

CHAPTER THREE: MANAGING CASH AND MARKETABLE SECURITIES

3.1. Nature of cash

Cash refers to coins, currency, cheques held by a firm, and demand deposits. Cash is the money which a firm can disburse immediately without any restriction. Sometimes near money such as marketable securities or bank time deposits are also included to define cash.

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

Cash is often called a "nonearning asset." It is needed to pay for labor and raw materials, to buy fixed assets, to pay taxes, to service debt, to pay dividends, and so on. However, cash itself (and also most commercial checking accounts) earns no interest. Thus, the goal of the cash manager is to minimize the amount of cash the firm must hold for use in conducting its normal business activities, yet, at the same time, to have sufficient cash (a) to take trade discounts, (b) to maintain its credit rating, and (c) to meet unexpected cash needs.

Cash management is concerned with optimizing the amount of cash available, maximizing the interest earned by spare funds not required immediately and reducing losses caused by delays in the transmission of funds. Holding cash to meet short-term needs incurs an opportunity cost equal to the return which could have been earned if the cash had been invested or put to productive use. However, reducing this opportunity cost by operating with small cash balances will increase the risk of being unable to meet debts as they fall due, so an optimum cash balance should be found.

In addition to this, Cash management is concerned with managing of: (i) cash flows in to and out of the firm, (ii) cash flows within the firm, (iii) cash balances held by the firm at a point of time by financing deficit or investing surplus cash. Sales generate cash which has to be disbursed out. The surplus cash has to be invested while deficit has to be borrowed. Cash management assumes more important than other current assets because cash is the most significant and the least productive asset that a firm holds. It is significant because it is used to pay the firm's obligations. However, cash is unproductive, unlike fixed assets or inventories; it does not produce goods for sale. Therefore, the aim of Cash management is to maintain adequate

control over cash position to keep the firm sufficiently liquid and to use excess cash in some profitable way.

Cash management is also important because it is difficult to predict cash flows accurately, particularly the inflows, and there is no perfect coincidence between the inflows and outflows of cash. During some periods, cash outflows will exceed cash inflows, because payments for taxes, dividends, or seasonal inventory buildup. At other times, cash inflow will be more than cash payments because there may be large cash sales and debtors may be realized in large sums promptly. Further Cash management is significant because cash constitutes the smallest portion of the total current assets, yet management's considerable time is devoted in managing it.

In order to resolve the uncertainty about cash flow prediction and lack of synchronization between cash receipts and payments, the firm should develop appropriate strategies for Cash management. The firm should evolve strategies regarding the following four facts of Cash management.

- o **Cash Planning:** cash inflows and out flows should be planned to project cash surplus or deficit for each period of the planning period. *Cash budget* should be prepared for this purpose.
- o **Managing the cash flows:** the flow of cash should be properly managed. The cash inflows should be accelerated while, as far as possible, the cash outflows should be decelerated.
- o **Optimum cash level:** the firm should decide about the appropriate level of cash balances. The cost of excess cash and danger of cash deficiency should be matched to determine the optimum level of cash balances.
- o **Investing surplus cash:** the surplus cash balances should be properly invested to earn profits. The firm should decide about the division of such cash balances between alternative short-term investment opportunities such as bank deposits, marketable securities, or inter-corporate lending.

The ideal Cash management system will depend on the firm's products, organizational structure, competition, culture and options available.

3.2. Motives for holding cash

The company should not have an excessive cash balance since no return is being earned upon it. The least amount of cash a firm should hold is the greater of (1) compensating balances (a deposit held by a bank to compensate it for providing services) or (2) precautionary balances (money held for emergency purposes) plus transaction balances (money needed to cover checks outstanding); the reasons for holding cash.

