WOLLO UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

DISTANCE MODULE FOR DEGREE PROGRAM

FINANCIAL MANAGEMENT PART II (ACFN2102)

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College of Business and Economics

Department of Accounting and Finance

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Preface

Dear Students!

Why This Course? *Like the other disciplines, the accounting course offers something similar: To understand a business, you have to understand the financial insides of a business organization. An accounting course will help you understand the essential financial components of businesses. Whether you are looking at a large multinational company or a single-owner simple shop, accounting helps to know about the company's financial position and operating result for a given period. Thus, knowing the concept of financial management will help you to understand how to run the business without interruptions and also to maintain the balance between fixed and short term finances. As an employee, a manager, an investor, a business owner, or a director of your own personal finances—any of which roles you will have at some point in your life—you will be much the wiser for having taken this course.*

Why This Module? *This module contains features to help you learn best, whatever your learning style. To understand what your learning style is, spend about enough time until you grasp the principles and concepts of financial management. Then, look at and workout the self-examination questions provided at the end of each chapters. This is one course where doing is learning, and the more time you spend on the doing questions, the more likely you are to learn the essential concepts, techniques, and methods of Finance.*

Structures of the Module: *the course -* ***Financial Management II –*** *has two parts (Part I and Part II). In this module part II is covered and part I has been covered in financial management I which is the prerequisite for this module. Hence,* ***Financial Management*** *Part I is the basis for this module and for the other courses of Accounting and Finance. In this module about five chapters included (Chapter Dividend Policy and Theory, Chapter 2: Principles of Working Capital Management, Chapter 3: Cash and liquidity Management, Chapter 4: Receivable management, Chapter 5. Thus you are expected to better understand each chapter before proceeding to the next chapter.*

About the Course

Course Code	AcFn2102
Course Title	Financial Management II
Degree Program	BA Degree in Accounting and Finance
Module	Corporate Finance
ETCTS Credits	5
Credit Hour	3
Course Objectives & Competences to be Acquired	The aim of the course is to expose students to the basic concepts and techniques of Financial Management. This course enhances students understanding of corporate finance and to improve their ability to make decisions in the firm. The course emphasizes on financial decision making within the firm and also to familiarize students with the basics of investment, financing and dividend decisions that are the central thematic areas of finance profession
Course Description	This course is a continuation of Financial Management I. It emphasizes on building and applying financial models, following the principle of financial management, for planning and decision making purposes. It explains with the help of the language of financial accounting, how top management conducts systematic analysis, builds innovative plans, understands and manages risk, and creates more profit, cash and value for the organization. Topics included are: Introduction to a modeling approach, financial accounting as the foundation for financial models, cash flow models for planning, the cost of capital, capital budgeting and strategy, and investment decisions and portfolio theory.
Evaluation Type	Weight
Assignment	35%
Tutorial Attendance	5%
Final exam	60%
Total	100%

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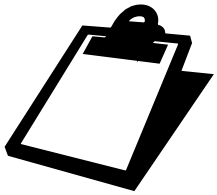
CHAPTER ONE:
DIVIDEND POLICY AND THEORY

Dear learner! The financial manager must take careful decisions on how the profit should be distributed among shareholders. It is very important and crucial part of the business enterprise, because these decisions are directly related with the value of the business enterprise and shareholder's wealth. Like financing decision and investment decision, dividend decision is also a major part of the financial manager. When the business enterprises decide dividend policy, they have to consider certain factors such as retained earnings and the nature of shareholder of the business enterprise.

A decision interrelated to investment and financing decisions involves dividend policy. The dividend decision, as determined by a firm's dividend policy, has an effect on the amount of earnings a firm pays out versus the amount it retains and reinvests. Interactions exist among investment, financing, and dividend decisions. When a firm changes its dividend payment, it may also have to change one of these other policies. By lowering the amount of dividends paid, a firm can retain more funds for investment purposes and avoid having to raise as much external financing. Financial managers typically pay careful attention to their choice of dividend policy for their firm.

OBJECTIVES OF THE CHAPTER



After studying this chapter, you should be able to:

Explain what a dividend is and describe the different types of dividends;

Identify key factors influencing a firm's dividend decision;

Describe factors that managers consider when setting the dividend policies of their firms;

Explain what a stock repurchase is and how companies repurchase their stock;

Define stock dividends and stock splits, and explain how they differ from other types of dividends and from stock repurchases

11..TYPES OF DIVIDENDS

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, dividends are classified into:

Cash dividend

Stock dividend

Bond dividend

Property dividend

Cash Dividend

If the dividend is paid in the form of cash to the shareholders, it is called cash dividend. It is paid periodically out the business enterprises EAIT (Earnings after interest and tax). Cash dividends are common and popular types followed by majority of the business enterprises. Cash dividends return profits to the owners of a corporation.

When cash dividend is distributed, both total assets and net worth of the company decrease. Total assets decrease as cash decreases and net worth decreases as retained earnings decrease. The market price per share also decreases in most cases by the amount of cash dividend distributed. Market price per share after cash dividend = Marker price per share before cash dividend - dividend per share.

The basic types of cash dividends are as follows:

- **A.** Regular cash dividend
- **B.** Extra cash dividend
- **C.** Special dividend
- **D.** Liquidating dividend

Regular Cash Dividend

It is the dividend that is normally expected to be paid by the firm. The most common type of cash dividend is a **regular cash dividend**, which is a cash payment made by a firm to its stockholders in the normal course of business. Most dividend paying companies issue a regular cash dividend four times a year.

Extra Cash Dividend

A nonrecurring dividend paid to shareholders in addition to the regular dividend. It may or may not be repeated in the future.

Special Dividends

A special dividend, like an extra dividend, is a one-time payment to stockholders. It is tend to be considerably larger than extra dividend and to occur less frequently. They are used to distribute unusually large amounts of cash.

Liquidating Dividend

Another form of dividend is a **liquidating dividend**, which is any dividend not based on earnings. It is a dividend that is paid to stockholders when a firm is liquidated. It implies a return of the stockholders' investment rather than of profits. For example, liquidating dividends may result from selling off all or part of the business and distributing the funds to shareholders.

Stock Dividend

Stock dividend – is a payment of additional shares of stock to shareholders. It is often used in place of or in addition to a cash dividend. It is one type of "dividend" that does not involve the distribution of value.

When a company pays a stock dividend, it distributes new shares of stock on a pro-rata basis to existing stockholders.

The only thing that happens when the stock dividend is paid is that the number of shares each stockholder owns increases and their value goes down proportionately.

The stockholder is left with exactly the same value as before.

Due to stock dividend, retained earnings decrease, common stock and paid in capital increase. The stock dividend does not affect the equity position of stockholders. Market price per share and earnings per share after stock dividend will decrease.

Marker price per share after stock dividend =
$\frac{Market\ price\ per\ share\ before\ stock\ dividend}{1 + stock\ dividend\ in\ fracton}$

Activity

Question 1: What is Dividend?.....

.....

Advantages

The important benefits derived from stock dividend or issue of bonus shares are as follows:

It preserves the company's liquidity as no cash leaves the company.

The shareholders receive a dividend which can be converted into cash whenever he wishes through selling the additional shares.

It broadens the capital base and improves image of the company.

It reduces the marker price of the shares, rendering the shares more marketable.

It is an indication to the prospective investors about the financial soundness of the company.

The shareholders can take the advantage of tax saving from stock dividend.

Disadvantages

The future rate of dividend will decline.

The future market price of share falls sharply after bonus issue.

Issue of bonus shares involves lengthy legal procedures and approvals.

Bond Dividend

Bond dividend is also known as script dividend. If the company does not have sufficient funds to pay cash dividend, the company promises to pay the shareholder at a future specific date with the help of issue of bond or notes.

Property Dividend

Property dividends are paid in the form of some assets other than cash. It will distribute under the exceptional circumstance. .

Activity

Question 2: What are the types of Dividends?.....

Benefits and Costs of Dividends

The benefits associated with dividends are as follows:

Dividends may attract investors who prefer to receive income directly from their investments. However, the tax costs of dividends may drive away other investors.

Dividends can function as a signal to investors that the company is performing well and has higher than expected cash flows.

Dividends can help align manager and stockholder incentives. By issuing dividends and raising capital through equity issues (rather than internal funds), managers are subject to more scrutiny. This increases the incentives for managers to perform well.

Dividends reduce equity claims on the company; this can help managers achieve the target capital structure suggested by the trade-off theory.

Some costs associated with dividends include:

Taxes: Dividends have historically taxed at a higher rate than other forms of income.

Reinvestment costs: Investors who don't intend to spend the cash must pay the transactions costs associated with reinvesting (brokerage fees, etc.).

Increased cost of debt: By reducing the amount of equity through a dividend issue, the firm becomes more leveraged. If the increase is significant, this could increase the risk associated with the company and increase the cost of debt should the company desire to borrow.

Dividend Payment Procedure

A corporation's board of directors is ultimately responsible for a firm's dividend policy. This policy could vary from zero to 100 percent payout of earnings. A corporation has no legal obligation to declare a dividend. After the board declares a dividend, the declared cash dividend becomes a liability and the corporation has a legal obligation to make the payment. Once the board sets the dividend, the procedure for paying the dividend is routine. In chronological order, the four important dates associated with a dividend payment are as follows.

Declaration date. The **declaration date** is the date when the board of directors announces the dividend payment.

Ex-dividend date. The **ex-dividend date** is the cut-off date for receiving the dividend. That is, the ex-dividend date is the first date on which the right to the most recently declared dividend no longer goes along with the sale of the stock. Companies and exchanges report the ex-dividend date to remove any ambiguity about who will receive a dividend after the sale of a stock. Investors who buy the stock before the ex-dividend date are entitled to the dividend, while those who buy shares on or after the ex-dividend date are not.

Record date. The **record date** is the date on which an investor must be a shareholder of record to be entitled to the upcoming dividend. The brokerage industry has a convention that new

shareholders are entitled to dividends only if they buy the stock at least two business days before the record date. This rule allows time for the transfer of the shares and gives the company sufficient notice of the transfer to ensure that new stockholders receive the dividend. Therefore, a stock sells ex-dividend two business days, not calendar days, before the record date. The board of directors sets the record date, which is typically several weeks after the declaration date.

Payment date. The **payment date** is the date when the firm mails the dividend checks to the shareholders of record. This date is usually several weeks after the record date.

Example 1

On June 30, 2009, XYZ Company declared a dividend of Br. 5 per share, payable on September 1 to the holders of record on August 1. Show the XYZ's dividend payment procedure.

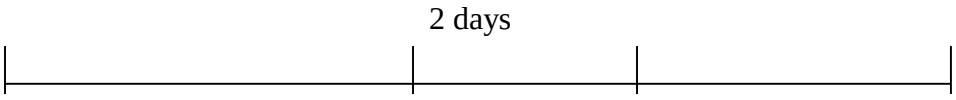
Solution

Declaration date: June 30, 2009 on which XYZ Company's board of directors declared a dividend of Br. 5 per share.

Ex-dividend date: July 30, 2009 after which dividends are entitled with the seller of the stock.

The record date: August 1, 2009 on which company makes a list of shareholders who are entitled to receive dividend.

Payment date: September 1, 2009 on which XYZ Company mails the cheque of dividends to the shareholder.



1.2.FACTORS INFLUENCING DIVIDEND POLICY

Dividend policy is concerned with determining the proportion of firm's net income to be distributed in the form of dividend and the proportion of earnings to be retained for investment purpose. A firm's dividend policy is influenced by a number of factors. Some of the major factors influencing the firm's dividend policy are as under:

Some of the major factors influencing the firm's dividend policy are as under:

- **A. Profitable Position of the Firm**
- **B. Sources of Finance**
- **C. Stability of Earnings**
- **D. Legal Constrains**
- **E. Liquidity Position**
- **F. Growth Rate of the Firm**
- **G. Tax Policy**
- **H. Access to the Capital Market**
- **I. Desire of Shareholders**
- **J. Cost of External Financing**
- **K. Degree of Control**

Profitable Position of the Firm

Dividend decision depends on the profitable position of the business enterprise. When the firm earns more profit, they can distribute more dividends to the shareholders.

Sources of Finance

If the firm has finance sources, it will be easy to mobilize large finance. The firm shall not go for retained earnings.

Stability of Earnings

The stability of earnings also effects the dividend policy decision. If the earnings of a firm are relatively stable, the firm is more likely to payout a higher percentage of earnings than the firm which has fluctuating earnings.

Legal Constrains

There are certain legal rules that may limit the amount of dividends a firm may pay. Following are the rules relating to dividend payment:

Net profit rule: According to this rule, dividends can be paid out of present or past earnings. Amount of dividends cannot exceed the accumulated profits. If there is accumulated loss, it must be set off out of the current earnings before paying out any dividends.

Insolvency rule: According to this rule, a firm cannot pay the dividends when its liabilities exceed assets. When the firm's liabilities exceed its assets, the firm is considered to be financially insolvent. The firm, financially insolvent, is prohibited by law to pay dividends.

Capital impairment rule: - According to this rule, a firm cannot pay dividend out of its paid up capital. The dividend payout that impairs capital is considered illegal.

Liquidity Position

In order to pay dividend, a company requires cash, and, therefore, the availability of cash resources within the company will be a factor in determining dividend payments. Generally, the greater the cash position and overall liquidity of a company, the greater is the ability to pay dividends. A company must have adequate cash available as well as retained earnings to pay dividends. The liquidity position of the company will influence the dividend payout of a particular year.

Liquidity position of the firms leads to easy payments of dividend. If the firms have high liquidity, the firms can provide cash dividend otherwise, they have to pay stock dividend.

Growth Rate of the Firm

High growth rate implies that the firm can distribute more dividends to its shareholders.

Tax Policy

Tax policy of the government also affects the dividend policy of the firm. When the government gives tax incentives, the company pays more dividends.

Access to the Capital Market

The company, which has a good access to capital market, can follow a liberal dividend policy because this type of the company can raise the required funds from the capital market.

Desire of Shareholders

Dividend policy is affected by the desire of shareholders. Shareholders may be interested either in dividend income or capital gain. Wealthy shareholders may be interested in capital gain as against dividend income because of low tax rate on capital gain. Whereas the shareholders, whose sources of income is dividend only, are interested in dividend income and would not be interested in capital gain.

Cost of External Financing

The cost of external financing will have impact on the dividend payout of a company. In situations, where the external funds are costlier, a firm may resort to low dividend payout and use the internal funds for financing its business.

Degree of Control

One of the important influencing factors on dividend policy is the objective of maintaining control over the company by the existing management or shareholders. The management who wish to maintain close control over the company will not much depend on the external sources of finance, and they maintain a low dividend payout policy and the funds generated from operations would be used for working capital and capital investment needs of the firm.

Tax Position of Shareholders

The tax position of shareholders also influences dividend policy. The company owned by wealthy shareholders having high income tax bracket tend toward lower dividend payout where as the company owned by small investors tend toward higher dividend payout.

Example 2

How would each of the following changes tend to affect dividend payout ratio, other things held constant?

An increase in personal income tax rate.

A decline in investment opportunities.

An increase in corporate profit.

A rise in interest rate.

Solution:

An increase in the personal income tax rate would lower the dividend payout ratio because shareholders with high income tax bracket prefer capital gain rather than dividend income.

A decline in investment opportunities would lead to high dividend payout ratio because less retention is required to support investment opportunities.

A permanent increase in corporate profit would lead to increase in dividend payout because the firm has more earnings to distribute dividend.

An increase in interest rate would lead to low dividend payout because retained earnings may be a relatively attractive way of financing new investment.

Activity

Question 3: Discuss the **major factors influencing the firm's dividend policy?**.....

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1.3. ESTABLISHING DIVIDEND POLICY

Dividend policy is an important topic because dividends represent major cash outlays for many corporations. Dividends are at the heart of the difficult choice that management must make in allocating their capital resources: reinvesting the money within the company or distributing it to shareholders. Although paying dividends directly benefits stockholders, it also affects the firm's ability to retain earnings to exploit growth opportunities. Dividend policy provides guidelines for balancing the conflicting forces surrounding the dividend payment versus retention decision.

Dividend policy refers to the payout policy that management follows in determining the size and pattern of distributions to shareholders over time. The dividend policy question centers on the percentage of earnings that a firm should pay out.

