Stock Control

The Importance of Managing Stocks

AS & A2 Business Studies
PowerPoint Presentations 2005
What Are Stocks?

Three main categories of stocks

- Raw Materials
- Work in Progress
- Finished Goods
Types of Stock

• **Raw Materials**
  – Substances in a natural state before they go through manufacturing or other processing
  – Components that require assembly
  – Purchased from outside suppliers

• **Work in progress**
  – Items which, at a given time, are going through the production process
  – Some products have a long production process – so the value of work in progress is often substantial – e.g. construction projects

• **Finished goods**
  – Goods that are complete
  – May be stocked awaiting delivery to customer
  – May be produced some time in advance ahead of seasonal increases in demand
Why Hold Stocks?

• To meet demand
  – Acts as a “buffer” in times of high demand
  – Protect against uncertain / unreliable delivery from suppliers
  – Encourage customers to buy (crucial in businesses like retailers)

• To lower production costs
  – Take advantage of quantity or “bulk” discounts by ordering more at a time
  – Can buy stocks ahead of a shortage or a supplier price rise
  – Reduce ordering costs
  – Ensure continuity of production (avoid costs of production shortages)
Role of the Purchasing Department

• An important service function in any business that needs to acquire inputs (e.g. raw materials) and transform them into outputs
  – E.g. manufacturing business
  – E.g. retailer

• Objectives of the purchasing department
  – Stocks are sufficient for the business needs at any one time
  – Avoid “over-stocking”
  – Obtain stocks of the right quality
  – Obtain stocks at the best available price
  – Develop strong working relationships with key suppliers
  – Operate the purchasing function effectively and efficiently
Costs of Holding Stocks

- **Purchase price** (i.e. the cost of the stock itself!)
- **Stock “Holding Costs”**
  - **Opportunity cost** of the cash tied up by buying stocks (i.e. the cost of not having that cash invested elsewhere)
  - Cost of storing and handling stocks (e.g. warehouse, stock control systems; employees)
  - Cost of insurance (important – many businesses have gone bust because their stocks were not insured...)
  - Cost / risk of deterioration or “obsolescence” (i.e. the stock becomes unusable after a period of time)
  - Stock losses (e.g. damage / theft)
- **Stock Ordering Costs**
  - Clerical and administrative costs (e.g. purchasing department)
- **Stock Shortage Costs**
  - Production stoppages caused by lack of raw materials
  - Lost sales due to stock-outs or delayed deliveries
Stock Control Systems

• Wide range of stock control systems available
  – Re-order and maximum stock levels
  – Economic Order Quantity (”EOQ”)
  – ABC system
  – Just-in-time (JIT) systems
  – Perpetual inventory methods
  – Sub-contracting production processing
  – Obtaining progress payments from customers
  – Reduce number of product lines

• Objectives of stock control
  – Minimise the value of stocks held by the business (i.e. conserve cash)
  – Ensure the business has the right stock at the right quantities to allow production to carried out efficiently
Setting Stock Levels

- **Maximum stock**
  - The most stock of a particular item that the business is able or willing to hold at any one time
  - May reflect storage capacity (permanent & temporary)
  - May also reflect management controls over spending by purchasing department

- **Re-order level**
  - When stocks held of an item fall to this level, a new purchase order is made
  - Needs to take account of the possible “lead time” between the order being placed and the stock being delivered by the supplier

- **Minimum stock level**
  - Also known as the “buffer stock”
  - Important to avoid “stock-outs” (lost sales) and disruption to production
Re-order Levels - Illustration

- Stock Level ('000)
  - Maximum stock level
  - Re-order level
  - Minimum stock level

- Lead Time between re-ordering and stock reaching minimum

- Time (Months)

- Re-order quantity: 55,000 Units
ABC System

• Helps to identify which stock items should be controlled
• Stocks are divided into three categories (A, B, C) according to importance of sales value
• High value stocks get the most management attention for stock control
## ABC System - Example

### Example Company:

<table>
<thead>
<tr>
<th>Stock Category</th>
<th>Stock Items (% of total)</th>
<th>Stock Value (% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
<td>72</td>
</tr>
<tr>
<td>B</td>
<td>38</td>
<td>18</td>
</tr>
<tr>
<td>C</td>
<td>50</td>
<td>10</td>
</tr>
</tbody>
</table>

Category A stocks require lots of attention; regular stock forecasting and monitoring; make sure buffer stocks are adequate.

