Chapter I
Working Capital Management

Working Capital Terminologies

Working capital is defined as a firm's investments in current assets. A related concept is **Net working capital**, defined as current assets minus current liabilities. The principal categories of working capital are current asset consists of cash, marketable securities, accounts receivable and inventory. Current liabilities include accounts payable, banks loans and notes payable; and current debt (due in one year).

Working capital policy: refers to the firm's basic policies regarding 1) target levels for each category of current assets and 2) how current assets will be financed.

Working capital management: involves the administration of current assets and current liabilities within policy guidelines.

Tasks of working capital management

The three tasks or concepts underlying working capital management are:

1. Speeding up receipts of cash
2. Delaying payments of cash, and
3. Investing excess cash

Implicitly these three tasks aim is to maximize shareholders wealth. Thus, they are to be performed in a manner that takes advantage of the time value of money in an optimal way. In other words, receipts should speed up, payments delayed, and cash invested if and only if the advantages outweigh the disadvantages.

Current asset Investment Policies

There are three alternative policies regarding the total amount of current assets carried. Essentially, these policies differ in that different amounts of current assets are carried to support any given level of sales. It is illustrated in figure 1.1 below

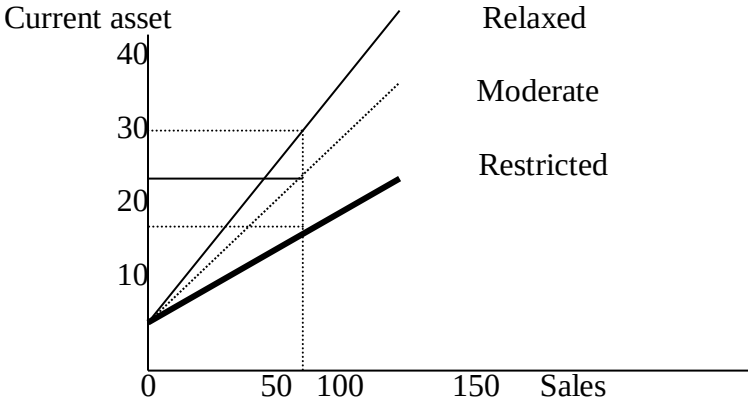


Figure 1.1

Policy	**Current assets to support sales of 100**
Relaxed	Birr 30
Moderate	23
Restricted	16

A. Relaxed current asset investment (fat cat) policy

Relatively large amounts of cash, marketable securities, and inventories are carried and where sales are stimulated by the use of a credit policy that provides liberal financing to customers and a corresponding high level of receivables.

B. Restricted current asset investment (lean and mean) Policy

With this policy, the holdings of cash, securities, inventories, and receivables are minimized.

C. Moderate current asset investment policy.

The moderate current asset investment policy is between the two extremes.

Under conditions of certainty - when sales, costs, payment periods are known for sure all firms would hold only minimal levels of current assets. Any larger amounts would increase the need for working capital financing without a corresponding increase in profits, while any smaller holdings would involve late payments to labor and suppliers and lost sales due to inventory shortages and an overly restrictive credit policy.

With a restricted current asset investment policy, the firm would hold minimal of safety stocks for cash and inventories, and it would have a tight credit policy even though this meant running the risk of losing sales. A restricted, lean and mean current asset investment policy generally provides the highest expected return on investment, but it entails the greatest risk, while the reverse is true under a relaxed policy. The moderate policy falls in between the two extremes in terms of risk and expected return.

1.1 Cash and marketable security management

Cash and marketable securities are the most liquid of the firm's assets. Cash is the ready currency to which all liquid assets can be reduced. Marketable securities are short term, interest-earning, money market instruments that are used by the firm to obtain a return on temporarily idle funds. Cash and marketable securities are held by firms to reduce the risk of technical insolvency by providing a pool of liquid resources for use in making planned as well as unexpected outlays. The desired balances are determined by carefully considering the motives for holding them. The higher these balances are, the lower the risk of technical insolvency, and the lower they are, the higher the risk of technical insolvency.

Motives for holding cash and near cash balances

There are three motives for holding cash and near cash (marketable securities) balances. Each motive is based on two underlying questions:

1) What is the appropriate degree of liquidity to maintain? And
2) What is the appropriate distribution of liquidity between cash and marketable securities?

A) Transaction motive: A firm maintains cash balances to satisfy the transaction motive, which is to make planned payments for items such as materials and wages. If cash inflows and cash outflows are closely matched, transaction cash balances can be smaller. While firms must achieve this motive, they typically try to achieve the following two motives as well.