There are three reasons why companies choose to hold cash.

a. Transactions motive

Companies need a cash reserve in order to balance short-term cash inflows and outflows since these are not perfectly matched. This is called the transactions motive for holding cash, and the approximate size of the cash reserve can be estimated by forecasting cash inflows and outflows and by preparing cash budgets. In addition to the cash reserve held for day-to-day operational needs, cash may be built up to meet significant anticipated cash outflows, for example those arising from investment in a new project or the redemption of debt.

b. Precautionary motive

Forecasts of future cash flows are subject to uncertainty and it is possible that a company will experience unexpected demands for cash. This gives rise to the precautionary motive for holding cash. Reserves held for precautionary reasons could be in the form of easily-realized short-term investments, which are discussed below.

c. Speculative motive

Companies may build up cash reserves in order to take advantage of any attractive investment opportunities that may arise, for example in the takeover market. Such reserves are held for speculative reasons. If a company has significant speculative cash reserves for which it cannot see an advantageous use, it may choose to enhance shareholder value by returning them to shareholders, for example by means of a share repurchase scheme or a special cash dividend.

The amount of cash to be held depends upon the following factors:

- o Cash management policies
- o Current liquidity position
- o Management's liquidity risk preferences
- o Schedule of debt maturity
- o The firm's ability to borrow
- o Forecasted short- and long-term cash flow
- o The probabilities of different cash flows under varying circumstances

Optimum cash levels

Given the variety of needs a company may have for cash and the different reasons it may have for holding cash, the optimum cash level will vary both over time and between companies. The optimum amount of cash held by a company will depend on the following factors:

- Forecasts of the future cash inflows and outflows of the company;
- The efficiency with which the cash flows of the company are managed;

- The availability of liquid assets to the company;
- The borrowing capability of the company;
- The company's tolerance of risk, or risk appetite.

Cash flow problems

A company may experience cash flow problems for a number of reasons. It may **be making losses**: while this need not be a problem in the short term, making losses on a regular basis will lead to serious cash flow problems, and perhaps even liquidation or acquisition. **Inflation** may also be a source of cash flow problems since historical profit may prove to be insufficient to fund the replacement of necessary assets. Growth requires investment in non-current assets and working capital; if the funds needed for this investment are not forthcoming, cash flows can be severely strained. Careful cash management is needed when dealing with a seasonal business as cyclical sales patterns can lead to cash flow imbalances. Finally, cash flow problems may arise due to **sizable one-off items of expenditure**, such as redemption of debt or investment in non-current assets. Companies could plan for the redemption of debt capital by setting up a *sinking fund* in which regular contributions of cash and accumulated interest combine to produce the required lump sum, although refinancing with new debt is more common. When faced with cash flow shortages, a company may choose one or more of a number of possible remedies. It may postpone non-essential capital expenditure. It may be able to accelerate the rate at which cash flows into the business, for example by offering discounts for early payment to customers, by chasing overdue accounts or by having a sale to clear unwanted inventory. If a company has investments, bought perhaps with surplus cash from an earlier period, it may choose to sell them in order to generate cash. Finally, a company may be able to identify ways to reduce or postpone cash outflows, for example by taking longer to pay suppliers or by rescheduling loan repayments. As a last resort, it may decide to reduce or pass a dividend payment, although this is usually seen as a sign of financial weakness by the capital markets.

Cash Planning: is a technique to plan and control the use of cash. It helps to anticipate the future cash flows and needs of the firm and reduces the possibility of idle cash balances (which lowers firm's profitability) and cash deficits (which cause the firm's failure). It protects the financial condition of the firm by developing a projected cash statement from a forecast of expected cash inflows and outflows for a given period. The forecasts maybe based on the present operations or the anticipated future operations. Cash plans are very curtail in developing overall operating plans of the firm. Cash planning may be done on daily, weekly, or monthly basis. The period and

frequency of cash planning depends upon the size of the firm and philosophy of management. Large firms prepare daily and weekly forecasts. Medium-size firms usually prepare weekly and monthly. And small-size firms may not have formal cash forecasts or if they have, the forecast is for monthly and above.

