

Introduction to Depreciation



Introduction to Depreciation

Depreciation is the process accountants use to determine the value of a tangible (physical) asset over time.



Purchase Price: \$50,000

Loss in Value: \$0



Value after a few years: \$20,000

Loss in Value: \$30,000



Value after a long time...

...donate to NPR

Loss in Value: \$50,000

Amortization: Loss in Value over Time

| | | | |
|---|--|----------------------------------|---------------------|
| United States Patent [19] | | [11] Patent Number: | 5,183,785 |
| Readey | | [45] Date of Patent: | Feb. 2, 1993 |
| [54] ALUMINUM BORATE CERAMICS AND PROCESS FOR PRODUCING SAME | | | |
| [75] Inventor: Michael J. Readey , Denver, Colo. | | 3,856,705 12/1974 McArthur | 252/432 |
| [73] Assignee: Coors Porcelain Company , Golden, Colo. | | 4,226,629 10/1980 Tabuchi et al. | 106/65 |
| [21] Appl. No.: 545,864 | | 4,645,753 2/1987 Zleiz et al. | 502/202 |
| [22] Filed: Jun. 29, 1990 | | 4,774,210 9/1988 Ray | 501/127 |
| [51] Int. Cl. ³ C04B 35/10; C04B 35/02; C04B 35/18; C04B 35/58 | | 4,789,422 12/1988 Misra | 156/623 |
| [52] U.S. Cl. 501/127; 501/94; 501/96; 501/153; 423/276; 423/278; 423/289; 423/600 | | 4,804,642 2/1989 Ray | 501/87 |
| [58] Field of Search 501/94, 95, 96, 105, 501/119, 127, 153; 502/202; 423/276, 278, 289, 600 | | 4,804,646 2/1989 Ray | 501/105 |
| [56] References Cited | | | |
| U.S. PATENT DOCUMENTS | | | |
| 3,080,242 3/1963 Berry 106/65 | | | |
| 3,350,166 10/1967 Alley et al. 23/59 | | | |
| 3,795,524 3/1974 Sowman 106/65 | | | |
| 3,856,702 12/1974 McArthur 252/432 | | | |
| 11 Claims, No Drawings | | | |

| | | | |
|---|--|----------------------------------|---------------------|
| United States Patent [19] | | [11] Patent Number: | 5,183,785 |
| Readey | | [45] Date of Patent: | Feb. 2, 1993 |
| [54] ALUMINUM BORATE CERAMICS AND PROCESS FOR PRODUCING SAME | | | |
| [75] Inventor: Michael J. Readey , Denver, Colo. | | 3,856,705 12/1974 McArthur | 252/432 |
| [73] Assignee: Coors Porcelain Company , Golden, Colo. | | 4,226,629 10/1980 Tabuchi et al. | 106/65 |
| [21] Appl. No.: 545,864 | | 4,645,753 2/1987 Zleiz et al. | 502/202 |
| [22] Filed: Jun. 29, 1990 | | 4,774,210 9/1988 Ray | 501/127 |
| [51] Int. Cl. ³ C04B 35/10; C04B 35/02; C04B 35/18; C04B 35/58 | | 4,789,422 12/1988 Misra | 156/623 |
| [52] U.S. Cl. 501/127; 501/94; 501/96; 501/153; 423/276; 423/278; 423/289; 423/600 | | 4,804,642 2/1989 Ray | 501/87 |
| [58] Field of Search 501/94, 95, 96, 105, 501/119, 127, 153; 502/202; 423/276, 278, 289, 600 | | 4,804,646 2/1989 Ray | 501/105 |
| [56] References Cited | | | |
| U.S. PATENT DOCUMENTS | | | |
| 3,080,242 3/1963 Berry 106/65 | | | |
| 3,350,166 10/1967 Alley et al. 23/59 | | | |
| 3,795,524 3/1974 Sowman 106/65 | | | |
| 3,856,702 12/1974 McArthur 252/432 | | | |
| 11 Claims, No Drawings | | | |

