

10

An Overview of Working Capital Management

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Learning Objectives

By the end of this chapter, participants will be able to:

- Define working capital and working capital management
- Distinguish gross and net working capital
- Identify current assets and current liabilities
- Explain permanent and temporary working capital
- Calculate the operating cycle and cash conversion cycle
- Evaluate liquidity and profitability trade-offs
- Explain aggressive, moderate and conservative policies
- Estimate working-capital requirements
- Analyze cash, receivables, inventory and payables
- Evaluate short-term financing sources
- Calculate key liquidity and efficiency ratios
- Identify working-capital risks
- Recommend strategies for improving working-capital performance

Chapter Roadmap

This chapter covers:

1. Meaning of working capital
2. Components of working capital
3. Types of working capital
4. Importance of working-capital management
5. Operating cycle
6. Cash conversion cycle
7. Liquidity–profitability trade-off
8. Working-capital policies
9. Estimation of working-capital requirements
10. Cash management
11. Receivables management
12. Inventory management
13. Payables management
14. Short-term financing
15. Working-capital ratios
16. Risk management and improvement strategies

SECTION 1

Introduction to Working Capital

What Is Working Capital?

Working capital represents the financial resources used to support an organization's daily operations. It is invested in:

- Cash
- Inventory
- Receivables
- Short-term operating expenses
- Other current assets

Meaning of Working Capital Management

Working capital management is the process of planning, controlling and optimizing:

- Current assets
- Current liabilities
- Short-term cash flows
- Operational financing
- Liquidity
- Short-term financial risk

The Central Working-Capital Question

Management must determine: How much should the organization invest in short-term assets, and how should those assets be financed? This decision affects:

- Liquidity
- Profitability
- Risk
- Operational continuity
- Financing costs
- Organizational value

Working Capital and Daily Operations

Working capital finances activities such as:

- Purchasing raw materials
- Paying salaries
- Maintaining inventory
- Providing customer credit
- Paying suppliers
- Covering utility costs
- Meeting short-term obligations

Why Working Capital Matters

An organization may be profitable but still fail if it cannot:

- Pay suppliers
- Pay salaries
- Meet debt obligations
- Purchase inventory
- Finance operations
- Collect customer balances on time

Profitability does not automatically guarantee liquidity.

Working Capital as the Lifeblood of Business

Working capital connects:



SECTION 2

Gross and Net Working Capital

Gross Working Capital

Gross working capital refers to the total investment in current assets.

$$\begin{array}{c} \text{Gross Working Capital} \\ = \\ \text{Total Current Assets} \end{array}$$

Current Assets

Current assets are expected to be:

- Converted into cash
- Sold
- Consumed
- Used in operations

...within one operating cycle or one year, depending on the applicable accounting framework.

Examples of Current Assets

Current assets may include:

- Cash
- Bank balances
- Short-term investments
- Accounts receivable
- Inventory
- Prepaid expenses
- Advances
- Other short-term assets

Net Working Capital

Net working capital is the difference between current assets and current liabilities.

$$\begin{aligned} &\text{Net Working Capital} \\ &= \\ &\text{Current Assets} - \text{Current Liabilities} \end{aligned}$$

Net Working-Capital Example

Assume current assets of ETB 15 million and current liabilities of ETB 10 million.

$$\text{NWC} = 15 \text{ million} - 10 \text{ million}$$

$$\text{NWC} = \text{ETB } 5 \text{ million}$$

Positive Net Working Capital

Positive net working capital occurs when:

$$\text{Current Assets} > \text{Current Liabilities}$$

It generally indicates that the organization has short-term resources above its immediate obligations.

Negative Net Working Capital

Negative net working capital occurs when $\text{Current Liabilities} > \text{Current Assets}$. It may indicate:

Liquidity pressure

Reduced ability to cover immediate short-term obligations.

Heavy reliance on suppliers

Operations funded largely through trade credit and short-term financing.

Short-term financing risk & possible payment difficulties

Greater exposure to refinancing needs and delayed payments.

Is Negative Working Capital Always Bad?

Not necessarily. Some businesses may operate successfully with negative working capital when they:

- Collect cash immediately
- Sell inventory quickly
- Pay suppliers later
- Maintain strong and predictable cash flow

Examples may include some retailers and subscription-based businesses.

Gross vs Net Working Capital

Gross Working Capital	Net Working Capital
Total current assets	Current assets minus current liabilities
Focuses on asset investment	Focuses on liquidity position
Measures short-term resources	Measures short-term financial cushion
Does not consider financing	Considers current obligations

SECTION 3

Current Liabilities

What Are Current Liabilities?

Current liabilities are obligations expected to be settled within:

- One year
- The normal operating cycle
- The contractual short-term period

Examples of Current Liabilities

Current liabilities may include:

- Accounts payable
- Accrued expenses
- Short-term loans
- Bank overdrafts
- Taxes payable
- Salaries payable
- Current portion of long-term debt
- Customer advances

Spontaneous Financing

Spontaneous financing arises naturally from normal operations. Examples include:

- Trade credit
- Accrued wages
- Accrued taxes
- Utility payables

It increases as business activity grows.

Negotiated Short-Term Financing

Negotiated financing requires formal arrangements. Examples include:

- Bank overdraft
- Short-term bank loan
- Revolving credit facility
- Commercial paper
- Invoice financing
- Factoring

SECTION 4

Types of Working Capital

Permanent Working Capital

Permanent working capital is the minimum amount of current assets required to maintain normal operations.