Cash Forecasting and Budgeting

Cash budget is a summary statement of the firm's expected cash inflows and outflows over a projected time period. It gives information on timing and magnitude of expected cash flows and cash balances over the projected period. The cash budget shows the firm's projected cash inflows and outflows over some specified period. Generally, firms use a monthly cash budget forecasted over the next year, plus a more detailed daily or weekly cash budget for the coming month. The monthly cash budgets are used for planning purposes, and the daily or weekly budgets for actual cash control. Normally, cash budgets are prepared for daily or weekly if the firm's cash flows show fluctuations. But if the firm's cash flow is relatively stable, the cash budget may be prepared for a long period.

Cash forecasts: are needed to prepare cash budgets. Cash forecasting may be done on short basis (forecasting covering a period of less than one year) or long term basis (forecasting covering a period of greater than a year).

Short term forecasting: it is to make short term forecasts. The important functions of carefully developed short term cash forecasts are:

- o To determine operating cash requirements
- o To anticipate short term financing
- o To manage investment of surplus cash; which helps a firm to (a) select securities with appropriate maturities and reasonable risk, (b) avoid over and under-investing and (c) maximize profits by investing idle money.
- o To plan reduction of short and long-term debt
- o To schedule payments in connection with capital expenditures programmes
- o To plan forward purchase of inventories
- o To check accuracy of long-range cash forecasts
- o To take advantage of cash discounts offered by suppliers
- o To guide credit policies.

Short term forecasting methods: there are two most commonly used short term cash forecasting methods, namely; *the receipt and disbursement method* and *the adjusted net income method*.

The receipts and disbursements method is generally employed to forecast for limited periods, such as a week or a month. The adjusted net income

method, on the other hand, is preferred for longer durations ranging between a few months to a year. The cash flows can be compared with budgeted income and expense items if the receipts and disbursements approach is followed. On the other hand, the adjusted income approach is appropriate in showing a company's working capital and future financing.

Receipts and disbursements method: cash flows in and out in most companies are on continuous basis. The prime aim of receipt and disbursement forecasts is to summarize these flows during a predetermined period. Three broad sources of cash inflows can be identified: (i) operating, (ii) net-operating, and (iii) financial. Cash sales and collections from customers is the most important part of operating cash inflows. Developing a sales forecast (***forecasting cash inflow***) is the first step in preparing cash forecast. In preparing cash budget, account should be taken of sales discount, returns and allowances and bad debts as they reduce the amount of cash collections from debtors.

Non-operating cash inflows include sale of old assets and dividends and interest income. When internally generated cash flows are not sufficient, the firm resorts to external sources. Borrowing and issuance of securities are external financial sources, which constitutes financial cash inflows.

The second step in preparation of cash budget is the ***estimate of cash outflows***. Cash outflows include: (i) *operating outflows*: cash purchases, payments of payables, advances to suppliers, wages and salaries and other operating expenses. (ii) *Capital expenditures*, (iii) *Contractual payments*; repayments of loan and interest and tax payments; and (iv) *Discretionary payments*; ordinary and preference shares.

The virtues of the receipts and payments methods are: it gives a complete picture of all items of expected cash flows; it is a sound tool of managing daily cash operations. But it also has limitations: its reliability is reduced because of the uncertainty of cash forecasts; and it fails to highlight the significant movements in the working capital items.

Adjusted net income method: involves tracing of working capital flows. It is also called the *sources and uses approach*. two objectives of the adjusted net income approach are: (i) to project the company's need for cash at a future date and (ii) to show whether the company can generate the required funds internally and if not, how much will have to be borrowed or raised in the capital market.

In preparing the adjusted net income forecasts items such as net income, depreciation, taxes, dividends etc., can easily be determined from the company's annual operating budget.

The benefits of adjusted net income method includes: it highlights the movements in the working capital items, and thus helps to keep a control on a firm's working capital; and it also helps in anticipating a firm's financial requirements. The major limitation of this method is: it fails to trace cash flows, and therefore, its utility in controlling daily cash operations is limited.

