

Key Concepts and Skills

- Understand the components of the cash cycle and why it is important
- Understand the pros and cons of the various short-term financing policies
- Be able to prepare a cash budget
- Understand the various options for short-term financing

Chapter Outline

- Tracing Cash and Net Working Capital
- The Operating Cycle and the Cash Cycle
- Some Aspects of Short-Term Financial Policy
- The Cash Budget
- Short-Term Borrowing
- A Short-Term Financial Plan

Sources and Uses of Cash

- Balance sheet identity (rearranged)
 - $NWC + \text{fixed assets} = \text{long-term debt} + \text{equity}$
 - $NWC = \text{cash} + \text{other CA} - CL$
 - $\text{Cash} = \text{long-term debt} + \text{equity} + CL - \text{CA other than cash} - \text{fixed assets}$
- Sources
 - Increasing long-term debt, equity, or current liabilities
 - Decreasing current assets other than cash, or fixed assets
- Uses
 - Decreasing long-term debt, equity, or current liabilities
 - Increasing current assets other than cash, or fixed assets

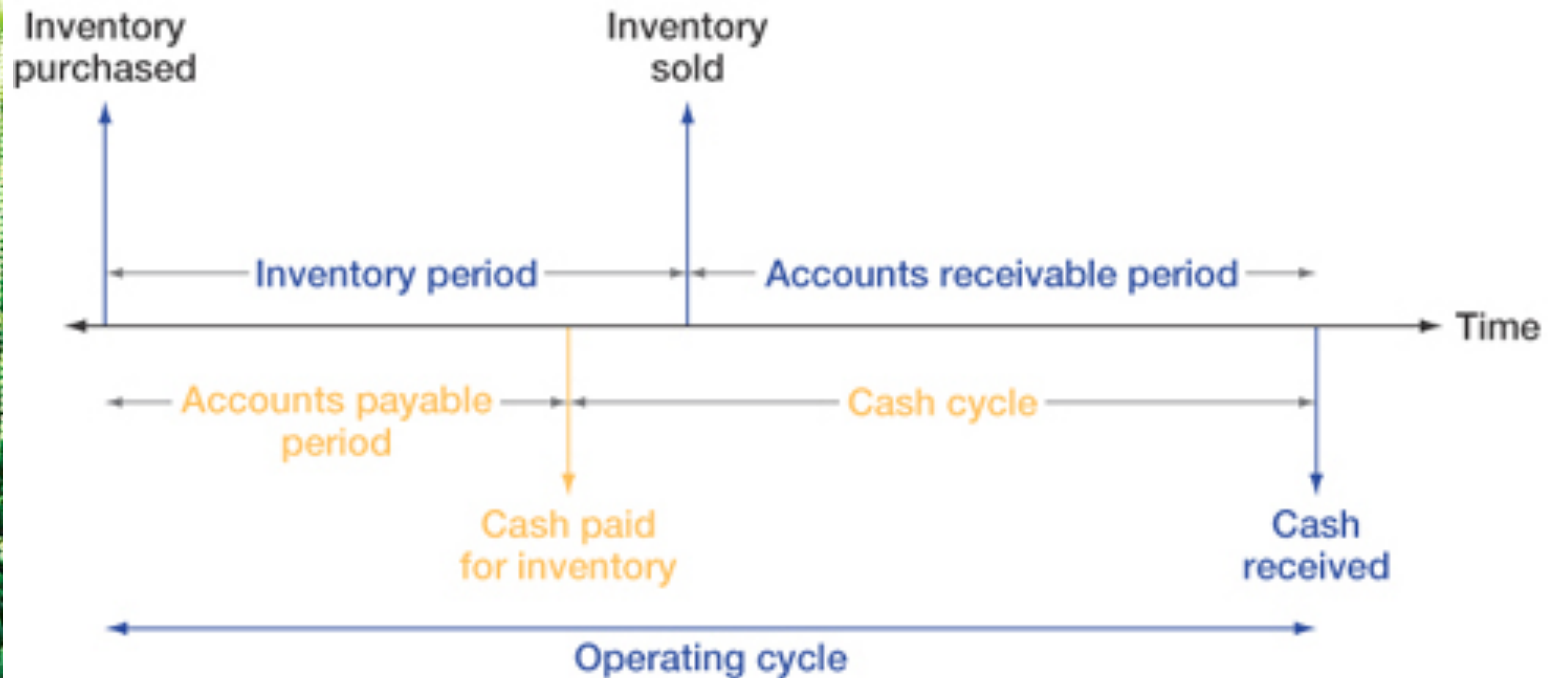
The Operating Cycle

- Operating cycle – time between purchasing the inventory and collecting the cash from sale of the inventory
- Inventory period – time required to purchase and sell the inventory
- Accounts receivable period – time required to collect on credit sales
- Operating cycle = inventory period + accounts receivable period