B) Safety motive: Balances held to satisfy the safety motive are invested in highly liquid marketable securities that can be immediately transferred from securities to cash. Such securities protect the firm against being unable to satisfy unexpected demands for cash.

C) Speculative motive: This is a motive of holding cash or near cash to put unneeded funds to work or to be able to quickly take advantage of unexpected opportunities that may arise. Speculative motive is the least common of the three motives.

Estimating cash balances

Management's goal should be to maintain levels of transactional cash balances and marketable securities investment that maximizes the value of a firm. If levels of cash are too high, the profitability of the firm will be lower than if more optimal balance were maintained. Firms can use either *subjective approaches* or *quantitative models* to determine appropriate transactional cash balances.

A. Subjective approaches

A subjective approach might be to maintain transactional balances equal to 10 percent of the following month's sales. If the forecasted amount of sales for the following month is birr 500,000, the firm would maintain a birr 50,000 (i.e. 0.10 x 500,000) transaction cash balance.

B. Quantitative models

Two quantitative models that management can use to determine the appropriate transactional cash balances are the Baumol model and the Miller-Orr model.

BAUMOL MODEL

A model that provides for cost efficient transactional cash balances; assumes that the demand for cash can be predicted with certainty and determines the economic conversion quantity (ECQ). It treats cash as inventory item whose future demand for settling transactions can be predicted with certainty. Baumol's cash management model helps in determining a firm's optimum cash balance under certainty. In other words, cash inflows and cash outflows are assumed to be known with certainty. A portfolio of marketable securities acts as a reservoir for replenishing transactional cash balances. The firm manages this cash inventory on the basis of the cost of converting marketable securities into cash (the conversion cost) and the cost of holding cash rather than marketable securities (opportunity cost). The ***economic conversion quantity (ECQ)***, the cost minimizing quantity in which to convert marketable securities to cash is

$$ECQ = \sqrt{\frac{2 \times \text{Conversion cost} \times \text{demand for cash}}{\text{Opportunity cost (in decimal form)}}}$$

Conversion cost: includes the fixed cost of placing and receiving an order for cash in the amount ECQ. It includes the cost of communicating the necessary to transfer funds to the cash account, associated paper work costs, and the cost of any follow up action. The conversion cost is stated as birr per conversion.

Opportunity cost: is the interest earnings per birr given up during a specified time period as a result of holding funds in a non-interest earning cash account rather than having them invested in interest earning marketable securities.

Total cost: is the sum of the total conversion and total opportunity costs. Total conversion cost equals the cost per conversion times the number of conversions per period. The number of conversions per period can be found by dividing the period's cash demand by economic

conversion quantity (ECQ). The total birr opportunity cost equals the opportunity cost (in decimal form) times the average cash balance. The average cash balance is found by dividing ECQ by 2. The total cost equation is

Total cost = Transaction cost + Holding cost (opportunity cost)
= (Cost per conversion x number of conversions)
+ [Opportunity cost (in decimal form) x average cash balance]

The objective of the Baumol model is to determine the economic conversion quantity (ECQ) of cash that minimizes total cost. Cash transfer that are larger or smaller than ECQ result in higher total cost. Graphically, the Baumol model can be depicted as a saw tooth pattern of cash holdings as shown in figure 1.2. The initial ECQ cash balance calculated by the equation decreases steadily to zero as the firm spends the cash. When the cash account reaches a zero balance, additional ECQ birr are transferred from marketable securities to cash.

