Cash Management

Liquidity

Factors affecting liquidity

1. Pattern and certainty of cash inflows
2. Certainty and prior knowledge of outflows
3. Availability and certainty of inventories supplies
4. Easy and timely availability of short-term borrowings

Measurement of Liquidity

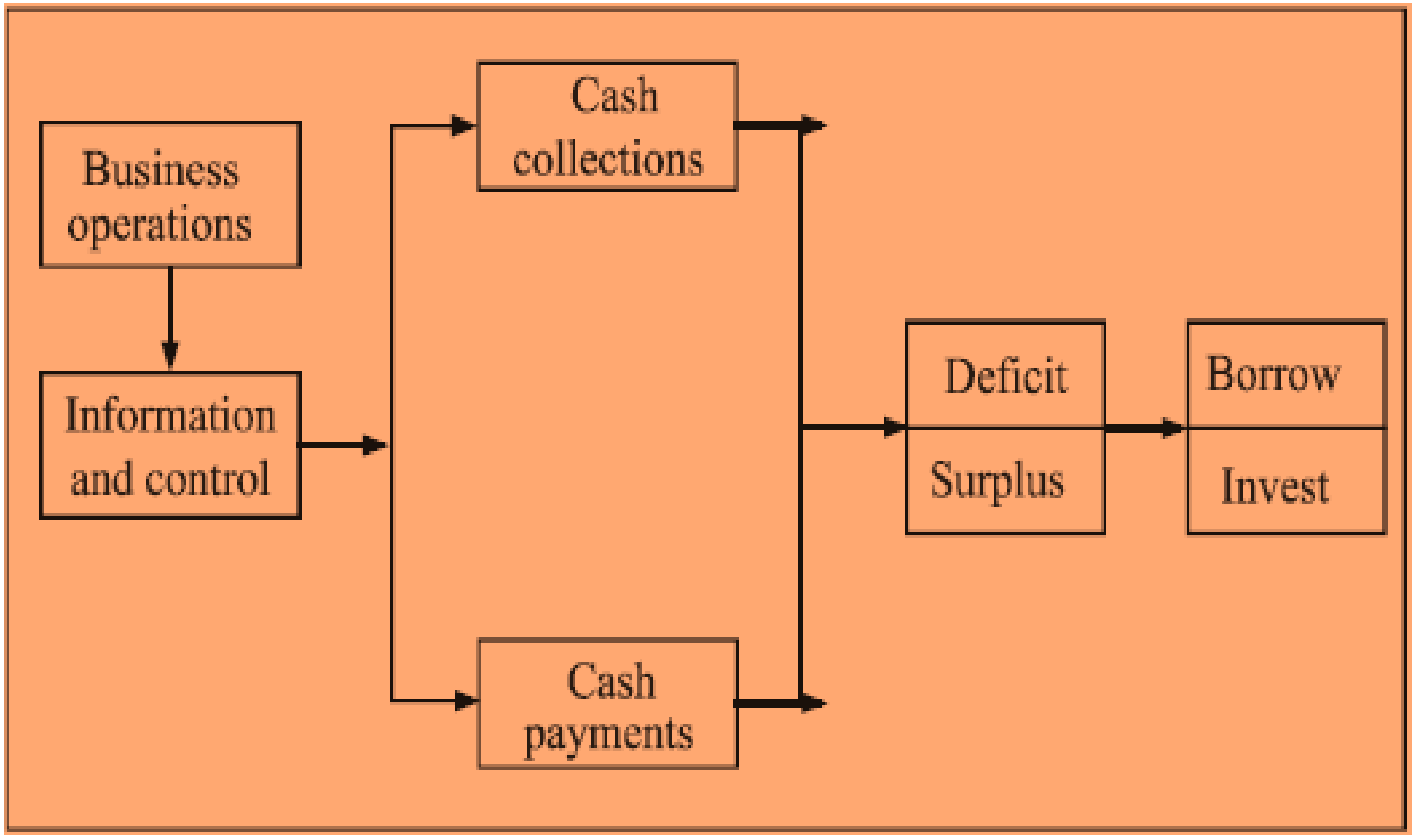
- Ratio Analysis:
- Liquidity Ratio
- Activity Ratio
- Profitability Ratio
- Capital Structure Ratio