The Cash Cycle

- Cash cycle
 - Amount of time we finance our inventory
 - Difference between when we receive cash from the sale and when we have to pay for the inventory
- Accounts payable period – time between purchase of inventory and payment for the inventory
- Cash cycle = Operating cycle – accounts payable period

Figure 18.1



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

Example Information

- Inventory:
 - Beginning = 200,000
 - Ending = 300,000
- Accounts Receivable:
 - Beginning = 160,000
 - Ending = 200,000
- Accounts Payable:
 - Beginning = 75,000
 - Ending = 100,000
- Net sales = 1,150,000
- Cost of Goods sold = 820,000

Example: Operating Cycle

- Inventory period
 - Average inventory = $(200,000 + 300,000) / 2 = 250,000$
 - Inventory turnover = $\text{COGS} / (\text{Ave inventory})$
 $= 820,000 / 250,000 = 3.28$ times
 - Inventory period = $365 / 3.28 = 111$ days
- Receivables period
 - Average receivables = $(160,000 + 200,000) / 2 = 180,000$
 - Receivables turnover = $\text{Net Sales} / (\text{Ave receivables})$
 $= 1,150,000 / 180,000 = 6.39$ times
 - Receivables period = $365 / 6.39 = 57$ days
- Operating cycle = $111 + 57 = 168$ days

Example: Cash Cycle

- Payables Period
 - Average payables = $(75,000 + 100,000) / 2 = 87,500$
 - Payables turnover = $\text{COGS} / (\text{Ave payables}) = 820,000 / 87,500 = 9.37$ times
 - Payables period = $365 / 9.37 = 39$ days
- Cash Cycle = operating cycle – payables period = $168 - 39 = 129$ days
- We have to finance our inventory for 129 days
- If we want to reduce our financing needs, we need to look carefully at our receivables and inventory periods – they both seem extensive. A comparison to industry averages would help solidify this assertion.

Short-Term Financial Policy

- Size of investments in current assets
 - Flexible (conservative) policy – maintain a high ratio of current assets to sales
 - Restrictive (aggressive) policy – maintain a low ratio of current assets to sales
- Financing of current assets
 - Flexible (conservative) policy – less short-term debt and more long-term debt
 - Restrictive (aggressive) policy – more short-term debt and less long-term debt