Long-term cash forecasting: this forecasting is used for a long period of time. The major uses of long-term cash forecasts are:

- ✚ It indicates as company's future financial needs, especially for its working capital requirements.
- ✚ It helps to evaluate proposed capital projects. It pinpoints the cash required to finance these projects as well as the cash to be generated by the company to support them.
- ✚ It helps to improve corporate planning. Long-term cash forecasts compel each division to plan for future and to formulate projects carefully.

Long-term cash forecasting method can be used *the receipt and disbursement method* and *the adjusted net income method*. Long-term cash forecasting reflects the impact of growth, expansion or acquisitions; it also indicates financing problems rising from these developments.

3.3. Strategies in cash management

The thrust of cash management is to accelerate cash receipts and delay cash payments. Each bank account should be analyzed as to its type, balance, and cost so that corporate return is maximized.

Acceleration of Cash Inflow

To accelerate cash inflow, the financial manager must (1) know the bank's policy regarding fund availability; (2) know the source and location of company receipts; and (3) devise procedures for quick deposit of checks received and quick transfer of receipts in outlying accounts into the main corporate account.

The various types of check processing delays that must be analyzed are: (1) mail float—the time required for a check to move from a debtor to a creditor; (2) processing float—the time it takes for a creditor to deposit the check after receipt; and (3) deposit collection float—the time required for a check to clear.

Note: Electronic data exchange (EDI), or financial EDI (FEDI), significantly reduces or eliminates a float. EDI refers to the growing practice of direct, electronic information exchange between all types of businesses, thereby shortening the length of time required to initiate and complete a business transaction. Mail float can be minimized by having the collection center

located near the customer. Local banks should be selected to speed the receipt of funds for subsequent transfer to the central corporate account. As an alternative, strategic post office lockboxes may be used for customer remissions. The local bank collects from these boxes periodically during the day and deposits the funds in the corporate account. The bank also furnishes the company with a computer listing of payments received by account and a daily total. Because the lockbox system has a significant per-item cost, it is most cost-effective with low-volume, high-dollar remissions. However, the system is becoming increasingly more available to companies with high-volume, low-dollar deposits as technological advances (such as machine-readable documents) lower the per-item cost of lockboxes.

Before a lockbox system is implemented, the company should make a cost-benefit analysis that considers the average dollar amount of checks received, the costs saved by having lockboxes, the reduction in mailing time per check, and the processing cost.

EXAMPLE 2.1. 4DBG Corporation obtains average cash receipts of \$200,000 per day. It usually takes 5 days from the time a check is mailed to its availability for use. The amount tied up by the delay is:

$$5 \text{ days} \times \$200,000 = \$1,000,000$$

EXAMPLE 2.2. It takes Travis Corporation about 7 days to receive and deposit payments from customers. Therefore, a lockbox system is being considered. It is expected that the system will reduce the float time to 5 days. Average daily collections are \$500,000. The rate of return is 12 percent.

The reduction in outstanding cash balances arising from implementing the lockbox system is:

$$2 \text{ days} \times \$500,000 = \$1,000,000$$

The return that could be earned on these funds is:

$$\$1,000,000 \times 0.12 = \$120,000$$

The maximum monthly charge the company should pay for this lockbox arrangement is therefore:

$$\$120,000 / 12 = \$10,000$$

EXAMPLE 2.3. Charles Corporation is exploring the use of a lockbox system that will cost \$100,000 per year. Daily collections average \$350,000. The lockbox arrangement will reduce the float period by 2 days. The firm's rate of return is 15 percent.

The cost-benefit analysis is shown below.

Return on early collection of cash	
$0.15 \times 2 \times \$350,000$	\$105,000
Cost	<u>100,000</u>

Advantage of lockbox

\$ 5,000

A corporate financial manager should determine whether it would be financially advantageous to split a geographic collection region into a number of parts.

