Analyzing Investing Activities

CHAPTER 4
Current Asset Introduction

**Classification**

**Current (Short-term) Assets**

Resources or claims to resources that are expected to be sold, collected, or used within one year or the operating cycle, whichever is longer.

**Noncurrent (Long-term) Assets**

Resources or claims to resources that are expected to yield benefits that extend beyond one year or the operating cycle, whichever is longer.
Current Asset Introduction

Operating Cycle

- Cash
- Receivables
- Sales
- Inventory
- Purchase commitment
- Holding or manufacturing interval
- Collection interval

Exhibit 4.1
Current Asset Introduction

Cash, Cash Equivalents and Liquidity

Cash
Currency, coins and amounts on deposit in bank accounts, checking accounts, and some savings accounts.
Cash Equivalents

Short-term, highly liquid investments that are:

1. Readily convertible to a known cash amount.
2. Close to maturity date and not sensitive to interest rate changes.
Companies risk a reduction in liquidity should the market value of short-term investments decline. Cash and cash equivalents are sometimes required to be maintained as compensating balances to support existing borrowing arrangements or as collateral for indebtedness.
Receivables are amounts due from others that arise from the sale of goods or services, or the loaning of money.

Accounts receivable refer to oral promises of indebtedness due from customers.

Notes receivable refer to formal written promises of indebtedness due from others.
Receivables are reported at their *net realizable value* — total amount of receivables less an allowance for uncollectible accounts.

Management estimates the allowance for uncollectibles based on experience, customer fortunes, economy and industry expectations, and collection policies.
Assessment of earnings quality is often affected by an analysis of receivables and their collectibility. Analysis must be alert to changes in the allowance—computed relative to sales, receivables, or industry and market conditions.

Two special analysis questions:

1. **Collection Risk**
   - Review allowance for uncollectibles in light of industry conditions.
   - Apply special tools for analyzing collectibility:
     - Determining competitors’ receivables as a percent of sales—vis-à-vis the company under analysis.
     - Examining customer concentration—risk increases when receivables are concentrated in one or a few customers.
     - Investigating the age pattern of receivables—overdue and for how long.
     - Determining portion of receivables that is a renewal of prior receivables.
     - Analyzing adequacy of allowances for discounts, returns, and other credits.

2. **Authenticity of Receivables**
   - Review credit policy for changes.
   - Review return policies for changes.
   - Review any contingencies on receivables.
Securitization (or factoring) is when a company sells all or a portion of its receivables to a third party. Receivables can be sold with or without recourse to a seller (recourse refers to guarantee of collectibility). Sale of receivables with recourse does not effectively transfer risk of ownership.
For securitizations with any type of recourse, the seller must record both an asset and a compensating liability for the amount factored.

For securitizations without any recourse, the seller removes the receivables from the balance sheet.
## Current Asset Introduction

## Analysis of Securitization

### Balance Sheet Effects of Securitization

<table>
<thead>
<tr>
<th>Assets</th>
<th>Before</th>
<th>After</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$50</td>
<td>$450</td>
<td>$450</td>
</tr>
<tr>
<td>Receivables</td>
<td>400</td>
<td>0</td>
<td>400</td>
</tr>
<tr>
<td>Other current assets</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Total current assets</td>
<td>600</td>
<td>600</td>
<td>1,000</td>
</tr>
<tr>
<td>Noncurrent assets</td>
<td>900</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Total assets</td>
<td>$1,500</td>
<td>$1,500</td>
<td>$1,900</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current liabilities</td>
<td>$400</td>
<td>$400</td>
<td>$800</td>
</tr>
<tr>
<td>Noncurrent liabilities</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Equity</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Total liabilities and equity</td>
<td>$1,500</td>
<td>$1,500</td>
<td>$1,500</td>
</tr>
</tbody>
</table>

### Key ratios

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>1.50</td>
<td>1.50</td>
<td>1.25</td>
</tr>
<tr>
<td>Total Debt to Equity</td>
<td>1.50</td>
<td>1.50</td>
<td>2.17</td>
</tr>
</tbody>
</table>
Prepaid expenses are advance payments for services or goods not yet received that extend beyond the current accounting period—examples are advance payments for rent, insurance, utilities, and property taxes.

