

Comparative Analysis of Depreciation Methods: Straight- Line vs. Diminishing Balance

INTRODUCTION

SCOPE:

The scope of this comparative analysis includes understanding the key differences between the Straight-Line and Diminishing Balance methods of depreciation. This analysis will help determine which method is more suitable under different circumstances, considering factors like asset cost, additional costs, asset lifespan, and salvage value.

OBJECTIVES:

- *To Understand Depreciation Methods:*

Provide a detailed explanation of the Straight-Line and Diminishing Balance methods.

- *To Compare Depreciation Methods:*

Analyse and compare the financial implications of each method.

- *To Provide Practical Examples:*

Illustrate both methods with practical examples and calculations.

- *To Create a Depreciation Schedule:*

Generate a year-by-year depreciation schedule for each method

DEFINITION OF DEPRECIATION:

Depreciation is the systematic allocation of the cost of a tangible asset over its useful life. It reflects the reduction in value of an asset as it is used over time.

IMPORTANCE OF DEPRECIATION IN ACCOUNTING:

Depreciation helps in matching the cost of the asset with the revenue it generates. It provides a method to allocate the cost of the asset over its useful life, impacting both the income statement and the balance sheet. Depreciation also helps in tax deduction, as it is considered an expense.

TERMINOLOGIES:

- **Asset Cost:**

The initial cost of the asset.

- **Additional Asset Cost:**

Any additional costs incurred in acquiring the asset, such as transportation, installation, and setup costs.

- **Asset Price:**

The total cost of the asset, including any additional costs.

- **Scrap Value:**

The estimated residual or salvage value of the asset at the end of its useful life.

- **Estimated Life Span (Years):**

The expected number of years over which the asset will be depreciated.

- **Depreciation/Year as per Straight Line Method:**

The amount of depreciation allocated to each year of the asset's useful life, calculated as $(\text{Asset Price} - \text{Scrap Value}) / \text{Estimated Life Span}$.

- Depreciation Percentage:

The annual depreciation rate, calculated as $(\text{Depreciation/Year as per Straight Line Method}) / \text{Asset Price}$.

- Total Depreciation For Its Life Span:

The total depreciation expense over the asset's entire useful life, calculated as $(\text{Depreciation/Year as per Straight Line Method}) * \text{Estimated Life Span}$.

- Depreciated Book Value After Its Life Span:

The value of the asset after it has been fully depreciated, equal to the scrap value.

- Balance Amount:

Any remaining balance after fully depreciating the asset, which should ideally be zero

	Depreciation Calculator

Straight Line Method

		Asset Cost	\$4,50,000.00
		Additional Asset Cost	\$50,000.00
In case of no scrap value, please put zero value.		Asset Price	\$5,00,000.00
		Scrap Value	\$50,000.00
		Estimated Life Span (Years)	10
		Depreciation / Year as per Straight Line Method	\$45,000.00
		Depreciation Percentage	9.00%
		Total Depreciation For Its Life Span	\$4,50,000.00
		Depreciated Book Value After Its Life Span	\$50,000.00
Accuracy Check - This cell must be zero.		Balance Amount	\$0.00

Diminishing Balance Method

In case of diminishing depreciation scrap value cannot be zero	Asset Cost	\$4,50,000.00
	Additonal Asset Cost	\$50,000.00
	Asset Price	\$5,00,000.00
	Scrap Value	\$50,000.00
	Estimated Life Span (Years)	10
	Rate of Depreciation as per Diminishing Balance Method	20.57%

Depreciation Schedule

[illegible]

Basics Problem Statements

STRAIGHT LINE METHOD:

1. CALCULATE THE ASSET PRICE

- Asset cost – \$5,00,000.00

2. WHATS IS THE DEPRECIATION AS PER STARIGHT LINE METHOD?

- Depreciation as per straight line method - \$45,000.00

3. WHAT IS THE DEPRECIATION PERCENTAGE FOR THE STRAIGHT-LINE METHOD?

- Depreciation Percentage – 9%

4. WHAT IS THE TOTAL DEPRECIATION FOR ITS LIFE SPAN?

- Total Depreciation for its Life Span - \$4,50,000.00

5. FIND THE DEPRECIATED BOOK VALUE AFTER ITS LIFE SPAN?

- Depreciated Book Value - \$50,000.00

6. WHAT IS THE BALANCE AMOUNT?

- Balance Amount - \$00.00

DIMINISHING BALANCE METHOD:

1. CALCULATE THE ASSET PRICE

- Asset Price - \$5,00,000.00

2. FIND THE RATE OF DEPRECIATION AS PER DIMINISHING BALANCE METHOD

- Rate of Depreciation – 20.57%

Intermediate Problem Statements

1. FIND THE BOOK VALUE FOR YEAR 1 AND THEN AFTER THAT CALCULATE THE YEAR-ON-YEAR DEPRECIATION AMOUNT

- Book value - \$3,97,164.12
- Year on Year Depreciation – \$1,02,835.88

2. FIND THE BOOK VALUE FOR YEAR 2 AND ITS YEAR-ON-YEAR DEPRECIATION AMOUNT FOR YEAR 2

- Book Value - \$2,94,328.23
- Year on Year Depreciation - \$60,535.01

3. FIND THE BOOK VALUE FOR YEAR3 AND ITS YEAR-ON-YEAR DEPRECIATION AMOUNT FOR YEAR3

- Book value - \$2,33,793.23
- Year on Year Depreciation - \$48,084.67

4. SO, BY USING ABOVE APPROACH CALCULATE FOR 10 YEARS DATA

- Book Value for Year 4 - \$1,85,708.56
- Year on Year Depreciation - \$38,195.01

- Book Value for Year 5 - \$1,47,513.55
- Year on Year Depreciation - \$30,339.37

- Book Value for Year 6 - \$1,17,174.18
- Year on Year Depreciation - \$24,099.42

- Book Value for Year 7 - \$93,074.76
- Year on Year Depreciation - \$19,142.85

- Book Value for Year 8 - \$73,931.91
- Year on Year Depreciation - \$15,205.71

- Book Value for Year 9 - \$58,726.20
- Year on Year Depreciation - \$12,078.32

- Book Value for Year 10 - \$46,647.88
- Year on Year Depreciation -

Advanced Problem Statements

1. CALCULATE THE ANNUAL DEPRECIATION AMOUNT USING THE STRAIGHTLINE METHOD FOR THE GIVEN ASSET.

- Annual Depreciation - \$45,000.00

- Formula -

$\text{Annual Depreciation} = (\text{Asset Price} - \text{Scrap Value}) / \text{Estimated life Span}$

2. CALCULATE THE TOTAL DEPRECIATION FOR THE ASSET'S ENTIRE LIFE SPAN USING THE STRAIGHT-LINE METHOD.

- Total Depreciation - \$4,50,000.00

- Formula –

$(\text{Depreciation/Year as per Straight Line Method}) * \text{Estimated Life Span}$

3. WHAT IS THE DEPRECIATED BOOK VALUE OF THE ASSET AFTER ITS LIFE SPAN USING THE STRAIGHT-LINE METHOD?

- Depreciated Book Value - \$50,000.00

4. CALCULATE THE RATE OF DEPRECIATION PER YEAR AS PER THE DIMINISHING BALANCE METHOD.

- Rate of Depreciation – 20.57%

5. WHAT IS THE DEPRECIATION AMOUNT FOR THE ASSET IN THE SECOND YEAR ACCORDING TO THE DIMINISHING BALANCE METHOD?

- Depreciation Amount - \$60,535.01

6. WHAT IS THE BOOK VALUE OF THE ASSET IN THE FOURTH YEAR USING THE DIMINISHING BALANCE METHOD?

➤ Book Value – \$1,85,708.56

7. CALCULATE THE TOTAL DEPRECIATION FOR THE ASSET'S ENTIRE LIFE SPAN USING THE DIMINISHING BALANCE METHOD.

➤ Total Depreciation - \$4,53,352.12

8. WHAT IS THE BOOK VALUE OF THE ASSET AFTER ITS LIFE SPAN USING THE DIMINISHING BALANCE METHOD?

➤ Book Value - \$46,647.88

9. COMPARE THE TOTAL DEPRECIATION AMOUNTS OBTAINED FROM THE STRAIGHT-LINE METHOD AND THE DIMINISHING BALANCE METHOD. WHICH METHOD RESULTS IN HIGHER TOTAL DEPRECIATION?

