

# Lower of Cost or Market

Accounting "conservatism" requires inventory to be recorded at the lower of cost or market.

As a result, firms are required to "write-down" their inventory when the market value of their inventory substantially declines.

- Obsolescence
- Deterioration

In order to make this determination, you need to know the "cost" and the "market" values of your inventory.

Cost is easy. It is the historical cost as determined by your inventory cost method.

Market is more difficult.

# Determining the "Market" Value of Inventory

- The market value is not defined as the current sales price of the inventory.
- Market value is generally equal to the inventory's current replacement cost (how much it would cost to replace the inventory).
- Except:
  - Market value cannot exceed the "net realizable value"
  - Market value cannot be less than the net realizable value less a normal profit margin.

Net realizable value is the selling price less any additional costs to complete or sell the inventory.

# Application of Lower of Cost or Market

Generally, firms will choose between replacement cost and net realizable value, based upon the reliability of the two numbers.

- Most of the time net realizable value will be the easiest number to compute.
- If a firm uses net realizable value, it does not have to worry about whether the market value is in the acceptable range.

The lower of cost or market adjustment can be applied to individual inventory items, logical categories, or the entire inventory. The broader the category, the higher the inventory and the lower the adjustment.

Once inventory has been written-down, the revised value becomes the "cost" value for future adjustments.

Any future recovery is ignored.

# Journal Entries

The proper journal entry is:

Dr. Loss from write-down of inventory  
    Cr. Inventory

If the amounts are relatively small, firms will instead record:

Dr. Cost of Goods Sold  
    Cr. Inventory

The problem with the second entry is that it distorts cost of goods sold (because the sales revenue for the units has not been recorded) and gross profit margins.

## Example from Text, Page 384

The normal profit margin is 25% of the selling price

		Replacement	Selling	Disposal
Product	Cost	Cost	Price	Costs
101	80,000	85,000	160,000	30,000
102	175,000	160,000	200,000	25,000
201	160,000	140,000	180,000	50,000
202	45,000	20,000	60,000	22,000

(In \$ thousands)

	<u>101</u>	<u>102</u>	<u>201</u>	<u>202</u>
Historical cost	80	175	160	45
Replacement cost	85	160	140	20
Net realizable value	130	175	130	38
NRV - normal profit	90	125	85	23
"Market value"	90	160	130	23

If the firm uses two inventory categories, Category A (101 & 102) and Category B (201 and 202):

	<u>Category A</u>	<u>Category B</u>
Cost	255	205
Market	250	153
Write-down	5	52

# Long-Term Assets

## Acquisition

- Which costs should be capitalized?
- How do you value "intangible assets?"
- Noncash Acquisitions
- Research and Development

## Expense Recognition

- Depreciation Methods
  - Accelerated vs. Straight-Line
  - Partial Periods
  - Changes in estimates
  - Changes in method
- Amortization of Intangibles
- Depletion of Natural Resources
- Impairment of Value

# Which Costs should be Capitalized?

Why is this important?

General Rule: All costs that are reasonable and necessary to prepare the asset for use.

- Freight and transportation
- Installation
- Testing

Note:

Depreciation begins when the asset begins production. Subsequent costs are generally expensed. Exceptions include costs that substantially alter the asset or extend the asset's useful life (can be capitalized).

Allocation of Costs: Common costs are generally allocated based upon the relative fair market values.

## Special Considerations

- Land: The basic rules apply, however the issues are more significant.
  - Lump-sum purchases are common (land and buildings)
  - Costs of preparation are large (removal of old building, etc.)
  - You do not depreciate land.
- Interest: Can be capitalized if the loans are used to finance the construction of an asset.
  - You do not capitalize interest if the loan is used to finance the purchase of the asset.
  - Loans can be specifically dedicated to the project, or can be general long-term financing.
  - Issues that arise include the determination of an interest rate and the allocation to construction costs.

# Research and Development

General Rule: R&D expenditures are expensed when incurred.

- Includes depreciation of assets and an allocation of indirect costs.
- Does not include most general and administrative costs.
- Includes expenditures incurred until the product is ready for commercial production.

Rationale: Future benefits associated with R&D are very uncertain. There are problems in determining the dollar value of the benefits (whether they are greater than the expenditures) and the period of benefit.

# R&D Special issues

R&D Limited Partnerships

Software Development Costs

Purchased R&D

R&D Limited Partnerships (Not in text): One way firms used to avoid the expensing of R&D was to form an R&D limited partnership. The sponsoring firm purchases an interest in the limited partnership with an option to purchase the results of the R&D. The investment in the limited partnership is treated as an asset. In SFAS #68, the FASB adjusted the accounting for such arrangements to substantially close this loophole.

# Software Development Costs

This applies to software to be sold commercially. Costs to develop software for internal use are generally expensed. Software development costs are expensed until technological feasibility is established.

- Technological feasibility: You have established that the product can be produced to meet its design specifications.
- Costs incurred between technological feasibility and the start of commercial production are capitalized as an intangible asset and amortized.

Example from the text:

Technological feasibility: June 30, 2000

Commercial production: January, 2001

Costs: 1/1/00 - 6/30/00 = \$1,200,000

7/1/00 - 12/31/00 = \$800,000

% of estimated total revenue in 2001: 30%

% of estimated economic life of the product in 2001: 25%

Expense recognized in 2001: 30% x \$800,000 = \$240,000.

## Purchased Research and Development

If one company purchases another company the purchase price is allocated to the assets of the acquired company based upon their fair values. The excess of the purchase price over the fair value of the assets acquired is considered to be "Goodwill". Goodwill is an intangible asset that is generally amortized over 40 years.

Companies generally do not like to record goodwill. Why?

Amounts paid for "in-process" R&D are expensed. Note that these are expenditures for products that are not yet technologically feasible.

Example: In 1995 IBM paid \$2.9 billion to acquire Lotus. The fair value of the tangible assets was determined to be \$325 million. The fair value of the intangible assets was determined to be \$735 million. The value of in-process R&D was valued at \$1.84 billion.

Most of the \$1.84 billion was allocated to a product called "WordSpeak". WordSpeak was a technology to convert oral communications into editable (typed) documents. The technology was in the preliminary development stage and was not expected to be marketable until the year 2000.

What is the rationale behind the accounting treatment for "in-process R&D?"

What are management's incentives with regard to the accounting for an acquisition?

Why is the accounting treatment for in-process R&D controversial?

# Required for Tuesday, October 31

E10-23; C10-14

## Financial Statements:

- Determine the amount of R&D expense for your company. Compute R&D as a proportion of sales.
- Did your company undertake any significant acquisitions during the year? If so, what is the proportion of the purchase price that was allocated to "in-process" R&D?
- Does your company have a substantial amount of "Goodwill" on its balance sheet? If so, what policy does your firm follow to amortize the goodwill? How much goodwill amortization did the company record?