- Exists continuously, even at the lowest activity level
- Represents the stable base of current-asset investment
- Typically financed with long-term funds

Examples of Permanent Working Capital

Permanent working capital may include:

- Minimum cash balance
- Basic inventory
- Normal receivables
- Essential prepaid expenses
- Minimum operating supplies

Temporary Working Capital

Temporary working capital is the additional current-asset investment required because of:

- Seasonal demand
- Business expansion
- Special orders
- Temporary price increases
- Emergency requirements

Seasonal Working Capital

Seasonal working capital arises from predictable changes in activity. Examples:

- Holiday sales
- Agricultural harvest seasons
- School-opening periods
- Tourism seasons
- Construction cycles

Special Working Capital

Special working capital may be required for:

- Large contracts
- Promotional campaigns
- Emergency response
- Temporary production increases
- New-market entry
- One-time procurement

Permanent vs Temporary Working Capital

Permanent Working Capital	Temporary Working Capital
Required continuously	Required periodically
Supports minimum operations	Supports fluctuations
Relatively stable	Changes with activity
Often financed long term	Often financed short term

Working Capital by Concept

Working capital may also be classified as:

- Regular working capital
- Reserve working capital
- Seasonal working capital
- Special working capital
- Project-specific working capital

SECTION 5

Importance of Working-Capital Management

Operational Continuity

Adequate working capital ensures that the organization can:

- Purchase inputs
- Pay employees
- Maintain production
- Provide services
- Pay suppliers
- Meet customer demand
- Continue operations without interruption

Liquidity Management

Working-capital management helps ensure that cash is available to meet:

- Supplier payments
- Payroll
- Taxes
- Loan installments
- Operating expenses
- Unexpected obligations

Profitability

Working-capital decisions affect profitability through:

- Inventory carrying costs
- Credit-management costs
- Financing expenses
- Cash-holding costs
- Discounts received
- Bad-debt losses
- Lost-sales risk

Risk Management

Poor working-capital management may create:

- Cash shortages
- Inventory losses
- Customer defaults
- Supplier disruption
- Excess borrowing
- Payment delays
- Operational failure

Organizational Reputation

Timely payment of obligations helps strengthen:

- Supplier confidence
- Employee trust
- Lender relationships
- Customer reliability
- Creditworthiness
- Market reputation

Working Capital and Growth

Growth usually requires additional investment in:

- Inventory
- Receivables
- Cash
- Staff advances
- Operating expenses

Rapid growth can create liquidity pressure even when sales and profits increase.

Overtrading

Overtrading occurs when a business expands faster than its working-capital capacity. Warning signs include:

- Rapid sales growth
- Increasing receivables
- Frequent overdraft use
- Delayed supplier payments
- Inventory shortages
- Falling liquidity ratios

SECTION 6

Working-Capital Objectives

Main Objectives

Working-capital management seeks to:

- Maintain liquidity
- Support operations
- Minimize financing costs
- Reduce short-term risk
- Improve profitability
- Optimize current assets
- Maintain supplier and customer relationships

The Balance Required

Management must avoid the two extremes:

Excessive Working Capital

Too many resources tied up in low-return current assets.

Inadequate Working Capital

Insufficient resources to support operations and meet obligations.

Consequences of Excessive Working Capital

Excessive working capital may result in:

- Idle cash
- Excess inventory
- High storage costs
- Obsolete stock
- Loose credit policies
- Low asset returns
- Reduced profitability

Consequences of Inadequate Working Capital

Insufficient working capital may result in:

- Missed payments
- Lost supplier discounts
- Stockouts
- Production interruptions
- Emergency borrowing
- Lost sales
- Financial distress

SECTION 7

Operating Cycle

What Is the Operating Cycle?

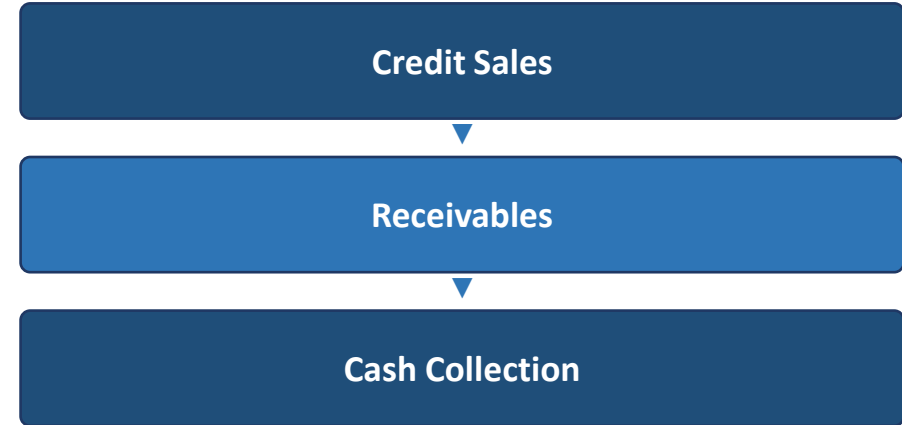
The operating cycle is the time required to:

1. Purchase inventory
2. Produce or prepare goods or services
3. Sell to customers
4. Collect cash from customers

Operating-Cycle Formula

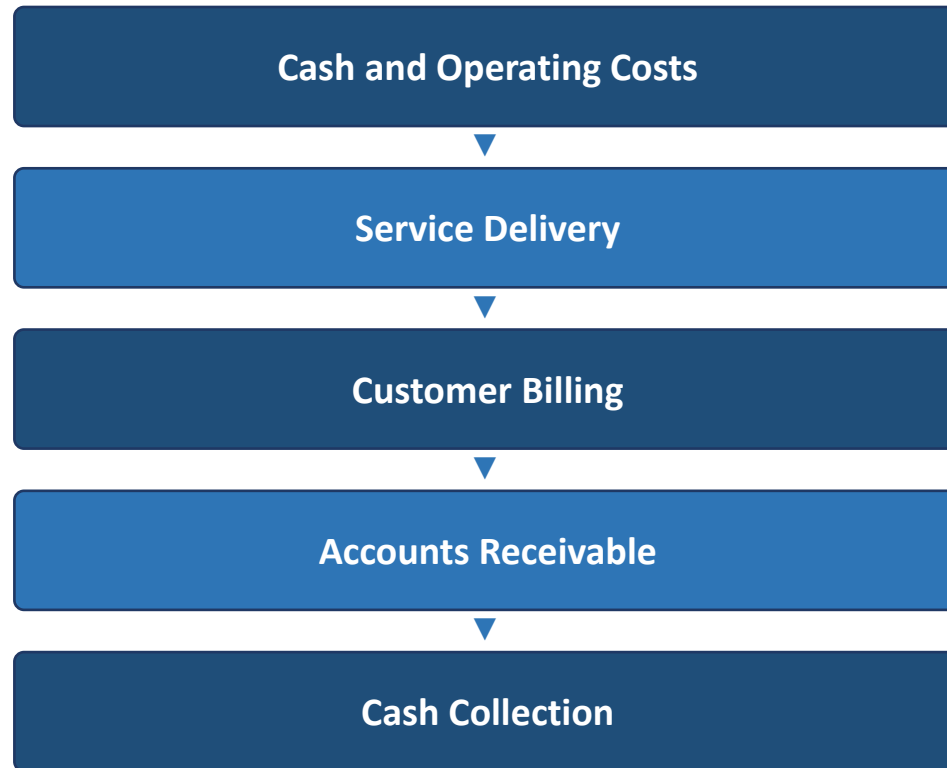
$$\begin{aligned} &\text{Operating Cycle} \\ &= \\ &\text{Inventory Holding Period} \\ &+ \\ &\text{Receivables Collection Period} \end{aligned}$$

Manufacturing Operating Cycle



Service-Business Operating Cycle

A service organization may have:



Inventory Holding Period

The inventory holding period measures the average number of days inventory remains before sale or use.

$$\begin{aligned} &\text{Inventory Days} \\ &= \\ &(\text{Average Inventory} \div \text{Cost of Sales}) \times 365 \end{aligned}$$

Inventory-Days Example

Assume average inventory of ETB 4 million and annual cost of sales of ETB 24 million.

$$\text{Inventory Days} = (4 \div 24) \times 365 \\ \approx 60.8 \text{ days}$$

Receivables Collection Period

The receivables collection period measures the average number of days required to collect customer balances.

$$\begin{aligned} &\text{Receivables Days} \\ &= \\ &(\text{Average Receivables} \div \text{Annual Credit Sales}) \times 365 \end{aligned}$$

Receivables-Days Example

Assume average receivables of ETB 3 million and annual credit sales of ETB 30 million.

$$\begin{aligned}\text{Receivables Days} &= (3 \div 30) \times 365 \\ &= 36.5 \text{ days}\end{aligned}$$

Calculate the Operating Cycle

Using inventory period of 60.8 days and receivables period of 36.5 days:

$$\begin{aligned}\text{Operating Cycle} &= 60.8 + 36.5 \\ &= 97.3 \text{ days}\end{aligned}$$

SECTION 8

Payables Period

Payables Payment Period

The payables period measures the average number of days the organization takes to pay suppliers.

$$\begin{aligned} &\textbf{Payables Days} \\ &= \\ &\textbf{(Average Trade Payables} \div \textbf{Annual Credit Purchases)} \times 365 \end{aligned}$$

Payables-Days Example

Assume average trade payables of ETB 2 million and annual credit purchases of ETB 18 million.

$$\text{Payables Days} = (2 \div 18) \times 365 \\ \approx 40.6 \text{ days}$$

Interpretation of Payables Days

Longer payables days may...

- Preserve cash
- Reduce financing needs
- Increase supplier risk
- Lead to late-payment penalties
- Damage relationships

Shorter payables days may...

- Earn discounts
- Strengthen supplier trust
- Increase cash requirements

SECTION 9

Cash Conversion Cycle

What Is the Cash Conversion Cycle?

The cash conversion cycle measures the number of days cash is tied up between paying suppliers and collecting cash from customers.

- Links inventory, receivables and payables into one measure
- Shows how long financing is required to fund operations
- A core indicator of working-capital efficiency

Cash Conversion Cycle Formula

$$\text{CCC} = \text{Inventory Days} + \text{Receivables Days} - \text{Payables Days}$$

Cash Conversion Cycle Example

Using inventory days 60.8, receivables days 36.5 and payables days 40.6:

$$\text{CCC} = 60.8 + 36.5 - 40.6$$

$$\text{CCC} = 56.7 \text{ days}$$

Interpretation of the CCC

A cash conversion cycle of 56.7 days means that cash is committed to operations for approximately 57 days before it is recovered.

- Cash is tied up across inventory and receivables
- Supplier credit offsets part of the requirement
- During this period, the business requires financing

Shorter Cash Conversion Cycle

A shorter CCC generally indicates:

- Faster inventory movement
- Faster customer collection
- Effective use of supplier credit
- Lower working-capital needs
- Improved liquidity

Longer Cash Conversion Cycle

A longer CCC may indicate:

- Slow inventory movement
- Delayed collections
- Weak credit control
- Early supplier payments
- Higher financing requirements
- Greater liquidity risk

Negative Cash Conversion Cycle

A negative CCC occurs when the organization collects customer cash before it pays suppliers. This may occur in:

- Cash retailers
- Subscription businesses
- Online marketplaces
- Businesses with strong supplier credit

Improving the Cash Conversion Cycle

The CCC can be improved by:

- Reducing inventory days
- Accelerating collections
- Negotiating longer supplier terms
- Improving forecasting
- Automating billing
- Reducing processing delays

SECTION 10

Liquidity–Profitability Trade-Off

The Trade-Off

Working-capital management involves balancing:

Liquidity

Ability to meet short-term obligations.

Profitability

Ability to earn an acceptable return on resources.

High Liquidity Position

A highly liquid organization may hold:

- Large cash balances
- High inventory
- Conservative receivables
- Low short-term debt

This reduces risk but may reduce profitability.

High Profitability Position

A profitability-focused organization may maintain:

- Low cash balances
- Lean inventory
- Aggressive collections
- Greater short-term borrowing

This may improve returns but increase liquidity risk.

