



# CASH MANAGEMENT

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# What do you know about cash and Cash Management



# WHAT IS CASH?

- ▣ In narrow sense: currency and generally accepted equivalents of cash like cheques, drafts etc.
- ▣ In broad sense: includes near-cash assets, such as marketable securities and time deposits in banks.
  - They can be readily sold and converted into cash.
  - Can serve as a reserve pool of liquidity.
  - Also provide short term investment outlet for excess cash.



# Cash management

- ▣ Cash management is concerned with the managing of:
  - cash flows into and out of the firm,
  - cash flows within the firm, and
  - cash balances held by the firm at a point of time by financing deficit or investing surplus cash



# Four Facets of Cash Management

- *Cash planning*
- *Managing the cash flows*
- *Optimum cash level*
- *Investing surplus cash*



# Motives for holding cash

- ▣ Transaction motive
- ▣ Precautionary motive
- ▣ Speculative motive
- ▣ Compensating motive



# Transaction motive



- ▣ Holding of cash to meet routine cash requirements to finance the transactions which a firm carries on in the ordinary course of business.
- ▣ Cash is held to pay for goods or services. It is useful for conducting our everyday transactions or purchases.



# Precautionary motive



- The cash balances held in reserve for random and unforeseen fluctuations in cash flows.
- A cushion to meet unexpected contingencies.
  - Floods, strikes and failure of imp customers
  - Unexpected slowdown in collection of accounts receivable
  - Sharp increase in cost of raw materials
  - Cancellation of some order of goods

- Defensive in nature







# Speculative motive



- ▣ Is a motive for holding cash/near-cash to quickly take advantage of opportunities typically outside the normal course of business.
- ▣ Positive and aggressive approach
- ▣ Helps to take advantage of:
  - An opportunity to purchase raw materials at reduced price
  - Make purchase at favorable prices
  - Delay purchase on anticipation of decline in prices
  - Buying securities when interest rate is expected to decline

# Compensating motive



- Is a motive for holding cash/near-cash to compensate banks for providing certain services or loans.
- Clients are supposed to maintain a minimum balance of cash at the bank which they cannot use themselves.



# Objectives of cash management

- **Meeting payments schedule**
  - It prevents insolvency
  - relationship with bank is not constrained
  - Helps in fostering good relationships
  - Cash discount can be availed
  - Strong credit rating
  - Take advantage of business opportunities
  - Can meet unanticipated cash expenditure with a minimum of strain.
- **Minimizing funds committed to cash balances**
  - High level of cash: large funds remain idle
  - Low level of cash: failure to meet payment schedule



# Factors determining cash needs

1. Synchronization of cash needs
2. Short costs:
  - i. Transaction costs
  - ii. Borrowing costs
  - iii. Loss on cash discount
  - iv. Cost associated with deterioration of the credit
  - v. Penalty rates
3. Excess cash balance costs
4. Procurement and Management
5. Uncertainty and Management

# Managing Cash Collections and Disbursements



- ▣ Accelerating Cash Collections
- ▣ Controlling Disbursements

# Accelerating Cash Collections



## 1. Decentralised Collections

- Number of collection centres
- Collection centres will collect cheques from customers and deposit in their local bank accounts
- They will deposit the funds to a central bank

# Accelerating Cash Collections Contd.....



## 1. Lock-box System

- ❖ Collection centers are established considering the customer locations and volume of remittances
- ❖ At each centre the firm hires a post office box
- ❖ Remittances are directly picked from the bank whom the firm gives the authority

### Advantages of lock-box system are:

- ❖ Cheques are deposited immediately upon receipt of remittances
- ❖ Eliminates the period between the time cheques are received by the firm and the time they are deposited in the bank for collection

# Controlling Disbursements

It means delay the payments as much as possible. Can help the firm in conserving cash and reducing the financial requirements.