Category C accounts for half of the number of stock items – but only 10% of the value; stock control can be more informal.
Just-in-Time Systems

- JIT focuses on minimising the holding costs of stock
- Idea is that stocks are brought into the production process at the time they are needed
- Effectively an attempt to operate production with minimal / zero buffer stocks
- With JIT systems, production and purchasing are closely linked to sales demand on a week-to-week basis
  - Continuous flow of raw materials into stock
  - When work-in-progress is completed, it goes straight to the customer
Requirements for JIT Systems

- **Flexibility**
  - Suppliers and internal workforce need to be able to expand and contract output at short notice
  - Need to be able to deliver supplies quickly and reliably

- **High quality**
  - Raw materials must be of guaranteed quality
  - Whole production process must focus on quality
  - There are no/minimal buffer stocks should a batch of raw materials from a particular supplier prove faulty, or if they are damaged during the production process

- **Close working relationship with suppliers**
  - Often geographically close
  - Joint approach to ensuring quality
  - Systems need to be able to share information (e.g. sales data, purchasing requirements, delivery times)
Potential Benefits of JIT

- Lower levels of cash tied up in stocks (i.e. – lower working capital)
- Reduction in stock holding costs
- Reduced manufacturing lead times
- Improved labour productivity
- Reduced scrap and warranty costs
- Price reductions on purchased materials
- Reduction in the time and cost of purchasing / accounting
Pitfalls / Problems with JIT

• Not suitable for many industries / organisations
  – Higher risk of stock-outs: e.g. critical medical supplies

• Lots of potential problems for suppliers
  – Break in supply causes immediate problem for supplier to solve
  – May require new systems
  – Potential loss of reputation if supplier responsible for stopping whole of customer’s production

• Not something that can be done easily
  – Requires careful planning
  – Cannot be done overnight – production needs to move gradually towards minimal / zero buffer stocks
  – Often requires a substantial change in production culture
Stock Ratios

• Measure how efficiently a business is managing its investment in stock

• Stock days
  – How many days of production are kept in stock?
  – Calculation: (Average stock / Cost of Sales) / x 365 days

• Stock turnover
  – How often does a business use its average stock levels each year?
  – Calculation: (Cost of Sales / Average Stock)
# Stock Ratios - Example

<table>
<thead>
<tr>
<th>Extracts from Profit and Loss Account &amp; Balance Sheet</th>
<th>2004 £’000</th>
<th>2005 £’000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Sales</td>
<td>4,750</td>
<td>5,200</td>
</tr>
<tr>
<td>Stocks at Balance Sheet Date:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Materials</td>
<td>675</td>
<td>850</td>
</tr>
<tr>
<td>Work-in-progress</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>Finished Goods</td>
<td>475</td>
<td>500</td>
</tr>
<tr>
<td>Total Stocks</td>
<td>1,275</td>
<td>1,500</td>
</tr>
<tr>
<td>Average Stock ((1,275 + 1,500) / 2)</td>
<td></td>
<td>1,387</td>
</tr>
<tr>
<td>Stock Days ((1,387 / 5,200) \times 365) days</td>
<td></td>
<td>97 days</td>
</tr>
<tr>
<td>Stock Turnover ((5,200 / 1,387))</td>
<td></td>
<td>3.75</td>
</tr>
</tbody>
</table>
Stock Ratios - Interpretation

- **Reasons for High Stock Days / Low Stock Turnover Ratios**
  - Business is being cautious in stock-holding policy (i.e. setting high levels of buffer stock)
  - Business has too much obsolete or slow-moving stock (a problem)
  - Stocks were unusually high at the balance sheet date
  - Business operates in an industry where stock traditionally turns over slowly

- **Reasons for Low Stock Days / High Stock Turnover Ratios**
  - Business operates in industries where stock normally turns over quickly
  - Business has supply difficulties and does not carry enough stock
  - Business is managing its stocks effectively