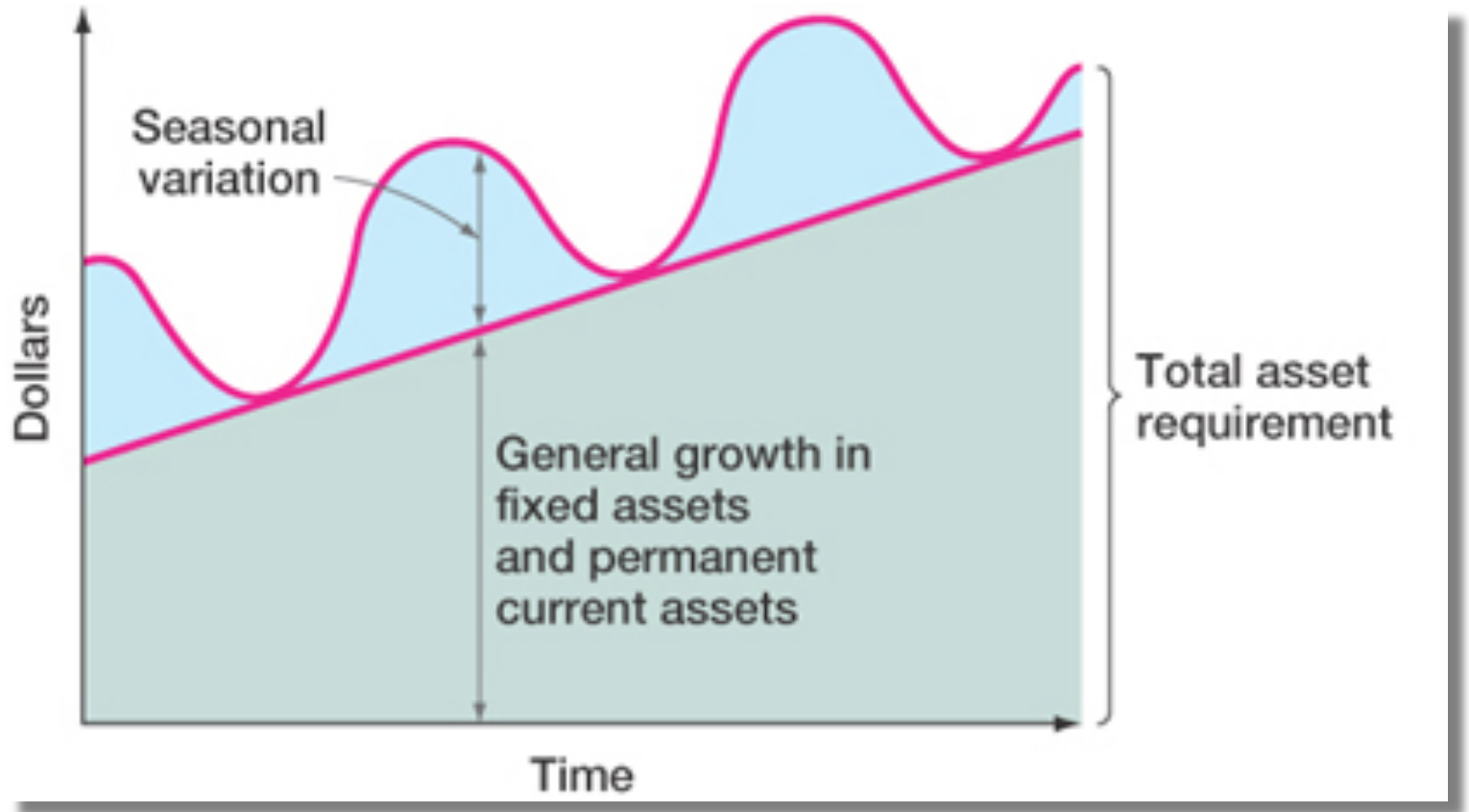
Carrying vs. Shortage Costs

- Managing short-term assets involves a trade-off between carrying costs and shortage costs
 - Carrying costs – increase with increased levels of current assets, the costs to store and finance the assets
 - Shortage costs – decrease with increased levels of current assets
 - Trading or order costs
 - Costs related to safety reserves, i.e., lost sales and customers, and production stoppages

Temporary vs. Permanent Assets

- Temporary current assets
 - Sales may be seasonal
 - Additional current assets are needed during the “peak” time
 - The level of current assets will decrease as sales occur
- Permanent current assets
 - Firms generally need to carry a minimum level of current assets at all times
 - These assets are considered “permanent” because the level is constant, not because the assets aren’t sold