Disbursement or Payment Float





# *The size of the minimum cash balance depends on:*

- ▣ How quickly and cheaply a organization can raise cash when needed.
- ▣ How accurately managers can predict cash requirements.  
Cash budget helps in this .
- ▣ How much precautionary cash the managers need for emergencies.



## *The organization's maximum cash balance depends on:*

- Availability of (short-term) investment opportunities
  - e.g. money market funds, CDs, commercial paper
- Expected return on investment opportunities.
  - e.g. If expected returns are high, organizations should be quick to invest excess cash
- Transaction cost of withdrawing cash and making an investment
- Demand for Cash for daily transactions



# CASH MANAGEMENT MODELS

# Cash Management Model

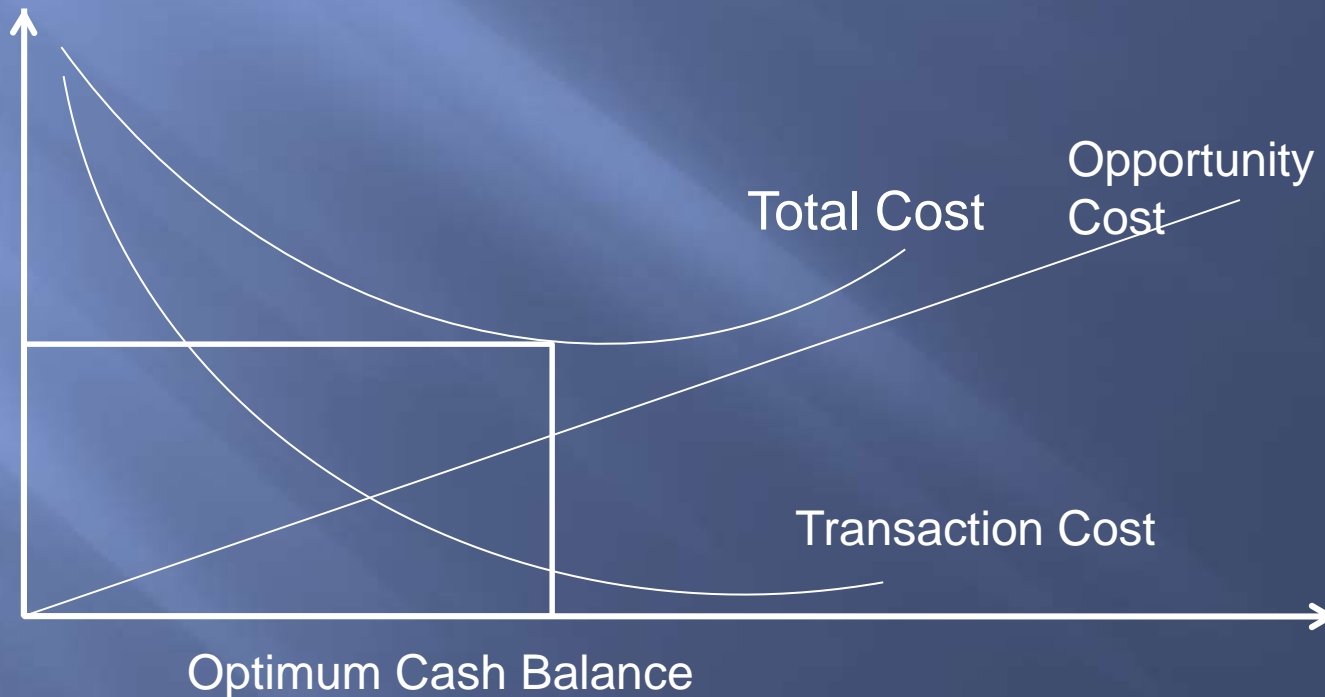
- ▣ A number of mathematical model have been to develop to determined the optimal cash balance.
- ▣ Two of such model are as follow;
  - a) William J. Baumol's inventory model
  - b) M. H. Miller and Daniel Orr's Stochastic model