Two analysis issues:

(1) For reasons of expediency, noncurrent prepaids sometimes are included among prepaid expenses classified as current—when their magnitude is large, they warrant scrutiny.

(2) Any substantial changes in prepaid expenses warrant scrutiny.
Inventories are goods held for sale, or goods acquired (or in process of being readied) for sale, as part of a company’s normal operations.

**Expensing** treats inventory costs like period costs—costs are reported in the period when incurred.

**Capitalizing** treats inventory costs like product costs—costs are capitalized as an asset and subsequently charged against future period(s) revenues benefiting from their sale.
Inventories

Inventory Cost Flows

Beginning Inventory

Net Cost of Purchases

Merchandise Available for Sale

Ending Inventory

Cost of Goods Sold
Use of Inventory Methods in Practice

- FIFO: 46%
- LIFO: 30%
- Weighted Average: 20%
- Other: 4%
Inventories

First-In, First-Out (FIFO)

Oldest Costs → Costs of Goods Sold

Recent Costs → Ending Inventory
Inventories

Last-In, First-Out (LIFO)

- Recent Costs
- Costs of Goods Sold
- Oldest Costs
- Ending Inventory
When a unit is sold, the **average cost of each unit** in inventory is assigned to cost of goods sold.

\[
\text{Cost of Goods Available for Sale} \div \text{Units available on the date of sale}
\]
Inventories

Illustration of Costing Methods

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory on January 1, Year 2</td>
<td>40</td>
<td>$500</td>
<td>$20,000</td>
</tr>
<tr>
<td>Inventories purchased during the year</td>
<td>60</td>
<td>$600</td>
<td>$36,000</td>
</tr>
<tr>
<td>Cost of Goods available for sale</td>
<td>100 units</td>
<td></td>
<td>$56,000</td>
</tr>
</tbody>
</table>

Note: 30 units are sold in Year 2 for $800 each = Total Revenue-$24,000
## Inventories

### Illustration of Costing Methods

<table>
<thead>
<tr>
<th></th>
<th>Beginning Inventory</th>
<th>Net Purchases</th>
<th>Cost of Goods Sold</th>
<th>Ending Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIFO</td>
<td>$20,000</td>
<td>+ $36,000</td>
<td>$15,000</td>
<td>+ $41,000</td>
</tr>
<tr>
<td>LIFO</td>
<td>$20,000</td>
<td>+ $36,000</td>
<td>$18,000</td>
<td>+ $38,000</td>
</tr>
<tr>
<td>Average</td>
<td>$20,000</td>
<td>+ $36,000</td>
<td>$16,800</td>
<td>+ $39,200</td>
</tr>
</tbody>
</table>

Assume sales of $35,000 for the period—then gross profit under each method is:

<table>
<thead>
<tr>
<th></th>
<th>Sales</th>
<th>Cost of Goods Sold</th>
<th>Gross Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIFO</td>
<td>$24,000</td>
<td>-- 15,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>LIFO</td>
<td>$24,000</td>
<td>-- 18,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>Average</td>
<td>$24,000</td>
<td>-- 16,800</td>
<td>$7,200</td>
</tr>
</tbody>
</table>
Economic Profit vs. Holding Gain

- In periods of rising prices, FIFO produces higher gross profits than LIFO because lower cost inventories are matched against sales revenues at current market prices. This is sometimes referred to as FIFO’s phantom profits.

- The FIFO gross profit is actually a sum of two components: an economic profit and a holding gain:
  - Economic profit = 30 units \times ($800 - $600) = $6,000
  - Holding gain = 30 units \times ($600 - $500) = $3,000
A company is required to use the same accounting methods from period to period.

