater flexibility, with higher levels of cash and stocks, which provide lower risk at the expense of reduced profitability.

Regardless of the policies adopted, improved management of working capital may have a significant impact on the level of requirement for external financing. Reductions in levels of WCR reduce the requirement for external financing and its associated costs. Maintenance of optimal, and therefore more manageable levels of WCR increase levels of efficiency and effectiveness and so additionally contribute to increased profitability and a reduction in the requirement for external financing.

### **Stocks management**

The Japanese quality experts Shingo and Ohno have identified seven main areas of waste, that relate mainly to stocks in terms of their handling, their movement, and their storage, in addition to the levels held and the proportion of defective and obsolete stocks. These areas of waste emphasise the importance for companies to identify and take the appropriate action for improvements in this aspect of the management of working capital:

- ◆ overproduction
- ◆ waiting
- ◆ transportation
- ◆ inappropriate processing
- ◆ unnecessary inventory
- ◆ unnecessary motion
- ◆ product defects

Stock levels should be optimised so that neither too little is held to meet orders or too much held so that waste occurs. Stock level optimisation requires the following:

- ◆ the establishment of robust stock purchase procedures
- ◆ the appropriate location and storage of stocks
- ◆ the accurate and timely systems for the recording, control and physical checks of stocks
- ◆ the monitoring of stock turnover performance, and the use of appropriate ratios:

$$\frac{\text{stock days}}{\text{or stock}} \text{ turnover} = \frac{\text{stock value}}{\text{average daily cost of sales in period}}$$

**finished goods**  
average weekly  
despatches

**raw materials**  
average weekly raw  
material usage

**work in progress**  
average weekly  
production

$$\text{stock weeks} = \frac{\text{total stock units}}{\text{average weekly units cost of sales}}$$

- ◆ the implementation of effective stock management and reorder systems:
  - ABC categories using Pareto analysis
  - VIN category analysis:
    - vital (V) – a stockout would be a disaster
    - important (I) – a stockout would give significant operational problems or costs
    - nice to have (N) – a stockout would present only an insignificant problem
  - economic order quantity (EOQ)

When the quantity ordered is the economic order quantity  $EOQ = \sqrt{2PN/S}$

where P = the £ cost per purchase order Q = order quantity of each order in units

N = annual units usage S = annual £ cost of holding one unit

- *kanban*
- vendor managed inventory (VMI)

### **Just in time (JIT)**

Just in time (JIT) is sometimes referred to as a stock reduction or a zero stock system. JIT is a philosophy that is a response to two key factors: the reduction in product life cycles; the increase in levels of quality

required from demanding customers, which incorporates a 'pull' system of producing or purchasing components and products in response to customer demand.

**Materials requirement planning (MRP or MRPI)**

MRP is a 'push' approach that starts with forecasts of customer demand. MRP is a set of techniques, which uses the bill of materials (BOMs), stock data and the master production schedule to calculate future requirements for the release of materials to the production system.

**Manufacturing resource planning (MRPII)**

MRPII is an expansion of material requirements planning (MRP) to give a broader approach to the planning and scheduling of resources, embracing areas such as finance, logistics, engineering and marketing.

**Optimised production technology (OPT)**

OPT is a philosophy, based on throughput accounting (TA) combined with a computerised system of shopfloor scheduling and capacity planning, that differs from a traditional approach of balancing capacity as near 100% as possible and then maintaining flow. It aims to balance flow rather than capacity, and improvements to the production process. It focuses on factors such as:

- ◆ manufacture to order
- ◆ quality
- ◆ lead times
- ◆ batch sizes
- ◆ setup times

and has important implications for purchasing efficiency, stock control and resource allocation.

**Debtors and credit management**

Effective management and control of debtors requires the establishment of appropriate policies covering the choice of customers, the way in which sales are made, trading terms, the sales invoicing system, the means of settlement, and the implementation of a credit management and overdue accounts collection system.