| | | | |
|---|--|----------------------------------|---------------------|
| United States Patent [19] | | [11] Patent Number: | 5,183,785 |
| Readey | | [45] Date of Patent: | Feb. 2, 1993 |
| [54] ALUMINUM BORATE CERAMICS AND PROCESS FOR PRODUCING SAME | | | |
| [75] Inventor: Michael J. Readey , Denver, Colo. | | 3,856,705 12/1974 McArthur | 252/432 |
| [73] Assignee: Coors Porcelain Company , Golden, Colo. | | 4,226,629 10/1980 Tabuchi et al. | 106/65 |
| [21] Appl. No.: 545,864 | | 4,645,753 2/1987 Zleiz et al. | 502/202 |
| [22] Filed: Jun. 29, 1990 | | 4,774,210 9/1988 Ray | 501/127 |
| [51] Int. Cl. ³ C04B 35/10; C04B 35/02; C04B 35/18; C04B 35/58 | | 4,789,422 12/1988 Misra | 156/623 |
| [52] U.S. Cl. 501/127; 501/94; 501/96; 501/153; 423/276; 423/278; 423/289; 423/600 | | 4,804,642 2/1989 Ray | 501/87 |
| [58] Field of Search 501/94, 95, 96, 105, 501/119, 127, 153; 502/202; 423/276, 278, 289, 600 | | 4,804,646 2/1989 Ray | 501/105 |
| [56] References Cited | | | |
| U.S. PATENT DOCUMENTS | | | |
| 3,080,242 3/1963 Berry 106/65 | | | |
| 3,350,166 10/1967 Alley et al. 23/59 | | | |
| 3,795,524 3/1974 Sowman 106/65 | | | |
| 3,856,702 12/1974 McArthur 252/432 | | | |
| 11 Claims, No Drawings | | | |

Value of a New Patent:
\$500,000

Loss in Value: **\$0**

Value after 10 years:
\$250,000

Loss in Value: **\$250,000**

Value after 20 years...
nada, zip, nuttin'

Loss in Value: **\$500,000**

Amortization is the process accountants use to determine the value of an intangible asset over time.

Depreciation & Amortization

Depreciation: the financial measure of how *tangible* assets (e.g., equipment, vehicles, etc.) lose value over time.

Amortization: the financial measure of how *intangible* assets (e.g., patents, trademarks, copyrights, etc.) lose value over time.

Accumulated Depreciation: the total amount of depreciation (and amortization) at some point in time.



Purchase Price: \$50,000

Accumulated Depreciation: \$0



Value after a few years: \$20,000

Accumulated Depreciation: \$30,000



Value after a long time: \$0

Accumulated Depreciation: \$50,000

Depreciation & Amortization

What can be depreciated?

- Assets used strictly for business
- Assets having a useful life of more than 1 year (otherwise they are “expensed” the year purchased)
- Assets whose value decreases over time (because of wear, obsolescence, gets used up, etc.)
- Assets such as equipment, vehicles, buildings, furniture, computers
 - ✗ But not land, which doesn’t decrease in value over time;
 - ✗ And not inventory, which is generally sold within 1 year

Depreciation, Amortization and Taxes

A typical Income Statement (Profit & Loss, P&L)

| | 2022 |
|---------------------------------|------------------|
| Revenues | \$1,000,000 |
| Cost of Goods Sold, COGS | \$600,000 |
| Gross Profit: | \$400,000 |
| | |
| Operating Expenses | |
| R&D | \$30,000 |
| Sales, General & Admin | \$170,000 |
| Depreciation | \$25,000 |
| Amortization | \$5,000 |
| Total Operating Expenses | \$230,000 |
| | |
| Income Before Taxes | \$170,000 |
| Income Tax (@ 21%) | \$35,700 |
| Net Income (PAT) | \$134,300 |

These numbers depend on the value of the company's "assets".

This number depends on Income Before Taxes.

Tax Implications of Depreciation and Amortization

| | 2022 |
|---------------------------------|------------------|
| Revenues | \$1,000,000 |
| Cost of Goods Sold, COGS | \$600,000 |
| Gross Profit: | \$400,000 |
| | |
| Operating Expenses | |
| R&D | \$30,000 |
| Sales, General & Admin | \$170,000 |
| Depreciation | \$25,000 |
| Amortization | \$5,000 |
| Total Operating Expenses | \$230,000 |
| | |
| Income Before Taxes | \$170,000 |
| Income Tax (@ 21%) | \$35,700 |
| Net Income (PAT) | \$134,300 |

Depreciation and Amortization reduce the company's income before tax, thereby decreasing taxes owed.

They are like tax deductions!

Operating expenses are increased by \$25,000 from the depreciation expense.

Operating expenses are increased by \$5,000 from the amortization expense.

As a result of the Depreciation & Amortization expenses, taxes are reduced ~ \$6,300 (21% of \$30K)

Tax Implications of Depreciation and Amortization



The IRS: The United States' government organization responsible for collecting taxes.