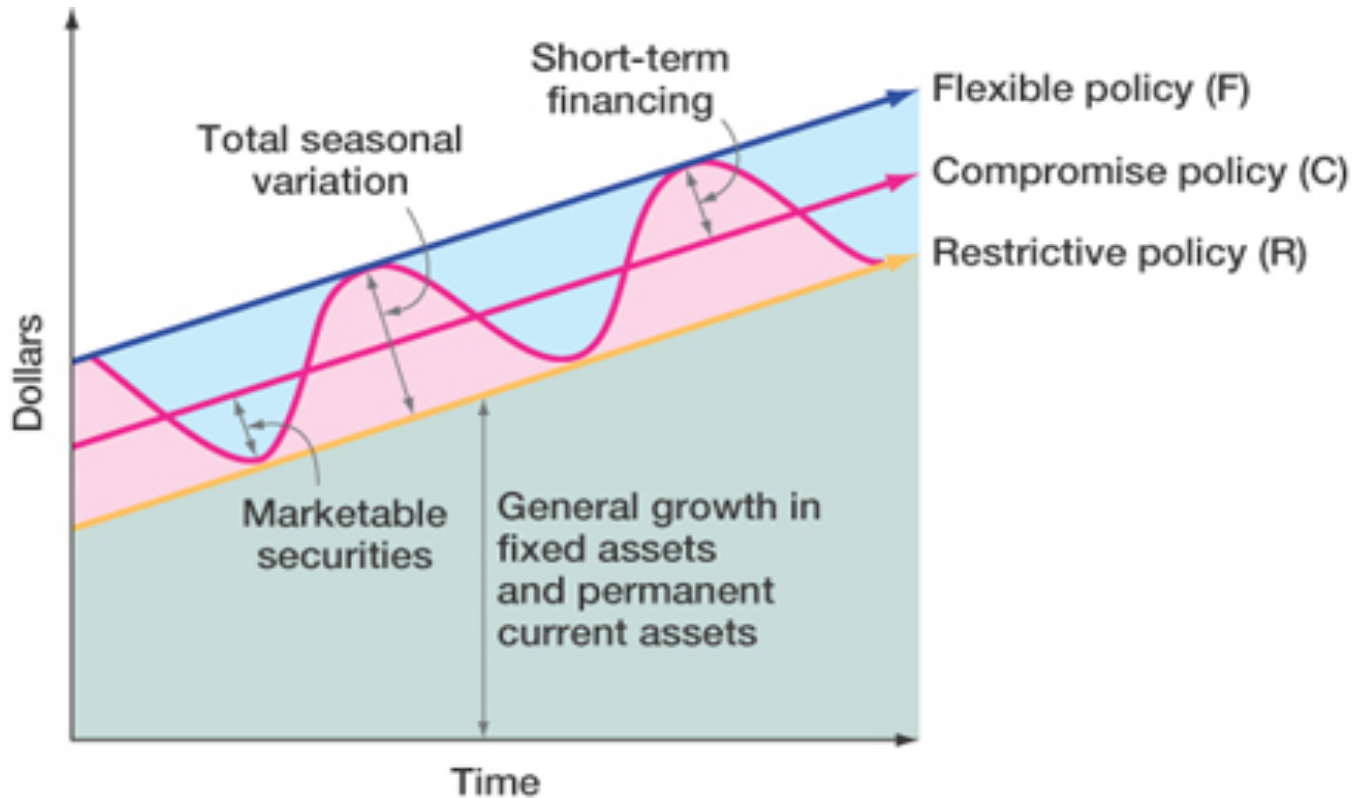
Figure 18.4



Choosing the Best Policy

- Cash reserves
 - High cash reserves mean that firms will be less likely to experience financial distress and are better able to handle emergencies or take advantage of unexpected opportunities
 - Cash and marketable securities earn a lower return and are zero NPV investments
- Maturity hedging
 - Try to match financing maturities with asset maturities
 - Finance temporary current assets with short-term debt
 - Finance permanent current assets and fixed assets with long-term debt and equity
- Interest Rates
 - Short-term rates are normally lower than long-term rates, so it may be cheaper to finance with short-term debt
 - Firms can get into trouble if rates increase quickly or if it begins to have difficulty making payments. May not be able to refinance the short-term loans
- Have to consider all these factors and determine a compromise policy that fits the needs of the firm

Figure 18.6



With a compromise policy, the firm keeps a reserve of liquidity that it uses to initially finance seasonal variations in current asset needs. Short-term borrowing is used when the reserve is exhausted.

Cash Budget

- Forecast of cash inflows and outflows over the next short-term planning period
- Primary tool in short-term financial planning
- Helps determine when the firm should experience cash surpluses and when it will need to borrow to cover working-capital requirements
- Allows a company to plan ahead and begin the search for financing before the money is actually needed

Example: Cash Budget Information Part I


- Pet Treats Inc. specializes in gourmet pet treats
- Sales estimates (in millions)
 - Q1=500; Q2=600; Q3=650; Q4=800; Q1 next yr = 550
- Accounts receivable
 - Beginning receivables = \$250
 - Average collection period = 30 days
- Accounts payable
 - Purchases = 50% of *next quarter's sales*
 - Beginning payables = 125
 - Accounts payable period is 45 days

Example: Cash Budget Information Part II

- Other expenses
 - Wages, taxes and other expense are 25% of sales
 - Interest and dividend payments are \$50
 - A major capital expenditure of **\$325** is expected in the second quarter
- The initial cash balance is \$100 and the company maintains a minimum balance of \$50



Example: Cash Budget – Cash Collections

- Average Collection Period = 30 days,  that 2/3 of sales are collected in the quarter made and the remaining 1/3 in the following quarter
- Beginning receivables of \$250 will be collected in the first quarter

	Q1	Q2	Q3	Q4
Beginning Receivables	250	167	200	217
Sales	500	600	650	800
Cash Collections	583	567	633	750
Ending Receivables	167	200	217	267

Diagram annotations: A red dashed arrow points from 250 in Q1 to 167 in Q2. A green dashed arrow points from 500 in Q1 to 583 in Q1. A blue dashed arrow points from 500 in Q1 to 567 in Q2. A red '1/3' is next to the 583. A red '2/3' is next to the 567. A dashed arrow points from 567 in Q2 to 200 in Q3.