**Debtor ratios**

Debtor days are used to measure and monitor customer settlement performance:

$$\text{debtor days} = \frac{\text{accounts receivable} \times 365}{\text{sales}}$$

**Collection policy**

The key factor underlying sustained, successful collection of accounts receivable is identification of 'the person' within the customer organisation who actually makes things happen and who can usually speed up the processing of a payment through the company's systems.

A routine should be established for when settlement of invoices becomes overdue.

Accurate debtor information must be available, that is up-to-date in terms of inclusion of all invoices that have been issued and allowing for all settlements received, before calling a customer to chase payment.

The most effective method of extracting payment from an overdue account is a threat to stop supply of goods or services. If a debt continues to be unpaid then the next step may be a chasing letter that shows that the organisation means business and will be prepared to follow up with legal action. A solicitors letter should probably be considered, as a rule of thumb, not before an invoice is say 60 days overdue from its expected settlement date.

The last resort is to instruct a solicitor to take action against a customer for non-payment.

**Creditors management**

Although not free, trade creditors provide the company with an additional source of finance.

Effective management and control of creditors requires the establishment of appropriate policies covering the choice of suppliers, the way in which purchases are made, trading terms, the purchase invoicing system, and the means of settlement.

**Creditor ratios**

Creditor days are used to measure and monitor supplier payment performance:

$$\text{creditor days} = \frac{\text{accounts payable} \times 365}{\text{cost of sales}} \quad (\text{or purchases})$$

### **Payment policy**

The priority for the accounts payable manager must be to maintain the level of payables and cash outflows in line with company policy, but at all times ensuring absolutely no interruption to any manufacturing processes or the operations of the business.

The accounts payable manager must have accurate accounts payable information that is up-to-date in terms of all invoices received, invoices awaited and payments made.

### **Operating cycle performance**

Regular measurement of the operating cycle, which determines the short-term financing requirements of the business, enables the company to monitor its working capital performance against targets and identify areas for improvement.

$$\text{operating cycle (days)} = \text{stock days} + \text{debtor days} - \text{creditor days}$$

The operating cycle may alternatively be calculated as a percentage using:

$$\text{operating cycle \%} = \frac{\text{working capital requirement}}{\text{sales}} \quad (\text{stocks} + \text{debtors} - \text{creditors})$$

### **Overtrading**

Overtrading is a condition of a business, which enters into commitments in excess of its available short-term resources. This can arise even if the company is trading profitably, and is typically caused by financing strains imposed by a lengthy operating cycle or production cycle. Overtrading is not inevitable. If it does occur then there are a number of strategies that may be adopted to deal with it.

### **Short-term cash flow improvement**

The short-term cash position of an organisation may be improved by reducing current liabilities, and/or increasing current liabilities, through:

- ◆ optimisation of stock levels
- ◆ minimisation of debtor levels
- ◆ monitoring and management of the bank balance
- ◆ maximisation of creditor levels
- ◆ monitoring and management of overdrafts
- ◆ payments of corporate taxation, VAT and PAYE/NI on due dates
- ◆ planning of appropriate dates for dividends payable

### **Long-term cash flow improvement**

The long-term cash position of an organisation may be improved by increasing equity, increasing long-term liabilities, reducing the net outflow on fixed assets, through:

- ◆ increase in shareholders' capital
- ◆ increase in loans
- ◆ leasing and hire purchase
- ◆ reduction in purchases of fixed assets
- ◆ increase in sales of fixed assets

### **Cash management**

To maintain control over cash flow it is crucial that a cash flow plan or statement is prepared on a month-by-month or week-by-week basis for say six months, and which is continually reviewed and revised in the light of actual performance.

Cash shortage is a common reason for business failure. However, businesses that are cash rich may also fail to take full advantage of opportunities to maximise the return on capital employed in the business.

All investments should as a matter of company policy be appraised using one of the recognised discounted cash flow techniques. A realistic company cost of capital should be used to determine whether each project is likely to pay back an acceptable return.

Good banking relationships should be maintained at all times with regular meetings and the provision of up-to-date information on company performance and new initiatives.