

LECTURE 7

DEPRECIATION OF FIXED ASSETS

A watermark logo is centered behind the main title. It features a stylized orange and blue circular emblem with the text 'Stamford Education Beyond Borders' in a light blue font.

LEARNING OUTCOMES

Upon completion of the lecture, the students should be able to:

- Understand the definition, purposes, and nature of depreciation.
- Compute the depreciation expenses using the Straight-line method and Reducing-balance method.
- Show the treatment for the disposal of fixed assets.

Definition and Purposes

- Depreciation is the process of allocating a non-current asset's cost to expenses over the period the asset is used.
- This process matches the asset's expense against the revenue generated over the asset's life.
- The primary purpose of depreciation is to measure profit, and the secondary purpose is the need to account for the asset's decline in usefulness.

Causes of depreciation

- **Physical deterioration**

Wear and tear

Erosion, rust, rot, and decay

- **Economic factors**

Obsolescence

Inadequacy

- **Time**

- **Depletion / exhaustion**

Important Points

- **Depreciation is not a process of valuation. Businesses do not record depreciation based on valuations of their assets made at the end of each period. Businesses allocate the asset's cost to the periods of its useful life based on a specific depreciation method.**
- **Depreciation does not mean that the business sets aside cash to replace assets as they become fully depreciated. Accumulated depreciation is that portion of the asset's cost that has already been recorded as expense. Accumulated depreciation does not represent a growing amount of cash.**



Measuring Depreciation

- **Cost**

The purchase price of the asset plus all other cost incidental to its acquisition.

- **Estimated useful life**

The length of service the business expects to get from the asset. It can be measured in years, units of output, or other measure of productive capacity.

- **Estimated residual value**

Also called scrap value or salvage value. Is the expected cash value of the asset at the end of its useful life.

- **Depreciable amount**

Is the asset's cost minus its estimated residual value.

Depreciation Methods

- **Straight-line Method**
- **Reducing-balance Method**
- **Units-of-production Method**
- **Sum-of-years-digits Method**

[For this course only the first two methods are covered].

Straight-line Method

- In this method, an equal amount of depreciation expense is assigned to each year [or period] of asset use. The depreciable amount is divided by useful life in years to determine the annual depreciation expense.
- The formula for this method is:

$$\text{Straight-line depreciation per year} = \frac{\text{Cost} - \text{Residual value}}{\text{Useful life in years}}$$

Reducing-balance Method

- Is one of the accelerated-depreciation methods. An accelerated-depreciation method writes off a relatively larger amount of the asset's cost nearer the start of its useful life than does the straight-line method. The rationale is that for certain assets, the productive capacity is relatively higher in the earlier years than in the later years. Hence, allowing for a better matching of expense and revenue. However, this method cannot be used if the residual value is zero.
- The formula for this method is:

$$\text{Depreciation rate} = 1 - \sqrt[N \text{ [number of years] }]{\frac{\text{Residual value}}{\text{cost}}}$$

Worked Example

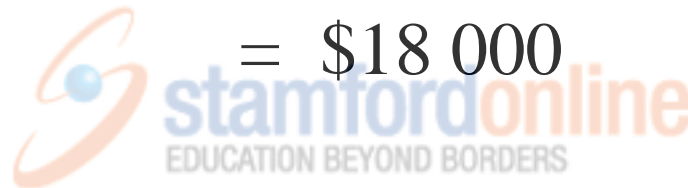
Data for depreciation calculations:

- Cost of equipment is \$100 000
- Estimated residual value is \$10 000
- Depreciable amount is \$90 000
- Estimated useful life is 5 years

Straight-line Method

- **Straight line depreciation per year:**

$$\text{Depreciation expense} = \frac{\$100\,000 - \$10\,000}{5}$$

$$= \$18\,000$$


The entry to record this depreciation is:

Dr. Depreciation Expense Account with \$18 000

Cr. Accumulated Depreciation Account with \$18 000

Reducing-balance Method

- The depreciation rate per year:

$$\begin{aligned}\text{Depreciation rate} &= 1 - \sqrt[5]{\frac{\$10\,000}{\$100\,000}} \\ &= 0.37\end{aligned}$$



$$\begin{aligned}\text{Depreciation expense for} & \quad [\$100\,000 \times .37] \\ \text{the first year} & = \mathbf{\$37\,000}\end{aligned}$$

$$\begin{aligned}\text{Depreciation expense for} & \quad ([\$100\,000 - \$37\,000] \times .37) \\ \text{the second year} & = \mathbf{\$23\,310}\end{aligned}$$

Recording Depreciation

- **Depreciation Expense Account**

This account will record the depreciation expense incurred during the accounting period. The depreciation expense for the period will be transferred to the Profit and Loss account.

- **Accumulated Depreciation Account**

This is a contra account for the asset concerned. Accumulated depreciation Account records the total depreciation of the asset to date. The total Accumulated Depreciation Account for the accounting period will be transferred to the Balance Sheet.

The Double-entry Record

- **For the first year:**

Dr. Depreciation Expense Account with \$37 000

Cr. Accumulated Depreciation Account with \$37 000



- **For the second year:**

Dr. Depreciation Expense Account with \$23 310

Cr. Accumulated Depreciation Account with \$ 23 310

The Disposal of Non-current Asset

- **On the sale of the asset, the following entries are needed:**
- **Transfer the cost price of the asset sold to an Asset Disposal account:**
Dr. Asset Disposal Account
Cr. Asset Account
- **Transfer the depreciation already charged to the Asset Disposal Account:**
Dr. Asset Accumulated Depreciation Account
Cr. Asset Disposal Account

- **For the amount received on disposal:**
Dr. Cash Book
Cr. Asset Disposal Account
- **Transfer the difference [the amount needed to balance the Asset Disposal Account] to the Profit and Loss Account:**
 - **If it shows a credit balance [profit on sale]**
Dr. Asset Disposal Account
Cr. Profit and Loss Account
 - **If it shows a debit balance [loss on sale]**
Dr. Profit and Loss Account
Cr. Asset Disposal Account