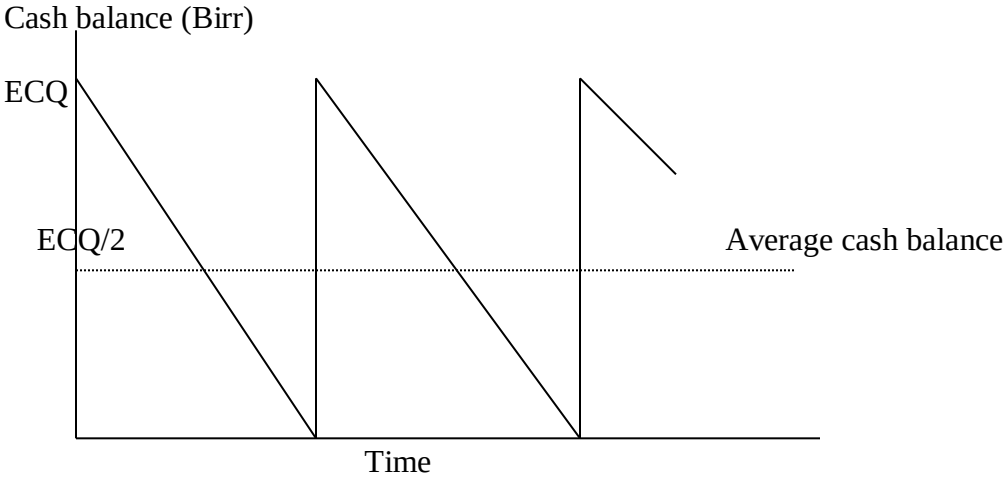


Figure 1.2 Baumol model

Example: The management of Alem Sport, a small distributor of sporting goods, anticipates birr 1,500,000 in cash outlays (demand) during the coming year. A recent study indicates that it costs birr 30 to convert marketable securities to cash. The marketable securities portfolio currently earns an 8 percent annual rate or return,

Required: Compute

1. Economic conversion quantity (ECQ)?
2. Number of conversions?
3. Average cash balance?
4. Total cost?

Solution:

$$ECQ = \sqrt{\frac{2 \times \text{Conversion cost} \times \text{demand for cash}}{\text{Opportunity cost (in decimal form)}}}$$

$$\sqrt{\frac{2 \times 30 \times 1{,}500{,}000}{0.08}} = \mathbf{33{,}541 \text{ birr}}$$

Number of conversion during the year to replenish the account = 1,500,000/33,541= **45**

The average cash balance = 33541/2 = **Br. 16,770.50**

The total cost of managing the cash is

Total cost = (Cost per conversion x number of conversions)
+ [Opportunity cost (in decimal form) x average cash balance]
= (Br.30 x 45) + (0.08 x Br 16,770.50) = Br**. 2,692**

There are certain assumptions that are made in the model.

1. The firm is able to forecast its cash requirements with certainty and receive a specific amount at regular intervals.
2. The firm's cash payments occur uniformly over a period of time i.e. a steady rate of cash outflows.
3. The opportunity cost of holding cash is known and does not change over time. Cash holdings incur an opportunity cost in the form of opportunity foregone.
4. The firm will incur the same transaction cost whenever it converts securities to cash.

Limitations of the Baumol model:

1. It does not allow cash flows to fluctuate.
2. Overdraft is not considered.
3. There are uncertainties in the pattern of future cash flows.

MILLER- ORR MODEL

A model that provides for cost efficient transactional cash balances; assumes uncertain cash flows and determines an *upper limit* (i.e. the maximum amount) and *return point* for cash balances. The return point represents the level at which the cash balance is set, either when cash is converted to marketable securities or vice versa. Cash balances are allowed to fluctuate between the upper limit and a zero balance.

Return point: the value for the return point depends on:

1. conversion costs
2. the daily opportunity cost of funds, and
3. The variance of daily net cash flows.

The variance is estimated by using daily net cash flows (inflows minus outflows for the day). The formula for determining the return point is

$$\text{Return point} = \sqrt[3]{\frac{3 \times \text{Conversion cost} \times \text{Variance of daily net cash flows}}{4 \times \text{daily opportunity cost (in decimal form)}}}$$

Upper limit: the upper limit for the cash balance is three times the return point.
Cash balance reaches the upper limit: when the cash balance reaches the upper limit, an amount equal to the upper limit minus the return point is converted to marketable securities.

Cash converted to marketable securities = upper limit – return point

Cash Balance falls to zero: when the cash balance falls to zero, the amount converted from marketable securities to cash is the amount represented by the *return point.*

Marketable securities converted to cash = return point – zero balance

Graphically, the Miller- Orr model shown in figure 1.3.