# William J. Baumol's Inventory model

## Baumol's model of cash management-

- ▣ Trades off between opportunity cost or carrying cost or holding cost & the transaction cost. As such firm attempts to minimize the sum of the holding cash & the cost of converting marketable securities in to cash.
- ▣ Helps in determining a firm's optimum cash balance under certainty

# William J. Baumol's Inventory model



(Baumol's Model : Tradeoff Between Holding cost and transaction cost)

# William J. Baumol's Inventory model

## Assumptions

- ▣ Cash needs of the firm is known with certainty
- ▣ Cash Disbursement over a period of time is known with certainty
- ▣ Opportunity cost of holding cash is known and remains constant
- ▣ Transaction cost of converting securities into cash is known and remains constant

# William J. Baumol's Inventory model

## Algebraic representation of William J. Baumol's Inventory model

$$C = \sqrt{\frac{2A * F}{O}}$$

C = Optimum Balance

A = Annual Cash Distribution

F = Fixed Cost Per Transaction

O = Opportunity Cost Of Holding



# William J. Baumol's Inventory model

## Uses

The Baumol's model enables companies to find out their desirable level of cash balance under certainty. The Baumol's model of cash management theory relies on the tradeoff between the liquidity provided by holding money (the ability to carry out transactions) and the interest foregone by holding one's assets in the form of non-interest bearing money. The key variables of the demand for money are then the nominal interest rate, the level of real income which corresponds to the amount of desired transactions and to a fixed cost of transferring one's wealth between liquid money and interest bearing assets

# William J. Baumol's Inventory model

## Evaluation of the model

- ▣ Helpful in determining optimum level of Cash holding
- ▣ Facilitates the finance manager to minimize Carrying cost and Maintain Cash
- ▣ Indicates idle cash Balance Gainful employment
- ▣ Applicable only in a situation of certainty in other words this model is deterministic model

# M. H. Miller and Daniel Orr's Stochastic Model

## Overview

- ▣ The **Miller and Orr model of cash management** is one of the various cash management models in operation. It is an important cash management model as well. It **helps the present day companies to manage their cash while taking into consideration the fluctuations in daily cash flow.**

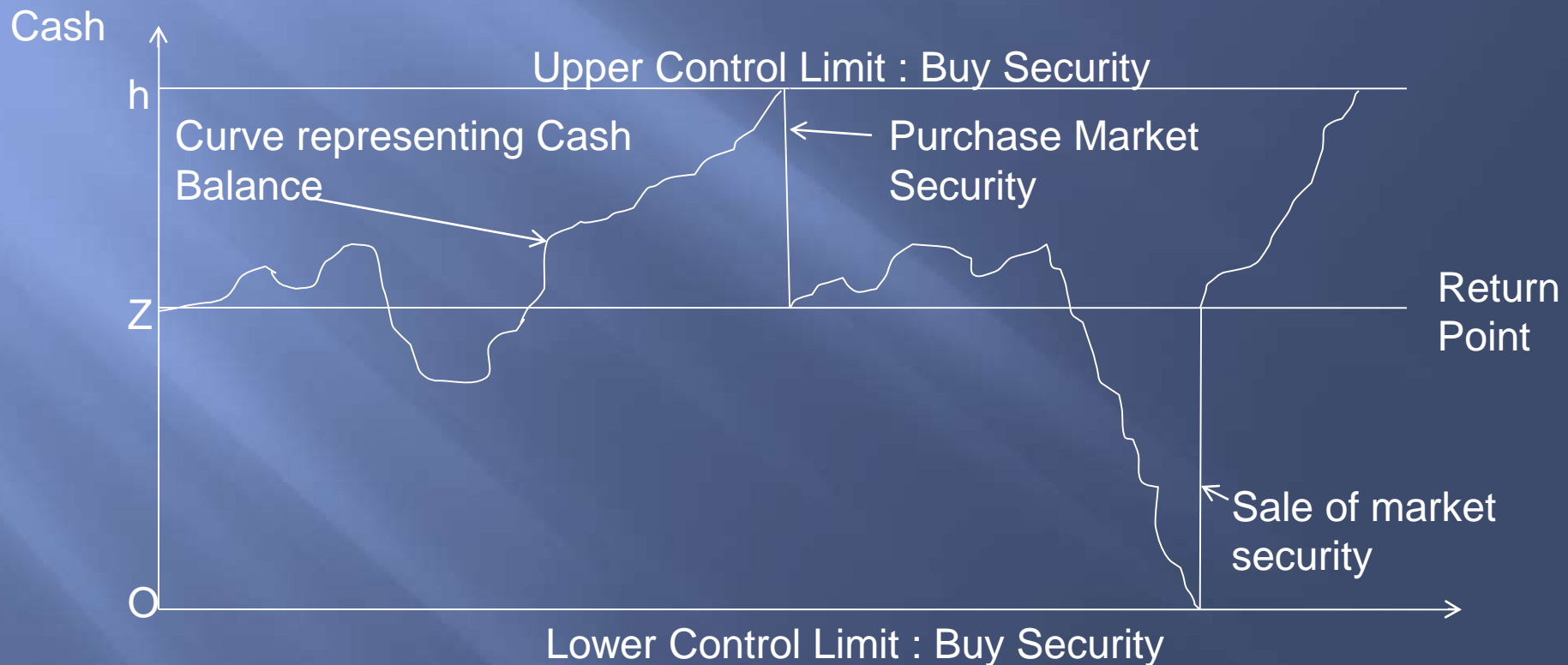
# M. H. Miller and Daniel Orr's Stochastic Model