Why does one depreciate assets anyway?

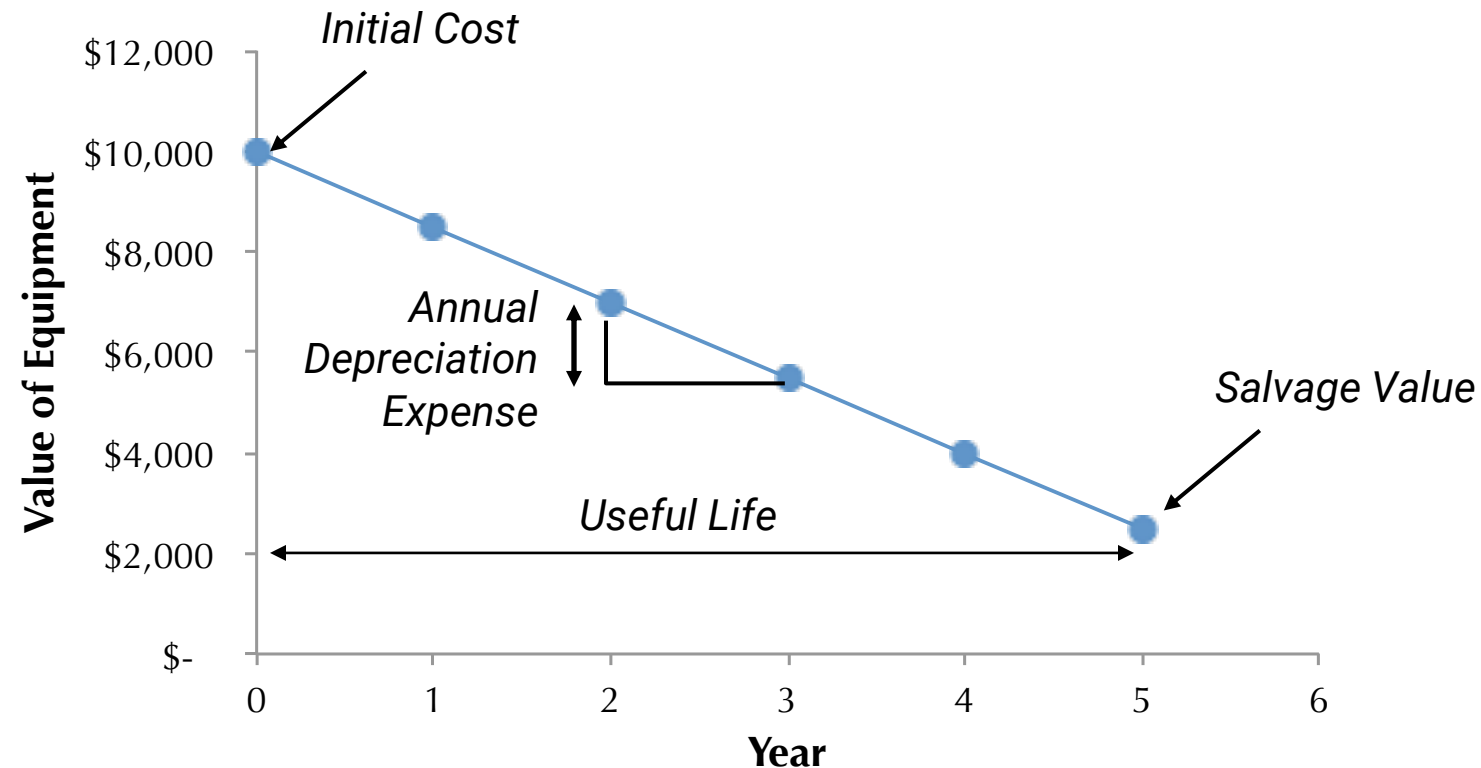
The value of an asset must be spread out over its useful life to the company.

Depreciation impacts taxes, which gets government tax organizations involved (the IRS in the U.S.).

In the U.S., the Internal Revenue Service (IRS) determines how the value of an asset is reduced over time.