A change is only acceptable when it improves financial reporting.
Inventory must be reported at market value when *market* is *lower* than cost.

Market is defined as current replacement cost *(not sales price).*

Dictated by the conservatism principle.
(1) Companies maintain LIFO inventories in separate cost pools.

(2) When inventory quantities are reduced, each cost layer is matched against current selling prices.

(3) In periods of rising prices, dipping into lower cost layers can inflate profits.
Inventories

Analyzing Inventories—Restatement of LIFO to FIFO

Three step process:

(1) Inventory + LIFO reserve
(2) Deferred tax payable + [LIFO reserve x Tax rate]
(3) Retained earnings + [LIFO reserve x (1-Tax rate)]

**LIFO reserve** is the amount by which current cost exceeds reported cost of LIFO inventories
Inventories

Analyzing Inventories—Restatement of LIFO to FIFO

**Campbell Soup Balance Sheet Adjustment—using an analytical entry:**

<table>
<thead>
<tr>
<th>Inventories</th>
<th>89.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred Tax Payable</td>
<td>30.5</td>
</tr>
<tr>
<td>Retained Earnings</td>
<td>59.1</td>
</tr>
</tbody>
</table>

**Campbell Soup Income Statement Adjustment:**

<table>
<thead>
<tr>
<th>Year 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under LIFO</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Beginning Inventory</td>
</tr>
<tr>
<td>+ Purchases (P)</td>
</tr>
<tr>
<td>-- Ending inventory</td>
</tr>
<tr>
<td>= Cost of goods sold</td>
</tr>
</tbody>
</table>
Long-Lived Asset Introduction

Definitions

Long-lived assets—resources or claims to resources are used to generate revenues (or reduce costs) in the long run

Tangible fixed assets such as property, plant, and equipment

Intangible assets such as patents, trademarks, copyrights, and goodwill

Deferred charges such as research and development (R&D) expenditures, and natural resources
Capitalization—process of deferring a cost that is incurred in the current period and whose benefits are expected to extend to one or more future periods.

For a cost to be capitalized, it must meet each of the following criteria:

- It must arise from a past transaction or event.
- It must yield identifiable and reasonably probable future benefits.
- It must allow owner (restrictive) control over future benefits.
Long-Lived Asset Introduction

**Allocation**—process of periodically expensing a deferred cost (asset) to one or more future expected benefit periods; determined by benefit period, salvage value, and allocation method

**Terminology**

- *Depreciation* for tangible fixed assets
- *Amortization* for intangible assets
- *Depletion* for natural resources
Impairment—process of writing down asset value when its value-in-use falls below its carrying (book) value

Two distortions arise from impairment:

- Conservative biases distort long-lived asset valuation because assets are written down but not written up
- Earnings management opportunities increase in a trade-off for more useful balance sheets
Plant Assets & Natural Resources

Plant Assets

Tangible

Actively Used in Operations

Expected to Benefit Future Periods

Property, Plant, and Equipment
Historical cost principle is used for valuation—justification includes:

- **Conservatism**—in not anticipating subsequent replacement costs
- **Accountability**—in dollar amounts for management
- **Objectivity**—in cost determination
**Plant Assets & Natural Resources**

**Plant Assets Costing Rule**

- **Purchase price**
- **Acquisition cost**
- **All expenditures needed to prepare the asset for its intended use**

**Acquisition cost excludes financing charges and cash discounts.**
Total cost, including exploration and development, is charged to depletion expense over periods benefited.

Extracted from the natural environment and reported at cost less accumulated depletion.

Examples: oil, coal, gold
Valuation emphasizes objectivity of historical cost, the conservatism principle, and accounting for the monies invested; represent a company’s capacity to produce goods and services.