A finance manager's objective for the company's dividend policy is to maximize owner wealth while providing adequate financing for the company. When a company's earnings increase, management does not automatically raise the dividend. Generally, there is a time lag between increased earnings and the payment of a higher dividend. Only when management is confident

that the increased earnings will be sustained will they increase the dividend. Once dividends are increased, they should continue to be paid at the higher rate.

1.4. TYPES OF DIVIDEND POLICY

Dividend policy depends upon the nature of the firm, type of shareholder and profitable position. On the basis of the dividend declaration by the firm, the dividend policy may be classified under the following types:

Residual Dividend approach

Dividend stability

A Compromise

Residual-dividend policy: Residual dividend policy is based on the assumption that investors prefer to have a firm retain and reinvest earnings rather than pay out them in dividends. Under residual dividend policy, a firm pays dividend only after meeting its investment need. Under residual dividend policy, if the net income exceeds the portion of equity financing, then the excess of net income over equity need is paid as dividend. The company does not pay any dividend when net income is less than or equal to equity need for financing the investment proposals. In case, net income is not sufficient to meet equity need, the company should raise deficit amount by external equity.

When a company's investment opportunities are not stable, management may want to consider a fluctuating dividend policy. With this kind of policy the amount of earnings retained depends upon the availability of investment opportunities in a particular year. Dividends paid represent the *residual* amount from earnings after the company's investment needs are fulfilled.

Stable dividend-per-share policy. Stable dividend policy means payment of certain minimum amount of dividend regularly. Many companies use a stable dividend-per-share policy since it is looked upon favorably by investors. Dividend stability implies a low-risk company. Even in a year that the company shows a loss rather than profit the dividend should be maintained to avoid negative connotations to current and prospective investors. By continuing to pay the dividend,

the shareholders are more apt to view the loss as temporary. Some stockholders rely on the receipt of stable dividends for income. A stable dividend policy is also necessary for a company to be placed on a list of securities in which financial institutions (pension funds, insurance companies) invest. Being on such a list provides greater marketability for corporate shares.

A compromise policy. A compromise between the policies of a stable dollar amount and a percentage amount of dividends is for a company to pay a low dollar amount per share plus a percentage increment in good years. While this policy affords flexibility, it also creates uncertainty in the minds of investors as to the amount of dividends they are likely to receive. Stockholders generally do not like such uncertainty. However, the policy may be appropriate when earnings vary considerably over the years. The percentage, or extra, portion of the dividend should not be paid regularly; otherwise it becomes meaningless.

Activity

Question 4: what is dividend policy? .....

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Practical Considerations in Setting a Dividend Policy

A company's dividend policy is largely a policy about how the excess value in a company is distributed to its stockholders.

It is extremely important that managers choose their firms' dividend polices in a way that enables them to continue to make the investments necessary for the firm to compete in its product markets.

Managers should consider several practical questions when selecting a dividend policy:

Over the long term, how much does the company's level of earnings (cash flows from operations) exceed its investment requirements? How certain is this level?

Does the firm have enough financial reserves to maintain the dividend payout in periods when earnings are down or investment requirements are up?

Does the firm have sufficient financial flexibility to maintain dividends if unforeseen circumstances wipe out its financial reserves when earnings are down?

Can the firm raise equity capital quickly if necessary?

If the company chooses to finance dividends by selling equity, will the increased number of stockholders have implications for control of the company?

REPURCHASE OF STOCK

Stock repurchase is method in which a firm buy back shares of its own stock, thereby decreasing shares outstanding, increasing earnings per share, and, often increasing the stock price. It is an alternative to cash dividends. In a stock repurchase, the company pays cash to repurchase shares from its shareholders. These shares are usually kept in the company's treasury and then resold when the company needs money.

If a firm has excess cash, it may purchase its own stock leaving fewer shares outstanding, increasing the earning per share and increasing the stock price. It may be an alternative to paying cash dividends. The benefits to the shareholders are the same under cash dividend and stock repurchase. In the absence of personal income taxes and transaction costs, both cash dividend and stock repurchase have no any difference to shareholders. Capital gain arising from repurchase should equal the dividend otherwise would have been paid.

Share can be repurchased in different ways. A company can repurchase its shares through authorized brokers on the open market. Shares can be also repurchased by making a tender offer which will specify the purchases price, the total amount and the period within which shares will be bought back. Similarly, a company can purchase a block of shares from one large holder on a negotiated basis.

Advantages of repurchase of stock

A firm can use idle cash to repurchase stock if it has less investment opportunities.

Dividend and earnings per share will be increased through stock repurchase.

Stock repurchase will result in increase in the share value.

The buying shareholders will benefit since the company generally offer a price higher than the current market price of the share.

When shares are undervalued in the market, a company can buy back shares at higher price to move up the current share price.

If a company has high proportion of equity in its capital structure, if can reduce equity capital by buying back its shares to achieve target capital structure.

The promoters of the company benefit by consolidating their ownership and control over companies through stock repurchase. They do not sell their shares to the company rather make the share repurchase attractive for others.

Repurchase of stock can remove a large block of stock that is overhanging the market and keeping the price per share down.

In a hostile takeover, a company may buy back its shares to reduce the availability of shares and make take over difficult.

Stockholders are given a choice of whether or not to sell their stock to the firm.

Disadvantages of stock repurchase

Shareholders may not be indifferent between dividends and capital gains, and the price of stock might benefit more from cash dividends than from repurchase.

The remaining shareholder may lose if the company pays excessive price for the shares under the stock repurchase scheme.

Stock repurchase may signal to investors that the company does not have long - term growth opportunities to utilize the cash.

The buyback of shares may be useful as a defense against hostile takeover only in case of cash rich companies.

STOCK SPLIT

A stock split is a method to reduce the market price per share by giving certain number of share for one old share. Due to stock split, number of outstanding shares increase and par value and marker price of the stock decrease. A stock split affects only the par value, market value and the number of outstanding shares. However, net worth of the company remains unaltered.

With a stock split, shareholder's equity account does not change, but the par value per share changes. The earnings per share will be diluted and market price per share fall proportionately with a stock split. But, the total value of the holdings of a shareholder remains unaffected by a stock split. Following are the reasons for splitting a firm's ordinary shares:

Stock split results in reduction in market price of the share. It helps in increasing the marketability and liquidity of a company's shares.

Stock splits are used by the company management to communicate to investors that the company is expected to earn higher profits in future.

Stock split is used to give higher dividends to shareholders.

Activity

Question 5: what does mean stock split? .....

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Summary

The term **dividend** usually refers to cash paid out of earnings. It may also be termed as the part of the profit of a business enterprise, which is distributed among its shareholders. Dividends are paid either in cash or stock. If a payment is made from sources other than current or accumulated retained earnings, the term **distribution**, rather than *dividend,* is used.

A **dividend** is a direct payment from a corporation to its stockholders. Corporations commonly pay dividends in cash, but occasionally they pay dividends in stock, property, or some other asset. All dividends, except for stock **dividends**, reduce the total stockholders' equity in the corporation.

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, dividends are classified into: Cash dividend, Stock dividend, Bond dividend and Property dividend. The basic types of cash dividends are: Regular cash dividend, Extra cash dividend, Special dividend and Liquidating dividend.

In chronological order, the four important dates associated with a dividend payment are as follows.

Declaration date. The **declaration date** is the date when the board of directors announces the dividend payment.

Ex-dividend date. The **ex-dividend date** is the cut-off date for receiving the dividend.

Record date. The **record date** is the date on which an investor must be a shareholder of record to be entitled to the upcoming dividend. ***Payment date***. The **payment date** is the date when the firm mails the dividend checks to the shareholders of record. This date is usually several weeks after the record date.

Some of the major factors influencing the firm's dividend policy are as under:

Profitable position of the firm, sources of finance,stability of earnings,growth rate of the firm, tax policy,access to the capital market,desire of shareholders,cost of external financing,degree of control, and tax position of shareholders

Self-Examination Questions

Part 1: Choose the best answer from the given alternatives

If the dividend is paid in the form of cash to the shareholders, it is called:

Cash dividend Bond dividend

Stock dividend Property dividend

Which one of the statement is incorrect?

When cash dividend is distributed, both total assets and net worth of the company decrease.

Total assets decrease as cash decreases and net worth decreases as retained earnings decrease.

The market price per share decreases in most cases by the amount of cash dividend

All none

The most common type of cash dividend is known as

Regular cash dividend Special dividend

Extra cash dividend Liquidating dividend

Which of the following is the advantage derived from issuance of stock dividends

The shareholders can take the advantage of tax saving from stock dividend.

It broadens the capital base and improves image of the company.

It reduces the marker price of the shares, rendering the shares more marketable.

All

The date when the board of directors announces the dividend payment is:

Ex-dividend date Payment date

Declaration date. Record date.

Part II: Discussion Question

Discuss the cost and benefits of dividends

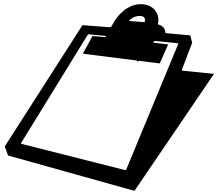
Discuss the major factors determining payment of dividends

Answer: 1A 2D 3A 4D 5B

CHAPTER TWO:
PRINCIPLES OF WORKING CAPITAL MANAGEMENT

OBJECTIVES OF THE CHAPTER

Dear learner After studying this chapter, you should be able to:



Understand Meaning, Concepts and Types of working capital

Define the operating and cash cycles, explain how they are used, and be able to compute their values for a firm.

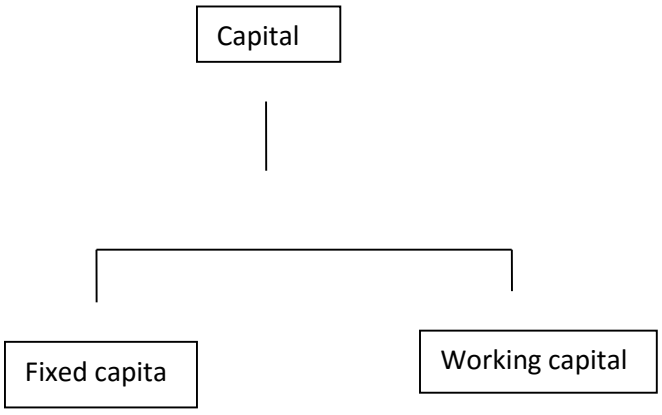
Describe the factors affecting working capital.

Describe the working capital financing policies.

INTRODUCTION

Decisions relating to working capital and short term financing are referred to as working capital management. These involve managing the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses.

Working capital is the capital required for day-to-day working of the concerned organization.



Fixed capital means that capital, which is used for long-term investment of the business concern. For example, purchase of permanent assets. Normally it consists of non-recurring in nature.

Working Capital is another part of the capital which is needed for meeting day to day requirement of the business concern. For example, payment to creditors, salary paid to workers, purchase of raw materials etc., normally it consists of recurring in nature. It can be easily converted into cash. Hence, it is also known as short-term capital.

Definitions

According to the definition of **Mead, Baker and Malott,** "Working Capital means Current Assets".

According to the definition of **J.S.Mill,** "The sum of the current asset is the working capital of a business".

According to the definition of **Weston and Brigham,** "Working Capital refers to a firm's investment in short-term assets, cash, short-term securities, accounts receivables and inventories".

According to the definition of **Bonneville,** "Any acquisition of funds which increases the current assets, increase working capital also for they are one and the same".

According to the definition of **Shubin,** "Working Capital is the amount of funds necessary to cover the cost of operating the enterprises".

According to the definition of **Genestenberg,** "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, for example, from cash to inventories, inventories to receivables, receivables to cash".

2.1. DEFINITION OF WORKING CAPITAL

Meaning of working capital

Working capital refers to the firm's investment in two types of assets.

First, working capital means a business's investment in short-term assets needed to operate over a normal business cycle. This meaning corresponds to the required investment in cash, accounts receivable, inventory, and other items listed as current assets on the firm's balance sheet.

Second, broader meaning of working capital is the company's overall non-fixed asset investments. Businesses often need to finance activities that do not involve assets measured on the balance sheet. For example, a firm may need funds to redesign its products or formulate a new marketing strategy, activities that require funds to hire personnel rather than acquiring accounting assets.

The term working capital has several meanings in business and economic development finance. In accounting and financial statement analysis, working capital is defined as the firm's short-term or current assets and current liabilities.

Just as working capital has several meanings, firms use it in many ways. Most fundamentally, working capital investment is the ***lifeblood*** of a company. Without it, a firm cannot stay in business.

Working capital is an operational necessity. A firm needs to invest in short-term current assets such as stocks (raw materials, work-in-progress and finished product) and also needs debtors to allow it to perform its day-to-day operations. This investment in current assets is for the short term, as raw materials will be bought, converted into finished product, and sold to customers who ultimately will pay.

For many businesses this cycle will be completed within a short timeframe, and will be repeated many times over during the year.

The investment in current assets requires to be financed and a primary source of this financing is the firm's current liabilities, particularly the credit received from suppliers.

A firm's total capital is found from its balance sheet by subtracting its total liabilities from its total assets. This is represented by the balance sheet equation:

Assets−Liabilities=Capital

Working capital is the kind of short-term capital required to finance a firm on a day-to day basis. It is a key measure of business liquidity. The more working capital a firm has, the less risk there is of the firm not being able to pay its creditors when the bills become due. Conversely the less working capital a firm has, the greater the risk of the firm not being able to pay its creditors when the bills are due.

Working capital, also known as *circulating capital,* is the amount of money which a business needs to survive on a day-to-day basis. It should be sufficient to cover:

paying creditors (without difficulty);

allowing trade credit to debtors;

Carrying adequate stocks.

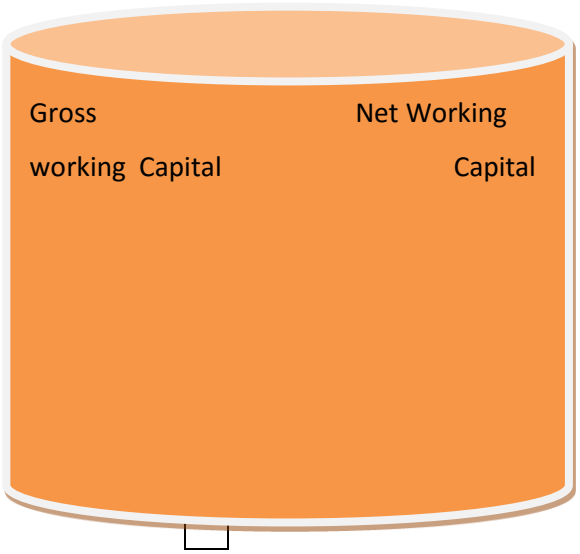
The key questions are: is the level of working capital positive? Is it sufficient in relation to current liabilities?

Sufficient working capital is needed, not only to be able to pay bills on time (e.g. wages and suppliers), but also to be able to carry sufficient stocks and also to allow debtors a period of credit to pay what they owe.

Working capital- the capital required for day to day working of the concerned organization. It is, sometimes called **gross working capital**, simply refers to current assets used in operations.

Working capital often referred to the capital which circulates on the business. It means that working capital flows into cash over a short period of time. Fixed capital period of time, when the assets converted into cash, then this cash is invested in the purchase of inventory. If we sell the inventory on cash, so cash sale will be created. If we sell it on credit, so receivable will be created. And these receivable will be converted into cash at about within a period of month.

CONCEPTS OF WORKING CAPITAL



Gross Working Capital (GWC)

GWC refers to the firm's total investment in current assets. Current assets are the assets which can be converted into cash within an accounting year (or operating cycle) and include cash, short–term securities, accounts receivable, and stock (inventory). GWC focuses on (i) Optimization of investment in current (ii) Financing of current assets. GWC also referred as "Economics Concept" since assets are employed to derive rate of return.

Net Working Capital (NWC)

NWC refers to the difference between current assets and current liabilities. Current liabilities (CL) are those claims of outsiders which are expected to mature for payment within an accounting year and include accounts payable, bills payable and outstanding expenses. NWC focuses on (i) Liquidity position of the firm (ii) Judicious mix of short–term and long–term financing.

NWC can be positive or negative.

Positive NWC = C > CL

Negative NWC = C < CL

Activity

Question 1: what are the components of Working capital? .....