Liquidity and Return Relationship

Generally:

Higher Liquidity → Lower Risk and Lower Return
Lower Liquidity → Higher Risk and Potentially Higher Return

Working-Capital Management Goal

The objective is not to maximize liquidity or profitability independently. It is to establish a working-capital level that:

- Supports operations
- Meets obligations
- Controls risk
- Produces acceptable returns
- Maximizes organizational value

SECTION 11

Working-Capital Investment Policies

Current-Asset Investment Policy

A current-asset investment policy determines the amount invested in cash, inventory, receivables and other short-term assets. The main approaches are:

- Conservative
- Moderate
- Aggressive

Conservative Investment Policy

A conservative policy maintains relatively high levels of current assets. Characteristics include:

- High cash reserves
- Large inventory balances
- Flexible customer credit
- Lower stockout risk
- Lower liquidity risk
- Lower profitability

Aggressive Investment Policy

An aggressive policy maintains relatively low levels of current assets. Characteristics include:

- Minimum cash balances
- Lean inventory
- Strict credit policy
- Higher operational risk
- Lower financing requirements
- Potentially higher profitability

Moderate Investment Policy

A moderate policy balances:

- Liquidity
- Risk
- Profitability
- Operational continuity

Current-asset investment is maintained between conservative and aggressive approaches.

Investment-Policy Comparison

Conservative	Moderate	Aggressive
High current assets	Balanced current assets	Low current assets
Lower risk	Moderate risk	Higher risk
Lower return	Balanced return	Potentially higher return
High liquidity	Adequate liquidity	Limited liquidity

SECTION 12

Working-Capital Financing Policies

Financing Working Capital

Working capital may be financed through:

- Long-term debt
- Equity
- Retained earnings
- Short-term loans
- Trade credit
- Bank overdrafts
- Accrued liabilities

Matching or Hedging Approach

Under the matching approach:

- Permanent working capital is financed long term
- Temporary working capital is financed short term
- Fixed assets are financed long term

Financing maturity is matched with asset life.

Conservative Financing Approach

A conservative financing policy uses long-term funds to finance:

- Fixed assets
- Permanent working capital
- Part of temporary working capital

It provides greater liquidity but may have higher financing costs.

Aggressive Financing Approach

An aggressive financing policy uses short-term funds to finance:

- Temporary working capital
- Part of permanent working capital
- Possibly part of fixed assets

It may reduce financing cost but increases refinancing and interest-rate risk.

Financing-Policy Comparison

Conservative	Matching	Aggressive
More long-term finance	Match maturities	More short-term finance
Lower refinancing risk	Balanced risk	Higher refinancing risk
Higher cost	Moderate cost	Potentially lower cost
Greater liquidity	Balanced liquidity	Lower liquidity

Refinancing Risk

Refinancing risk is the possibility that short-term financing:

- Cannot be renewed
- Becomes more expensive
- Is reduced by lenders
- Requires immediate repayment
- Becomes unavailable during financial stress

Interest-Rate Risk

Short-term borrowing rates may change frequently. If rates rise:

- Financing cost increases
- Profitability declines
- Cash-flow pressure rises
- Debt-service capacity weakens

SECTION 13

Estimating Working-Capital Requirements

Why Estimate Working Capital?

Working-capital forecasting helps management determine:

- Cash requirements
- Financing needs
- Inventory funding
- Receivables investment
- Supplier-credit use
- Seasonal financing
- Liquidity reserves

Factors Affecting Working-Capital Needs

Working-capital requirements depend on:

- Business nature
- Sales volume
- Operating cycle
- Inventory policy
- Credit policy
- Supplier terms
- Seasonality
- Growth rate
- Inflation
- Production process

Sales Growth

Higher sales may require more:

- Inventory
- Receivables
- Cash
- Staff
- Operating expenses
- Short-term financing

Working-capital requirements often rise before cash is collected from additional sales.

Length of Operating Cycle

The length of the operating cycle drives financing needs.

- A longer operating cycle generally requires greater working capital because resources remain tied up for a longer period
- A shorter operating cycle generally reduces financing needs

Seasonality

Seasonal businesses may need temporary working capital to finance:

- Inventory buildup
- Temporary employees
- Marketing
- Transportation
- Seasonal receivables
- Increased operating costs

Inflation and Working Capital

Inflation increases the amount required to finance:

- Inventory
- Salaries
- Utilities
- Transportation
- Receivables
- Minimum cash balances

Even if physical activity is unchanged, nominal working-capital needs may increase.

Percentage-of-Sales Method

A simple forecasting method assumes that selected current assets and liabilities vary with sales.

$$\text{Forecast Account} = \text{Expected Sales} \times \text{Historical Account-to-Sales Ratio}$$

Percentage-of-Sales Example

Assume expected sales of ETB 50 million and inventory historically equal to 15% of sales.

$$\begin{aligned}\text{Forecast Inventory} &= 50 \text{ million} \times 15\% \\ &= \text{ETB } 7.5 \text{ million}\end{aligned}$$

Working-Capital Gap Method

$$\begin{aligned} &\textbf{Working-Capital Gap} \\ &= \\ &\textbf{Current Operating Assets – Spontaneous Current Liabilities} \end{aligned}$$

This estimates the amount requiring formal financing.

Operating-Cost Method

Working capital may also be estimated using expected cash operating costs. Example:

- One month of cost of sales
- Two months of other cash operating expenses
- Less expected supplier credit

The method should reflect the organization's actual operating cycle.