EXAMPLE 2.4. Travis Company has an agreement with Charter Bank in which the bank handles \$3 million in collections a day and requires a \$700,000 compensating balance. Travis is thinking of canceling the agreement and dividing its western region so that two other banks will handle its business instead. Bank A will handle \$1 million a day of collections, requiring a compensating balance of \$300,000, and bank B will handle the other \$2 million a day, asking for a compensating balance of \$500,000. Travis's financial manager anticipates that collections will be accelerated 14 day if the western region is divided. The company's rate of return is 14 percent.

The financial manager decided that the new arrangement should be implemented, based on the following analysis:

Acceleration in cash receipts	\$750,000
\$3 million per day $\times$ $\frac{1}{4}$ day	
Additional compensating balance required	<u>100,000</u>
Increased cash flow	\$650,000
Rate of return	<u>$\times 0.14$</u>
Net annual savings	<u>\$ 91,000</u>

Concentration banking should also be considered for use. With this method funds are collected by several local banks and transferred to a main *concentration* account in another bank. The transfer of funds between banks should be accomplished through the use of depository transfer checks (DTCs) or wire transfers. In the DTC arrangement, there exists a resolution statement with the bank in which Signature less checks are allowed to be deposited. As the initial banks collect the funds, information is immediately transferred to the concentration bank, which then issues a DTC to collect the outlying funds. The funds may be available the same day.

Once remissions have been accelerated, freed cash should be used for investment in marketable securities or to pay off short-term debt. Thus, the freed cash will generate interest revenue to the business. The revenue derived can be determined for a given month by multiplying the monthly average accounts receivable balance times the associated monthly interest rate (i.e., the interest rate on marketable securities or the interest rate applicable to short-term debt).

EXAMPLE 2.5. A firm's weekly average cash balances are as follows:

Week	Average Cash Balance
1	\$12,000
2	17,000

3	10,000
4	<u>15,000</u>
Total	<u>\$54,000</u>

The monthly average cash balance is: $\$54,000/4 = \underline{\$13,500}$

If the annual interest rate is approximated at 12 percent, the monthly return earned on the average cash balance is:

$\$13,500 \times 0.1 = \underline{\$135}$

For a cash acceleration system to be feasible, the return earned on the freed cash must exceed the cost of the system.

Delay of Cash Outflow

There are various ways to delay cash disbursements, including:

1. Using drafts to pay bills since drafts are not due on demand. When a bank receives a draft it must return the draft to the issuer for acceptance prior to payment. When the company accepts the draft, it then deposits the required funds with the bank; hence, a smaller average checking balance is maintained.
2. Mailing checks from post offices having limited service or from locations where the mail must go through several handling points, lengthening the payment period.
3. Drawing checks on remote banks or establishing cash disbursement centers in remote locations so that the payment period is lengthened. For example, someone in Addis Ababa can be paid with a check drawn on a Gonder bank.
4. Using credit cards and charge accounts in order to lengthen the time between the acquisition of goods and the date of payment for those goods.
5. Disbursing sales commissions when the receivables are collected rather than when the sales are made.
6. Maintaining a *zero balance account* (ZBA) where zero balances are established for all of the company's disbursing units. These accounts are in the same concentration bank. Checks are drawn against these accounts, with the balance in each account never exceeding \$0. Divisional disbursing authority is thus maintained at the local level of management. The advantages of zero balance accounts are better control over cash payments, reduction in excess cash balances held in regional banks, and a possible increase in disbursing float.
7. Using a *controlled disbursement account*. With this system, almost all payments that must be made are known in the morning. The bank informs the firm of the total, and the firm transfers (usually by wire) the amount needed.

EXAMPLE 2.6. Every 2 weeks, company X disburses checks that average \$500,000 and take 3 days to clear. How much money can the company save annually if it delays transfer of funds from an interest-bearing account that pays 0.0384 percent per day (annual rate of 14 percent) for those 3 days?