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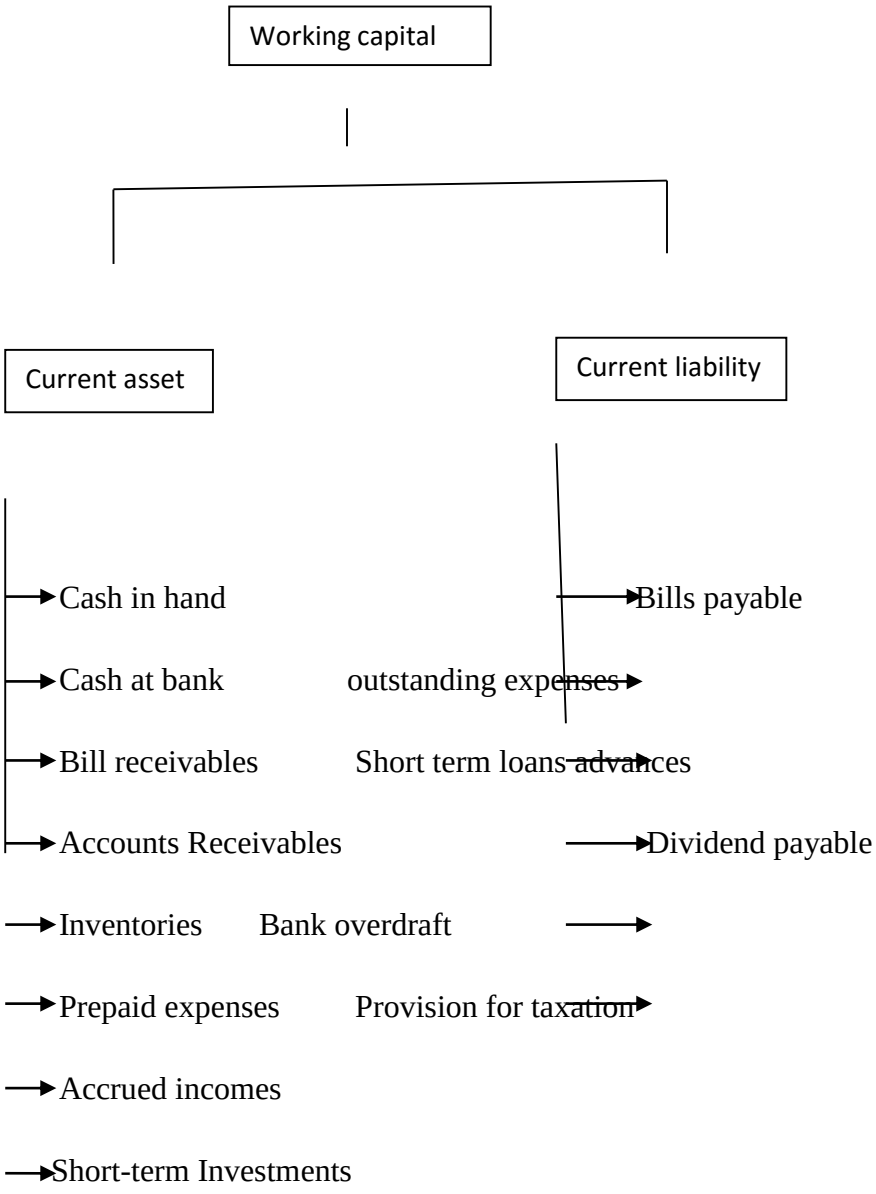
2.2. Component of Working Capital

Working capital constitutes various current assets and current liabilities. This can be illustrated by the following chart.



2.3.OPERATING AND CASH CONVERSION CYCLE

Two tools to measure the working capital management efficiency are the ***operating cycle*** and the ***cash conversion cycle***.

Operating Cycle

The **operating cycle** begins when the firm receives the raw materials it purchased and ends when the firm collects cash payments on its credit sales.

Two measures—accounts receivable period and inventory period—help determine the operating cycle.

Inventory period shows how long the firm keeps its inventory before selling it.

It is the ratio of the inventory balance to the daily cost of goods sold.

The quicker a firm can move out its raw materials as finished goods, the shorter the duration when the firm holds it inventory, and the more efficient it is in managing its inventory.

Accounts receivable period estimates how long it takes on average for the firm to collect its outstanding accounts receivable balance. This ratio is also called the **average collection period (ACP)**.

An efficient firm with good working capital management should have a low average collection period compared to its industry.

The operating cycle is calculated by summing the **Inventory period** and the **Accounts receivable period**.

(Operating cycle = inventory period + accounts receivable period)

Cash Conversion Cycle

The **cash conversion cycle** is related to the operating cycle, but it does not start until the firm actually pays for its inventory.

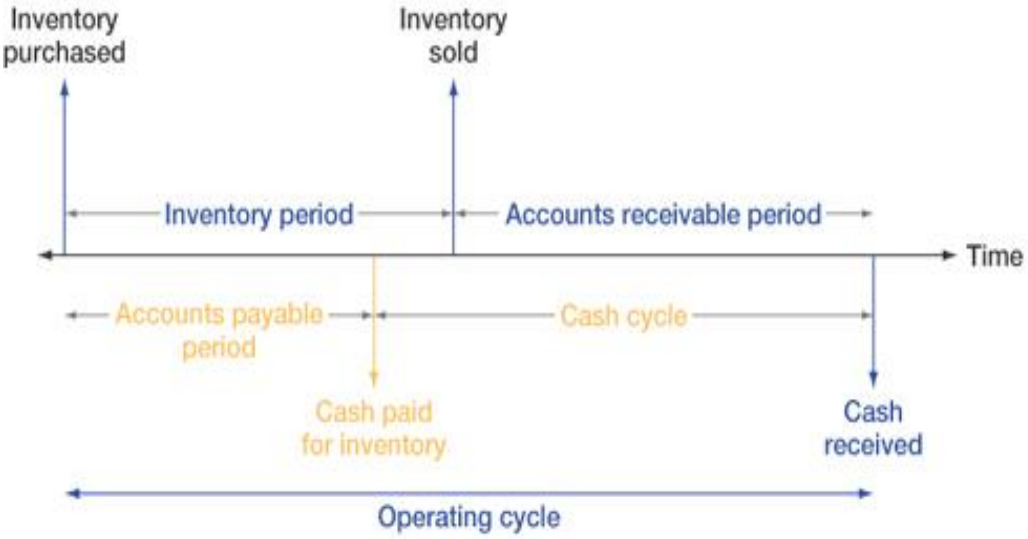
The cash conversion cycle is the length of time between the cash outflow for materials and the cash inflow from sales.

To measure the cash conversion cycle, we need another measure called the payables period.

Payable period shows how long a firm takes to pay off its suppliers for the cost of inventory.

The cash conversion cycle is then calculated by summing the accounts receivable period and the inventory period and subtracting the payables period.

Figure 2.1: The Operating Cycle



The operating cycle is the time period from inventory purchase until the receipt of cash. (The operating cycle may not include the time from placement of the order until arrival of the stock.) The cash cycle is the time period from when cash is paid out to when cash is received.

AN ILLUSTRATION

We can illustrate the process with data from Real Time Computer Corporation (RTC), which in early 2001 introduced a new minicomputer that can perform one billion instructions per second and that will sell for $250,000. RTC expects to sell 40 computers in its first year of production. The effects of this new product on RTC's working capital position were analyzed in terms of the following five steps:

1. RTC will order and then receive the materials it needs to produce the 40 computers it expects to sell. Because RTC and most other firms purchase materials on credit, this transaction will create an account payable. However, the purchase will have no immediate cash flow effect.

2. Labor will be used to convert the materials into finished computers. However, wages will not be fully paid at the time the work is done, so, like accounts payable, accrued wages will also build up.

3. The finished computers will be sold, but on credit. Therefore, sales will create receivables, not immediate cash inflows.

4. At some point before cash comes in, RTC must pay off its accounts payable and accrued wages. This outflow must be financed.

5. The cycle will be completed when RTC's receivables have been collected. At that time, the company can pay off the credit that was used to finance production, and it can then repeat the cycle.

The **cash conversion cycle model,** which focuses on the length of time between when the company makes payments and when it receives cash inflows, formalizes the steps outlined above.

The following terms are used in the model:

1. Inventory conversion period, which is the average time required to convert materials into finished goods and then to sell those goods. Note that the inventory conversion period is calculated by dividing inventory by sales per day. For example, if average inventories are $2 million and sales are $10 million, then the inventory conversion period is 73 days:

$$\begin{aligned}\text{Inventory conversion period} &= \frac{\text{Inventory}}{\text{Sales per day}} \\ &= \frac{\$2{,}000{,}000}{\$10{,}000{,}000/365} \\ &= 73 \text{ days.}\end{aligned}$$

Thus, it takes an average of 73 days to convert materials into finished goods and then to sell those goods.

2. Receivables collection period, which is the average length of time required to convert the firm's receivables into cash, that is, to collect cash following a sale. The receivables collection period is also called the *days sales outstanding (DSO),* and it is calculated by dividing accounts receivable by the average credit sales per day. If receivables are $657,534 and sales are $10 million, the receivables collection period is:

$$\text{Receivables collection period} = \text{DSO} = \frac{\text{Receivables}}{\text{Sales}/365}$$
$$= \frac{\$657{,}534}{\$10{,}000{,}000/365} = 24 \text{ days.}$$

Thus, it takes 24 days after a sale to convert the receivables into cash.

3. Payables deferral period, which is the average length of time between the purchase of materials and labor and the payment of cash for them. For example, if the firm on average has 30 days to pay for labor and materials, if its cost of goods sold are $8 million per year, and if its accounts payable average $657,534, then its payables deferral period can be calculated as follows:

$$\text{Payables deferral period} = \frac{\text{Payables}}{\text{Purchases per day}}$$
$$= \frac{\text{Payables}}{\text{Cost of goods sold}/365}$$
$$= \frac{\$657{,}534}{\$8{,}000{,}000/365}$$
$$= 30 \text{ days.}$$

The calculated figure is consistent with the stated 30-day payment period.

4. Cash conversion cycle, which nets out the three periods just defined and which therefore equals the length of time between the firm's actual cash expenditures to pay for productive resources (materials and labor) and its own cash receipts from the sale of products (that is, the length of time between paying for labor and materials and collecting on receivables). The cash conversion cycle thus equals the average length of time a dollar is tied up in current assets.

We can now use these definitions to analyze the cash conversion cycle.

Each component is given a number, and the cash conversion cycle can be expressed by this equation:

(1)		(2)		(3)		(4)
Inventory conversion period	+	Receivables collection period	−	Payables deferral period	=	Cash conversion cycle.

To illustrate, suppose it takes Real Time an average of 73 days to convert raw materials to computers and then to sell them, and another 24 days to collect on receivables. However, 30 days normally elapse between receipt of raw materials and payment for them. In this case, the cash conversion cycle would be 67 days:

2.4. PERMANENT AND VARIABLE WORKING CAPITAL

Permanent or **fixed working capital**

A minimum level of current assets, which is continuously required by a firm to carry on its business operations, is referred to as permanent or fixed working capital. It is part of total current assets which is not changed due to variation in sales. It is considered permanent because the level is constant, not because the assets are not sold.

Fluctuating or **variable working capital**

The extra working capital needed to support the changing production and sales activities of the firm is referred to as fluctuating or variable working capital. It is the additional asset required to meet the variations in sales above the permanent level. Additional current assets are needed during the peak time. It increases with growth of business.

2.5. DETERMINANTS OF WORKING CAPITAL MANAGEMENT

Firm should have neither low nor high working capital. Low working capital involves more risk and more returns, high working capital involves less risk and less returns. Risk here refers to technical insolvency while returns refer to increased profits/earnings. The amount of working capital is determined by wide variety of factors.

Nature of Business: The working capital requirement of firm depends on the nature of the business. For example, firm involved in sale of services rather than manufacturing or firm is allowing only cash sales. In the first instance, no investment is required in either raw materials or WIP or finished goods, while in the second instance there exists no receivables as there is immediate realization of cash. Hence the requirement of working capital will be lower.

Seasonality of Operations: If the product of the firm has seasonal demand like refrigerators, the firms need high working capital in the periods of summer, as the demand for the refrigerators is more and the firm needs low working capital in the periods of winter, as the demand for the product is low.

Production Cycle: The term production cycle refers to the time involved in the manufacture of goods. It covers the time span between the procurement of the raw materials and the completion

of the manufacturing process leading to the production of goods. As funds are necessarily tied up during the production cycle, the production cycle has bearing on the quantum of working capital. The longer the time span of production cycle, the larger will be the funds tied up and therefore the larger the working capital needed and vice versa.

Production Policy: The quantum of working capital is also determined by production policy. In case of the firms having seasonal demand of the products like refrigerators, air coolers etc. The production policy of the firm determines the amount of working capital requirement. If the firm has production policy to carry production at steady level to meet the peak demand, this will result in large accumulation of finished goods (inventories) during the off–seasons and the abrupt sale during the peak season. The progressive accumulation of finished goods will naturally require an increasing amount of working capital. If the firm has production policy to produce only when there is demand then the firm needs low working capital during the slack season and high working capital during season.

Credit Policy: The level of the working capital is also determined by the credit policy, as the firm's credit policy determines the amount of receivables. If the firm has liberal credit policy, then the firm needs high working capital and the firm needs low working capital if the company's credit policy does not allow it to extend credit to the buyers.

Market Conditions: The working capital requirements are also determined by the market conditions. In case of the high degree of competition prevailing in the market the firm has to maintain larger inventories as customers are not inclined to wait for the product. This needs higher working capital requirements. If there is good demand for the product and the competition is weak, firm can manage with smaller inventory of finished goods, as customers can wait for the product if it is not available in the market. Thus, firm can manage with low inventory and will need low working capital requirements.

Conditions of Supply: The availability of raw materials and spares also determine the level of working capital. If there is ready availability of raw materials and spares, firm can maintain minimum inventory and need less working capital. If the supply of raw materials is unpredictable, then the firm has to acquire stocks as and when they are available for ensuring

continuous production. Thus, the firm needs to maintain larger inventory average and needs larger requirement of working capital.

Activity

Question 1: what are the factors that affect Working capital? .....

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COMPUTATION (OR ESTIMATION) OF WORKING CAPITAL

Working Capital requirement depends upon number of factors, which are already discussed in the previous parts. Now the discussion is on how to calculate the Working Capital needs of the business concern. It may also depend upon various factors but some of the common methods are used to estimate the Working Capital.

A. Estimation of components of working capital method

Working capital consists of various current assets and current liabilities. Hence, we have to estimate how much current assets as inventories required and how much cash required to meet the short term obligations.

Finance Manager first estimates the assets and required Working Capital for a particular period.

B. Percent of sales method

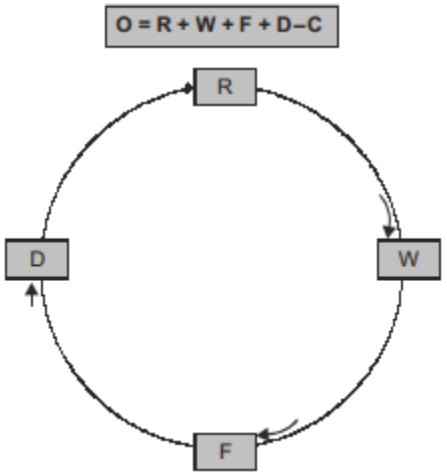
Based on the past experience between Sales and Working Capital requirements, a ratio can be determined for estimating the Working Capital requirement in future. It is the simple and tradition method to estimate the Working Capital requirements. Under this method, first we have to find out the sales to Working Capital ratio and based on that we have to estimate Working Capital requirements. This method also expresses the relationship between the Sales and Working Capital.

C. Operating cycle

Working Capital requirements depend upon the operating cycle of the business. The operating cycle begins with the acquisition of raw material and ends with the collection of receivables.