Working-Capital Forecast Table

Component	Basis	Forecast Amount
Inventory	45 days of cost of sales	ETB X
Receivables	30 days of credit sales	ETB X
Cash	Minimum balance	ETB X
Payables	40 days of purchases	(ETB X)
Net requirement	Total	ETB X

SECTION 14

Cash Management

Objectives of Cash Management

Cash management seeks to:

- Ensure adequate liquidity
- Minimize idle cash
- Reduce borrowing costs
- Accelerate collections
- Control payments
- Invest temporary surpluses
- Prevent fraud and loss

Reasons for Holding Cash

Organizations hold cash for:

- Transaction purposes
- Precautionary purposes
- Speculative opportunities
- Compensating balances
- Regulatory requirements

Transaction Motive

Cash is needed for normal payments such as:

- Salaries
- Suppliers
- Taxes
- Utilities
- Transport
- Loan installments
- Operating expenses

Precautionary Motive

Precautionary cash protects against:

- Delayed collections
- Unexpected costs
- Emergencies
- Revenue shortfalls
- Market disruption
- System failure

Speculative Motive

Cash may be held to take advantage of opportunities such as:

- Supplier discounts
- Asset purchases
- Market-price declines
- Emergency procurement
- Short-term investments

Cost of Holding Cash

Excess cash has an opportunity cost because it could be:

- Invested
- Used to repay debt
- Distributed to owners
- Used for profitable projects
- Used to purchase productive assets

Cash Budget

A cash budget forecasts:

- Cash inflows
- Cash outflows
- Opening balance
- Closing balance
- Financing requirements
- Temporary cash surpluses

Basic Cash-Budget Formula

$$\begin{aligned} &\text{Closing Cash} \\ &= \\ &\text{Opening Cash} + \text{Cash Inflows} - \text{Cash Outflows} \end{aligned}$$

Cash-Budget Example

Assume opening cash ETB 500,000, collections ETB 2,500,000 and payments ETB 2,800,000.

$$\begin{aligned}\text{Closing Cash} &= 500,000 + 2,500,000 - 2,800,000 \\ &= \text{ETB } 200,000\end{aligned}$$

Minimum Cash Balance

If the required minimum balance is ETB 400,000:

$$\begin{aligned}\text{Financing Need} &= 400,000 - 200,000 \\ &= \text{ETB } 200,000\end{aligned}$$

Improving Cash Collections

Organizations can accelerate collections through:

- Electronic invoicing
- Mobile and online payments
- Clear payment terms
- Early-payment discounts
- Collection follow-up
- Automated reminders
- Centralized collection accounts

Controlling Cash Payments

Cash payments can be managed through:

- Payment schedules
- Approval controls
- Due-date monitoring
- Electronic payments
- Supplier-term negotiation
- Cash-flow forecasting
- Avoiding unnecessary early payments

SECTION 15

Receivables Management

What Are Accounts Receivable?

Accounts receivable represent amounts owed by customers for credit sales. Offering credit may:

- Increase sales
- Attract customers
- Strengthen relationships
- Create bad-debt and collection risks

Objectives of Receivables Management

Receivables management seeks to:

- Increase profitable sales
- Control bad debts
- Accelerate collections
- Reduce collection costs
- Maintain customer relationships
- Minimize funds tied up

Credit Policy Components

A credit policy should define:

- Credit standards
- Credit limits
- Credit period
- Discounts
- Documentation
- Collection procedures
- Bad-debt treatment
- Approval authority

Credit Standards

Credit standards determine which customers qualify for credit. Assessment may consider:

- Character
- Capacity
- Capital
- Collateral
- Conditions

These are commonly known as the five Cs of credit.

Character

Character evaluates the customer's willingness to pay. Evidence may include:

- Payment history
- References
- Reputation
- Management integrity
- Past defaults

Capacity

Capacity evaluates the customer's ability to generate sufficient cash to repay. Indicators include:

- Cash flow
- Profitability
- Debt-service capacity
- Operating performance
- Payment history

Capital and Collateral

Capital

Measures the customer's financial strength.

Collateral

Represents assets available to secure the obligation.

Credit Conditions

Conditions include:

- Economic environment
- Industry outlook
- Market demand
- Political conditions
- Seasonal factors
- Regulatory changes

Credit Terms

Credit terms may be expressed as: 2/10, net 30. This means:

- 2% discount if paid within 10 days
- Full amount due within 30 days

Cost of Forgoing a Cash Discount

$$\text{Annualized Cost} \approx [d \div (1 - d)] \times [365 \div (N - D)]$$

- d = discount rate
- D = discount period
- N = final payment period

Discount-Cost Example

For terms 2/10, net 30:

$$(0.02 \div 0.98) \times (365 \div 20) \\ \approx 37.24\%$$

Forgoing the discount can be very expensive.

Receivables Aging Schedule

An aging schedule classifies balances by how long they have remained unpaid.

Category	Example
Current	Not yet due
1–30 days overdue	Early delay
31–60 days overdue	Moderate concern
61–90 days overdue	High concern
Above 90 days	Serious collection risk

Collection Procedures

Collection procedures may include:

1. Reminder notice
2. Telephone follow-up
3. Formal demand letter
4. Suspension of further credit
5. Negotiated payment plan
6. Collection agency
7. Legal action

Bad-Debt Risk

Bad debts occur when customer balances cannot be collected. High bad debts may indicate:

- Weak credit screening
- Excessive credit limits
- Poor documentation
- Weak follow-up
- Difficult market conditions

SECTION 16

Inventory Management

Why Inventory Is Held

Inventory may be held to:

- Meet customer demand
- Support production
- Avoid stockouts
- Benefit from quantity discounts
- Protect against supply delays
- Manage seasonal demand

Types of Inventory

Inventory may include:

- Raw materials
- Work in progress
- Finished goods
- Spare parts
- Consumable supplies
- Goods for resale

Costs of Holding Inventory

Inventory carrying costs may include:

- Storage
- Insurance
- Security
- Damage
- Obsolescence
- Financing cost
- Opportunity cost
- Handling

Costs of Insufficient Inventory

Low inventory may create:

- Stockouts
- Lost sales
- Production delays
- Emergency purchases
- Customer dissatisfaction
- Higher transport costs
- Damaged reputation