The interest for 3 days is:

$$\$500,000 \times (0.000384 \times 3) = \underline{\$576}$$

The number of 2-week periods in a year is:

$$52 \text{ weeks} / 2 \text{ weeks} = \underline{26}$$

The savings per year is:

$$\$576 \times 26 = \underline{\$14,976}$$

Opportunity Cost of Forgoing a Cash Discount

An *opportunity cost* is the net revenue lost by rejecting an alternative action. A firm should typically take advantage of a discount offered by a creditor because of the associated high opportunity cost. For example, if the terms of sale are 2/10, net/30, the customer has 30 days to pay the bill but will get a 2 percent discount if he or she pays in 10 days. Some companies use seasonal dating such as 2/10, net/30, July 1 dating. Here, with an invoice dated July 1, the discount can be taken until July 10.

The following formula may be used to compute the opportunity cost in percentage, on an annual basis, of not taking a discount:

$$\text{Opportunity cost} = \frac{\text{Discount percent}}{100 - \text{Discount percent}} \times \frac{360}{N}$$

Where, **N** = the number of days payment can be delayed by forgoing the cash discount

$$= \text{days credit} - \text{outstanding discount period}$$

The numerator of the first term (discount percent) is the cost per dollar of credit, whereas the denominator (100-discount percent) represents the money made available by forgoing the cash discount. The second term represents the number of times this cost is incurred in a year.

EXAMPLE 2.7. The opportunity cost of not taking a discount when the terms are 3/15, net/60 is computed as follows:

$$\text{Opportunity cost} = \frac{3}{100 - 3} \times \frac{360}{60 - 15} = \frac{97}{97} \times \frac{360}{45} = \underline{24.7\%}$$

Determination of the Optimal Cash Balance

There are two techniques for deciding how much cash to maintain at any given point, considering that both holding cash and investing it have both

advantages and disadvantages. The purpose of cash models is to satisfy cash requirements at the least cost.

BAUMOL'S MODEL

It attempts to determine the optimum cash balance under conditions of certainty. The objective is to minimize the sum of the fixed costs of transactions and the opportunity cost of holding cash balances.

These costs are expressed as:

$$b \times \frac{(T)}{C} \times \frac{i(C)}{2}$$

Where; **b**=the fixed cost of a transaction, **T**=the total cash needed for the time period involved, **i**=the interest rate on marketable securities, and **C**=cash balance.

The optimal level of cash or the optimal cash balance is determined using the following formula:

$$C^* = \sqrt{\frac{2bT}{i}}$$

EXAMPLE 2.8. You estimate a cash need for \$4,000,000 over a 1-month period where the cash account is expected to be disbursed at a constant rate. The opportunity interest rate is 6 percent per annum or 0.5 percent for a 1-month period. The transaction cost each time you borrow or withdraw is \$100.

The optimal cash balance and the number of transactions you should make during the month follow:

$$C^* = \sqrt{\frac{2bT}{i}} = \sqrt{\frac{2(100) \times 4,000,000}{0.005}}$$

The optimal cash balance is \$400,000. The average cash balance is:

$$\frac{C^*}{2} = \frac{\$400,000}{2} = \$200,000$$

The number of transactions required is:

$$\frac{\$4,000,000}{\$400,000} = 10 \text{ transactions during the month}$$

THE MILLER-ORR MODEL

The Miller-Orr model is a stochastic model for cash management where *uncertainty* exists for cash payments. In other words, there is irregularity of cash payments. The Miller-Orr model places an upper and lower limit for cash balances. When the upper limit is reached a transfer of cash to marketable securities or other suitable investments is made. When the lower

limit is reached a transfer from securities to cash occurs. A transaction will not occur as long as the cash balance falls within the limits.

The Miller–Orr model takes into account the fixed costs of a securities transaction (b), assumed to be the same for buying as well as selling, the daily interest rate on marketable securities (i), and the variance of daily net cash flows (s^2). A major assumption is the randomness of cash flows. The two control limits in the Miller–Orr model may be specified as “ h ” dollars as an upper limit and zero dollars at the lower limit. When the cash balance reaches the upper level, h less z dollars of securities are bought and the new balance equals zero, and z dollars of securities are sold and the new balance again reaches z .