Operating cycle consists of the following important stages:

1. Raw Material and Storage Stage, (R)
2. Work in Process Stage, (W)
3. Finished Goods Stage, (F)
4. Debtors Collection Stage, (D)
5. Creditors Payment Period Stage. (C)



Each component of the operating cycle can be calculated by the following formula:

$$R = \frac{\text{Average Stock of Raw Material}}{\text{Average Raw Material Consumption Per Day}}$$

$$W = \frac{\text{Average Work in Process Inventory}}{\text{Average Cost of Production Per Day}}$$

$$F = \frac{\text{Average Finished Stock Inventory}}{\text{Average Cost of Goods Sold Per Day}}$$

$$D = \frac{\text{Average Book Debts}}{\text{Average Credit Sales Per Day}}$$

$$C = \frac{\text{Average Trade Creditors}}{\text{Average Credit Purchase Per Day}}.$$

Exercise 1

From the following information extracted from the books of a manufacturing company, compute the operating cycle in days and the amount of working capital required:

Period Covered	365 days
Average period of credit allowed by suppliers	16 days
Average Total of Debtors Outstanding	480 00
Raw Material Consumption	4,400 00
Total Production Cost	10,000 00
Total Cost of Sales	10,500 00
Sales for the year	16,000 00
Value of Average Stock maintained:	
Raw Material	320 00
Work-in-progress	350 00
Finished Goods	260 00

Solution

Computation of Operating Cycle

(i) *Raw material held in stock:*

$$\frac{\text{Average stocks of raw materials held}}{\text{Average consumption per day}} = \frac{320}{4{,}400 \times 365}$$

$$= \frac{320 \times 365}{4{,}400} = 275 \text{ days}$$

Less: Average credit period granted by Suppliers $\frac{16 \text{ days}}{11 \text{ days}}$

(ii) *Work-in-progress:*

$$\frac{\text{Average WIP maintained}}{\text{Average cost of production per day}} = \frac{350}{10{,}000/365}$$

$$= \frac{365 \times 320}{10{,}000} = 13 \text{ days}$$

(iii) *Finished good held in stock:*

$$\frac{\text{Average finished goods maintained}}{\text{Average cost of goods sold per days}} = \frac{260}{10{,}500/365}$$

$$= \frac{260 \times 365}{10{,}500} = 9 \text{ days}$$

(iv) *Credit period allowed to debtors:*

$$\frac{\text{Average total of outstanding debtors}}{\text{Average credit sales per day}} = \frac{480}{16{,}000 \times 365}$$

$$= \frac{365 \times 480}{16{,}000} = 11 \text{days}$$

Total operating cycle period: (i) + (ii) + (iii) + (iv) = 44 days
Number of Operating cycles in a year = 365/44
= 8.30

$$\text{Amount of Working Capital required} = \frac{\text{Total operating cost}}{\text{Number of operating cycles in a year}}$$

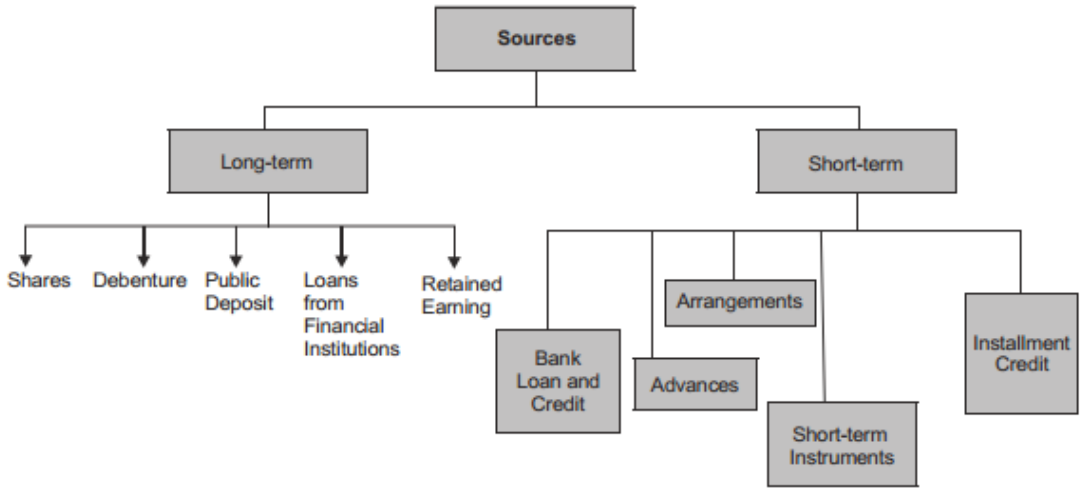
= 10,500/8.3
= Rs. 1,265

Alternatively, the amount of working capital could have also been calculated by estimating the components of working capital method, as shown below:

Value of Average Stock Maintained	320
Raw Material	350
Work-in-progress	260
Finished Goods	480
Average Debtors Outstanding:	1,410
Less: Average Creditors Outstanding	145
	1,265

SOURCES OF WORKING CAPITAL

Working Capital requirement can be normalized from short-term and long-term sources. Each source will have both merits and limitations up to certain extract. Uses of Working Capital may be differing from stage to stage.



2.6. FINANCING CURRENT ASSETS

A firm may adopt different financing policies for its current assets. There are three types of financing:

Long-term financing: **-** Sources of long term financing include ordinary share capital, preference share capital, debentures (bonds), long-term borrowing from financial institutions and reserves, and surplus (retained earnings).

Short-term financing: **-** Obtained for a period less than one year. It is arranged in advance from banks, and other suppliers of short-term finance in the money market. It includes working capital funds from banks, public deposits, commercial paper, factoring receivables, etc.

Spontaneous financing: **-** Refers to the automatic sources of short-term funds arising in the normal course of a business. Trade credit and outstanding expenses are examples of spontaneous financing. There is no explicit cost of spontaneous financing. A firm is expected to utilize these sources of finance to the fullest extent.

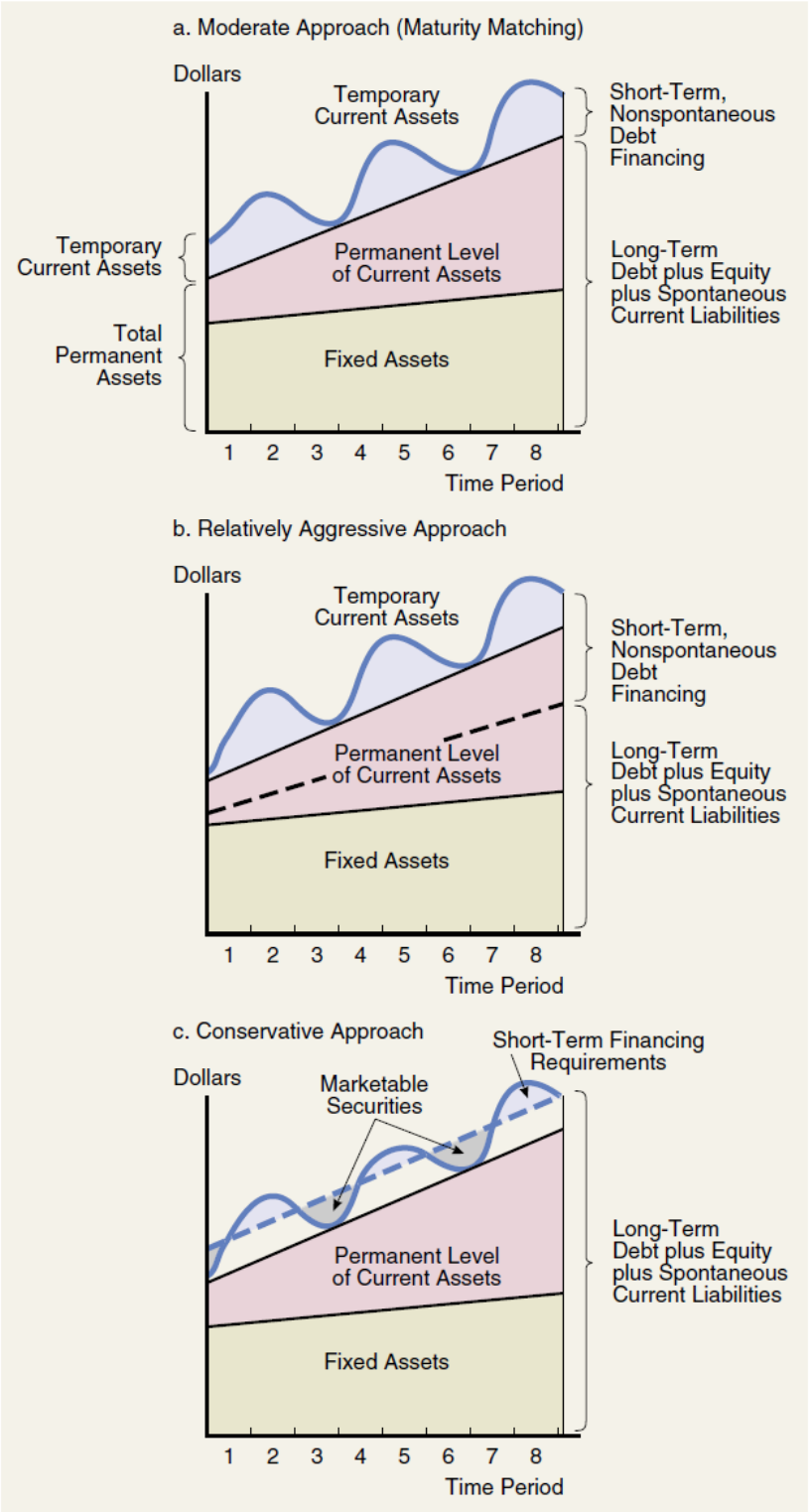
Depending on the mix of short and long-term financing, the approach followed by a company may be referred to as:

Matching (hedging) approach: Match the maturity of the assets with the maturity of the financing.

Conservative approach: Use permanent capital for permanent assets and temporary assets.

Aggressive approach: Use short–term financing to finance permanent assets.

Alternative Current Asset Financing Policies



Let's view the characteristics of each approach I detail.

Matching (hedging) approach: This approach tries to balance risk and return concerns. Temporary current assets that are only going to be on the balance sheet for short time should be financed with short–term debt, current liabilities. Modular permanent current assets and long–term fixed assets that are going to be on the balance sheet for long time should be financed from long–term debt and equity sources.

The firm has moderate amount of net working capital. It is relatively amount of risk balanced by relatively moderate amount of expected return. In the real world, each firm must decide on its balance of financing sources and its approach to working capital management based on its particular industry and the firm's risk and return strategy.

Conservative approach: As the name itself suggests, under the approach the finance manager does not undertake risk. As result, all the working capital needs are primarily financed by long term sources and the use of short term sources may be restricted to unexpected and emergency situation only. The working capital policy of firm is called conservative policy when all or most of the working capital needs are met by the long term sources and thus the firm avoids the risk of insolvency.

So, under the conservative approach, the working capital is primarily financed by long term sources. The larger the portion of long term sources used for financing the working capital, the more conservative is said to be the working capital policy of the firm. In case, the firm has no temporary working capital need then the idle long term funds can be invested in marketable securities. This will help the firm to earn some income. The firm uses small amount of short term sources to meet its peak level working capital needs. It also stores liquidity in the form of marketable securities in slack season. Long–term financing is generally more expensive than short–term financing.

Aggressive approach: Low level of investment more short–term financing is used to finance current assets. Support low level of production & sales Borrowing short–term is considered more risky than borrowing long–term. Firm risk increases, due to the risk of fluctuating interest rates, but the potential for higher returns increases because of the generally low–cost financing. This

approach involves the use of short–term debt to finance at least the firm's temporary assets, some or all of its permanent current assets, and possibly some of its long–term fixed assets. (Heavy reliance on short term debt) The firm has very little net working capital. It is more risky. May be negative net working capital. It is very risky.

Figure 2.2

Brigham & Houston page, 613

Approaches	**Profitability**	**Liquidity**	**Risk**
Conservative	Low	High	Low
Aggressive	High	Low	High
Matching	Moderate	Moderate	Moderate

Summary

Working Capital refers to that part of the firm's capital, which is required for financing short–term or current assets such cash marketable securities, debtors and inventories.

Gross Working Capital refers to the firm's total investment in current assets.

Net Working Capital refers to the difference between current assets and current liabilities.

Permanent Working Capital: The minimum level of investment in current assets that is required to continue the business without interruption is referred as permanent working capital.

Variable Working Capital: This is the amount of investment required to take care of fluctuations in business activity or needed to meet fluctuations in demand consequent upon changes in production & sales as result of seasonal changes.

Cash Conversion Cycle: It is the length of time between the actual cash disbursement on purchases and labor and cash receipt from the sale of finished product.

Conservative Working Capital Policy: Use permanent capital for permanent assets and temporary assets

Moderate Working Capital Policy: Match the maturity of the assets with the maturity of the financing.

Aggressive Working Capital Policy: Use short–term financing to finance permanent assets.

SELF Examination Questions

1. Define working capital and give the concept of working capital.

2. Discuss the importance of working capital management.

3. What are the types of working capital? Discuss.

4. What do you mean by cash conversion cycle? How the company can reduce it?

5. Explain the factors affecting working capital.

6. What are the different types of working capital policy firm can adopt? Discuss each policy in terms of risk and return to the firm.

Problems

1. The Kathmandu Candy Corporation carries an average balance of inventory equal to Rs.400,000. The company's cost of goods sold averages Rs.4.5 million. What are Kathmandu's (a) inventory conversion period?

[**Ans.: (a)** 32 days]

2. Valley Cold Stores generally has inventory that equals Rs.48 mil1ion. If the inventory turnover for the company is 8, what are its (a) inventory conversion period

[**Ans.: (a)** 45 days;

3. Sanim Dairy Firm generally carries an amount of receivables equal to Rs.80,000 and its annual credit sales equal Rs. 2.4 million. What are firm's (a) receivables collection period (DSO)?

[**Ans.:** (a) 12 days)]

4. Unique Uniforms generally has accounts receivable that equal Rs.480,000. If User the accounts receivable turnover for the company is 12, what are its (a) receivables collection period (DSO) and (b) annual credit sales?

[**Ans.:** (a) 30 days; (b) Rs.57,60,000]

5. At any point in time, Lumbini Ferti1izer generally owes its suppliers Rs.180,00. The company's cost of goods sold averages Rs.2.52 million. What are Lumbini Fertilizer's (a) payables deferral period (DPO).

[Ans.: (a) 25.71 days]

6. The Saliford Corporation has an inventory conversion period of 60 days, receivables collection period of 36 days, and payables deferral period of 24 days.

a) What is the length of the firm's cash conversion cycle?

b) If Saliford's annual sales are Rs.3,960,000 and all sales are on credit, what is the average balance in accounts receivable?

[**Ans.**: **(a)** 72 days; **(b)** Rs. 396,000;

7. The Flamingo Corporation is trying to determine the effect of its inventory turnover ratio and days sales outstanding (DSO) on its cash flow cycle. Flamingo's 2008 sales (all on credit) were Rs.180,000, and it earned net profit of 5 percent, or Rs.9,000. The cost of goods sold equals 85 percent of sales. Inventory was turned over eight times during the year, and the DSO, or average collection period, was 36 days. The firm had fixed assets totaling Rs.40,000. Flamingo's payables deferral period is 30 days.

a) Calculate Flamingo's cash conversion cycle.

[**Ans**.: **(a)** 51 days;

8. Verbrugge Corporation is leading U.S. producer of automobile batteries. Cerbrugges turns out 1,500 batteries day at cost of Rs. 6 per battery for materials and labor. It takes the firm 22 days to convert raw materials into batery. Verbrugge allows its customers 40 days in which to pay for the batteries, and the firm generally pays its suppliers in 30 days.

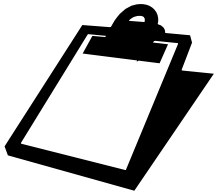
a) What is the length of Verbrugge's cash conversion cycle?

[**Ans.**: **(a)** 32 days;

CHAPTER THREE:
CASH AND LIQUIDITY MANAGEMENT

OBJECTIVES OF THE CHAPTER

Dear students, after studying this chapter, you should be able to:



Explain the reason for holding cash

Understand the importance of float and how it affects the cash balance.

Understand how to accelerate collections and manage disbursements.

Understand the advantages and disadvantages of holding cash and some of the ways to invest idle cash

3.1. INTRODUCTION

Cash is an important current asset for the operations of the business. Cash is the basic input needed to keep the business running on a continuous basis; it is also an ultimate output expected to be realized by selling the service or product manufactured by the firm. The firm should keep sufficient cash, neither more nor less. Cash shortage will disrupt the firm's operations while excessive cash will simply remain idle, without contributing anything towards the firm's profitability. Thus, a major function of the financial manager is to maintain a sound cash position. Cash Management is concerned with managing of;

Cash flows into and out of the firm,

Cash flows within the firm

Cash balances held by the firm at a point of time by financing deficit or investing surplus. This can be represented by the following cash management cycle.

