

DEPRECIATION CALCULATION AND ITS IMPACT ON REPLACEMENT OF ASSETS – A STUDY OF VIDARBHA BASED MANUFACTURING UNITS.

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Abstract:

Tangible physical assets like Plant and Machinery diminish in due course of time after use. The depreciation of such assets is considered in the financial statements of the companies for P& L statements and Balance sheets. After a certain life of assets the assets are to be replaced and upgraded. Due to technological changes and additional features the cost of the assets goes on increasing where as the Book Value of the assets is decreasing. Some companies make regular provisions for replacement of such assets where as some might not. The Firms need to make financial provisions for replacement of these assets and normally the provisions are made based on book value.

Even those companies which make provisions fall in dilemma of whether the provisions to be made as per the market value or the book value.

The present study has been undertaken by considering the perception of working chartered accountants and financial executives of the industry. It is necessary to understand how the depreciation calculations based on Market value affects the financial statements as compared to Book Value. The study focuses on the preparedness of companies for replacement of the assets considering changes in the GAAP and International Accounting Standards especially considering the matching principle module of Depreciation. The Researcher also tries to understand the probability and its effects on the allotment of Depreciation in Reserves and Surplus.

Key Words: Depreciation, Book Value, Market Value, GAAP

[A] **Introduction:** Resources owned by an enterprise for use in the production or supply of goods or services, for rental to others or for administrative purposes which are expected to be used for more than one period are recognized as assets. There are two major types of assets which can be classified as a) Tangible assets and b) Intangible assets. Tangible assets are physical assets like Buildings, machinery, equipment, furniture, fixtures, computers, outdoor lighting, parking lots, cars, and trucks, etc. Assets do not last

indefinitely. Some assets like buildings, equipment, and vehicles are diminished over a period of time after its use. Any business using tangible assets may incur costs related to those assets. The assets can be valued using Book Value or Market Value. The book value of an asset is its original purchase cost, adjusted for any subsequent changes such as for impairment or Depreciation. Market value is the price that could be obtained by selling an asset on the competitive open market. The highest estimated price that a buyer would pay and a seller would accept for an item in an open and competitive market. As per accounting, the replacement cost of an item is arrived at by deducting estimated carrying, delivery and selling costs from its estimated selling price. The reduction in value of an asset over the course of its useful life is depreciation.

Depreciation therefore is the transfer of a portion of the asset's cost from the balance sheet to the income statement during each year of the asset's life. The calculation and reporting of depreciation is based upon two accounting principles:

- **Cost Principle:** This principle requires that the Depreciation Expense reported on the income statement, and the asset amount that is reported on the balance sheet, should be based on the historical (original) cost of the asset. (The amount should not be based on the cost to replace the asset, or on the current market value of the asset, etc.)
- **Matching Principle:** This principle requires that the asset's cost be allocated to Depreciation Expense over the life of the asset. In effect the cost of the asset is divided up with some of the cost being reported on each of the income statements issued during the life of the asset. By assigning a portion of the asset's cost to various income statements, the accountant is matching a portion of the asset's cost with each period in which the asset is used. This also means that the asset's cost is being matched with the revenues earned by using the asset.

Definitions as per International Accounting Standard (IAS16):

- **Depreciable amount** – Cost of an asset, or another amount that has been substituted for cost, minus the residual value of the asset.

Depreciable amount of a depreciable asset is its Historical cost, or other amount substituted for historical cost in the financial statements, less the estimated residual value.

True Valuation of Assets:

- Value of assets gradually decreases on account of depreciation, if depreciation is not taken into account, the value of asset will be shown in the books at a figure higher than its true value and hence the true financial position of the business will not be disclosed.

[B] Disparity between Book Value and Market Value: There can be disparity between book value and market value, since the Book value is the recorded historical cost and market value is based on the perceived supply and demand for an asset which can be vary constantly. The problem emerges when the difference between book value and market value is high. It becomes difficult to ascertain the value of the business. The

market value of asset can be higher than book value, due to increased demand or change in technology. Following table explains the difference between two values.