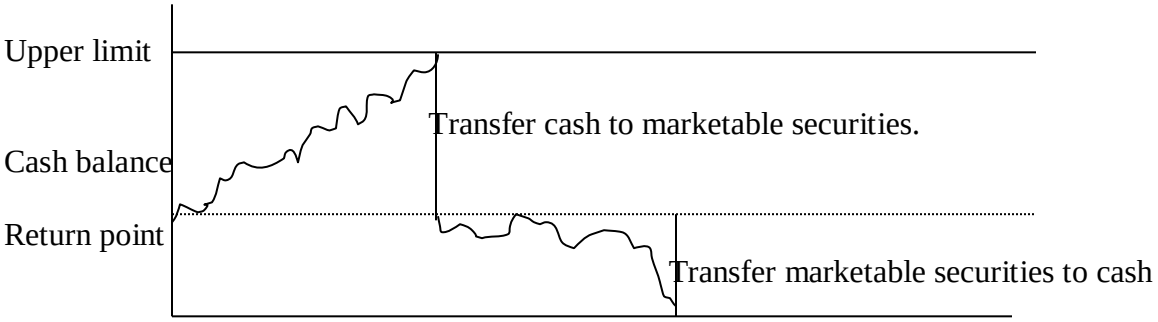


Figure 1.3 Miller-Orr Model

Example, continuing with the prior example, it costs Alem sport birr 30 to convert marketable securities to cash, or vice versa; the firm's marketable securities portfolio earns an 8 percent annual return, which is 0.0222 percent daily (8%/360 days). The variance of Alem sport's daily net cash flows is estimated to be birr 27,000.

$$\text{Return point} = \sqrt[3]{\frac{3 \times \text{Conversion cost} \times \text{Variance of daily net cash flows}}{4 \times \text{daily opportunity cost (in decimal form)}}}$$

$$\sqrt[3]{\frac{3 \times 30 \times 27{,}000}{4 \times 0.000222}} = \mathbf{1{,}399}$$

The upper limit is 3 x return point
Upper limit = 3 x 1,399 = **4,197**
The firm's cash balance will be allowed to vary between birr 0 and birr 4,197. When the upper limit is reached, birr 2,798 (4,197- 1,399) is converted from cash to marketable securities that will earn interest. When the cash balance falls to zero, birr 1,399 (1,399-0) is converted from marketable securities to cash.

Cash management techniques
To minimize the firm's financing requirements; financial managers attempt to speed collections and slow disbursements.
Cash flow synchronization

It is arranging of events that cash receipts match with required cash outflows. It reduces the transaction balances to a minimum, decrease its bank loans, lower interest expenses, and boost profits.

Float

In the broadest sense, float refers to funds that have been dispatched by a payer (the firm or individual making payment) but are not yet in a form that can be spent by the payee (the firm or individual receiving payment). Float also exists when a payee has received funds in a spendable form but these funds have not been withdrawn form the account of the payer. Delays in the collection – payment system resulting from the transportation and processing of checks are responsible for float. With electronic payment system float will disappear. However, financial manager must continue to understand and take advantage of float until that time.

Types of float

1. ***Collection float***: results from the delay between the times when a payer or customer deducts a payment form its checking account ledger and the time when the payee or vendor actually receives these funds in a spendable form. Thus, collection float is experienced by the payee and is a delay in the receipt of funds.
2. ***Disbursement float***: results from the lapse between the time when a firm deducts a payment form its checking account ledger (disburse it) and the time when funds are actually withdrawn from its account. Disbursement float is experienced by the payer and is a delay in the actual withdrawal of funds.

Components of float

Both collection float and disbursement float have the same three basic components:

1. ***Mail float***: the delay between the time when a payer places payment in the mail and the time when it is received by the payee.
2. ***Processing float:*** the delay between the receipt of a check by the payee and the deposit of it in the firm's account.
3. ***Clearing float:*** the delay between the deposit of a check by the payee and the actual availability of the funds. This component of float is attributable to the time required for a check to clear the banking system

Speeding up collections

The firm's objective is not only to stimulate customers to pay their accounts as promptly as possible but also to convert their payments into a spendable form as quickly as possible- in other words, to minimize collection float. Some of the techniques to speeding up collections are:

1. ***Concentration banking***: a collection procedure in which payments are made to regionally dispersed collection centers, then deposited in local banks for quick clearing. Reduces collection float by shortening mail and clearing float.
2. ***Lockboxes:*** a collection procedure in which payers send their payments to a nearby post office box that is emptied by the firm's bank several times daily; the bank deposits the payment checks in the firm's account. Reduces collection float by shortening processing float as well as mail and clearing float.
3. ***Direct send***: a collection procedure in which the payee presents payment checks directly to the banks on which they are drawn, thus reducing clearing float.
4. ***Preauthorized checks***
5. ***Wire transfer.***

1.2 Receivable Management

Account receivables represent the extension of credit by the firm to its customers. The extension of credit to customers by most manufacturers is a cost of doing business. By keeping its money tied up in accounts receivable, the firm loses the time value of the money and runs the risk of nonpayment by its customers. In return for incurring these costs, the firm can be competitive, attract and retain customers, and improve and maintain sales and profits.

Generally, the firm's financial manager directly controls accounts receivable through involvement in the establishment and management of

1. *Credit policy,* which includes determining credit selection, credit standards, and credit terms, and
2. *Collection policy* involves the collection procedures and techniques of receivables.