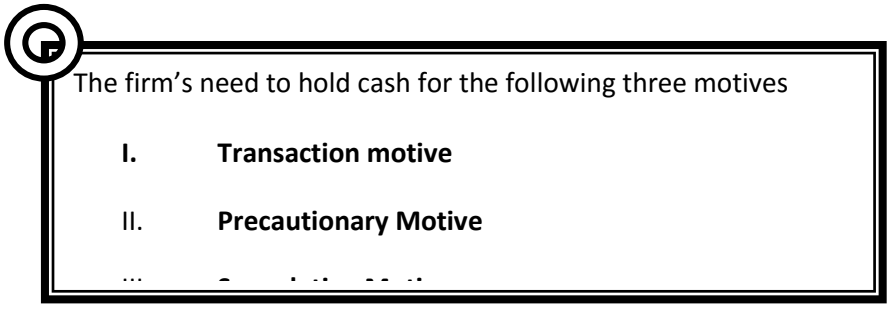
The objective in cash management is to keep the investment in cash as low as possible while maintaining the firm's efficient operations and to invest the surplus cash funds in profitable opportunities. To accomplish this objective, managers must determine the target cash balance

required to maintain liquidity while minimizing the total costs related to the investment in cash. Cash management involves three major decision areas:

Determining appropriate cash balances.

Investing idle cash.

Managing collections and disbursements.



Definition of Cash

Cash is the money which a firm can disburse immediately without any restriction. The term cash includes coins, currency and checques held by the firm, and balances in its bank account.

Generally, when a firm has excess cash, it invests it in marketable securities. This kind of investment contributes some profit to the firm.

REASONS FOR HOLDING CASH

Transaction Motive:

The transaction motive requires a firm to hold cash to conduct its business in the ordinary course. It is the need to hold cash to satisfy normal disbursement and collection activities associated with a firm's ongoing operations or to pay day-to-day bills. The firm needs cash primarily to make payments for purchases, wages and salaries, other operating expenses, taxes, dividends etc. The need to hold cash would not arise if there were perfect synchronization between cash receipts and payments.

Precautionary Motive:

The precautionary motive is the need to hold cash to meet contingencies in future. It provides a cushion or buffer to withstand some unexpected emergency. The precautionary motive of cash depends upon the predictability of cash flows. If cash flows can be predicted with accuracy, less cash will be maintained for emergency.

Speculative Motive:

The speculative motive relates to the holding of cash for investing in profit making opportunities as and when thk2ey arise. The opportunity to make profit may arise when the security prices change. The firm will hold cash, when it is expected that interest rate is expected to fall. The firm will benefit by subsequent fall in interest rates and increase in security prices.

Firms do not need to actually hold cash to meet the speculative demand for money. They can usually satisfy the speculative motive for holding cash through using reserve borrowing ability and marketable securities. This is similar to using credit cards instead of cash to make purchases.

Activity

Question 1: what are the reasons for holding cash? .....

.....

.....

Costs of Holding Cash

The opportunity cost of holding cash is the return that could be earned by investing the cash in other assets. However, there is also a cost to converting between cash and other assets. The optimal cash balance will consider the trade-off between these costs to minimize the overall cost of holding cash.

3.2.Cash Management versus Liquidity Management

The distinction between liquidity management and cash management is straightforward. Liquidity management is a fairly broad area that concerns the optimal quantity of liquid assets a

firm should have, including accounts receivable and inventory. Cash management deals with the optimization of the collection and disbursement of cash.

3.3. UNDERSTANDING FLOAT

The amount of money you have according to your checkbook can be very different from the amount of money that your bank thinks you have. The reason is that some of the checks you have written haven't yet been presented to the bank for payment. The same thing is true for a business. The cash balance that a firm shows on its books is called the firm's *book,* or *ledger, balance.* The balance shown in its bank account as available to spend is called its *available,* or *collected, balance*. It may not be the same as the amount of checks deposited less the amount of checks paid, because deposits are not normally available immediately. The difference between the available balance and the ledger balance is called the float, and it represents the net effect of checks in the process of *clearing* (moving through the banking system).

Float = Available Balance – Book Balance

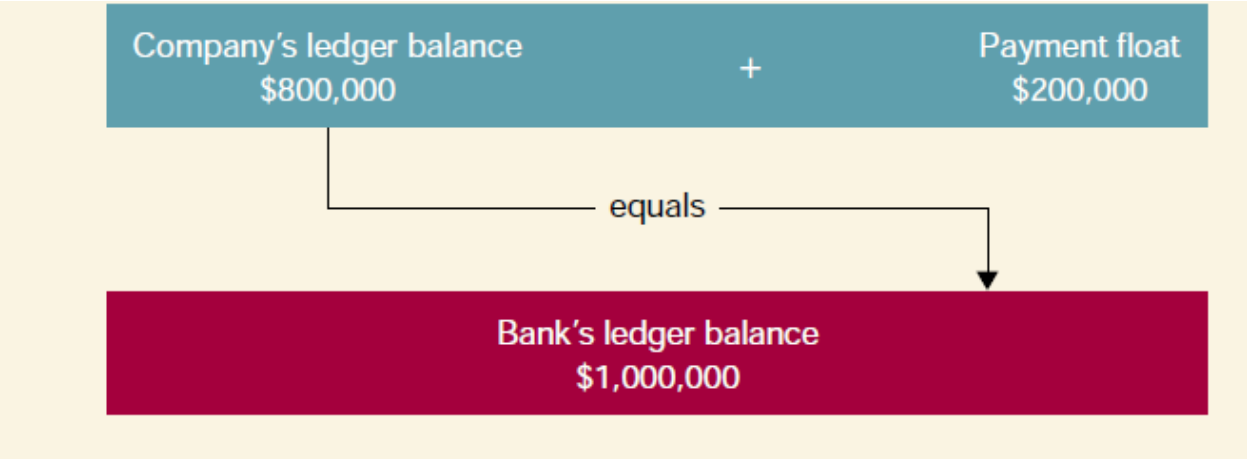
Positive float implies that checks that have been written have not yet cleared. The company needs to make sure that it adjusts the available balance so that it does not think that there is more money to spend than there actually is.

Disbursement float

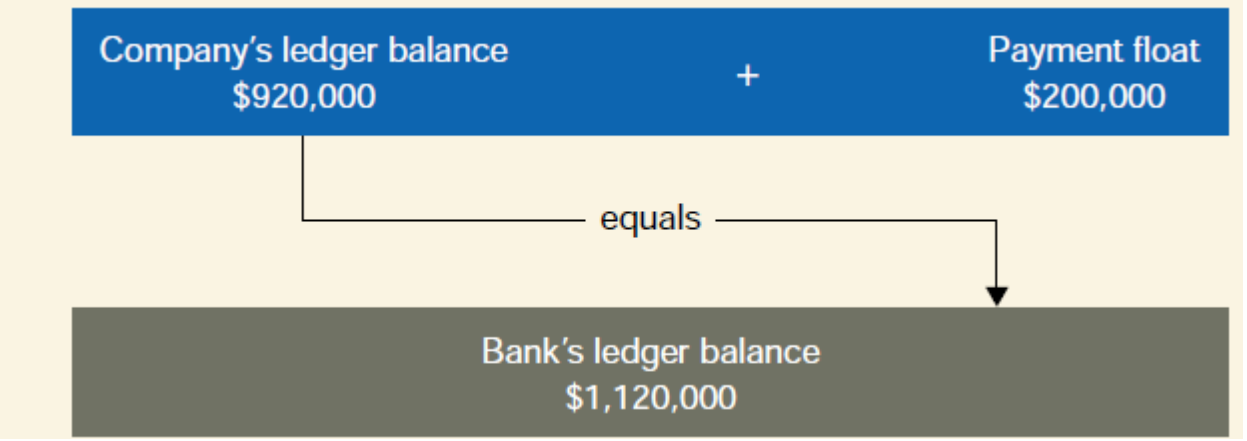
Disbursement float – generated by checks the firm has written that have not yet cleared the bank; arrangements can be made so that this money is invested in marketable securities until needed to cover the checks.

For Disbursement Float: Available balance at bank – Book Balance > 0

Suppose that the United Carbon Company has $1 million in a demand deposit (checking account) with its bank. It now pays one of its suppliers by writing and mailing a check for $200,000. The company's records are immediately adjusted to show a cash balance of $800,000. Thus the company is said to have a *ledger balance* of $800,000. But the company's bank won't learn anything about this check until it has been received by the supplier, deposited at the supplier's bank, and finally presented to United Carbon's bank for payment. During this time United Carbon's bank continues to show in *its* ledger that the company has a balance of $1 million. While the check is clearing, the company obtains the benefit of an extra $200,000 in the bank. This sum is often called disbursement float, or **payment float.**



Float sounds like a marvelous invention; every time you spend money, it takes the bank a few days to catch on. Unfortunately, it can also work in reverse. Suppose that in addition to paying its supplier, United Carbon *receives* a check for $120,000 from a customer. It first processes the check and then deposits it in the bank. At this point both the company and the bank increase the ledger balance by $120,000:



Collection and Net Float

Collection float – generated by checks that have been received by the firm but are not yet included in the available balance at the bank. Checks received increase book balance before the bank credits the account

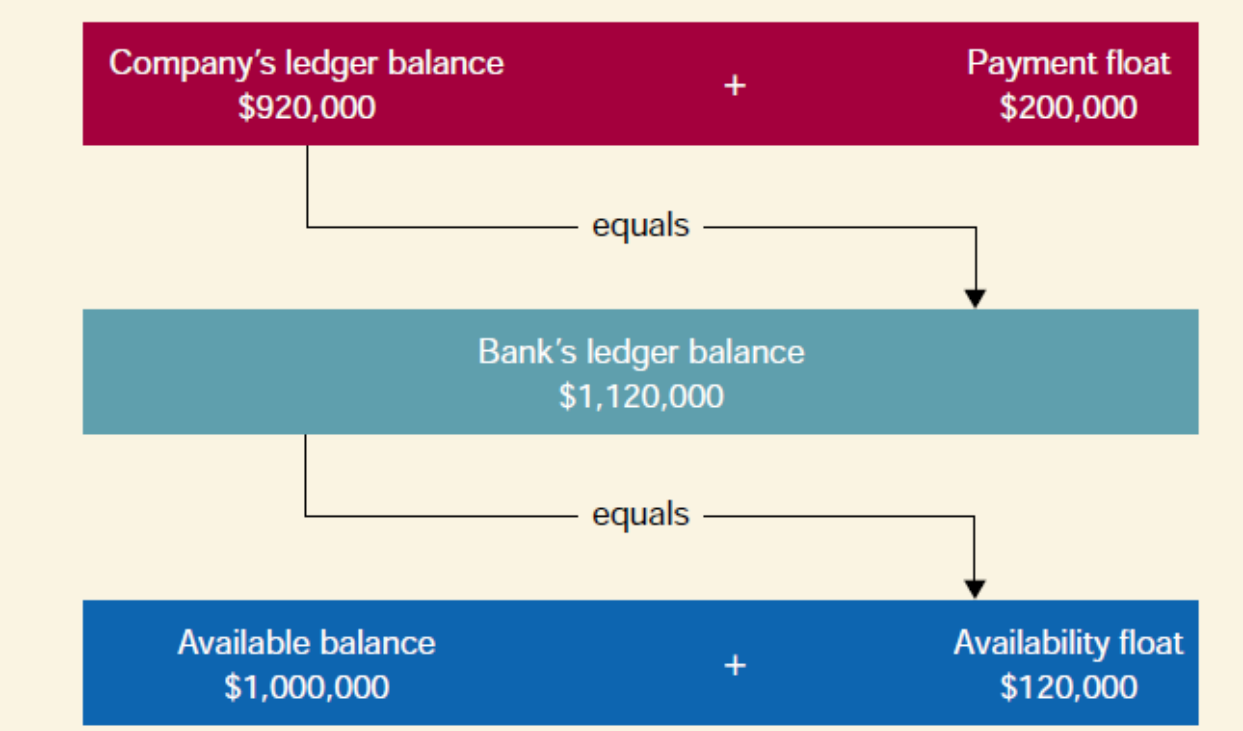
For Collection Float: Available balance at bank – Book balance < 0

Net float = Disbursement float + Collection float

Negative float implies that checks that have been deposited are not yet available. The firm needs to be careful that it does not write checks over the available balance, or the checks may bounce.

Managers need to be more concerned with net float and available balances than with the book balance.

Have you ever written a check a day or two before receiving a paycheck, even though, on the day when the check was mailed, their checking account had insufficient funds to cover it. This is an example of using disbursement float. We recognize that the time for the check to travel through the mail and then be processed and cleared should allow enough time for the paycheck to clear our bank. We do need to be careful about this process, however. The check we wrote may go through the system faster than anticipated, and it may take the paycheck longer to become available than anticipated. In this case, our check may bounce, or at the very least our credit line is tapped and we end up paying some unexpected interest charges.



Example

You have Br. 3,000 in your checking account. You just deposited Br. 2,000 and wrote a check for Br. 2,500.

What is the disbursement float? Disbursement float = Br. 2500

What is the collection float? Collection float = - Br. 2000

What is the net float? Net float = 2500 – 2000 = Br. 500

What is your book balance? Book balance = Br. 3000 + 2000 – 2500 = Br. 2500

What is your available balance? Available balance = Br. 3000

Float Management

Float management – speeding up collections (reducing collection float) and slowing down disbursements (increasing disbursement float).

Delay = mailing time + processing delay + availability delay

The three components of float are:

Mail float – the time the check is in the mail

Processing float – handling time between receipt and deposit

Availability float – time for the check to clear the banking system

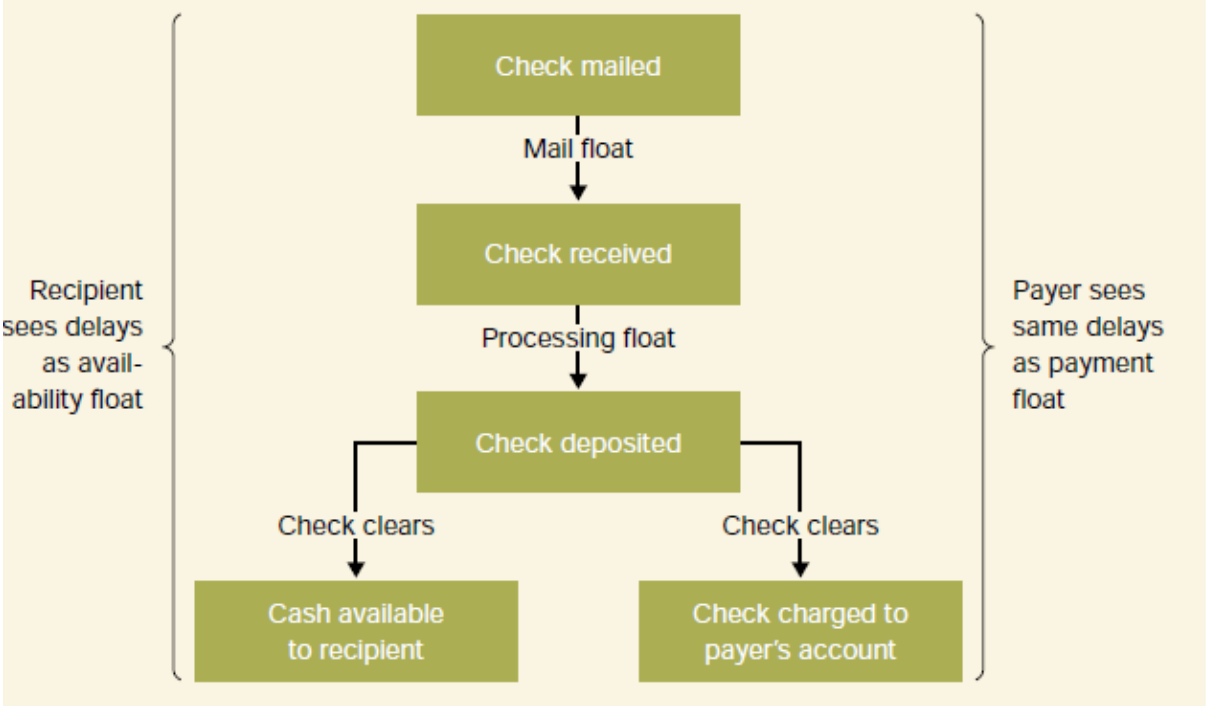
Several kinds of delay create float, so people in the cash management business refer to

several kinds of float. Figure 2.5 shows the three sources of float:

• The time that it takes to mail a check.