A Depreciation Example

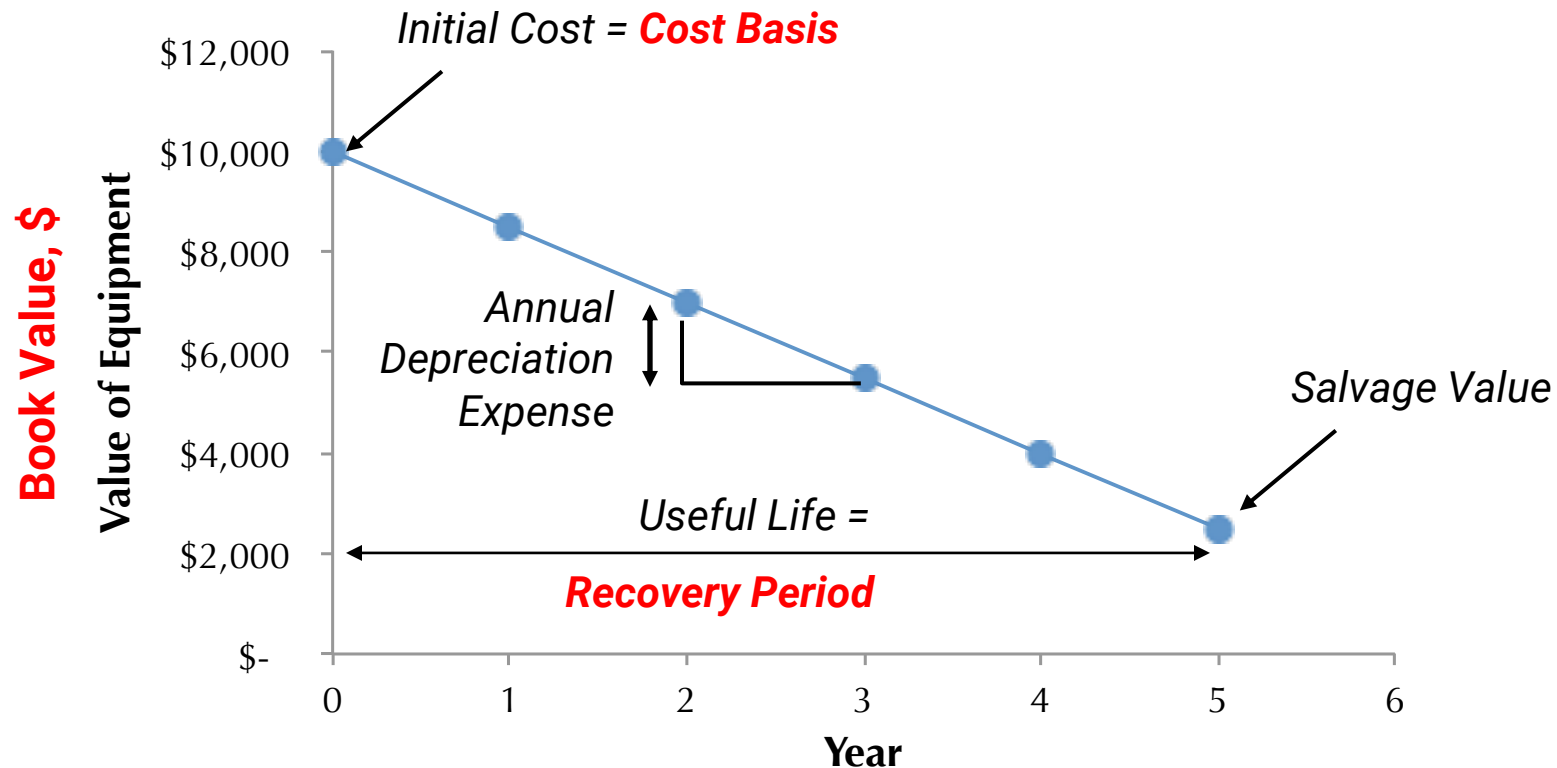
Your company purchases a new 3D Printer for \$10,000. One way the company would look at its decreasing value is below.