A firm's *credit selection* activity involves deciding whether to extend credit to a customer and how much credit to extend. Appropriate sources of credit information and methods of credit analysis must be developed.

The five C's of Credit

A firm's credit analysts often use the five C's of credit to focus their analysis on the key dimensions of an applicant's creditworthiness.

1. ***Character***: the applicant's record of meeting past obligations- financial, contractual, and moral. Past payment history as well as any pending or resolved legal judgments against the applicant would be used to evaluate its character.
2. ***Capacity***: the applicant's ability to repay the requested credit. Financial statement analysis with particular emphasis on liquidity and debt ratio is typically used to assess the applicant's capacity.
3. ***Capital***: the financial strength of the applicant as reflected by its ownership position. Analysis of the applicant's debt relative to equity and its profitability ratios are frequently used to assess its capital.
4. ***Collateral***: the amount of assets the applicant has available for use in securing the credit. The larger the amount of available assets, the greater the chance that a firm will recover its funds if the applicant defaults. A review of the applicant's balance sheet, asset value appraisals, and any legal claims filed against the applicant's assets can be used to evaluate its collateral.
5. ***Conditions***: the current economic and business climate as well as any unique circumstances affecting either party to the credit transaction. For example, if the firm has excess inventory of the item the applicant wishes to purchase on credit, the firm may be willing to sell on more favorable terms or to less creditworthy applicants. Analysis of general economic and business conditions, as well as special circumstances that may affect the applicant or firm is performed to assess conditions.

The credit analyst typically gives primary attention to the first two C's – character and capacity- since they represents the most basic requirements for extending credit to an applicant. Consideration of the last three C's – capital, collateral, and conditions- is important in structuring the credit arrangement and making the final credit decision, which is affected by the credit analyst's experience and judgment.

Collection Policy

It is the set of procedures for collecting accounts receivable when they are due. The effectiveness of this policy can be partly evaluated by looking at the level of bad debt expenses. This level of depends not only on collection policy but also on the policy on which

the extension of credit is based. If one assumes that the level of bad debts attributable to credit policy is relatively constant, increasing collection expenditures can be expected to reduce bad debts. Popular approaches used to evaluate credit and collection policies include the average collection period ratio and aging accounts receivable.

Types of collection techniques

A number of collection techniques are employed. As an account becomes more and more overdue, the collection effort becomes more personal and more strict. The basic techniques are:

- **Letters**: after an account receivable becomes overdue a certain number of days, the firm normally sends a polite letter reminding the customer of its obligation. Collection letters are the fist step in the collection process for overdue accounts.
- **Telephone calls:** if letter prove unsuccessful, a telephone call may be made to the customer to personally request immediate payment
- **Personal visits:** sending a local salesperson or a collection person to confront the customer can be a very effective collection procedure.
- **Using collection agencies:** a firm can turn uncollectible accounts over to a collection agency or an attorney for collection. The fee for this service are typically quite high; the firm may receive less than 50% on accounts collected in this way.
- **Legal action:** legal action is the most stringent step in the collection process. It is an alternative to the use of a collection agency. Not only is direct legal action expensive, but it may force the debtor into bankruptcy, thereby reducing the possibility of future business without guarantying the ultimate receipt of the overdue amount.

1.3 Inventory Management

Inventory is a necessary current asset that permits the production - sale process to operate with a minimum disturbance. The three basic types of inventory are raw materials, work in process, and finished goods.

Techniques for managing inventory

Techniques that are commonly used in managing inventory are:

1. ABC system
2. Economic order quantity (EOQ) model
3. Reorder point
4. Material requirement planning (MRP) system and
5. Just-in-time (JIT) system

ABC system

Inventory is divided into three groups, A, B, and C. The A group includes those items that require the largest birr investment. The B group consists of the items accounting for the next largest investment. The C group typically consists of a large number of items accounting for a relatively small birr investment. Dividing its inventory into A, B, and C items allows the firm to determine the level and types of inventory control procedures needed. Control of A items should be most intensive and the use of perpetual inventory record keeping that allows daily monitoring of these inventory levels is appropriate. B items are frequently controlled through Periodic checking- possibly weekly - of their levels. C items could be controlled by using unsophisticated procedures such as a *red line method,* in which a reorder is placed when enough inventory has been removed from a bin containing the inventory item to expose a red line that has been drawn around the inside of the bin.

Economic Order Quantity (EOQ)

It is most commonly used and sophisticated tool for determining the optimal order quantity for an item of inventory. It takes into account various operating and financial costs and determines the order quantity that minimizes total inventory cost.