• The time that it takes the company to process the check after it has been received.

• The time that it takes the bank to clear the check and adjust the firm's account.



3.4 MEASURING FLOAT

Size of float depends on the dollar amount and the time delay.

Suppose you mail a check each month for Br. 1,000 and it takes 3 days to reach its destination, 1 day to process, and 1 day before the bank makes the cash available.

What is the average daily float (assuming 30-day months)?

Method 1: (3+1+1)(1,000)/30 = 166.67

Method 2: (5/30)(1,000) + (25/30)(0) = 166.67

There are two distinct cases: (a) periodic collections and (b) continuous or steady-state collections.

For periodic collections, average daily float = (check amount*days delay) / (# days in period)

Example

Periodic Collections: Suppose a Br. 10,000 check is mailed to Belief Systems, Inc. every two weeks. It spends two days in the mail, one day at Belief Systems offices and is credited to Belief Systems' bank account two days after deposit, for a total delay of five days. Over the 14-day period, the float is Br. 10,000 for five days and Br. 0 for nine days; then the cycle starts over. The average float is (5*10,000 + 9*0)/14 = Br. 3,571.43.

Example

Continuous Collections: Suppose average daily checks arriving at Hector Company amount to Br. 2,000. The checks take an average of three days to arrive in the mail, one day to process and two days to be credited to the bank account. The total collection delay is six days, and the average daily float is 6*2000 = Br. 12,000. Eliminating all delays would free up Br. 12,000; eliminating one day's delay would free up Br. 2,000.

Cost of the Float

Cost of float – opportunity cost of not being able to use the money

Cost of Collection Float

The benefit of reducing collection delays is directly reflected in the change in average daily float. Every dollar reduction in average daily float is a dollar freed up for use in perpetuity. The change in the average daily float that any plan to hasten collections might make is also the most the firm would be willing to pay for faster collections.

Example

Periodic Collections: What is the most that Belief Systems would pay to speed up collections by one day? If the collections delay were reduced from five days to four days, the average daily float would go from Br. 3,571.43 to Br. 2,857.14. So, the most the company would be willing to pay is 3571.43 – 2857.14 = 714.29.

Example

Continuous Collections: How much would Hector save if they reduced their collection delay from six days to three? The average daily float for three days' delay is Br. 6,000, so the company would save 12,000 – 6,000 = Br. 6,000 and this is the most it would be willing to pay.

3.5 CASH COLLECTION AND CONCENTRATION

Components of Collection Time

Collection Time = mailing time + processing delay + availability delay

One of the goals of float management is to try to reduce the collection delay. There are several techniques that can reduce various parts of the delay.

Cash Collection

Cash collection policies depend on the nature of the business. Firms can choose to have checks mailed to one or more locations, (reduces mailing time), or allow preauthorized payments. Many firms also accept online payments either with a credit card, with authorization to request the funds directly from your bank, or through online bill paying arrangements.

One of the goals of float management is to try to reduce the collection delay. There are several techniques that can reduce various parts of the delay

Lockboxes

Lockboxes are special post office boxes that allow banks to process the incoming checks and then send the information on account payment to the firm. They reduce processing time and often reduce mail time because several regional lockboxes can be used.

Lockboxes can reduce mail delay by having customers mail their payments to PO boxes that are closer to where they live. The processing delay is also reduced because bank employees process the checks instead of the company doing it and then taking the checks to the bank.

Suppose that you are thinking of opening a lock box. The local bank shows you a map of mail delivery times. From that and knowledge of your customers' locations, you come up with the following data:

Average number of daily payments to lock box = 150

Average size of payment = $1,200

Rate of interest *per day* = .02 percent

Saving in mailing time = 1.2 days

Saving in processing time = .8 day

On this basis, the lock box would reduce collection float by

150 items per day × $1,200 per item × (1.2 + .8) days saved = $360,000

Invested at .02 percent per day, that gives a daily return of

.0002 × $360,000 = $72

The bank's charge for operating the lock-box system depends on the number of checks processed. Suppose that the bank charges $.26 per check. That works out to 150*$.26 = $39.00 per day. You are ahead by $72.00 – $39.00 = $33.00 per day, plus whatever your firm saves from not having to process the checks itself.

Cash concentration

The practice of moving cash from multiple banks into the firm's main accounts. This is a common practice that is used in conjunction with lockboxes.

Cash concentration – reduce management time by having a systematic process for moving cash received in the lock-boxes to a central account. Allows the company to maintain smaller cash balances overall.

3.6 MANAGING CASH DISBURSEMENT

Increasing disbursement float

Slowing payments by increasing mail delay, processing time or collection time. A firm may not want to do this from both an ethical standpoint and a valuation standpoint. Slowing payment could cause a company to forgo discounts on its accounts payable. As we will see later in the chapter, the cost of forgoing discounts can be extremely high.

Slowing down payments can increase disbursement float – but it may not be ethical or optimal to do this.

Controlling disbursements

Minimize liquidity needs by keeping a tight rein on disbursements through any *ethical* means possible

Zero-balance account

Zero-balance account: maintain a master account; when checks are written on sub-accounts, cash is transferred from the master account to the sub-account to cover the checks; can maintain a smaller overall cash balance by utilizing this technique

Controlled disbursement account

Controlled disbursement accounts – the firm is notified on a daily basis how much cash is required to meet that day's disbursements and the firm wires the necessary funds.

Controlled disbursement account – cash is transferred to bank account to cover the day's anticipated payments

Ethical behavior in this area of cash management is very important. Because transactions occur frequently and in large amounts, unscrupulous financial managers tend to "cut corners" in this

area more often than in some others. Some corporations routinely pay late or take discounts that they do not qualify for. This hurts the suppliers that the company does business with and may ultimately hurt the company through a loss of reputation or credit.

Ethical behavior can be summed up in the following rule of thumb proposed by a top executive at a financial management seminar. When asked about a practice similar to the one described above, he responded that he followed the "mother rule" when faced with a decision with ethical consequences – "If you would be comfortable telling your mother what you did, it's probably ethical." Of course, this doesn't work for everyone, but it does hit home with a lot of students.

3.7 INVESTING IDLE CASH

Temporary cash surpluses

Seasonal or Cyclical Activities

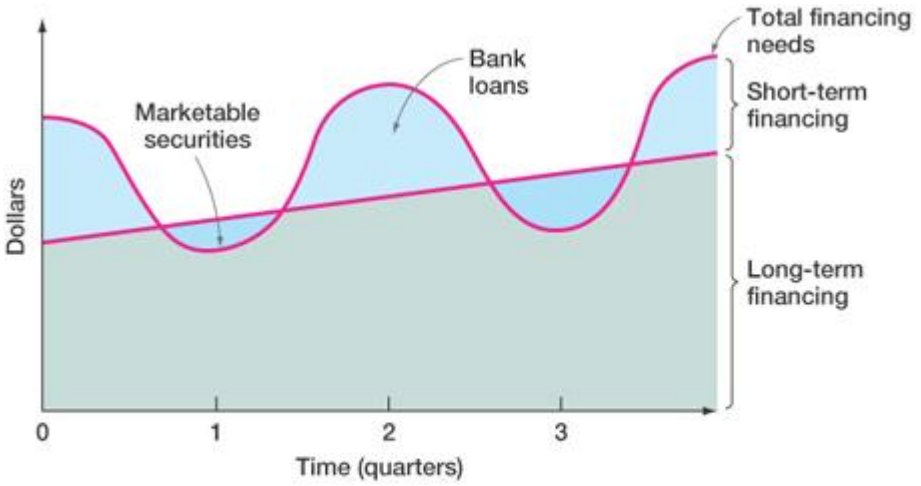
Seasonal or cyclical activities – buy marketable securities with seasonal surpluses, convert securities back to cash when deficits occur

Planned or Possible Expenditures

Planned or possible expenditures – accumulate marketable securities in anticipation of upcoming expenses

The goal is to invest temporary cash surpluses in liquid assets with short maturities, low default risk and high marketability.

Seasonal Cash Demands



Time 1: A surplus cash flow exists. Seasonal demand for assets is low. The surplus cash flow is invested in short-term marketable securities.

Time 2: A deficit cash flow exists. Seasonal demand for assets is high. The financial deficit is financed by the selling of marketable securities and by bank borrowing.

Characteristics of Short-Term Securities

Corporate treasurers seek to acquire assets with the following characteristics:

Maturity – firms often limit the maturity of short-term investments to 90 days to avoid loss of principal due to changing interest rates

Default risk – avoid investing in marketable securities with significant default risk

Marketability – ease of converting to cash

Taxability – consider different tax characteristics when making a decision

"Marketability" suggests that large amounts of an asset can be bought or sold quickly with little effect on the current market price. This characteristic is usually associated with financial markets that are "broad" and "deep." Broad markets have a large number of participants; deep markets have participants that are willing and able to engage in large transactions. The market for U.S. T-bills epitomizes these characteristics. There are millions of potential buyers and sellers world-wide, and multi-million dollar transactions are common.

Some Different Types of Money Market Securities

Money market – financial instruments with an original maturity of one year or less

Government Treasury bills

Commercial Paper

Certificates of Deposit

Repurchase Agreements

Preferred Stock

3.8DETERMINING THE TARGET CASH BALANCE

Target cash balance – the desired cash balance as determined by the trade-off between carrying costs and storage costs.

Carrying costs - the opportunity cost of holding too much cash.

Shortage costs – costs associated with holding low levels of cash. Also called adjustment costs.

With a flexible working capital policy, the trade-off is between the opportunity cost of cash balances and the adjustment costs of buying, selling and managing securities.

The Basic Idea

The objective is to determine the optimal or target cash balance. This occurs when the opportunity and trading costs are equal.

The BAT Model

The Baumol-Allais-Tobin (BAT) is a classic means of

Define:

C* = optimal cash transfer amount (amount of marketable securities to sell to raise cash)

F = fixed cost of selling securities

T = cash needed for transactions over entire planning period

R = opportunity cost of cash (interest rate on marketable securities)

Assume that cash is paid out at a constant rate through time.

Opportunity cost = average cash balance * interest rate = [(C+0)/2]*R

Trading cost = (# of transactions) (cost per transfer) = (T/C*)F

Total cost = opportunity cost + trading cost = (C*/2)R + (T/C*)F

To find the optimal transfer amount, take a first derivative of the cost function relative to C* and set it equal to zero.

You can also find it by setting opportunity cost = trading cost and solving for C*.

$$C^* = \sqrt{\frac{(2T*F)}{R}}$$

The Miller-Orr Model: A More General Approach

The Miller-Orr model offers a general approach to handling uncertain cash flows.

The Basic Idea:

U* = upper limit on cash balance

L = lower limit on cash balance

C* = target cash balance

When cash reaches U*, the firm transfers cash (buys securities) in the amount of U* - C*. If cash falls below L, the firm sells C* - L worth of securities to add to cash.

Using the Model:

Given the variance (2) of cash flow ("cash flow" refers to both the amounts that go into and come out of the cash balance) per period, the interest rate per period (period may be a day, week,

or month as long as the two are consistent), and L, the target balance and upper limit, are given by:

$C^* = L + (¾ * F * 2/R)1/3$

$U^* = 3C^* - 2L$

Example: Suppose F = $25, R = 1% per month, and the variance of monthly cash flows is $25,000,000 per month. Assume a minimum cash balance of $10,000.

$C^* = 10,000 + (¾ (25)(25,000,000)/.01)1/3 = \$13,605.62$

$U^* = 3(13,605.62) – 2(10,000) = \$20,816.86$

Implications of the BAT and Miller-Orr Models

From both:

The higher the interest rate (opportunity cost), the lower the target balance

The higher the transaction cost, the higher the target balance

From Miller-Orr:

The greater the variability of cash flows, the higher the target balance

Summary

Cash is an important current asset for the operations of the business. The firm should keep sufficient cash, neither more nor less. Thus, a major function of the financial manager is to maintain a sound cash position.

The objective in cash management is to keep the investment in cash as low as possible while maintaining the firm's efficient operations and to invest the surplus cash funds in profitable opportunities. Cash management involves three major decision areas:

Determining appropriate cash balances.

Investing idle cash.

Managing collections and disbursements.

The firm's need to hold cash may be attributed to the following three motives:

Transaction Motive:

The transaction motive requires a firm to hold cash to conduct its business in the ordinary course.

Precautionary Motive:

The precautionary motive is the need to hold cash to meet contingencies in future

Speculative Motive:

The speculative motive relates to the holding of cash for investing in profit making opportunities as and when they arise.

Lockboxes

Lockboxes are special post office boxes that allow banks to process the incoming checks and then send the information on account payment to the firm.

Characteristics of Short-Term Securities

Corporate treasurers seek to acquire assets with the following characteristics:

Maturity – firms often limit the maturity of short-term investments to 90 days to avoid loss of principal due to changing interest rates

Default risk – avoid investing in marketable securities with significant default risk

Marketability – ease of converting to cash

Taxability – consider different tax characteristics when making a decision

Self-Examination Questions

PART I: CHOOSE THE BEST ANSWER FROM THE FOLLOWING ALTERNATIVES

Cash Management is concerned with managing of;

Cash flows into and out of the firm,

Cash flows within the firm

Cash balances held by the firm at a point of time by financing deficit or investing surplus.

All of the above

Three major decision areas of cash management involves:

Determining appropriate cash balances. Managing collections and disbursements.

Investing idle cash. All of the above

The transaction motive requires a firm to hold cash to conduct its business in the ordinary course is known as:

Speculative motive Precautionary motive

Transaction motive Cash motive

PART II: WORK OUT QUESTION

You have Br. 3,000 in your checking account. You just deposited Br. 2,000 and wrote a check for Br. 2,500.

What is the disbursement float? Disbursement float = Br. 2500

What is the collection float? Collection float = - Br. 2000

What is the net float? Net float = 2500 – 2000 = Br. 500

What is your book balance? Book balance = Br. 3000 + 2000 – 2500 = Br. 2500

What is your available balance? Available balance = Br. 3000

Suppose average daily checks arriving at Hector Company amount to Br. 2,000. The checks take an average of three days to arrive in the mail, one day to process and two days to be credited to the bank account. The total collection delay is six days. How much would Hector save if they reduced their collection delay from six days to three?

ANSWER TO THE MODEL QUESTIONS

D 2. D 3. B

Work out:

What is the disbursement float? Disbursement float = Br. 2500

What is the collection float? Collection float = - Br. 2000

What is the net float? Net float = 2500 – 2000 = Br. 500

What is your book balance? Book balance = Br. 3000 + 2000 – 2500 = Br. 2500

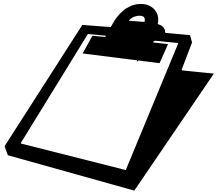
What is your available balance? Available balance = Br. 3000

Continuous Collections: The average daily float for three days' delay is Br. 6,000, so the company would save 12,000 – 6,000 = Br. 6,000 and this is the most it would be willing to pay.

CHAPTER FOUR:
RECEIVABLE MANAGEMENT

Dear Students! As we have discussed in chapter two, Working Capital Management includes, Management of current assets such as: Cash and liquidity, Receivable and inventory management. We already discussed Cash and Liquidity management in chapter three. In this chapter we will see some highlights of the Receivable Management.

OBJECTIVES OF THE CHAPTER



After studying this chapter, you should be able to:

Understand the key issues related to receivable management;

Understand the impact of cash discounts;

Be able to evaluate a proposed credit policy;

Understand the components of credit analysis.

4.1.INTRODUCTION

Receivables are book debts which an organization is expected to collect in the near future. Investment in receivables will arise when there is a gap or time lag between point of delivery of goods and services and when payment is received from customers.

Trade credit is very important to an organization because it helps in protecting organizations' sales from being eroded by competitors. It also helps to attract potential customers to buy at favorable terms.

A firm must establish a policy for credit terms given to its customers. A relaxed credit policy may attract different customers but at a disproportionate increase in costs.