## Description

- ▣ As per the Miller and Orr model of cash management the companies let their cash balance move within two limits
  - a) Upper Control limit
  - b) Lower Control Limit

# M. H. Miller and Daniel Orr's Stochastic Model

## Miller – Orr Cash Management Model



# M. H. Miller and Daniel Orr's Stochastic Model

## Explanation For the Diagram

- ▣ Along with a return point when the cash balance touches the upper Control limit ( $h$ ), the marketable security is purchased to the extent till it reaches normal cash balance ( $Z$ )
- ▣ In the same manner when the cash balance touches lower limit ( $o$ ), the firm Will Sell the Marketable security to the extent till it reaches normal cash Balance ( $Z$ )

# M. H. Miller and Daniel Orr's Stochastic Model

## Computation of Miller - Orr Model of Cash Management

$$\text{Spread (Z)} = \frac{(3/4 * \text{Transaction cost} * \text{Variance of Cash Flow})^{1/3}}{\text{Interest Rate}}$$

$$\text{Return Point} = \text{Lower limit} + \frac{\text{Spread (Z)}}{3}$$

$$\text{Variance of Cash Flow} = (\text{Standard Deviation})^2 \text{ or } \frac{2n}{3}$$

# M. H. Miller and Daniel Orr's Stochastic Model

## Benefits

- ▣ Allows for net cash flow in a random fashion.
- ▣ transfer can take place at any time and are instantaneous with a fixed transfer cost.
- ▣ Produce control limit can be used as basis for balance management



# M. H. Miller and Daniel Orr's Stochastic Model

## Limitations

- ▣ May prove difficult to calculate.
- ▣ Monitoring needs to be calculated for the organizations benefits becomes a tedious Work.

# M. H. Miller and Daniel Orr's Stochastic Model

## Application

- ▣ Finding out the approximate prices at which the salable securities could be sold or bought
- ▣ Deciding the minimum possible levels of desired cash balance
- ▣ Checking the rate of interest
- ▣ Calculating the SD (Standard Deviation) of regular cash flows

# M. H. Miller and Daniel Orr's Stochastic Model

## Evaluation of the Model

- ▣ This Stochastic model can be employed even in extreme uncertainty
- ▣ When the cash flow fluctuate violently in short period it will give optimal result
- ▣ Finance Manager can apply this model in highly unpredictable situation