Table 1: Difference between Book value and Market value

Book Value	Market Value
The value which is in the books of the firm for any asset.	The maximum price at which an asset is sold or bought in the market.
It is the actual worth of the asset.	It is the highest estimated value of asset
It reflects firms equity	It reflects current market price
Calculation is on the basis of tangible assets	Calculation is on the basis of tangible and intangible assets
Book value changes annually	Market price fluctuates every time and is not easily available

Source: <http://www.veristart.com> 23 Nov. 2017

[C] Purpose of Selecting the Topic under Study: From the above discussion we interpret that the tangible depreciable assets have fixed life. The firms consider the depreciation while calculating P&L or preparing the balance sheet of the organisation. The cost principle of reporting the depreciation requires that the Depreciation Expense reported on the income statement should be based on the historical (original) cost of the asset. The amount should not be based on the cost to replace the asset, or on the current market value of the asset, etc. Value of assets gradually decreases on account of depreciation and hence reduced value of asset is shown in the books of accounts. In the course of time when an asset has served its life or becomes obsolete due to change of technology or other reasons this asset needs to be upgraded or replaced. If the whole amount of profit is withdrawal from business each year without considering the loss on account of depreciation, the working capital will gradually reduce causing the business to become weak and necessary sum may not be available with firms for buying the new asset. Also, if there are great chances of improvements being made in a particular asset on account of inventions, the up-gradation or replacement cost of the assets is very high as compared to the book value of the asset. This increased market value of asset needs to be revalued and hence it becomes necessary for the firms to procure much more funds for up-gradation or replacement of the assets. It may therefore create a situation of unavailability of funds for the organisations for replacement of assets if the organisation has not planned for the funds for replacement of assets. In light of the above, the researcher has chosen “Consideration of Market Value instead of Book Value for Calculation of Depreciation and its effects on procurement of funds for replacement of assets in the industry” as a research issue.

[D] Objectives of the Study:

- *To understand the effects of Consideration of Market Value for Calculation of Depreciation.*

As per present GAAP the Book value is considered for calculation of depreciation. Since the market value of asset differs compared to Book value and is generally higher. The researcher wants to study what effect it makes on the P& L statement of companies if Market value is considered for calculation of depreciation.

- *To know the preparedness of Companies regarding procurement of funds for replacement of assets having higher market value.*

The value of assets diminishes after the use. Hence the companies consider depreciation as expenditure on the P& L statement and the effect is correspondingly higher profit displayed. However after the life of Assets the asset is to be replaced. It is therefore necessary to understand the preparedness of Firms regarding the procurement of funds for replacement of these assets.

- *To know the perception of CAs to consider Market value over Book value while recording the depreciation in accounts statements.*

As a trend and the two important Acts of Companies Act and Tax laws the CAs and the accounting professionals have been considering the Book value for calculation of depreciation. The researcher wants to understand the perception of these accounts professional if Market value is taken for depreciation calculation. It is necessary to understand their opinion and what effects will take place in the account statements if market value is considered.

[E] Period of Study:

The chain of reforms that took place with regards to business, manufacturing, and financial services industries targeted at lifting the economy of the country to a more proficient level. The economic reforms of 1991 had influenced the overall economic growth of the country in a significant manner and India has become a major player in the globalization by 2000. Hence the researchers felt the importance of study in the first decade of 21st century. Therefore the period of this study is considered from 2001 to 2012.

[F] Sampling Frame:

The data is collected through questionnaire or Personal interviews from Chartered accountants: working as practitioners.&working as Finance executives in different organizationsFor the selection of Chartered accountants for questionnaire judgmental sampling method was used. Out of total 150 chartered accountants 115 respondents responded favorably. The close ended questionnaire was put before the respondents.Following questions were prepared for the present paper study.

1. Do the companies invest the depreciation expenses for the proper reserves and surplus for make good of the depreciated assets?
2. Are you satisfied with the way the companies invest depreciation funds/cash flow?
3. Will you recommend consideration of Market rate for depreciation calculation?

4. In your opinion should the book value be the only criterion for consideration and Market value should not be considered for depreciation calculation.

[G] Data analysis and Hypothesis testing:

Following two hypotheses are designed for the study.