CREDIT AND RECEIVABLES

The profitability of a business is dependent upon its ability to successfully sell its products for more than it costs to produce them. Selling on credit generally attracts customers and increases sales volume. There are, however, direct and indirect costs to extending credit which must be weighed against any potential benefits.

The costs associated with granting credit are not trivial. First, there is the chance that the customer will not pay. Second, the firm has to bear the costs of carrying the receivables. The credit policy decision thus involves a trade-off between the benefits of increased sales and the costs of granting credit. In other words, the goal of receivable management is to ensure that the costs of granting credit are offset by the benefits of higher sales.

Too often, especially during their start-up period, businesses concentrate on generating sales and pay little attention to the collection of money from debtors. As a result although sales exist on paper, the cash generated by these sales takes too long to materialize and cash flow problems occur. Additionally, the longer a debt is outstanding the greater the likelihood it will become bad.

Components of Credit Policy

If a firm decides to grant credit to its customers, then it must establish procedures for extending credit and collecting. In particular, the firm will have to deal with the following components of credit policy:

Terms of sale. The terms of sale establish how the firm proposes to sell its goods and services. A basic decision is whether the firm will require cash or will extend credit. If the firm does grant credit to a customer, the terms of sale will specify (perhaps implicitly) the credit period, the cash discount and discount period, and the type of credit instrument.

Credit analysis. In granting credit, a firm determines how much effort to expend trying to distinguish between customers who will pay and customers who will not pay. Firms use a number of devices and procedures to determine the probability that customers will not pay, and, put together, these are called credit analysis.

Collection policy. After credit has been granted, the firm has the potential problem of collecting the cash, for which it must establish a collection policy.

4.2.TERMS OF SALE

Whenever a firm sells a product, the seller spells out the terms and conditions of the sale in a document called the *terms of sale.*

The agreement specifies when the cash payment is due and the amount of any discount if early payment is made.

Trade credit, which is short-term financing, is typically made with a discount for early payment rather an explicit interest charge.

An offer of "3/10, net 40" means that the selling firm offers a 3 percent discount if the buyer pays the full amount of the purchase in cash within 10 days of the invoice date. Otherwise, the buyer has 40 days to pay the balance in full from the date of delivery.

To calculate the cost, we need to determine the interest rate the buyer is paying and convert it to an equivalent annual rate.

The formula for calculating the EAR for a problem like this is shown below:

$$\text{Effective annual rate} = \left(1+\frac{\text{Discount}}{\text{Discounted price}}\right)^{365/\text{days credit}} - 1$$

Trade credit is a loan from the supplier and it can be a very costly form of credit.

Credit Period

Credit period is the length of time allowed before the credit buyer must pay for credit purchases.

When deciding the credit period offered to customers a firm must consider several factors. A longer credit period (for example 45 days compared to 30 days offered by competitors) may generate additional sales; however these must be compared against the additional costs incurred by the business. These costs might include an increase in bad debts, higher administration costs

and bank overdraft charges. If the profits arising from the additional credit period are less than the costs incurred, the credit period should be reviewed.

There are a number of other factors that influence the credit period. Many of these also influence our customer's operating cycles; so, once again, these are related subjects.

Among the most important are:

Perishability and collateral value. Perishable items have relatively rapid turnover and relatively low collateral value. Credit periods are thus shorter for such goods. For example, a food wholesaler selling fresh fruit and produce might use net seven days. Alternatively, jewelry might be sold for 5/30, net four months.

Consumer demand. Products that are well established generally have more rapid turnover. Newer or slow-moving products will often have longer credit periods associated with them to entice buyers. Also, as we have seen, sellers may choose to extend much longer credit periods for off-season sales (when customer demand is low).

Cost, profitability, and standardization. Relatively inexpensive goods tend to have shorter credit periods. The same is true for relatively standardized goods and raw materials. These all tend to have lower markups and higher turnover rates, both of which lead to shorter credit periods. There are exceptions. Auto dealers, for example, generally pay for cars as they are received.

Credit risk. The greater the credit risk of the buyer, the shorter the credit period is likely to be (assuming that credit is granted at all).

Size of the account. If an account is small, the credit period may be shorter because small accounts cost more to manage, and the customers are less important.

Competition. When the seller is in a highly competitive market, longer credit periods may be offered as a way of attracting customers.

Customer type. A single seller might offer different credit terms to different buyers. A food wholesaler, for example, might supply groceries, bakeries, and restaurants. Each group would

probably have different credit terms. More generally, sellers often have both wholesale and retail customers, and they frequently quote different terms to the two types.

Cash Discount

The last element of the credit policy is cash discount. A small cash discount is often used as an incentive to encourage early payment by debtors. For example, many firms offer a discount of two per cent of the invoice value for payment within seven working days of the invoice date.

Cash discounts may also attract new customers who look at cash discount as a form of price reduction. These benefits, however, must be weighed against the birr cost of the discount before any decisions are made.

Credit Policy Effects

In evaluating credit policy, there are five basic factors to consider:

Revenue effects. If the firm grants credit, then there will be a delay in revenue collections as some customers take advantage of the credit offered and pay later. However, the firm may be able to charge a higher price if it grants credit and it may be able to increase the quantity sold. Total revenues may thus increase.

Cost effects. Although the firm may experience delayed revenues if it grants credit, it will still incur the costs of sales immediately. Whether the firm sells for cash or credit, it will still have to acquire or produce the merchandise (and pay for it).

The cost of debt. When the firm grants credit, it must arrange to finance the resulting receivables. As a result, the firm's cost of short-term borrowing is a factor in the decision to grant credit.

The probability of nonpayment. If the firm grants credit, some percentage of the credit buyers will not pay. This can't happen, of course, if the firm sells for cash.

The cash discount. When the firm offers a cash discount as part of its credit terms, some customers will choose to pay early to take advantage of the discount.

Total Cost of Granting Credit

The trade-off between granting credit and not granting credit is not hard to identify, but it is difficult to quantify precisely. As a result, we can only describe an optimal credit policy.

a) Carrying costs

To begin, the carrying costs associated with granting credit come in three forms:

The required return on receivables

The losses from bad debts

The costs of managing credit and credit collections

The cost of managing credit consists of the expenses associated with running the credit department. Firms that don't grant credit have no such department and no such expense. These three costs will all increase as credit policy is relaxed.

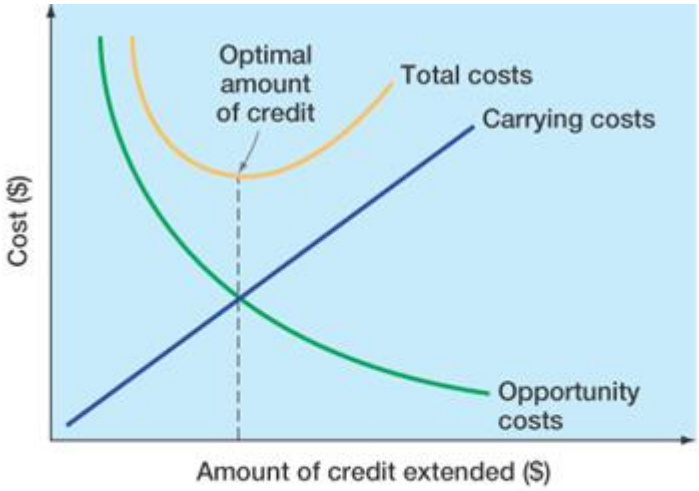
b) Shortage costs

It is lost sales due to a restrictive credit policy. If a firm has a very restrictive credit policy, then all of the associated costs will be low. In this case, the firm will have a "shortage" of credit, so there will be an opportunity cost. This opportunity cost is the extra potential profit from credit sales that is lost because credit is refused.

Total cost curve

Sum of carrying costs and shortage costs

Optimal credit policy is where the total cost curve is minimized



Carrying costs are the cash flows that must be incurred when credit is granted. They are positively related to the amount of credit extended.

Opportunity costs are the lost sales resulting from refusing credit. These costs go down when credit is granted.

4.4. CREDIT ANALYSIS

Once a firm decides to grant credit to its customers, it must then establish guidelines for determining who will and who will not be allowed to buy on credit. Credit analysis refers to the process of deciding whether or not to extend credit to a particular customer. Credit analysis is important simply because potential losses on receivables can be substantial. It usually involves two steps: gathering relevant information and determining creditworthiness.

Gathering information

If a firm does want credit information on customers, there are a number of sources. Information sources commonly used to assess creditworthiness include the following:

Financial statements. A firm can ask a customer to supply financial statements such as balance sheets and income statements.

Credit reports on the customer's payment history with other firms. Quite a few organizations sell information on the credit strength and credit history of business firms.

Banks. Banks will generally provide some assistance to their business customers in acquiring information on the creditworthiness of other firms.

The customer's payment history with the firm. The most obvious way to obtain information about the likelihood of a customer's not paying is to examine whether they have settled past obligations (and how quickly).

Determining Creditworthiness

Before extending credit, the credit worthiness of a buyer must be evaluated. Most businesses measure credit quality and evaluate a customer's probability of default by examining the five Cs of credit:

Character

Capacity to repay

Capital

Collateral

Conditions

A customer's character refers to his/her acknowledgement of a moral obligation to paynthe debt as promised. It may be evaluated by examining the customer's previous payment habits.

Relevant information may be requested from the customer's previous suppliers or from credit reporting agencies. The capacity to pay is the subjective judgment of customer's ability to repay the loan. An examination of the financial statements and the business plan of the credit buyer may aid in making the correct judgment.

The analysis of financial ratios, especially risk ratios such as the debt-to-asset and the current ratios, will help in measuring capital.

4.5. COLLECTION POLICY

Collection policy refers to actions that the business is willing to take to collect slow-paying accounts. The length of time a firm is willing to extend credit to its customers and the "toughness" of the firm in collecting its receivables may influence sales and, ultimately, its profits, while a "relaxed" collection policy may increase the percentage of bad debt.

The receivable position must be monitored closely by calculating the average collection period (ACP) and comparing it to the industry average.

Moreover, an aging schedule must be constructed to show how long accounts receivable are outstanding by dividing the receivables position in age categories and showing the percentage of receivables in each age group. Then, the firm must decide what actions are appropriate for collecting the past due accounts. Usually, a letter is sent to remind the credit buyer that the account is past due, followed by a telephone call if payment is further delayed. Finally, the services of a collection agency may be necessary.

The collection process may be expensive both in terms of out-of-pocket expense and the loss of business relations. Therefore, making the decision to grant credit is an important and delicate business function requiring careful handling.

Activity

Question: what are the 5 C's of receivables? .....

.....

Summary

Receivables are book debts which an organization is expected to collect in the near future. Investment in receivables will arise when there is a gap or time lag between point of delivery of goods and services and when payment is received from customers. A firm must establish a policy for credit terms given to its customers. A relaxed credit policy may attract different customers but at a disproportionate increase in costs

The credit policy decision involves a trade-off between the benefits of increased sales and the costs of granting credit. In other words, the goal of receivable management is to ensure that the costs of granting credit are offset by the benefits of higher sales.

Components of credit policy are:

Terms of sale. The terms of sale establish how the firm proposes to sell its goods and services. A basic decision is whether the firm will require cash or will extend credit. If the firm does grant credit to a customer, the terms of sale will specify (perhaps implicitly) the credit period, the cash discount and discount period, and the type of credit instrument.

Credit analysis. In granting credit, a firm determines how much effort to expend trying to distinguish between customers who will pay and customers who will not pay. Firms use a number of devices and procedures to determine the probability that customers will not pay, and, put together, these are called credit analysis.

Collection policy. After credit has been granted, the firm has the potential problem of collecting the cash, for which it must establish a collection policy.

Before extending credit, the credit worthiness of a buyer must be evaluated. Most businesses measure credit quality and evaluate a customer's probability of default by examining the five Cs of credit:

Character

Capacity to repay

Capital

Collateral

Conditions

SELF-EXAMINATION QUESTIONS

PART I: CHOOSE THE BEST ANSWER FROM THE FOLLOWING ALTERNATIVES

The basic factors to consider while evaluating credit policy are:

Revenue effects

Probability of non repayments

Cost effects

All

Which one of the following is the not the components of credit policy?

Terms of sale.

Collection policy

Credit analysis.

All

----------refers to actions that the business is willing to take to collect slow-paying accounts.

Terms of sale.

Collection policy

Credit analysis.

PART II: Short Answers

What are the five C's of Receivables

CHAPTER FIVE:
INVENTORY MANAGEMENT

OBJECTIVES OF THE CHAPTER

Dear learner, after studying this chapter, you should be able to:

Understand the major components of inventory management

Be able to use the EOQ model to determine optimal inventory levels

5.1. INTRODUCTION

A firm's profitability depends on the successful sale of its product or service. For non-service oriented businesses, sufficient inventories must be available to meet demand. While determining how many units to have in stock, sales must be predicted and sufficient inventories held to satisfy the expected demand. Moreover, to prepare for potential sales increases, some level of "safety stocks" must also be held. The amount of safety stock is determined by comparing the cost of maintaining this additional inventory against potential sales losses.

Holding inventory levels at less than what is needed to support sales will cost the firm business. On the other hand, since holding inventory involves costs such as storage and insurance expenses, excess inventory must also be avoided if minimal cost and maximum profits are desired.

5.2. MEANING AND NATURE OF INVENTORY

Inventories are stock of product a company is manufacturing for sale and components that make up the product. The various forms in which inventories exist in a manufacturing company are: raw materials, work in progress and finished goods.

Raw materials are those basic inputs that are converted into finished products through the manufacturing process. Raw material inventories are those units which have been purchased and stored for future productions

Work in progress inventories are semi manufactured products. They represent products that need more work before they become finished products for sale.

Finished goods inventories are those completely manufactured products which are ready for sale. Stocks of raw materials and work in progress facilitate production while stock of finished goods is required for smooth marketing operations.

Objectives of Inventory Management

The aim of inventory management is to avoid excessive and inadequate levels of inventories and maintain sufficient inventory for smooth production and sales operations. Efforts should be made to place an order at the right time with the right source to acquire the right quantity at the right price and quality. An effective inventory management should:

Ensure a continuous supply of raw materials to facilitate an interrupted production

Maintain sufficient stocks of raw materials in periods of short supply and anticipate price changes

Maintain sufficient finished goods inventory for smooth sales operations and efficient customer service

Minimize the carrying costs and time and control investment in inventories and keep it at optimum level.

5.4. BENEFITS AND COSTS OF HOLDING INVENTORY

Benefits of Holding Inventory

Firms hold inventory for various reasons, some of which are as follows.

Customer Satisfaction**-** Inventory allows customers to be served quickly and conveniently (otherwise the firm would have to make everything as the customer requested it).

Economy**-** Inventory can be used so that a firm can buy in bulk, which is usually cheaper.

Flexibility**-** Inventory allows operations to meet unexpected surges in demand.

Shock Absorber: - Inventory is insurance if there is an unexpected interruption in supply from outside the operation or within the operation.

Enables Decoupling: - Inventory allows different parts of the operation to be 'decoupled'. This means that they can operate independently to suit their own constraints and convenience while the stock of items between them absorbs short-term differences between supply and demand. In many ways this is the most significant advantage of inventory.

Costs of Holding Inventory

The cost of holding inventory is relatively easy to measure and will include: storage, security, losses due to theft, obsolescence, and goods perishing.

Total inventory costs include:

Carrying Costs

The following costs are generally referred to as the inventory carrying costs.

Value of the capital tied up in inventories

Storage and handling expenses

Insurance

Obsolescence costs

Carrying costs always increase as inventory levels rise.

Ordering Costs

Ordering costs include the administrative costs of placing, tracking, shipping, receiving and paying for an order. These costs are fixed for every order and remain the same regardless of an order's size.

For example, consider a retail outlet selling home computers. Three years ago it acquired fifty state of the art PCs at a cost of Br. 30,000 each. At the time each computer could be sold for Br. 40,000 resulting in a profit of Br. 10,000 per machine. Unfortunately, today fifteen of these

models remain in stock. Not only are they taking up valuable space, but also due to rapid advances in technology they can only be sold for Br. 10,000 each.

When we take into account administration and storage costs this transaction will actually result in a loss to the firm. We can therefore see the disadvantage of holding excessive levels of stock.