A Depreciation Example

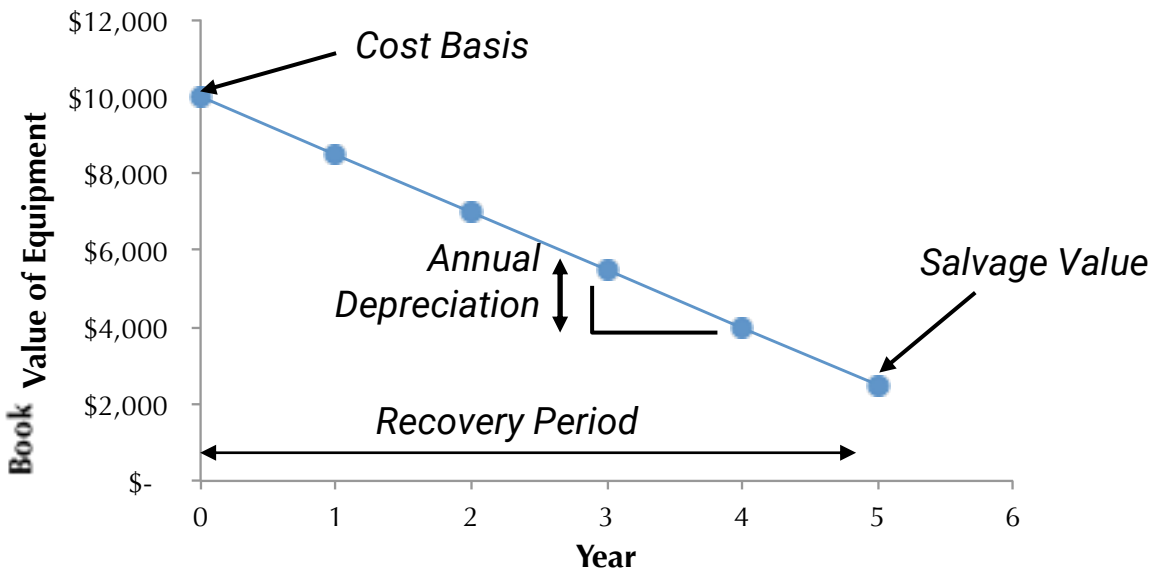
Now some accounting terminology...

Why "Book Value"? Because every year the accountants would record the equipment's value in the company's accounting books – back in the day when it was done with actual books!



A Depreciation Example

What is the “Book Value” of a \$10,000 asset depreciated over a Recovery Period of 5 years with a salvage value of \$2500?



| | A | B | C | D |
|----|------------------|--------------|---------------------------------|-----------|
| 1 | Cost Basis: | \$10,000 | | |
| 2 | Recovery Period: | 5 | years | |
| 3 | Salvage Value: | \$2,500 | | |
| 4 | Depreciation/yr: | \$1,500 | =(Cost-Salvage)/Recovery Period | |
| 5 | | | | |
| 6 | | | | |
| 7 | | Annual | Accumulated | Book |
| 8 | Year | Depreciation | Depreciation | Value |
| 9 | 0 | | \$ - | \$ 10,000 |
| 10 | 1 | \$ 1,500 | \$ 1,500 | \$ 8,500 |
| 11 | 2 | \$ 1,500 | \$ 3,000 | \$ 7,000 |
| 12 | 3 | \$ 1,500 | \$ 4,500 | \$ 5,500 |
| 13 | 4 | \$ 1,500 | \$ 6,000 | \$ 4,000 |
| 14 | 5 | \$ 1,500 | \$ 7,500 | \$ 2,500 |

\$1500 is recorded as a Depreciation Expense on the Income Statement, each year for the 5 years the equipment is in service.

Accumulated Depreciation is recorded annually on the Balance Sheet.

Main Takeaways...

Depreciation is the process of determining the value of a physical asset over its useful life.

Amortization is the same thing, only for intangible assets (i.e., Intellectual Property).

“Depreciation Expense” is the annual loss in asset value and shows up in the Income Statement.

“Accumulated Depreciation” is the total loss in asset value a period of time and shows up in the Balance Sheet.

Depreciation and amortization expenses are tax deductible – they reduce the amount of tax owed for the year, and that gets the Internal Revenue Service involved!

Depreciation has a significant impact on a company's cash flows, and therefore we must account for it in our project valuation analysis.

Next Time...

Depreciation and Financial Statements



Credits & References

Slide 1: Financial analyst analysis business financial report on digital tablet during discussion at meeting of corporate showing the results of their successful teamwork by crizzystudio, Adobe Stock (502970152.jpeg).

Slide 2: Black Pick up Truck on white. 3D illustration by 2dmolier, Adobe Stock (129294008.jpeg). Photo by [Evan Middleton](#) on [Unsplash](#). Vintage Truck by Franklyn, Adobe Stock (179163011.jpeg).

Slide 3: Image Source adapted from US Patent #5,183,785 by Michael Readey.

Slide 8: Sign on IRS headquarter building in downtown Washington, DC by Natalia Bratslavsky, Adobe Stock (131610852.jpeg).

Slide 13: Diagram of Financial Statements by Dmitry, Adobe Stock (114601085.jpeg).