**Limitations of historical costs:**
- Balance sheets do not purport to reflect market values.
- Not especially relevant in assessing replacement values.
- Not comparable across companies.
- Not particularly useful in measuring opportunity costs.
- Collection of expenditures reflecting different purchasing power.
Depreciation is the process of allocating the cost of a plant asset to expense in the accounting periods benefiting from its use.
The calculation of depreciation requires three amounts for each asset:

1. **Cost.**
2. **Salvage Value.**
3. **Useful Life.**
4. **Depreciation Method**
The majority of companies use the straight-line method.
Plant Assets & Natural Resources

Comparing Depreciation Methods

**Straight-Line Method**

Depreciation Expense per Year = \( \frac{\text{Cost} - \text{Salvage Value}}{\text{Useful life in periods}} \)
### Straight-Line Depreciation Illustration

**Facts:** Asset cost=$110,000; Useful life=10 years; Salvage value=$10,000

<table>
<thead>
<tr>
<th>End of Year</th>
<th>Depreciation</th>
<th>Accumulated Depreciation</th>
<th>Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$ 10,000</td>
<td>$ 10,000</td>
<td>100,000</td>
</tr>
<tr>
<td>2</td>
<td>10,000</td>
<td>20,000</td>
<td>90,000</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>9</td>
<td>10,000</td>
<td>90,000</td>
<td>20,000</td>
</tr>
<tr>
<td>10</td>
<td>10,000</td>
<td>100,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>
Plant Assets & Natural Resources

Double-Declining-Balance Method

Step 1:
Straight-line depreciation rate = \frac{100 \%}{\text{Useful life}}

Step 2:
Double-declining-balance rate = 2 \times \text{Straight-line depreciation rate}

Step 3:
Depreciation expense = \text{Double-declining-balance rate} \times \text{Beginning period book value}

Ignores salvage value
# Plant Assets & Natural Resources

## Double-Declining-Balance (and SYD) Depreciation Illustration

| Year | Year 1 Depreciation | Year 1 Cumulative Amount | Year 2 Depreciation | Year 2 Cumulative Amount | Year 3 Depreciation | Year 3 Cumulative Amount | Year 4 Depreciation | Year 4 Cumulative Amount | Year 5 Depreciation | Year 5 Cumulative Amount | Year 6 Depreciation | Year 6 Cumulative Amount | Year 7 Depreciation | Year 7 Cumulative Amount | Year 8 Depreciation | Year 8 Cumulative Amount | Year 9 Depreciation | Year 9 Cumulative Amount | Year 10 Depreciation | Year 10 Cumulative Amount |
|------|----------------------|--------------------------|----------------------|--------------------------|----------------------|--------------------------|------------------------|------------------------|----------------------|--------------------------|----------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1    | $22,000              | $22,000                  | $17,600              | $39,600                  | $14,080             | $53,680                  | $11,264                | $64,944                | $9,011               | $73,955                  | $7,209               | $81,164                  | $5,767                 | $86,931                | $4,614                 | $91,545                | $4,228                 | $95,773                | $4,228                 | $100,000               |
| 2    | $18,182              | $40,182                  | $16,364              | $34,546                  | $14,545             | $49,091                  | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 3    | $14,080              | $54,262                  | $14,545              | $49,091                  | $14,545             | $59,636                  | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 4    | $11,264              | $65,526                  | $12,727              | $61,818                  | $12,727             | $74,553                  | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 5    | $9,011               | $74,537                  | $10,909              | $72,727                  | $10,909             | $83,636                  | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 6    | $7,209               | $81,746                  | $9,091               | $81,818                  | $9,091              | $92,727                  | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 7    | $5,767               | $87,513                  | $7,273               | $89,091                  | $7,273              | $99,996                  | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 8    | $4,614               | $92,127                  | $5,455               | $94,546                  | $5,455              | $105,441                 | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 9    | $4,228               | $96,355                  | $3,636               | $98,182                  | $3,636              | $109,007                 | $12,727                | $61,818                | $10,909              | $72,727                  | $9,091               | $81,818                  | $7,273                 | $89,091                | $5,455                 | $94,546                | $3,636                 | $98,182                | $1,818                 | $100,000               |
| 10   | $4,228               | $100,583                 | $1,818               | $100,000                 | $1,818              | $100,000                 |                       |                       |                      |                         |                     |                         |                       |                       |                         |                     |                         |                       |                     |

*reverts to straight-line
Plant Assets & Natural Resources

Activity (Units-of-Production) Method

Step 1:

Depreciation Per Unit = \( \frac{\text{Cost} - \text{Salvage Value}}{\text{Total Units of Production}} \)

Step 2:

Depreciation Expense = Depreciation Per Unit \times \text{Units Produced in Period}
Total cost, including exploration and development, is charged to depletion expense over periods benefited.