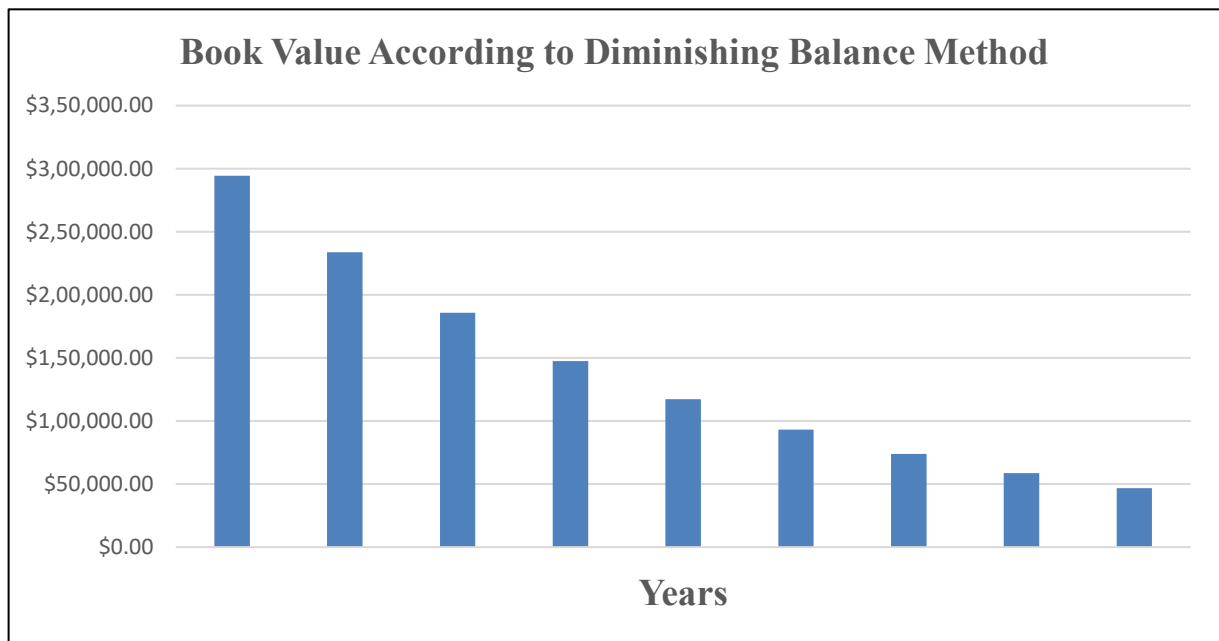
➤ Total Depreciation amount by **Straight Line Depreciation** method - \$4,50,000.00

➤ Total Depreciation amount by **Diminishing Balance** method - \$4,53,352.12

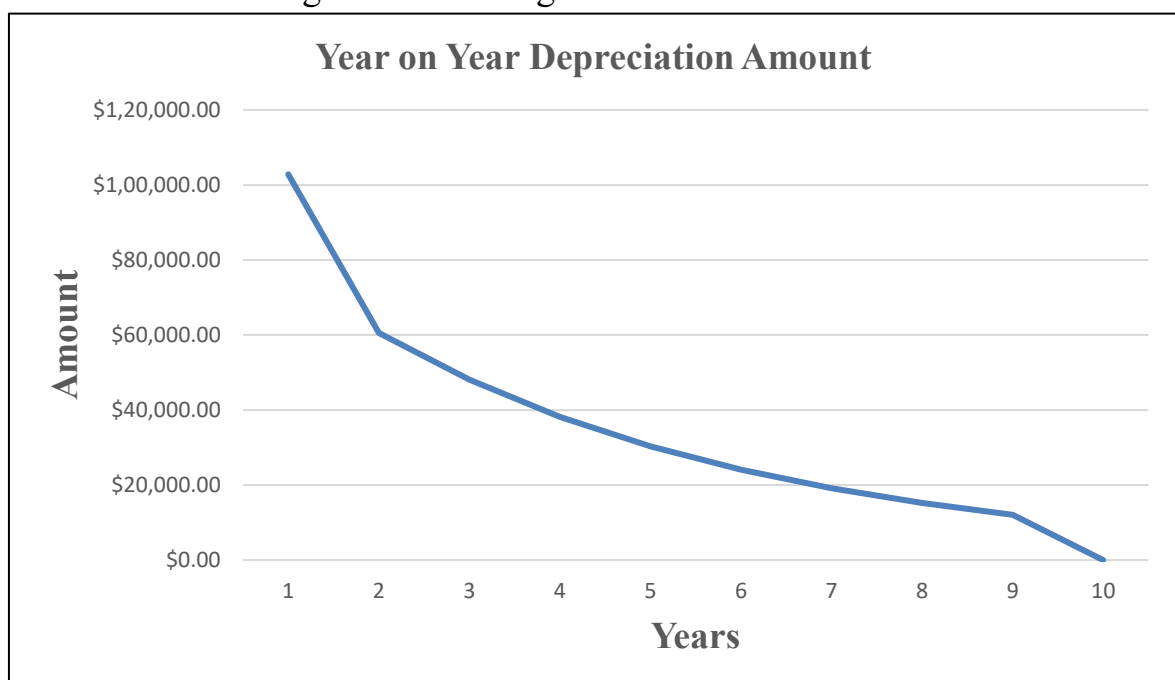
➤ Total Depreciation obtained from **Diminishing Balance Method** is higher than depreciation obtained from **Straight Line Method**.