Economic Order Quantity

EOQ estimates the order quantity that minimizes ordering and carrying costs.

$$EOQ = \sqrt{(2DS \div H)}$$

- D = annual demand
- S = ordering cost
- H = annual holding cost per unit

EOQ Example

Assume annual demand 10,000 units, ordering cost ETB 200 per order, holding cost ETB 10 per unit.

$$\text{EOQ} = \sqrt{(2 \times 10,000 \times 200 \div 10)}$$
$$\text{EOQ} \approx 632 \text{ units}$$

Reorder Point

The reorder point indicates when a new order should be placed.

$$\begin{aligned} &\text{Reorder Point} \\ &= \\ &(\text{Daily Usage} \times \text{Lead Time}) + \text{Safety Stock} \end{aligned}$$

Reorder-Point Example

Assume daily usage 50 units, lead time 8 days, safety stock 100 units.

$$\text{ROP} = 50 \times 8 + 100$$

$$\text{ROP} = 500 \text{ units}$$

Safety Stock

Safety stock protects against:

- Demand fluctuations
- Delivery delays
- Supplier failure
- Forecasting errors
- Quality problems
- Emergency demand

Too much safety stock increases carrying costs.

ABC Inventory Analysis

ABC analysis classifies inventory according to value and importance.

Category A

High value — close monitoring.

Category B

Moderate value — normal controls.

Category C

Low value — simplified controls.

Just-in-Time Inventory

Just-in-Time aims to receive inventory close to when it is needed.

Potential benefits

- Lower inventory
- Reduced storage costs
- Reduced obsolescence
- Improved efficiency

Risks

- Supplier delays
- Transport disruption
- Limited emergency stock

SECTION 17

Payables Management

What Are Accounts Payable?

Accounts payable are amounts owed to suppliers for goods or services received on credit.

- Represent a normal outcome of purchasing on credit
- Trade credit is an important source of short-term financing

Objectives of Payables Management

Payables management seeks to:

- Use supplier credit efficiently
- Avoid late-payment penalties
- Maintain strong supplier relationships
- Capture worthwhile discounts
- Manage cash outflows
- Prevent duplicate or unauthorized payments

Managing Payment Timing

Organizations should generally:

- Pay on the agreed due date
- Take valuable discounts
- Avoid unnecessary early payments
- Avoid unauthorized late payments
- Maintain accurate supplier records

Stretching Payables

Stretching payables means delaying payment beyond agreed terms. It may temporarily preserve cash but can:

- Damage supplier relationships
- Reduce credit access
- Trigger penalties
- Interrupt supply
- Harm reputation

Supplier-Financing Considerations

Evaluate:

- Discount terms
- Credit period
- Supplier reliability
- Late-payment cost
- Alternative financing cost
- Supply continuity
- Contractual obligations

SECTION 18

Short-Term Financing Sources

Main Short-Term Financing Sources

Short-term financing may include:

- Trade credit
- Bank overdraft
- Short-term loan
- Revolving credit
- Commercial paper
- Factoring
- Invoice discounting
- Accrued liabilities

Bank Overdraft

A bank overdraft allows withdrawing more than the account balance up to an approved limit.

Advantages

- Flexibility
- Interest charged on amount used
- Useful for temporary shortages

Risks

- Variable interest
- Repayable on demand
- Renewal uncertainty

Short-Term Bank Loan

A short-term loan provides a fixed amount for a defined period. It may require:

- Interest
- Collateral
- Fees
- Regular repayment
- Financial covenants
- Personal or corporate guarantees

Revolving Credit Facility

A revolving facility allows the borrower to borrow, repay and borrow again within an approved limit and period.

- Borrow within the approved limit
- Repay as cash allows
- Borrow again when needed

It provides flexibility but may involve commitment and usage fees.

Factoring

Factoring involves selling receivables to a financial institution.

Potential benefits

- Faster cash collection
- Reduced collection workload
- Transfer of some credit risk

Potential costs

- Factoring fees
- Discount on receivables
- Customer-perception concerns

Invoice Discounting

Invoice discounting uses receivables as security for financing while the organization often continues to collect customer balances.

- Receivables serve as security for the advance
- The organization usually retains customer management
- Provides liquidity without fully transferring collection

Commercial Paper

Commercial paper is an unsecured short-term debt instrument issued by financially strong organizations. It generally requires:

- Strong credit quality
- Developed capital markets
- Large financing requirements
- Investor confidence

Accrued Liabilities

Accrued liabilities arise from expenses incurred but not yet paid. Examples:

- Salaries
- Taxes
- Interest
- Utilities

They provide temporary spontaneous financing.

SECTION 19

Liquidity Ratios

Current Ratio

$$\text{Current Ratio} = \text{Current Assets} \div \text{Current Liabilities}$$

It measures the ability to cover short-term obligations with current assets.

Current-Ratio Example

Assume current assets ETB 15 million and current liabilities ETB 10 million.

$$\text{Current Ratio} = 15 \div 10 \\ = 1.5$$

Quick Ratio

The quick ratio excludes inventory and less-liquid current assets.

$$\text{Quick Ratio} = \frac{\text{Cash} + \text{Short-Term Investments} + \text{Receivables}}{\text{Current Liabilities}}$$

Quick-Ratio Example

Assume cash ETB 2m, short-term investments ETB 1m, receivables ETB 4m, current liabilities ETB 10m.

$$\begin{aligned}\text{Quick Ratio} &= (2 + 1 + 4) \div 10 \\ &= 0.7\end{aligned}$$

Cash Ratio

$$\text{Cash Ratio} = \frac{\text{Cash} + \text{Short-Term Investments}}{\text{Current Liabilities}}$$

It is the most conservative liquidity ratio.

Interpreting Liquidity Ratios

A high ratio may indicate...

- Strong liquidity
- Excess current assets
- Idle resources
- Inefficient working capital

A low ratio may indicate...