Example: Cash Budget – Cash Disbursements

- Payables period is 45 days, so half of the purchases will be paid for in each quarter and the remaining will be paid the following quarter
- Beginning payables = \$125
50% of [50% of next Q Sales]
50% of [50% of \$600]

	Q1	Q2	Q3	Q4
Payment of accounts	275	313	362	338
Wages, taxes and other expenses	125	150	163	200
Capital expenditures		325		
Interest and dividend payments	50	50	50	50
Total cash disbursements	450	838	575	588

Example: Cash Budget

– Net Cash Flow and Cash Balance

	Q1	Q2	Q3	Q4
Total cash collections	583	567	633	750
Total cash disbursements	450	838	575	588
Net cash inflow	133	-271	58	162
Beginning Cash Balance	100	233	-38	20
Ending cash balance	233	-38	20	182
Minimum cash balance	-50	-50	-50	-50
Cumulative surplus (deficit)	183	-88	-30	132

Short-Term Borrowing

- Unsecured Loans
 - Line of credit
 - Committed vs. noncommitted
 - Revolving credit arrangement
 - Letter of credit
- Secured Loans
 - Accounts receivable financing
 - Assigning
 - Factoring
 - Inventory loans
 - Blanket inventory lien
 - Trust receipt
 - Field warehouse financing
- Commercial Paper
- Trade Credit

Example: Compensating Balance

- We have a \$500,000 line of credit with a 15% compensating balance requirement. The quoted interest rate is 9%. We need to borrow \$150,000 for inventory for one year.
 - How much do we need to borrow?
 - $150,000 / (1 - .15) = 176,471$
 - What interest rate are we effectively paying?
 - Interest paid = $176,471(.09) = 15,882$
 - Effective rate = $15,882 / 150,000 = .1059$ or 10.59%
 - Using financial calculator, $PV=150,000$; $FV= - (150,000 + 15,882) = -165,882$; $N=1$; $CPT I = 10.588\%$

Example: Factoring

- Last year your company had average accounts receivable of \$2 million. Credit sales were \$24 million. You factor receivables by discounting them 2%. What is the effective rate of interest?
 - Receivables turnover = $24/2 = 12$ times
 - APR = $12(.02/.98) = .2449$ or 24.49%
 - EAR = $(1+.02/.98)^{12} - 1 = .2743$ or 27.43%

Short-Term Financial Plan

Assume that minimum cash balance is \$50 and firm use ST debt to cover any difference. ST funds are borrowed at 12%. ST surpluses are invested at 2%. Interest is compounded quarterly.

	Q1	Q2	Q3	Q4
Beginning cash balance	80	188	50	50
Net cash inflow	108	(176)	26	122
New short-term borrowing		38		
Interest on short-term investment (loan)		1	(1)	
Short-term borrowing repaid			25	13
Ending cash balance	188	50	50	159
Minimum cash balance	(50)	(50)	(50)	(50)
Cumulative surplus (deficit)	138	0	0	109
Beginning short-term debt	0	0	38	13
Change in short-term debt	0	38	(25)	(13)
Ending short-term debt	0	38	13	0

Quick Quiz

- How do you compute the operating cycle and the cash cycle?
- What are the differences between a flexible short-term financing policy and a restrictive one? What are the pros and cons of each?
- What are the key components of a cash budget?
- What are the major forms of short-term borrowing?

Ethics Issues

- A large retailer such as Wal-Mart possesses power over smaller suppliers. In theory, Wal-Mart could force these suppliers to sell on payment terms that were well beyond a typical industry norm.
 - How would this impact Wal-Mart's cash cycle?
 - How would this impact the supplier's cycle?
 - Are there any ethical issues involved in such a practice?

Comprehensive Problem

- With a quoted interest rate of 5% and a 10% compensating balance, what is the effective rate of interest (use a \$200,000 loan proceeds amount)?
- With average accounts receivable of \$5 million and credit sales of \$24 million, you factor receivables by discounting them 2%. What is the effective rate of interest?



End of Chapter