What is less easy to quantify is the cost of not holding sufficient levels of stock to meet the demand from customers. For example, if a firm has insufficient stock to meet demand, it will initially result in lost sales. In the longer term it may also damage a business's goodwill, with long-standing customers turning to other, more reliable suppliers.

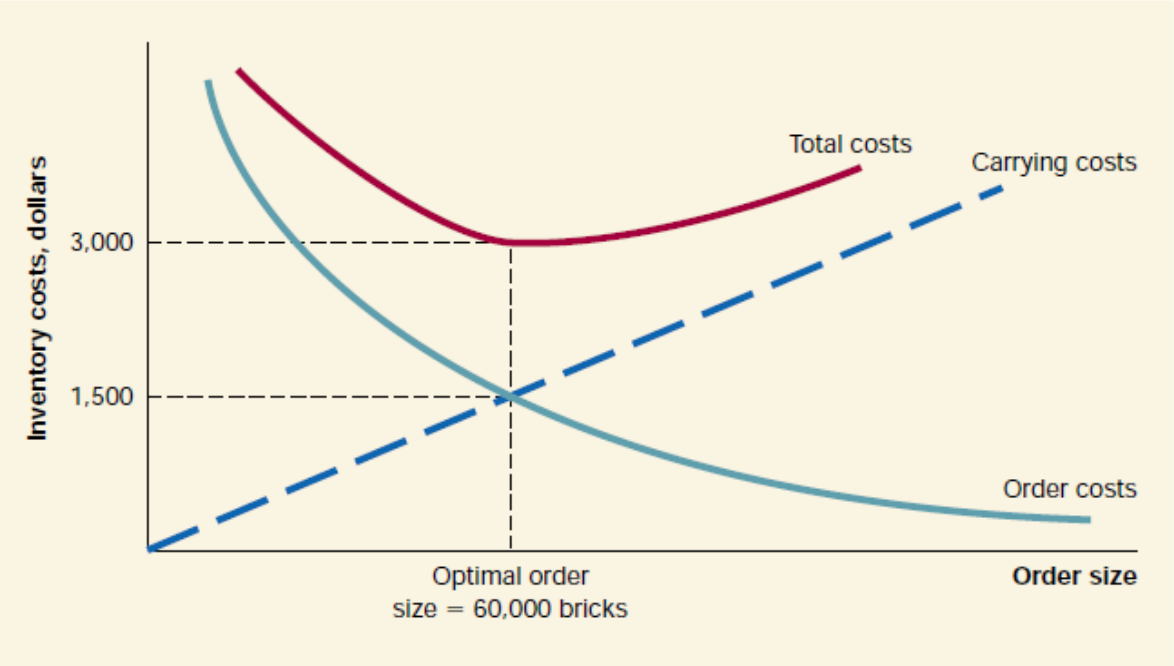
Let's additional illustration. Suppose that the merchant plans to buy 1 million bricks over the coming year. Each order that it places costs $90, and the annual carrying cost of the inventory is $.05 per brick. To minimize order costs, the merchant would need to place a single order for the entire 1 million bricks on January 1 and would then work off the inventory over the remainder of the year. *Average* inventory over the year would be 500,000 bricks and therefore carrying costs would be 500,000 × $.05 = $25,000. The first row of Table 2.10 shows that if the firm places just this one order, total costs are $25,090:

Total costs = order costs + carrying costs

$25,090 = $90 + $25,000

To minimize *carrying* costs, the merchant would need to minimize inventory by placing a large number of very small orders.

Determination of optimal order size.



The above diagram shows the costs of placing 100 orders a year for 10,000 bricks each. The average inventory is now only 5,000 bricks and therefore the carrying costs are only 5,000 × $.05 = $250. But the order costs have risen to 100 × $90 = $9,000. Each row in Table 2.10 illustrates how changes in the order size affect the inventory costs. You can see that as the order size decreases and the number of orders rises, total inventory costs at first decline because carrying costs fall faster than order costs rise. Eventually, however, the curve turns up as order costs rise faster than carrying costs fall. Total costs are minimized in this example when the order

size is 60,000 bricks. About 17 times a year the merchant should place an order for 60,000 bricks and it should work off this inventory over a period of about 3 weeks

5.5. INVENTORY MANAGEMENT TECHNIQUES

Effective inventory management involves turning over inventory as quickly as possible without losing sales from inventory stock outs. Inventory management is important for two major reasons. First, inventory represents a sizable investment for some firms and affects their profitability. Second, managers often cannot correct errors in inventory management quickly because inventory is the firm's least liquid current asset.

Managers commonly use four inventory management techniques: the ABC system, the economic order quantity (EOQ) model, the just-in-time (JIT) system, and the materials requirement planning (MRP) system. We discuss each in turn.

The ABC System

Under the ABC inventory management system, a firm divides its inventory into A, B, and C groups. The firm places those items with the largest dollar investment in the A group. While the A group often includes as little as 20 percent of a firm's total inventory, it may account for as much as 80 percent of its total investment in inventory. The B group includes inventory items that account for the next largest inventory investment, and the C group includes a large number of inventory items that represent a relatively small inventory investment.

Monitoring inventory levels differs among the three groups. Because of its high value in terms of investment, the A group logically receives the most extensive monitoring. Managers track items in the A group using a perpetual inventory system that allows for immediate, hourly, or daily inventory tracking or counts. Managers track items in the B group less frequently, often on a weekly basis. Items in the C group receive even less attention.

Because the items in the A and B inventory groups represent such large inventory investments, managers often use more sophisticated inventory management techniques. We discuss one such technique, the economic order quantity system, in the next section.

Economic Order Quality Model

The economic order quantity (EOQ) mathematically determines the minimum total inventory cost, taking into account *reorder costs* and *inventory-carrying costs*. The optimal order size is the point at which these two effects offset each other. This order size is called the **economic order quantity.** There is a neat formula for calculating the economic order quantity. The formula is:

$$\text{Economic order quantity} = \sqrt{\frac{2 \times \text{annual sales} \times \text{cost per order}}{\text{carrying cost}}}$$

In the present example,

$$\text{Economic order quantity} = \sqrt{\frac{2 \times 1{,}000{,}000 \times 90}{.05}} = 60{,}000 \text{ bricks}$$

One of the major inventory management problems to be resolved is how much inventory should be added when inventory is replenished. If the firm is buying raw materials, it has to decide lots in which it has to be purchased on each replenishment. Determining an optimum inventory level involves two types of costs

Ordering or Restocking Costs

Carrying costs

The economic order quantity is that inventory level which minimizes the total of ordering and carrying costs.

Ordering or Restocking Costs

Ordering costs include, cost of requisitioning, purchase ordering, transporting, receiving, inspecting and storing. Ordering costs increase in proportion to the number of orders placed.

Total restocking cost = (fixed cost per order) x (number of orders) = F(T/Q)

Carrying Costs

Costs for maintaining a given level of inventory are called carrying costs. They include storage, insurance taxes, deterioration and obsolescence.

Total carrying cost = (average inventory) x (carrying cost per unit) = (Q/2)(CC)

Total Cost = Total carrying cost + total restocking cost = (Q/2)(CC) + F(T/Q)

The economic ordering quantity (EOQ) model states that given certain reasonable assumptions, the order quantity that minimizes total inventory costs.

Example 2; KK Industrial Products sells 2,250 units of inventory per year. The cost of placing one order is Br. 250, and the cost of carrying a unit of inventory is Br. 50 per year. What are the EOQ, average inventory, number of orders per year, time interval between orders, total ordering costs, total carrying costs and annual total costs?

Solution:

$$EOQ = \sqrt{\frac{2x2{,}250x250}{50}}$$

= 150 unit

Average inventory is the Q/2 = 150/2 = 75 units.

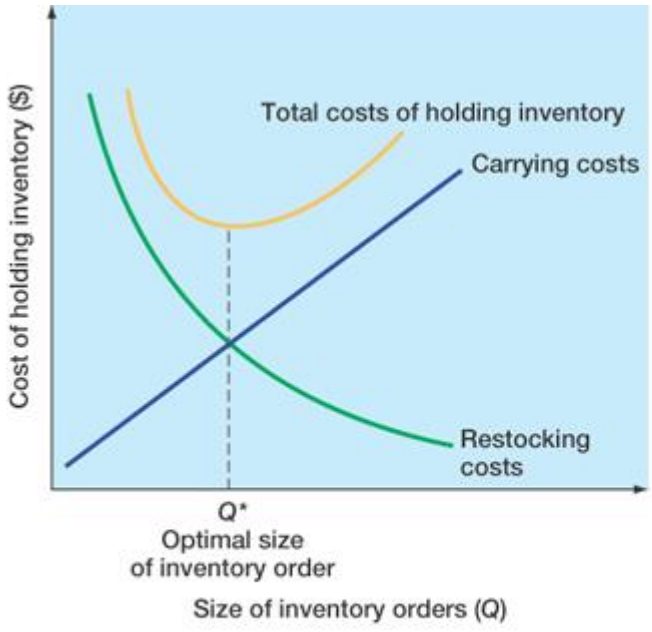
Number of orders per year = T/Q = 2,250/150 = 15

Time interval between orders = Q/T = 150/2,250 = 0.0667 years (24.3 days)

Total ordering costs = F(T/Q) = 250(2,250/150) = Br. 3,750

Total carrying costs = C (Q/2) = 50(150/2) = Br. 3,750

Total costs = Ordering costs + Carrying costs = Br. 7500



Restocking costs are greatest when the firm holds a small quantity of inventory.
Carrying costs are greatest when there is a large quantity of inventory on hand.
Total costs are the sum of the carrying and restocking costs.

Managing Derived-Demand Inventories

The third type of inventory management technique is used to manage derived-demand inventories. The demand for some inventory types is derived from or dependent on other inventory needs. A good example is given by the auto manufacturing industry, in which the demand for finished products depends on consumer demand, marketing programs, and other factors related to projected unit sales. The demand for inventory items such as tires, batteries, headlights, and other components is then completely determined by the number of autos planned. Materials requirements planning and just-in-time inventory management are two methods for managing demand dependent inventories.

Materials Requirements Planning

Production and inventory specialists have developed computer-based systems for ordering and/or scheduling production of demand dependent types of inventories. These systems fall under the general heading of **materials requirements planning (MRP)**. The basic idea behind MRP is that, once finished goods inventory levels are set, it is possible to determine what levels of work-in-progress inventories must exist to meet the need for finished goods. From there, it is possible to calculate the quantity of raw materials that must be on hand. This ability to schedule backwards from finished goods inventories stems from the dependent nature of work-in-progress and raw materials inventories. MRP is particularly important for complicated products for which a variety of components are needed to create the finished product.

Just-in-Time Inventory Management

In this system the exact day-by-day, or even hour-by-hour, raw material needs are delivered by the suppliers, who deliver the goods “just in time” for them to be used on the production line.

A big advantage of this system is that there are essentially no raw inventory costs and no chance of obsolescence or loss to theft.

On the other hand, if the supplier fails to make the needed deliveries, then production shuts down.

Summary

Inventories are stock of product a company is manufacturing for sale and components that make up the product. The various forms in which inventories exist in a manufacturing company are: raw materials, work in progress and finished goods. The aim of inventory management is to avoid excessive and inadequate levels of inventories and maintain sufficient inventory for smooth production and sales operations. Efforts should be made to place an order at the right time with the right source to acquire the right quantity at the right price and quality.

Firms hold inventory for various reasons, some of which are as follows.

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Flexibility **-** Inventory allows operations to meet unexpected surges in demand.

Shock Absorber: **-** Inventory is insurance if there is an unexpected interruption in supply from outside the operation or within the operation.

Inventory management is important for two major reasons. First, inventory represents a sizable investment for some firms and affects their profitability. Second, managers often cannot correct errors in inventory management quickly because inventory is the firm's least liquid current asset.Managers commonly use four inventory management techniques: the ABC system, the economic order quantity (EOQ) model, the just-in-time (JIT) system, and the materials requirement planning (MRP) system. We discuss each in turn.

Model Examination Question

Which one of the following is not an effective inventory management techniques:

Ensure a continuous supply of raw materials to facilitate an interrupted production

Maintain sufficient stocks of raw materials in periods of short supply and anticipate price changes

Maintain sufficient finished goods inventory for smooth sales operations and efficient customer service

Maximize the carrying costs and time and control investment in inventories and keep it at optimum level.

Which one of the following is benefits of holding inventory

Flexibility

Economy

All of the above

Customer Satisfaction

Which one of the following is not cost of holding inventory

Carrying cost

Selling cost

Ordering cost

None of the above

Which one of the following is inventory carrying cost?

Insurance

Capital tied up in inventories

Storage and handling expenses

All are carrying costs

All are inventory management systems except

The ABC system

The economic order quantity (EOQ)

The just-in-time (JIT) system

The materials requirement planning (MRP) system

None of the above

Part Two: Work out

KK Industrial Products sells 2,250 units of inventory per year. The cost of placing one order is Br. 250, and the cost of carrying a unit of inventory is Br. 50 per year. What are the EOQ, average inventory, number of orders per year, time interval between orders, total ordering costs, total carrying costs and annual total costs?

Answer: 1. D 2. D 3. C 4. D 5. E

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Name_____ID_____

WOLLO UNIVERSITY

College of Business and Economics

Department of Accounting and Finance

Distance assignment for the course

Financial Management _II(AcFn 2011)

Part I: True or false Questions (1.5 points each)

1. Dividends paid represent the residual amount from earnings after the company's investment needs are fulfilled.
2. Capital gains arising from the appreciation of the market price of stock have a tax advantage over dividends.
3. Payment of dividends reduces the chance of uncertainty in stockholders' minds about the company's financial health.
4. Cash dividend may be declared when the cash position of the firm is inadequate and/or when the firm wishes to prompt more trading of its stock by reducing its market price.
5. Dividend irrelevance implies that shareholders not prefer current dividend and there is direct relationship between dividend policy and value of the firm.
6. A stock dividend involves issuing a substantial amount of additional shares and reducing the par value of the stock on a proportional basis.

Part II: Multiple Choice Questions (1.5 each)

1. Working Capital Policy Basic policy decisions regarding:

A. a target levels for each category of current assets

B. How current assets will be financed.

 C. a target levels for each category of fixed assets.

D. A and B are answers

2. A cycle in which they purchase inventory, sell goods on credit, and then collect accounts receivable referred to as

A. The *cash conversion cycle,*
B. Inventory conversion period
C. Receivables Collection Period
D. Payables deferral period

3. The value of the firm is not affected by types of dividend policy under the theory of:

A. M and M dividend irrelevancy theory
B. Bird in the hand theory
C. Tax preference theory

4. Net working capital is defined as:

A. Current assets minus fixed assets.
B. Current assets minus noninterest- bearing current liabilities.
C. Current assets Net working capital is equal to current assets less current liabilities.
D. None of the above

5. A policy under which relatively large amounts current assets are carried and under which sales are stimulated by a liberal credit policy, resulting in a high level of receivables is:

A. Relaxed fixed Investment Policy
B. Restricted Current Asset Investment Policy
C. Moderate Current Asset Investment Policy
D. Relaxed Current Asset Investment Policy

Part II: Fill in the blank space (1.5 point each)

1. _____dividends are common and popular types followed by majority of the business concerns.

2._____ is the date upon which the stockholder is entitled to receive the dividend.

3. _____is the date that a dividend becomes a legal liability of the corporation.

4_____refers to shares reacquired by the company.

Part IV: Short Answer Questions (2 points each)

1. Lists the factors affecting the dividend policy
2. Explain the working capital and components of working capital
3. Lists the factors affecting the working capital requirements
4. Describe the factors affecting working capital.
5. Describe the working capital financing policies.
6. *Explain the reason for holding cash*
7. *Discuss how to accelerate collections and manage disbursements.*
8. *Discuss the components of credit analysis.*
9. *Discuss the major components of inventory management*

Exercise 1

From the following information extracted from the books of a manufacturing company, compute the operating cycle in days and the amount of working capital required:

Period Covered	365 days
Average period of credit allowed by suppliers	16 days
Average Total of Debtors Outstanding	480 00
Raw Material Consumption	4,400 00
Total Production Cost	10,000 00
Total Cost of Sales	10,500 00
Sales for the year	16,000 00
Value of Average Stock maintained:	
Raw Material	320 00
Work-in-progress	350 00
Finished Goods	260 00