Excluding the actual cost of the merchandise, the costs associated with inventory can be divided into three broad groups: order costs, carrying costs, and total costs.

Order costs: it includes the fixed clerical costs of placing and receiving an order- the cost of writing a purchase order, processing the resulting paperwork, and receiving an order and checking it against the invoice. Order costs are normally stated as birr per order.

Order cost = O x S/Q
Where O is order cost per order
S is usage in units per period
Q is order quantity in units

Carrying costs are the variable costs per unit of holding an item in inventory for a specified time period. These costs are typically stated as birr per unit per period. Carrying cost includes storage costs, insurance costs, the cost of deterioration and obsolescence, and most important, the opportunity or financial cost of tying up funds in inventory.

Carrying cost = C x Q/2
Where C is carrying cost per unit per period
Q is order quantity in units

Total cost is the sum of the order and carrying costs. Total cost is important in the EOQ model, since the model's objective is to determine the order quantity that minimizes it.

Total cost = (O x S/Q) + (C x Q/2)

The objective of the EOQ model is to find the order quantity that minimizes the firm's total inventory cost. The economic order quantity can be found with the following formula.

$$EOQ = \sqrt{\frac{2 \times S \times O}{C}}$$

Example, Hyphen Company, a manufacturer of electronic test equipment, uses 1,600 units of an item annually. Its order cost is birr 50 per order, and carrying cost is birr 1 per unit per year.
Required: Determine the economic order quantity?

$$EOQ = \sqrt{\frac{2 \times S \times O}{C}}$$

$$EOQ = \sqrt{\frac{2 \times 1600 \times 50}{1}} = 400 \text{ } \underline{\textbf{units}}$$

Reorder Point

Once the firm has calculated its economic order quantity, it must determine when to place orders. A reorder point is required that considers the lead time needed to place and receive orders. Assuming a constant usage rate for inventory, the reorder point can be determined by the following formula

Reorder point = lead time in days x daily usage

For example, if a firm knows that it requires 10 days to place and receive an order, and if it uses five units of inventory daily, the reorder point would be 50 units (10 days x 5 units per day). Thus, as soon as the firm's inventory level reaches 50 units, an order will be placed for an amount equal to the economic order quantity. If the estimates of lead time and daily usage are correct, the order will be received exactly when the inventory level reaches zero. Because of the difficulty in precisely predicting lead times and daily usage rates, many firms typically maintain *safety stocks*, which are extra inventories that can be drawn down when actual outcomes are greater than expected.

MRP system

It is a system to determine what to order, when to order, and what priorities to assign to ordering materials. MRP uses EOQ concepts and a computer to compare production needs to available inventory balance. The advantage of the MRP system is that it forces the firm to more thoughtfully consider its inventory needs and plan accordingly. The objective is to lower the firm's inventory investment without impairing production.

Just in time (JIT) system

It is an inventory management system that minimizes inventory investment by having material inputs arrive at exactly the time they are needed for production. Ideally, the firm would have only work in process inventory. Since its objective is to minimize inventory investment, a JIT system uses no, or very little, safety stocks. Extensive coordination must exist between the firm, its suppliers, and shipping companies to ensure that material inputs arrive on time.

The goal of the JIT system is manufacturing efficiency. It uses inventory as a tool for attaining efficiency by emphasizing quality in terms of both the materials used and their timely delivery.

Exercise

1. Namtig industries forecasts cash outlay of birr 1.8 million for its next fiscal year. To minimize investment in the cash account, management intends to apply the Baumol model. A financial analyst for the company has estimated the conversion cost of converting marketable securities to cash to be birr 45 per conversion transaction and the annual opportunity cost of holding cash instead of marketable securities to be 8 percent.

   A. Calculate the optimal amount of cash to transfer from marketable securities to cash (i.e. the ECQ). What will be the average cash balance?
   B. How many transactions will be required for the year?
   C. Calculate the total cost resulting from use of the ECQ calculated in A.
   D. If management makes 12 equal conversions (i.e one per month), what will be 1) the total conversion cost, 2) the total opportunity cost, and 3) the total cost.

1.4 Financing Current Assets

Current asset investment policy has to be established with the firm's production policy and current asset financing policy.

Current asset financing policy is the manner in which the permanent and temporary current assets are financed. ***Permanent current asset*** are those current assets that the firm holds even during slack times, where as ***temporary current assets*** are the additional current assets that are needed during seasonal or cyclical peaks.