- Liquidity risk
- Efficient operations
- Strong cash turnover
- Heavy short-term obligations

SECTION 20

Efficiency Ratios

Inventory Turnover

$$\text{Inventory Turnover} = \text{Cost of Sales} \div \text{Average Inventory}$$

A higher turnover generally indicates faster inventory movement.

Inventory-Turnover Example

Assume cost of sales ETB 24 million and average inventory ETB 4 million.

$$\text{Inventory Turnover} = 24 \div 4 \\ = 6 \text{ times}$$

Receivables Turnover

$$\begin{aligned} &\text{Receivables Turnover} \\ &= \\ &\text{Annual Credit Sales} \div \text{Average Receivables} \end{aligned}$$

Receivables-Turnover Example

Assume credit sales ETB 30 million and average receivables ETB 3 million.

$$\begin{aligned}\text{Receivables Turnover} &= 30 \div 3 \\ &= 10 \text{ times}\end{aligned}$$

Payables Turnover

$$\text{Payables Turnover} = \text{Credit Purchases} \div \text{Average Trade Payables}$$

It measures how frequently supplier balances are paid.

Working-Capital Turnover

$$\text{Working-Capital Turnover} = \text{Sales} \div \text{Average Net Working Capital}$$

It measures sales generated per unit of net working capital.

Working-Capital Turnover Example

Assume sales ETB 50 million and average net working capital ETB 5 million.

$$\begin{aligned}\text{Working-Capital Turnover} &= 50 \div 5 \\ &= 10 \text{ times}\end{aligned}$$

Interpreting Working-Capital Turnover

A high ratio may indicate...

- Efficient working-capital use
- Insufficient working capital
- High liquidity risk

A low ratio may indicate...

- Excess current assets
- Slow inventory
- Weak collection
- Inefficient resource use

SECTION 21

Working-Capital Risks

Major Working-Capital Risks

Working-capital risks include:

- Liquidity risk
- Credit risk
- Inventory risk
- Supplier risk
- Financing risk
- Interest-rate risk
- Currency risk
- Fraud risk
- Forecasting risk

Liquidity Risk

Liquidity risk is the possibility that the organization cannot meet short-term obligations when due. Causes may include:

- Delayed collections
- Excess inventory
- Unexpected payments
- Revenue decline
- Financing withdrawal

Inventory Risk

Inventory may be exposed to:

- Obsolescence
- Theft
- Damage
- Expiry
- Price decline
- Excess stocking
- Stockouts
- Poor-quality records

Receivables Risk

Receivables risks include:

- Customer default
- Disputes
- Fraud
- Delayed payment
- Concentration in one customer
- Weak documentation
- Currency loss

Supplier Risk

Supplier-related risks include:

- Delivery delay
- Price increases
- Supply interruption
- Poor quality
- Withdrawal of credit
- Dependence on one supplier
- Contract failure

Short-Term Financing Risk

Risks include:

- Facility cancellation
- Higher interest rates
- Reduced credit limits
- Collateral demands
- Refinancing failure
- Currency mismatch
- Covenant breach

SECTION 22

Working-Capital Controls

Internal Controls over Working Capital

Controls should cover:

- Cash handling
- Bank accounts
- Customer credit
- Inventory custody
- Supplier payments
- Short-term borrowing
- Reconciliations
- System access
- Reporting

Cash Controls

Cash controls may include:

- Segregation of duties
- Daily recording
- Bank reconciliation
- Payment authorization
- Cash counts
- Restricted access
- Electronic approval
- Secure custody

Receivables Controls

Receivables controls may include:

- Approved credit limits
- Customer verification
- Invoice controls
- Aging reviews
- Collection follow-up
- Write-off approval
- Customer reconciliations
- Segregation of duties

Inventory Controls

Inventory controls may include:

- Authorized purchases
- Receiving inspections
- Bin cards
- System records
- Restricted storage
- Periodic counts
- Reconciliation
- Obsolescence reviews

Payables Controls

Payables controls may include:

- Three-way matching
- Approved suppliers
- Payment authorization
- Duplicate-payment checks
- Supplier-statement reconciliation
- Due-date monitoring
- Segregation of duties

SECTION 23

Working-Capital Reporting

Working-Capital Dashboard

A dashboard may include:

- Cash balance
- Current ratio
- Quick ratio
- Inventory days
- Receivables days
- Payables days
- Cash conversion cycle
- Overdue receivables
- Short-term borrowing
- Forecast cash gap

Aging and Exception Reports

Important reports include:

- Receivables aging
- Payables aging
- Slow-moving inventory
- Expired inventory
- Customer-credit exceptions
- Supplier-payment exceptions
- Cash-flow variance report
- Bank-reconciliation status

Working-Capital Trend Analysis

Management should compare:

- Current period
- Previous period
- Budget
- Industry benchmark
- Policy target

A single ratio provides limited information without comparison.

SECTION •

Practical Exercise

Practical Exercise: Evaluate Working-Capital Performance

Participants will:

- Calculate net working capital
- Calculate liquidity ratios
- Calculate inventory, receivables and payables days
- Calculate the operating cycle
- Calculate the cash conversion cycle
- Identify working-capital risks
- Recommend corrective actions

Exercise Scenario

A company reports:

Item	ETB
Cash	1,500,000
Short-term investments	500,000
Receivables	4,000,000
Inventory	6,000,000
Other current assets	1,000,000
Current liabilities	8,000,000

Additional Information

Item	ETB
Annual sales	36,000,000
Annual credit sales	30,000,000
Cost of sales	24,000,000
Credit purchases	18,000,000
Average inventory	4,500,000
Average receivables	3,000,000
Average payables	2,500,000

Step 1 — Calculate Current Assets

$$\begin{aligned}\text{Current Assets} &= 1.5 + 0.5 + 4 + 6 + 1 \\ &= \text{ETB 13 million}\end{aligned}$$