Hypothesis 1 = “The allotment of depreciation expenditure to Reserves and surplus for the up-gradation/renewal of the depreciating assets is independent of the sector of the business.” In other words the companies allot their depreciation expenditure to proper reserves so that they are prepared to invest in the renewal of the assets as and when required.

Hypothesis 2 = “The views of accounting professionals for consideration of market value for calculation of depreciation are independent of the sector of the business.” In other words there is no relation between the consideration of market value for calculation of depreciation and the sectors of the companies.

1. Preparedness of companies for renewal/up-gradation of Assets.

Question: Allotment of depreciation expenditure for Reserve and surplus to make good the depreciated asset.

The companies need to keep on upgrading/renewal of depreciating assets for the improvement in output quantity and quality .Following Table has been prepared to study the sector wise allotment of depreciation expenditure for proper reserves so that the companies are prepared to invest in the up-gradation/renewal of the assets.

Hypothesis 1 = “The allotment of depreciation expenditure to Reserves and surplus for the up-gradation/renewal of the depreciating assets is independent of the sector of the business.” In other words the companies allot their depreciation expenditure to proper reserves so that they are prepared to invest in the renewal of the assets as and when required.

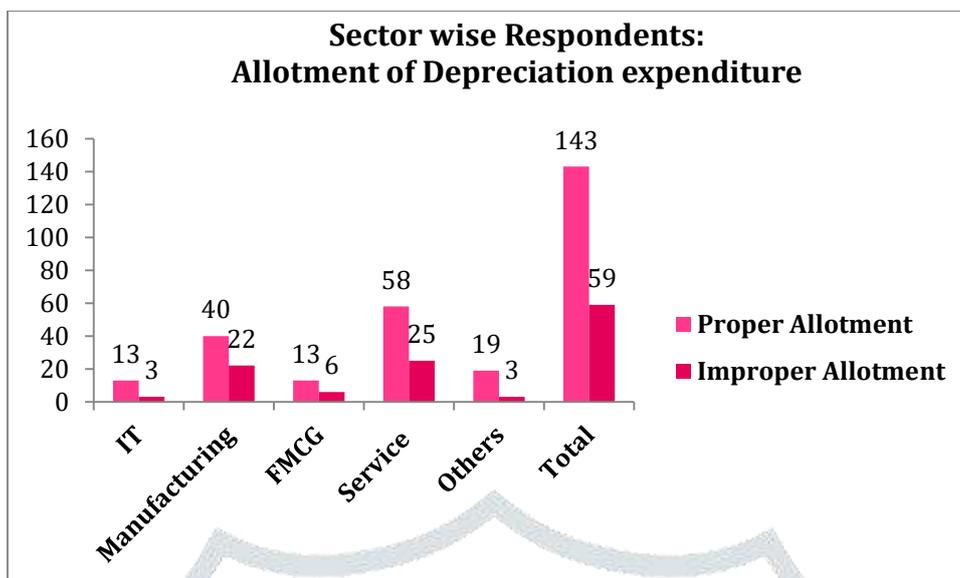
Table 2: Allotment of Depreciation Expenditure for Proper Reserves

Sector Type -Wise Distribution							
Sl. No	Allotment of Depreciation Expenditure for Proper Reserves	IT	Mfg.	FMCG	Service	Others	Total
1	Proper Allotment	13	40	13	58	19	143
2	Improper Allotment	3	22	6	25	3	59
	Total	16	62	19	83	22	202

Chi-sq. =4.69, DF=4

(Source: Survey)

Chart 1: Allotment of Depreciation expenditure



The calculated value of chi square for 4 degree of freedom i.e. $X^2 = 4.69$ and the Table value at 5 % probability is 9.488. The critical value / Table value is greater than the calculated Chi sq. X^2 ; therefore the difference is not significant. Hence the null hypothesis is accepted.

The companies allot their depreciation expenditure to proper reserves so that they are prepared to invest in the renewal of the assets as and when required. And the allotment is independent of sector.

2. Market Value for Calculation of Depreciation

Question: Recommendation of Market value for calculation of depreciation.

