Long-lived Assets

15.511 Corporate Accounting

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Agenda

- Understand how the matching principle influences
  - the capitalization of long-lived assets
  - the expensing of capitalized costs to match revenues generated in the use of long-lived assets
- Understand how differences in “book” vs. tax accounting for depreciation lead to deferred taxes

Review of Matching Principle

- Capitalize versus Expense
  - Capitalized Costs means show it as an Asset on the Balance Sheet
    - Assets have future benefits
  - Expense (i.e., not capitalize) when
    - benefits are immediate
    - OR future benefits are too uncertain or immaterial (e.g., R&D)
- Assets are consumed (in future) to generate future revenues
  - Current Assets like Inventory, Prepaid Rent, and Insurance
  - Non-current assets like Plant, buildings, machinery
  - NC Intangible assets like Patents, acquired goodwill

The case of non-current assets: PP&E

- Accounting for Non-Current assets:
  - What is the acquisition cost?
  - What is the expected useful service life?
  - What is the salvage value?
  - What pattern of depreciation should be used to allocate expense over the useful life?
- ***Note:*** *Land is the only non-current asset that is never depreciated / amortized*

Determining Acquisition Cost

- What is given up to obtain the asset?
  - Include all costs required to bring the asset into serviceable or usable condition and location.
- Purchased Assets: Purchase price plus cost to prepare the asset for use (installation, transport)
  - Case 1: Cash
  - Case 2: Financing (down payment plus loan/note)
- Self-Constructed Assets
  - Direct costs of construction
  - Financing costs (interest on funds borrowed to finance construction)

Determining the Acquisition Cost

- Purchased Assets: Example 1
- ABC, Inc. purchases new equipment on 1/1/03. The firm
  - pays $890,000 to the vendor of the machine
  - pays $51,000 to transport the equipment
  - pays $8,000 for insurance during transportation
  - estimates that maintenance will cost $4,000 in the first year, and will rise by about 20% annually for 10 years
- What is the balance sheet effect on 1/1/03?
  - Asset, Equipment = $949,000 (= 890 + 51 + 8)

Determining the Acquisition Cost

- Purchased Assets: Example 2
- Seattle Manufacturing acquires a work-station on 1/1/01. The firm
  - pays a $30,000 down payment to the vendor
  - signs a 3-year note payable for $170,000 at an annual interest rate of 10%
  - pays employees $4,000 to configure the work-station for daily operations and run appropriate tests
  - spends $11,500 to train the employees who will operate the work-station
- What is the balance sheet effect on 1/1/01?
  - Asset, Work station = $204,000 (= 30 + 170 + 4)

Determining the Acquisition Cost

Self-constructed Assets: Example

- Conglomerated Products is constructing a new production facility. Expected completion date is 6/1/2001.
- During 2000, the company
  - spends $1.7 million for materials
  - pays $2.1 million to architects and laborers
  - accrues interest payable equal to 10% of a $1.6 million construction loan
  - incurs fees related to zoning, inspection, etc. of $52,000
- What is the balance sheet effect as of 12/31/00?
  - Asset, Factory building construction in progress = $4,012,000 (= 1,700 + 2,100 + 160 + 52)

Salvage Value and Useful Life

- Determining Salvage Value
  - Requires managerial judgment
  - SV = estimated proceeds at disposal, net of selling costs
  - What factors can affect this estimate?
  - **Depreciable basis** = Acquisition cost - SV
- Determining Useful life
  - Requires managerial judgment
  - The time period over which the asset will be used
  - What factors can affect the estimate?
- Choose depreciation method
  - What does GAAP allow?

GAAP Depreciation Methods

- Production (Use) Method
  - Depreciation cost per machine-hour = depreciable basis/service life (in machine-hours)
  - Depr. Expense = Actual hours used * hourly rate
- Example:
  - A machine with depreciable basis of $50,000 is expected to provide 20,000 hours of service. During Year 1, the machine is used for 2,500 hours.
  - What is the depreciation expense for Year 1?
    - $2,500*[50,000/20,000] = $6,250
  - What is the machine's book value at the end of Year 1?
    - $50,000 - $6,250 = $43,750

GAAP Depreciation Methods

- Straight-line Depreciation
  - Annual Depreciation Expense = depreciable basis/service life (in years) = (AC - SV) / Years
  - Used by an overwhelming majority of US firms
- Example:
  - Avis acquires cars for its rental fleet for $30,000 each. It expects to rent each car for 2 years, then sell them for $15,000 each.
  - What is the depreciation expense per car for Year 1?
    - ($30,000 - $15,000)/2 = $7,500
  - What is each car's book value at the end of Year 1?
    - $22,500

Depreciation Bookkeeping

- At the time of acquisition of the asset:

  Dr PP&E 30,000

  Cr Cash 30,000
- Say SV = 15,000
- Depreciable basis = (30,000 – 15,000)
- Depreciation = (Depreciable basis)/(useful life)

  = 15,000/2 = 7,500

  Dr Depreciation Expense 7,500

  Cr Accumulated Depreciation 7,500

Depreciation Bookkeeping

At the beginning of first year

PP&E

30,000

At the end of first year

Gross PP&E	30,000
Less: Acc Deprecn.	07,500
Net PP&E	*22,500*
Income effect	*-07,500*

At the end of first year

PP&E

30,000

Acc. Deprecn.

7,500

Deprecn. Expense (RE)

7,500

GAAP Depreciation Methods

- Accelerated Depreciation
  - Mostly confined to tax reporting
  - Higher depreciation expense is recognized in the earlier years of an asset's useful life
- Differences between Tax *depreciation deductions* and Financial Reporting *depreciation expense* give rise to ***Deferred Tax accounts***
  - More on this at end of lecture

Depreciation Bookkeeping

- What accounts does depreciation affect?
  - Accumulated depreciation account, contra-asset account
  - Retained earnings account, depreciation expense

Which financial statements are affected?

- Balance sheet and income statement

Does depreciation affect cash?

- No