The optimal cash balance z is computed as follows:

$$z = \sqrt[3]{\frac{3bs^2}{4i}}$$

The optimal value for h is computed as $3z$. The average cash balance will approximate $(z+h)/3$.

EXAMPLE 2.9. Delta Inc. has experienced a stochastic demand for its product, which results in fluctuating cash balances randomly. The following information supplied:

Fixed cost of a securities transaction	\$10
Variance of daily net cash flows	\$50
Daily interest rate on securities (10%/360)	0.0003

The optimal cash balance, the upper limit of cash needed, and the average cash balance follow:

$$z = \sqrt[3]{\frac{3(10)(50)}{4(0.0003)}} = \sqrt[3]{\frac{3(10)(50)}{0.0012}} = \sqrt[3]{\frac{1500}{0.0012}} = \sqrt[3]{1,250,000} = \$102$$

The optimal cash balance is \$102. The upper limit is \$306 ($3 \times \$102$). The average cash balance is:

$$\frac{(\$102 + \$306)}{3} = \$136$$

When the upper limit of \$306 is reached, \$204 of securities ($\$306 - \$102$) will be purchased to bring you to the optimal cash balance of \$102. When the lower limit of zero dollars is reached, \$102 of securities will be sold to again bring you to the optimal cash balance of \$102.

3.4. Management of Marketable securities

Features of marketable securities

1. **Maturity:** usually less than 90 days. This reduces interest rate risk.

2. **Default Risk:** usually very low
3. *High degree of Liquidity*
 - a. can be sold quickly
 - b. low cost of transaction
 - c. no price pressure effect when buying and selling
4. *Tax considerations*

3.4.1. Types of marketable securities

Certificates of deposit	Debt issued by banks sold in large denominations. This debt has maturities ranging generally up to one year. Because this debt is issued by banks, but exceeds the amount for deposit guarantees by bank insurance, there is some default risk.
Commercial paper	Debt issued by large corporations that is sold in large denominations and generally matures in 30 days. While the debt is unsecured credit and is issued by corporations, there is some default risk, though this is minimized by the back-up lines of credit at commercial banks.
Eurodollars deposits	Loans and certificates of deposits of non-U.S. banks that are denominated in the U.S. dollar. These debts are generally large denominations with maturities up to six months. Like loans and certificates of U.S. banks, there is some default risk.
Banker's acceptances	time drafts or notes issued by firm that is guaranteed payment by a bank. Often used in foreign trade.
Repurchase agreements	buy securities from a bond dealer with agreement for dealer to repurchase at higher prices.
Treasury Bills	mature in 90, 180, 270 or 360 days. Usually issued by government companies, and have low risk associated with investing on it.

3.5. Criteria in selecting marketable securities

Marketable securities are short-term, high-quality debt instruments that can be easily converted into cash.

In order of priority, three primary criteria for selecting appropriate marketable securities to meet firm's anticipated short-term cash needs (particularly those arising from precautionary and speculative motives):

(1) Safety (2) Liquidity (3) Yield

Safety: it implies that there is negligible risk of default of securities purchases and marketable securities will not be subject to excessive market fluctuations due to fluctuations in interest rates

Liquidity: it requires that marketable securities can be sold quickly and easily with no loss in principal value due to inability to readily locate purchaser for securities

Yield: it requires that the highest possible yield be earned and is consistent with safety and liquidity criteria. It is the least important of three in structuring marketable securities portfolio

Safety, liquidity, and yield criteria severely restrict range of securities acceptable as marketable securities.

Most major corporations meet marketable securities needs with Treasury bills or with corporate commercial paper carrying highest credit rating.

- *These securities are short-term, highly liquid, and have reasonably high yields.*
- Treasury bills are default-risk free.
- High-quality commercial paper carries miniscule default risk.

Firms that have sought to achieve higher potential yields via money market funds invested in asset-backed securities have learned that *those higher potential yields carried higher risk.*