10.PREPARE AN PRESENTATION FOR ABOVE ANALYSIS YOU
MADE SO FAR ALONG WITH VISUAL GRAPHS
REPRESENTATION

- Graphical Representation of Book Value according to Diminishing
Balance Method



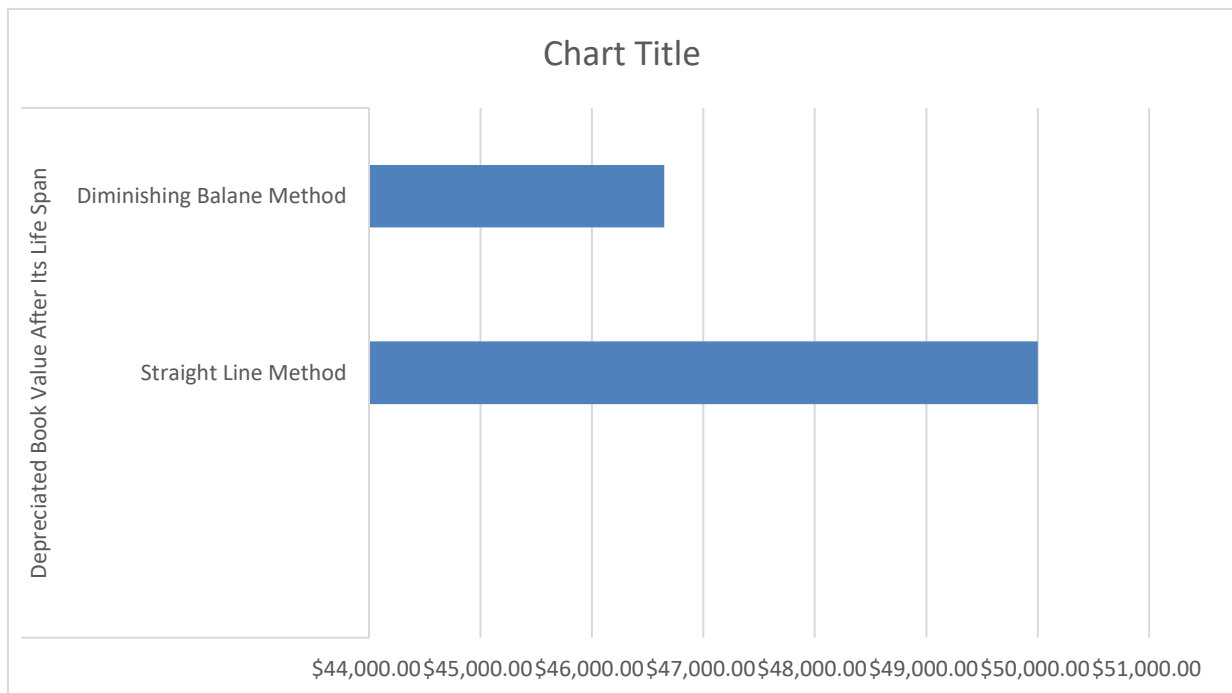
- Graphical Representation of Year-on-Year Depreciation Amount
according to Diminishing Balance Method



COMPARATIVE ANALYSIS OF BOTH METHODS:

The Straight-Line method provides a consistent annual depreciation expense, which is simple to calculate and understand. It is suitable for assets that provide consistent utility over time.

The Diminishing Balance method provides higher depreciation expense in the earlier years and lower expense in the later years. It is suitable for assets that lose value quickly or become obsolete faster.



ADVANTAGES AND DISADVANTAGES:

Straight-Line Method:

- *Advantages:*

Simplicity, consistency in expense.

- *Disadvantages:*

Does not reflect the accelerated loss of value for some assets.

Diminishing Balance Method:

- *Advantages:*

Better reflects the actual usage and value loss of some assets.

- *Disadvantages:*

More complex calculation, results in lower book values in later years.

Conclusion

SUMMARY OF FINDINGS:

Both methods have their own merits and are suitable for different types of assets and business scenarios. The choice of method depends on the nature of the asset and the business's financial strategy.

RECOMMENDATIONS:

For assets that provide consistent utility over time, the StraightLine method is recommended due to its simplicity and uniform expense allocation.

For assets that lose value quickly or become obsolete faster, the Diminishing Balance method is recommended to better match expense with asset usage