# Depreciation

## (Cheat Sheet)

Accounting Coach®

## Depreciation

In accounting, depreciation is the spreading (allocation) of an asset's cost over the many accounting periods in which it is used. The assets that are depreciated include buildings, equipment, furnishings, vehicles, land improvements (but not the land), and similar long-term assets that are used in a business.

The purpose of depreciation is to *match the cost of the asset with the revenues that are earned from the use of the asset*. In other words, the purpose of depreciation is *not* to calculate the market value of an asset.

The depreciation for the accounting period is recorded as a debit in the income statement account Depreciation Expense. The credit amount is recorded in the balance sheet account Accumulated Depreciation, which is a contra-asset account. This means that instead of crediting an asset such as Equipment, the credit is recorded in a related account such as Accumulated Depreciation for Equipment. The combination of the debit balance in the Equipment account and the credit balance in the account Accumulated Depreciation for Equipment is the *book value* (or the carrying value) of the equipment. Remember that this book value is not the fair market value of the equipment. It merely represents the cost that has not been depreciated.

Example 1. A company purchases equipment at a cost of $100,000 and it is expected to be useful for 10 years. At the end of 10 years it will be scrapped for $0. A common depreciation method is to debit $10,000 per year to Depreciation Expense (and credit Accumulated Depreciation).

## Depreciation on the Financial Statements Vs. Tax Return

The depreciation that we are discussing is the depreciation used on the *financial statements*. This depreciation is almost always different from the depreciation reported on the corporation's income tax returns. The reason is that the financial statement depreciation is based on the matching principle of accounting while the income tax depreciation is based on income tax regulations and tax strategies. However, the *total amount* of depreciation taken over the life of the asset will likely be the same. The asset's total cost is the maximum amount of depreciation for both financial reporting and tax reporting. The annual differences result from the *timing* of when the depreciation is recorded as an expense. (Information on income tax depreciation can be found at www.IRS.gov).

## Cost

An asset's cost is the *cash equivalent amount* paid for the asset plus the necessary costs to get the asset in place and ready for use. The asset's cost is the maximum total amount that can be charged to depreciation expense over the years of the asset's useful life. Once the asset's cost is depreciated, the depreciation expense stops, even if the asset continues to be used in the business.

## Useful Life

An asset's useful life is the estimated number of years (or units of output) that the asset will be economically useful. This estimate is made when the asset is placed into service. For example, if a company estimates that a machine with a cost of $100,000 will have a useful life of 10 years, its financial statements will report $10,000 per year. (The 10 years is used even if the income tax regulations specify a

7-year life or it allows the immediate expensing of the $100,000 in the year that it is placed into service.)

## Salvage Value (Scrap Value or Residual Value)

An asset's salvage value is an estimate of the amount that will be recovered at the end of an asset's useful life. It is also referred to as the *scrap value* or *residual value*. This estimate is made at the time the asset is placed into service and the amount is subtracted from an asset's cost in order to determine the total amount of depreciation over the life of the asset. Often the salvage value is estimated to be $0.

## Depreciable Cost

An asset's depreciable cost is an asset's cost minus the asset's estimated salvage value at the end of its useful life.

## Half-year Convention

Half-year convention assumes that a newly acquired asset was placed in service at the midpoint of a year. As a result, *one-half of the annual* depreciation is charged to depreciation expense in the first year (and in the final year) of the asset's useful life.

Example 2. If an asset has a cost of $100,000 and an estimated useful life of 10 years and an estimated salvage value of $0, the *annual* depreciation could be $10,000. Under the half-year convention, the company will report $5,000 of depreciation in the year the asset is placed into service, followed by 9 full years of $10,000 of depreciation, and then $5,000 in the 11th year…for a total of $100,000.

## Straight-Line Depreciation

Straight-line depreciation is a common method of the depreciation reported on the financial statements. Straight-line depreciation results in the same amount of annual depreciation in each year (except for partial years). The full-year, annual depreciation is computed by taking the asset's *depreciable cost* and dividing it by the years of useful life.

## Accelerated Depreciation

Accelerated depreciation refers to the depreciation methods in which larger amounts of annual depreciation are taken in the early years of an asset's life, and as a result, smaller amounts of annual depreciation are taken in the later years. (Over the entire useful life of the asset the total amount of depreciation is the same as the straight-line method.) Hence, accelerated depreciation involves the timing of the same total amount of depreciation. Examples of the accelerated depreciation methods are the *double-declining-balance method*, and the *sum-of-the-years'-digits method*.

## Double-Declining-Balance (DDB) Method

Double-declining-balance (or DDB) method of depreciation is one of the accelerated methods of depreciation. "Double" indicates taking *200% of the straight-line depreciation rate*. The "declining-balance" refers to the asset's book value which is declining as the asset is depreciated. (*Book value or carrying value* is the asset's *cost minus* its *accumulated depreciation*.) This means that an asset with a useful life of 10 years will have a straight-line rate of 10% which will be doubled to 20%. This rate is multiplied times the asset's *book value as of the beginning of the year*.

Example 3. Assume that a corporation acquires an asset at the cost of $100,000. It estimates the asset will be useful for 10 years. This means the straight-line depreciation rate is 10%, which will become 20% for the double-declining-balance method. The asset's book value at the beginning of the first year is $100,000 which is multiplied by 20% to arrive at $20,000 of depreciation in the first year of the asset's life. For the second year of the asset's life, the beginning book value will be $80,000 ($100,000 minus $20,000 of accumulated depreciation). That amount times 20% will mean $16,000 of depreciation during the second year of the asset's life. The depreciation for the third year of the asset's life will be $64,000 X 20% = $12,800. This continues until the asset's book value is equal to the asset's salvage value. (Over the life of the asset, the *total amount of depreciation* will be the same under any depreciation method. The differences involve the timing of the depreciation.)

## Sum-of-the-Years'-Digits (SYD) Method

Sum-of-the-years'-digits (SYD) method of depreciation is also an accelerated method of depreciation. Its name comes from summing all of the digits in the years of the asset's useful life (see Example 4). This sum will become the *denominator of the fraction* that will be used. The *numerator of the fraction* is the years of depreciation remaining.

Example 4. Assume that a corporation acquires a business asset and estimates its useful life is 10 years. The digits in the years of useful life are: 1+2+3+4+5+6+7+8+9+10 and the sum is 55. Since there are 10 years remaining in the first year of the asset's life, the depreciation for the first year will be 10/55 of the *depreciable cost*. If the asset has a cost of $100,000 and the estimated salvage value is $0, the depreciation (rounded) for the first year of the asset's life is $100,000 X 10/55 = $18,182. The depreciation for the second year of the asset's life will be $100,000 X 9/55 = $16,364. In the final year of the asset's life the depreciation will be $100,000 X 1/55 = $1,818. (Again, the *total amount* of depreciation expense during the years of useful life will be the same regardless of the method used. Any differences during a specific year are timing differences.)

## Book Value

The book value of an asset is its cost minus its *accumulated depreciation*. The book value is also known as an asset's carrying value. The book value does *not* indicate the market value of the asset.