Step 2 — Calculate Net Working Capital

$$\text{NWC} = 13 \text{ million} - 8 \text{ million}$$

$$\text{NWC} = \text{ETB } 5 \text{ million}$$

Step 3 — Calculate Current Ratio

$$\begin{aligned}\text{Current Ratio} &= 13 \div 8 \\ &= 1.63\end{aligned}$$

Step 4 — Calculate Quick Ratio

Quick Assets = 1.5 + 0.5 + 4 = ETB 6 million

Quick Ratio = 6 ÷ 8 = 0.75

Step 5 — Calculate Inventory Days

$$\text{Inventory Days} = (4.5 \div 24) \times 365$$
$$\approx 68.4 \text{ days}$$

Step 6 — Calculate Receivables Days

$$\begin{aligned}\text{Receivables Days} &= (3 \div 30) \times 365 \\ &= 36.5 \text{ days}\end{aligned}$$

Step 7 — Calculate Payables Days

$$\begin{aligned}\text{Payables Days} &= (2.5 \div 18) \times 365 \\ &\approx 50.7 \text{ days}\end{aligned}$$

Step 8 — Calculate Operating Cycle

$$\begin{aligned}\text{Operating Cycle} &= 68.4 + 36.5 \\ &= 104.9 \text{ days}\end{aligned}$$

Step 9 — Calculate Cash Conversion Cycle

$$\text{CCC} = 68.4 + 36.5 - 50.7$$

$$\text{CCC} = 54.2 \text{ days}$$

Interpretation

The company:

- Has positive net working capital
- Has a current ratio above 1
- Has a quick ratio below 1
- Holds inventory for approximately 68 days
- Collects receivables in approximately 37 days
- Pays suppliers in approximately 51 days
- Finances operations for approximately 54 days

Potential Working-Capital Concerns

Possible concerns include:

- Heavy dependence on inventory
- Limited quick liquidity
- Long inventory period
- Working-capital funds tied up for 54 days
- Potential need for short-term financing
- Risk of slow-moving stock

Recommended Actions

The company may:

- Review slow-moving inventory
- Improve demand forecasting
- Strengthen customer collections
- Negotiate better supplier terms
- Prepare rolling cash forecasts
- Establish minimum liquidity targets
- Monitor the cash conversion cycle monthly

Sensitivity Exercise

Recalculate the cash conversion cycle if:

- Inventory days fall by 10 days
- Receivables days rise by 15 days
- Payables days fall to 30 days
- Sales increase by 20%
- Supplier terms are extended by 10 days

Explain the liquidity impact of each change.

Group Assignment

Each group should present:

1. Net working capital
2. Current and quick ratios
3. Operating cycle
4. Cash conversion cycle
5. Main liquidity risks
6. Financing requirement
7. Three corrective actions
8. Recommended working-capital policy

SECTION •

Chapter Review

Common Working-Capital Mistakes

Avoid the following:

- Holding excessive idle cash
- Maintaining excessive inventory
- Offering credit without assessment
- Failing to follow up receivables
- Paying suppliers too early
- Stretching payables without agreement
- Using short-term debt for permanent needs
- Ignoring seasonal requirements
- Focusing only on the current ratio
- Failing to prepare cash forecasts

Working-Capital Management Checklist

Management should regularly review:

- Cash balance
- Cash-flow forecast
- Current ratio
- Quick ratio
- Inventory days
- Receivables days
- Payables days
- Cash conversion cycle
- Overdue receivables
- Slow-moving inventory
- Supplier terms
- Short-term debt
- Financing maturity
- Working-capital risks

Knowledge Check

Answer the following:

1. What is gross working capital?
2. How is net working capital calculated?
3. What is permanent working capital?
4. What is the operating cycle?
5. How is the cash conversion cycle calculated?
6. What is the liquidity–profitability trade-off?
7. How does an aggressive policy differ from a conservative policy?
8. What does the quick ratio measure?
9. Why is inventory management important?
10. How can a business shorten its cash conversion cycle?

Knowledge Check Answers

1. Total investment in current assets
2. Current assets minus current liabilities
3. Minimum current assets continuously required
4. Time from acquiring inventory to collecting customer cash
5. Inventory days plus receivables days minus payables days
6. Balancing short-term payment capacity with returns
7. Aggressive policies hold fewer current assets and use more short-term finance
8. Ability to meet current obligations without relying on inventory
9. Inventory affects sales, production, storage cost and liquidity
10. Reduce inventory and receivables days or improve supplier terms

Action Plan

Evaluate one organization and identify:

- Current assets
- Current liabilities
- Net working capital
- Current ratio
- Quick ratio
- Inventory days
- Receivables days
- Payables days
- Cash conversion cycle
- Main working-capital risk
- One immediate corrective action
- One long-term improvement

Chapter Summary

Key points from this chapter:

- Working capital supports daily operations
- Gross working capital represents current assets
- Net working capital equals current assets minus current liabilities
- Adequate working capital supports liquidity and operational continuity
- Excessive working capital reduces profitability
- Inadequate working capital increases financial risk
- The operating cycle measures time from inventory investment to cash collection
- The cash conversion cycle adjusts the operating cycle for supplier credit
- Cash, inventory, receivables and payables must be managed together
- Working-capital policies involve liquidity, profitability and risk trade-offs
- Permanent needs should generally have stable financing
- Ratios and cycle measures support monitoring and decision-making
- Effective working-capital management strengthens sustainability and value

Key Message

Working-capital management is not simply about a high cash balance or current ratio.

It is about coordinating the full short-term financing chain:

**Cash → Inventory → Sales → Receivables → Collections → Supplier Payments → Short-Term Financing →
Operational Continuity**

Each link must be managed together to sustain liquidity and value.

THANK YOU

Questions and Discussion

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Effective working-capital management ensures that an organization has enough liquidity to operate, but not so much that resources remain idle. It creates value by accelerating cash flows, controlling short-term risks and balancing operational continuity with profitability.

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