- Cash flow statement

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*

CASH MANAGEMENT CYCLE



Four Facets of Cash Management

- ***Cash planning (Cash budget)***
- ***Managing the cash flows*** **(accelerate inflows, decelerate outflows)**
- ***Optimum cash level***
- ***Investing surplus cash*** (bank deposits, marketable securities, inter-corporate lending)

Motives for Holding Cash

- The transactions motive (because of lack of synchronisation between cash receipts and cash payments)
- The precautionary motive (to meet contingencies)
- The speculative motive (profit-making opportunities)

Cash Planning

- **Cash planning is a technique to plan and control the use of cash.**

- **Cash Forecasting and Budgeting**
  - **Cash budget is the most significant device to plan for and control cash receipts and payments.**
  - **Cash forecasts are needed to prepare cash budgets.**

Short-term Cash Forecasts

- ***The important functions of short-term cash forecasts***
  - To determine operating cash requirements
  - To anticipate short-term financing
  - To manage investment of surplus cash.
- ***Short-term Forecasting Methods***
  - The receipt and disbursements method
  - The adjusted net income method.
  - The adjusted balance sheet method

The Receipts and Disbursements Method

- Under this method, a statement projecting the cash inflows and outflows over various interim periods of the budget is prepared
- **The virtues of the receipt and payment methods are:**

  It gives a complete picture of all the items of expected cash flows.

  It is a sound tool of managing daily cash operations.
- **This method, however, suffers from the following limitations:**

1. Its reliability is reduced because of the uncertainty of cash forecasts. For example, collections may be delayed, or unanticipated demands may cause large disbursements.

The Adjusted Net Income Method

- A proforma income statement is prepared for each desired interim period of the budget period. Income figures are then adjusted to a cash basis by deleting transactions that are effecting income statements but not the cash balance. This adjusted figure is taken as cash profit or loss during that period.
- **The benefits of the adjusted net income method are:**

  It highlights the movements in the working capital items, and thus helps to keep a control on a firm's working capital.

  It 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.

The Adjusted Balance Sheet Method

- Under this method, a proforma balance sheet is prepared for each interim period.
- Each item of the balance sheet is projected except cash.
- Cash balance is ascertained in accordance with the accounting equation:
- Total Assets = Total Liabilities + Capital.
- The balancing figure is taken as the cash balance.

Illustration 18.4

Prepare a Cash Budget for the three months ending 30 June 2012, from the information given below:

(a) Month	Sales ₹	Materials ₹	Wages ₹	Overheads ₹
February	14,000	9,600	3,000	1,700
March	15,000	9,000	3,000	1,900
April	16,000	9,200	3,200	2,000
May	17,000	10,000	3,600	2,200
June	18,000	10,400	4,000	2,300

(b) Credit terms are:

Sales and debtors—10% of sales are on cash, 50% of the credit sales are collecte next month and the balance in the following month:

Creditors — Materials 2 months
Wages 1/4 month
Overheads 1/2 month

(c) Cash and bank balance on 1 April 2012 is expected to be ₹6,000.

(d) Other relevant informations are:

(i) Plant and machinery will be installed in February 2012 at a cost of ₹96,000. The monthly instalment of ₹2,000 is payable from April onwards.

(ii) Dividend @ 5% on Preference Share Capital of ₹2,00,000 will be paid on 1 June.

(iii) Advance to be received for sale of vehicles ₹9,000 in June.

(iv) Dividends from investments amounting to ₹1,000 are expected to be received in June.

(v) Income tax (advance) to be paid in June is ₹2,000. *(ICWA Inter)*

Cash Budget
for three months ending 30 June 2012

	April ₹	May ₹	June ₹	Total ₹
Balance b/f	6,000	3,950	3,000	6,000
Receipts:				
Sales*	14,650	15,650	16,650	46,950
Dividend	—	—	1,000	1,000
Advance against vehicle	—	—	9,000	9,000
Total	20,650	19,600	29,650	62,950
Payments:				
Creditors (materials)	9,600	9,000	9,200	27,800
Wages	3,150	3,500	3,900	10,550
Overheads	1,950	2,100	2,250	6,300
Instalment for plant	2,000	2,000	2,000	6,000
Pref. dividend	—	—	10,000	10,000
Income-tax advance	—	—	2,000	2,000
Total	16,700	16,600	29,350	62,650
Closing balance	3,950	3,000	300	300