Alternative Current asset financing Policies

A. Maturity Matching or "Self-liquidating" approach.

The maturity approach calls for matching asset and liability maturities. This strategy minimizes the risk that the firm will be unable to pay off its maturing obligations. A firm could attempt to match exactly the maturity structure of its asset and liabilities.

Example, inventory expected to be sold in 30 days could be financed with a 30 day bank loan; a machine expected to last for 5 years could be financed with a 5 year loan; a 20 year building could be financed by a 20 year mortgage bond and so forth. Actually, two factors prevent this exact maturity matching: 1) there is uncertainty about the lives of assets, and 2) some common equity must be used, and common equity has no maturity.

B. Aggressive approach

An aggressive strategy results in a relatively aggressive firm which finances all of its fixed assets with long term capital but part of its permanent current assets with short term, non-spontaneous credit. In this strategy the firm financing at least its seasonal needs, and possibly some of its permanent needs, with short term funds. The balance is financed with long term funds.

C. Conservative approach

The most conservative financing strategy should be to finance all projected funds requirements with long term funds and use short term financing in the event of an emergency or an unexpected outflow of funds. It is difficult to imagine how this strategy could actually be implemented, since the use of short term financing tools, such as accounts payable and accruals, is virtually unavoidable.

Example, the following example is used to illustrate the cost and risk consideration on aggressive and conservative financing strategies.

NCN Company's estimated current, fixed, and total asset requirements on monthly basis for the coming year is given in the columns 1, 2 and 3 of table 1.1. Columns 4 and 5 present a breakdown of the total requirement into its permanent and seasonal components. The permanent component (column 4) is the lowest level of total assets during the period; the seasonal portion is the difference between the total funds requirement (i.e. total assets) for each month and the permanent funds requirement. By comparing the firm's fixed assets (column 2) to its permanent funds requirement (column 4), we see that the permanent funds requirement exceeds the firm's level of fixed assets. This result occurs because *a portion of the firm's current assets is permanent.* The permanent component of current assets is found by subtracting the level of fixed assets form the permanent funds requirements, which is 800 (13,800 – 13,000)

Month	Current asset 1	Fixed asset 2	Total asset 3= 1+2	Permanent funds requirement 4	Seasonal funds requirement 5=3-4
January	4,000	13,000	17,000	13,800	3,200
February	3,000	13,000	16,000	13,800	2,200
March	2,000	13,000	15,000	13,800	1,200
April	1,000	13,000	14,000	13,800	200
May	800	13,000	13,800	13,800	0
June	1,500	13,000	14,500	13,800	700
July	3,000	13,000	16,000	13,800	2,200
August	3,700	13,000	16,700	13,800	2,900
September	4,000	13,000	17,000	13,800	3,200
October	5,000	13,000	18,000	13,800	4,200
November	3,000	13,000	16,000	13,800	2,200
December	2,000	13,000	15,000	13,800	1,200
Monthly average				13,800	1,950

Aggressive strategy

An aggressive strategy may finance the permanent portion of the firm's funds requirement (13,800) with long term funds and finance the seasonal portion (ranging from 0 in May to 4,200 in October) with short term funds. Much of the short term financing may be in the form of *trade credit (i.e. accounts payable).*

Cost consideration:

Under the aggressive strategy, average short term borrowing (seasonal funds requirement) is 1,950 and average long term borrowing (permanent funds requirement) is 13,800. If the annual cost of short term funds needed is 3% and the annual cost of long term financing is 11%, the total cost of the financing strategy is estimated as follows:

Cost of short term financing = 3% x 1,950 = 58.50

Cost of long term financing = 11% x 13,800 = 1,518.00

Total cost = 1,576.50

The total annual cost of 1,576.50 will become more meaningful when compared to the cost of the conservative financing strategy. The relatively low cost of short term financing results from using a high amount of free trade credit.

Risk consideration:

The aggressive strategy operates with minimum net working capital, since only the permanent portion of the firm's current assets is being financed with long term funds. The level of net working capital is birr 800 (13,800 permanent funds requirement – 13,000 fixed assets)

The aggressive financing strategy is risky not only form the standpoint of low networking capital but also because the firm must draw as heavily as possible on its short term sources of funds to meet the seasonal fluctuations in its requirements. The risk associated with the aggressive strategy results from the fact that a firm has only a limited amount of short term borrowing capacity.

Conservative strategy

Long term financing of 18,000, (which equals the firm's peak need (during October)), is used under this strategy. Therefore, all the required over the one year period, including the entire 18,000 forecast for October, are financed with long term funds.

Cost consideration:

In the preceding example the annual cost of long term funds was 11%. Since the average long term financing balance under this strategy is 18,000, the total cost of this strategy is 1,980 (11% x 18,000).

