

Comparative Analysis of Depreciation Methods

Straight-Line Method vs Diminishing
Balance Method

Introduction

- Depreciation is the systematic allocation of the cost of an asset over its useful life.
- It helps in matching expenses with revenues.
- This analysis compares Straight-Line and Diminishing Balance methods.

Methodologies

- Straight-Line Method: Equal depreciation charged every year.
- Diminishing Balance Method: Depreciation charged on opening book value.
- Both methods are applied using Excel-based calculations.

Approach & Asset Details

- Asset Cost: \$450,000
- Additional Cost: \$50,000
- Asset Price: \$500,000
- Scrap Value: \$50,000
- Useful Life: 10 Years

Straight-Line Method Analysis

- Formula: $(\text{Asset Price} - \text{Scrap Value}) \div \text{Useful Life}$
- Annual Depreciation: \$45,000
- Total Depreciation: \$450,000
- Book Value at end of life equals scrap value.

Diminishing Balance Method Analysis

- Depreciation Rate: 20.57%
- Higher depreciation in early years.
- Lower depreciation in later years.
- Final year adjusted to reach scrap value.

The formula to calculate the depreciation rate in the diminishing

balance method is: $\text{Rate} = 1 - \sqrt[n]{\frac{S}{C}}$, where S is the salvage value,

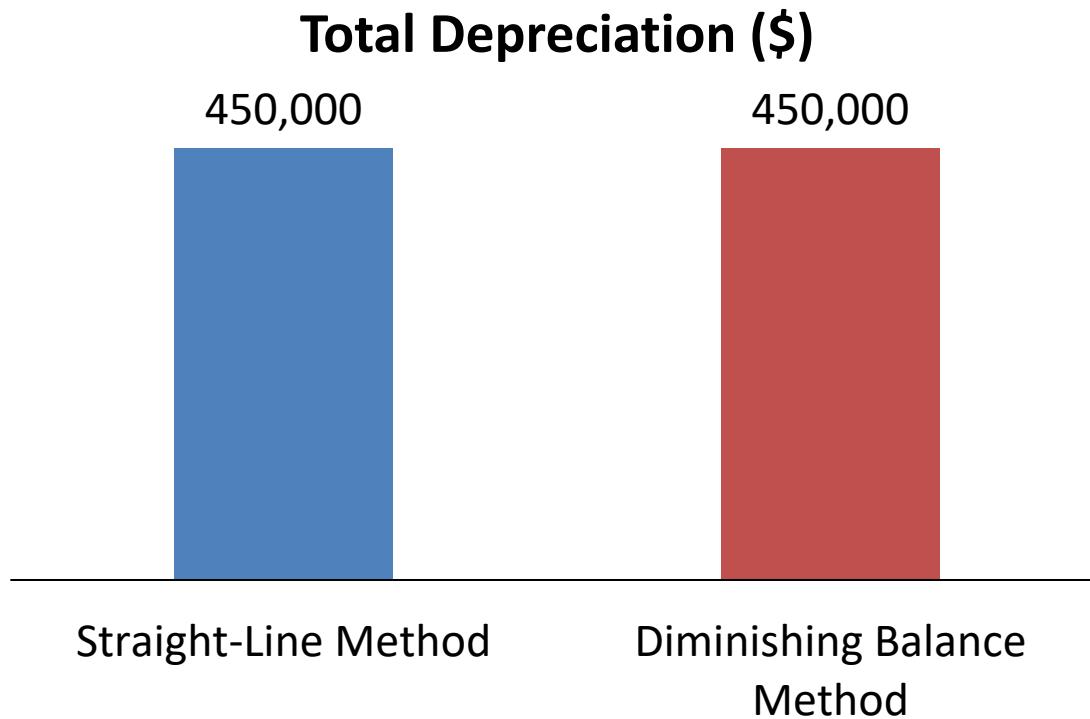
C is the original cost, and n is the useful life of the asset. Once the rate is determined, the annual depreciation is calculated by multiplying the rate by the asset's current book value: **Depreciation for the year = Book Value × Depreciation Rate.**

Reducing Balance Depreciation Net Book

$$BV = Cost \times (1 + Depreciation\ Rate)^{-n}$$

BV = Net book value at the end of period
 $Cost$ = Original asset cost
Depreciation rate = Reducing balance depreciation rate
 n = Number of periods

Total Depreciation Comparison



Key Findings

- Both methods result in the same total depreciation of \$450,000.
- Straight-Line spreads cost evenly over the life.
- Diminishing Balance accelerates depreciation in early years.

Actionable Recommendations

- Use Straight-Line method for assets with consistent usage.
- Use Diminishing Balance method for assets with rapid obsolescence.
- Align depreciation method with tax planning and financial strategy.
- Review depreciation assumptions periodically.

Insights

- Total depreciation depends on asset cost and scrap value.
- Method choice affects profit timing, not total expense.
- Accelerated depreciation improves early-year expense recognition.

Conclusion

- Both depreciation methods are valid under accounting standards.
- Straight-Line offers simplicity and consistency.
- Diminishing Balance better reflects rapid value loss.
- Final method selection depends on business needs.