3,950	3,000	300	300

Working Notes:

1. Calculation of collection from debtors:

	Feb. ₹	March ₹	April ₹	May ₹	June ₹
Sales	14,000	15,000	16,000	17,000	18,000
Less: Cash sales (10%)	1,400	1,500	1,600	1,700	1,800
Credit sales	12,600	13,500	14,400	15,300	16,200
50% collection in next month			6,750	7,200	7,650
50% collection in the following month			6,300	6,750	7,200
Total collection			13,050	13,950	14,850
Cash sales			1,600	1,700	1,800
Cash receipts from sales			14,650	15,650	16,650

Managing Cash Collections and Disbursements

- **Accelerating Cash Collections**
  - ***Decentralised Collections***
- ***Controlling Disbursements***
  - ***Disbursement or Payment Float***

CLEARING

- The **clearing process** refers to the exchange by banks of instruments drawn on them, through a **clearinghouse**.
- Instruments like cheques, demand drafts, interest and dividend warrants and refund orders can go through clearing.
- Documentary bills, or promissory notes do not go through clearing.
- The clearing process has been highly automated in a number of countries.

Electronic Fund Transfer

- ECS (Electronic Clearing System)
- NEFT (National Electronic Fund Transfer)
- RTGS (Real Time Gross Settlement)

Controlling Disbursements

- Delaying disbursement results in maximum availability of funds. However, the firms that delay in making payments may endanger its credit standing.

- While, for accelerated collections a decentralized collection procedure may be followed, for a proper control of disbursements, a centralized system may be advantageous.

- Some firms use the technique of '**playing the float**' to maximize the availability of funds. When the firm's actual bank balance is greater than the balance shown in the firm's books,

the difference is called **disbursement** or **payment**

Optimum Cash Balance

- **Optimum Cash Balance under Certainty: Baumol's Model**
- **Optimum Cash Balance under Uncertainty: The Miller–Orr Model**

BAUMOL'S MODEL–ASSUMPTIONS:

- The firm is able to forecast its cash needs with certainty.
- The firm's cash payments occur uniformly over a period of time.
- The opportunity cost of holding cash is known and it does not change over time.
- The firm will incur the same transaction cost whenever it converts securities to cash.

BAUMOL'S MODEL

- The firm incurs a **holding cost** for keeping the cash balance. It is an opportunity cost; that is, the return foregone on the marketable securities. If the opportunity cost is k, then the firm's holding cost for maintaining an average cash balance is as follows:

$$\text{Holding cost} = k(C/2)$$

- The firm incurs a **transaction cost** whenever it converts its marketable securities to cash. Total number of transactions during the year will be total funds requirement, T, divided by the cash balance, C, i.e., T/C. The per transaction cost is assumed to be constant. If per transaction cost is c, then the total transaction cost will be:

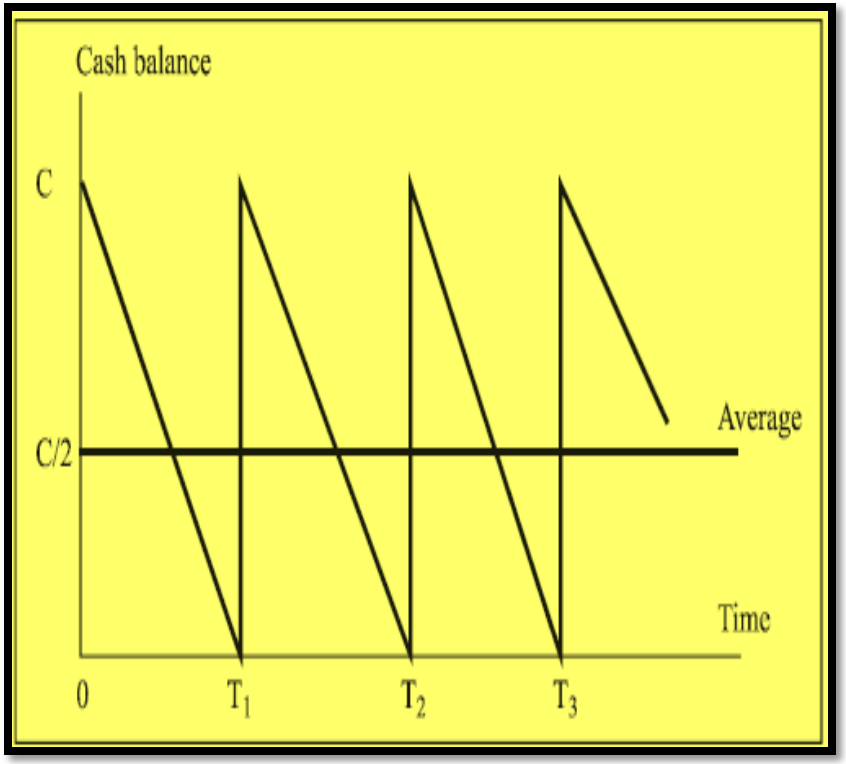
$$\text{Transaction cost} = c(T/C)$$

- The total annual cost of the demand for cash will be:

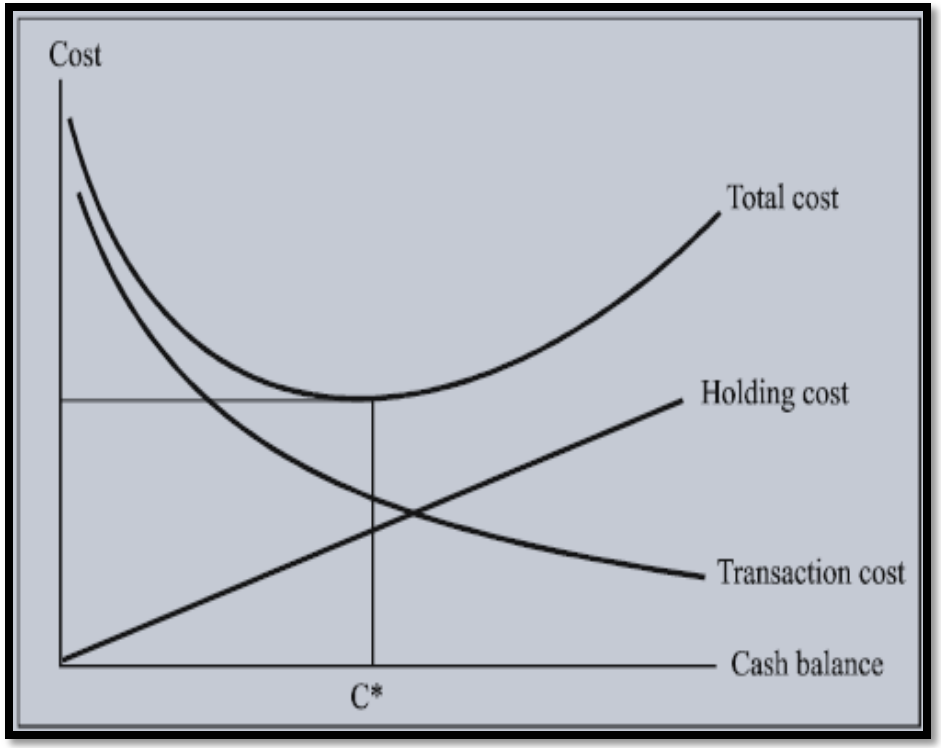
$$\text{Total cost} = k(C/2) + c(T/C)$$

- The optimum cash balance, C^*, is obtained when the total cost is minimum. The formula for the optimum cash balance is as follows:

$$C^* = \sqrt{\frac{2cT}{k}}$$



Baumol's model for cash balance

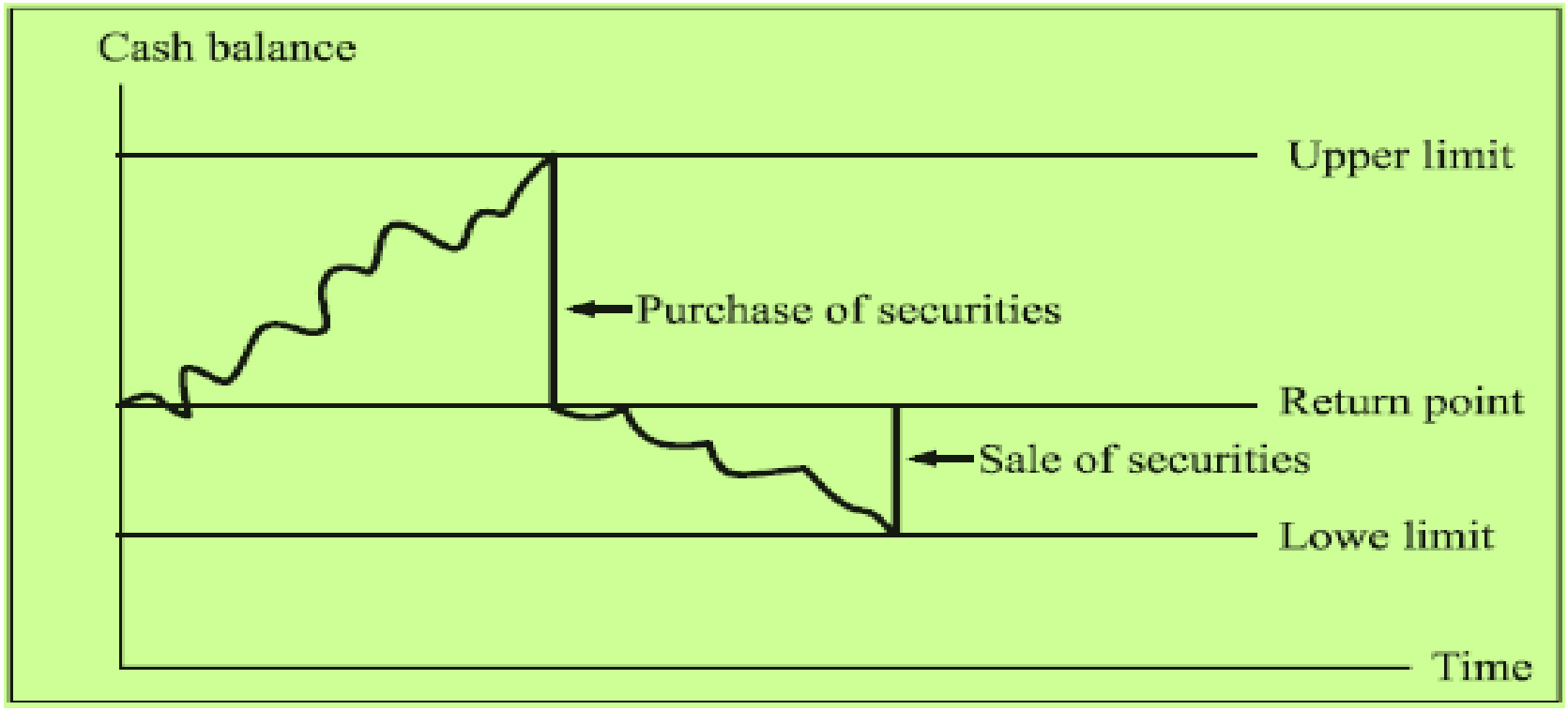


Cost trade-off: Baumol's model

The Miller–Orr Model

- The MO model provides for two control limits–the upper control limit and the lower control limit as well as a return point.
- If the firm's cash flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of cash balance (the return point).
- Similarly, when the firm's cash flows wander and hit the lower limit, it sells sufficient marketable securities to bring the cash balance back to the normal level (the return point).

MILLER-ORR MODEL



The Miller-Orr Model

- The difference between the upper limit and the lower limit depends on the following factors:
  - the transaction cost (c)
  - the interest rate, (i)
  - the standard deviation (s) of net cash flows.
- The formula for determining the distance between upper and lower control limits (called Z) is as follows:
  - $Z = (3/4 * czs^2 / i)^{1/3}$

Upper Limit = Lower Limit + $3Z$

Return Point = Lower Limit + Z

The net effect is that the firms hold the average the cash balance equal to:

Average Cash Balance = Lower Limit + $4/3Z$

INVESTING SURPLUS CASH IN MARKETABLE SECURITIES

- **Selecting Investment Opportunities:**
  - ***Safety,***
  - ***Maturity***
  - ***Marketability*/ Liquidity**
  - **Default risk**

SHORT-TERM INVESTMENT OPPORTUNITIES:

- ***Treasury bills***
- ***Commercial papers*** *(unsecured promissory note)*
- ***Certificates of deposits*** *(papers issued by banks acknowledging fixed deposits)*
- ***Bank deposits***
- ***Inter-corporate deposits***
- ***Money market mutual funds***