Risk consideration:

The 5,000 of net working capital (18,000 long term financing -13,000 fixed assets) associated with the conservative strategy should mean a very low level of risk for the firm. The firm's risk should also be lowered by the fact that the strategy does not require the firm to use any of its limited short term borrowing capacity.

Conservative versus aggressive strategy

Unlike the aggressive strategy, the conservative strategy requires the firm to pay interest on unneeded funds. The lower cost of the aggressive strategy therefore makes it more profitable than the conservative strategy. However, the aggressive strategy involves much more risk. For most firms a tradeoff between the extremes represented by these two strategies should result in an acceptable financing strategy.

Advantages and Disadvantages of short term financing

The three financing policies are distinguished by the relative amounts of short term debt used under each policy. The aggressive policy called for the greatest use of short term debt, while the conservative policy called for the least. Maturity matching fell in between. Although using short term credit is generally riskier than using long term credit, short term credit does have some significant advantages.

The advantages of short term credit are:

A. **Speed**: a short term loan can be obtained much faster than long term credit.

B. **flexibility:** if the needs are for seasonal or cyclical, a firm may not want to commit itself to long term debt for three reasons:

1. Flotation costs are generally high when raising long term debt but trivial for short term credit.
2. Although long term debt can be repaid early, provided the loan agreement included a prepayment provisions, prepayment penalties can be expensive. Accordingly, if a firm thinks its need for funds will diminish in the near future, it should choose short term debt for the flexibility it provides.
3. Long term loan agreements always contain provisions, or covenants, which constrain the firm's future actions. Short term credit agreements are generally much less onerous in this regard.

C. **Lower interest rate**: the yield curve is normally upward sloping, indicating that interest are generally lower on short term than on long term debts.

The disadvantage of short term credits is the extra risk that the borrower must bear. Even though shot term debt is often less expensive than long term debt, short term credit subjects the firm to more risk than does long term financing. This occurs for two reasons:

1. If a firm borrows on a long term basis, its interest costs will be relatively stable over time, but if it uses short term credit, its interest expense will fluctuate widely, at times going quite high. Many firms that had borrowed heavily on a short term basis simply

could not meet their rising interest costs, and as a result bankruptcies hit record levels during that period.

2. If a firm borrows heavily on a short term basis, it may find itself unable to repay this debt, and it may be in such a weak financial position that the lender will not extend the loan; this too could force the firm into bankruptcy.

Sources of short term financing

If a firm does not have the cash and marketable securities to meet its cash budget shortfalls, it must raise funds externally. Most firms use short term financing to meet temporary shortfalls, while permanent capital (long term debt and equity) is used to meet long term capital requirements. The four primary sources of short term financing are:

1. accruals
2. accounts payable
3. bank loans, and
4. commercial paper

Accruals

Firm's balance sheet show accrued wages, income tax payables. Accruals increase automatically or spontaneously as a firm's operations expand. Further, this type of debt is "free" in the sense that no explicit interest is paid on funds raised through accruals. However, a firm cannot ordinarily control its accruals the timing of wage payments is set by economic forces and industry custom, while tax payment dates are established by law. Thus, firms use all the accruals they can, but they have little controls over the levels of these accounts.

Accounts payable

Firms generally make purchases form other firms on credit, recording the debt as an accounts payable or trade credit. Trade credit is a spontaneous source of financing in the sense that it arises from ordinary business transactions. Lengthening the credit period as well as expanding sales and purchases generates additional financing from accounts payable.

Short-term bank loan

Commercial banks, whose loans generally on firms' balance sheets as notes payable, are second in importance to trade credit as a source of short term financing. As a firm's financing needs increase, it requests additional funds from its bank. The key features of bank loans are:

A. Maturity: although banks do make longer term loans, the bulk of their lending is on a short term basis
B. Promissory note: when a bank loan is approved, the agreement is executed by signing a promissory note.
C. Compensating balances: banks some times require borrowers to maintain an average demand deposit (checking account) balance equal to 10 to 20 percent of the face amount of the loan.
D. Line of credit: a line of credit is an agreement between a bank and a borrower indicating the maximum credit the bank will extend to the borrower.

Commercial Paper

It is a type of unsecured promissory note issued by large, strong firms, and it is sold primarily to other business firms, to insurance companies, to pension funds, to money market mutual funds, and to banks.

The use of commercial paper is restricted to larger businesses that are exceptionally good credit risks. Commercial paper is rarely secured, but all other types of loans are often secured if this is deemed necessary.