Extracted from the natural environment and reported at cost less accumulated depletion.

Examples: oil, coal, gold
Depletion of Natural Resources

Depletion is calculated using the units-of-production method.

Unit depletion rate is calculated as follows:

\[
\frac{\text{Cost} - \text{Salvage Value}}{\text{Total Units of Capacity}}
\]
Total depletion cost for a period is:

\[
\text{Total depletion cost} = \text{Unit Depletion Rate} \times \text{Number of Units Extracted in Period}
\]
Plant Assets & Natural Resources

Analyzing Depreciation and Depletion

• Assess reasonableness of depreciable base, useful life, and allocation method
• Review any revisions of useful lives
• Evaluate adequacy of depreciation—ratio of depreciation to total assets or to another size-related factors
• Analyze plant asset age—measures include

\[
\text{Average total life span} = \frac{\text{Gross plant and equipment assets}}{\text{Current year depreciation expense.}}
\]

\[
\text{Average age} = \frac{\text{Accumulated depreciation}}{\text{Current year depreciation expense.}}
\]

\[
\text{Average remaining life} = \frac{\text{Net plant and equipment assets}}{\text{Current year depreciation expense.}}
\]

\[
\text{Average total life span} = \text{Average age} + \text{Average remaining life}
\]

(these measures also reflect on profit margins and financing requirements)
Intangible Assets

Noncurrent assets without physical substance.

Useful life is often difficult to determine.

Often provide exclusive rights or privileges.

Usually acquired for operational use.
Intangible Assets

Accounting for Intangible Assets

- Patents
- Copyrights
- Leaseholds
- Leasehold Improvements
- Goodwill
- Trademarks and Trade Names

Record at cost, including purchase price, legal fees, and filing fees.
Intangible Assets

Accounting for Intangible Assets

- Amortize identifiable intangibles over shorter of economic life or legal life, subject to a maximum of 40 years.
- Use straight-line method.
- Research and development costs are normally expensed as incurred.
- Goodwill is not amortized, but is tested annually for impairment.
# Intangible Assets

## Accounting for Intangible Assets

<table>
<thead>
<tr>
<th>Manner of Acquisition</th>
<th>Purchased</th>
<th>Developed Internally</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identifiable intangible</strong></td>
<td>Capitalize and amortize</td>
<td>Expense (with some exceptions)</td>
</tr>
<tr>
<td><strong>Goodwill</strong></td>
<td>Capitalize and test for impairment</td>
<td>Expense</td>
</tr>
</tbody>
</table>
Intangible Assets

**Goodwill** is the value assigned to a rate of earnings above the norm—it translates into excess earnings called *superearnings*.

Goodwill (1) can be a sizable asset, (2) is recorded only upon purchase of another entity or segment, and (3) varies considerably in composition.
Intangible Assets

Goodwill

Occurs when one company buys another company.

Only purchased goodwill is an intangible asset.

The amount by which the purchase price exceeds the fair market value of net assets acquired.
Intangible Assets

Analyzing Intangibles and Goodwill

1. Search for unrecorded intangibles and goodwill—often misvalued and most likely exist off-balance-sheet.
2. Examine for superearnings as evidence of goodwill.
3. Review amortization periods—any bias likely is in the direction of less amortization and can call for adjustments.
4. Recognize goodwill has a limited useful life--whatever the advantages of location, market dominance, competitive stance, sales skill, or product acceptance, they are affected by changes in business.