As per present Indian GAAP, the depreciation is calculated on the basis of book value. The opinion of chartered accountant is sought for considering market value for depreciation calculation as we know the market value is different from book value and is normally higher. The CAs has been asked if they will recommend the market value for calculation of depreciation. The hypothesis is framed and tested as below.

Hypothesis 2 = “The views of accounting professionals for consideration of market value for calculation of depreciation are independent of the sector of the business.” In other words there is no relation between the consideration of market value for calculation of depreciation and the sectors of the companies.

Table 3: Market Value for Depreciation Calculation

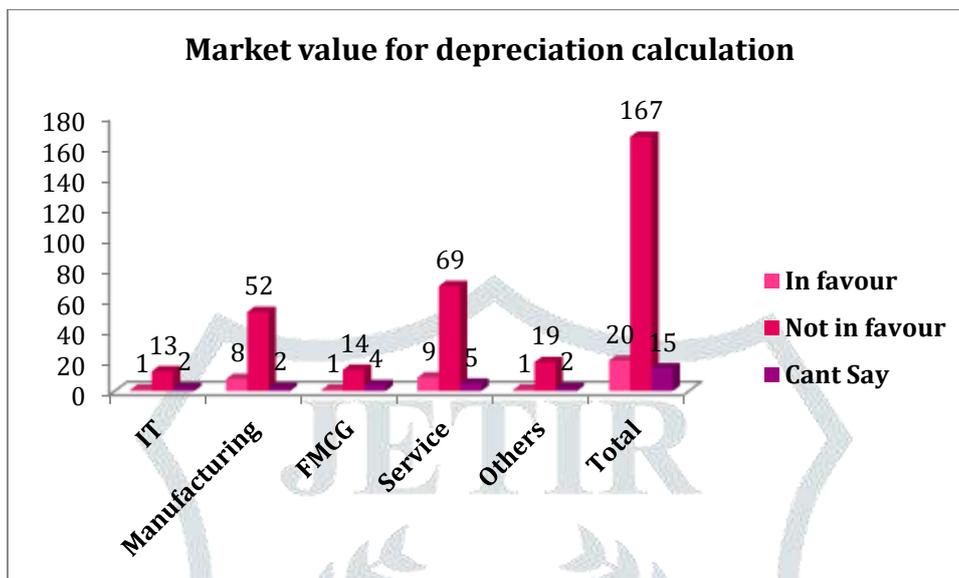
Sector Type-Wise Classification							
Sl. No	Market Value for Depreciation Calculation	IT	Mfg.	FMCG	Service	Others	Total
1	In Favor	1	8	1	9	1	20
2	Not in Favor	13	52	14	69	19	167

3	Can't Say	2	2	4	5	2	15
	Total	16	62	19	83	22	202

Chi-sq. =9.224, DF=8

(Source: Survey)

Chart 2: Market value for depreciation calculation



The calculated value of chi square at 8 degree of freedom i.e. $X^2 = 9.224$ and the Table value at 5 % probability is 15.507. The critical value / Table value is greater than the calculated Chi sq. X^2 ; therefore the difference is not significant. Hence the null hypothesis is accepted.

The consideration of market value for calculating the depreciation is independent of the sectors of the business. It is also observed that many accounting professionals do not want to consider the market value for calculation of depreciation.

[H] Findings and Conclusions:

- The companies’ investment and depreciation claim is not kept in reserve and surplus but indirectly it takes care of meetings its debt obligations.
- Market value of the assets may not reflect true and fair picture of the Profit and Loss account and Balance sheet of the company and it will be very difficult to reflect true financial position of the company as the market value is vague phenomena and relevant accounting standards are not in place. The assessing market value of the assets is in the consideration in Indian company but not yet implemented fully.
- CAs agree that the fair value is better concept as explained in new IAS 16 but they do not want to create complexity by considering fair value /market value for revaluation and NBV is being continued.

- The companies avail the depreciation, but they do not make proper provision of funds for renewal of the assets due to its wear and tear, diminishing characteristics or obsolescence due to fall in the capacity to give output or change of technology.
- Revaluation model of Depreciation allows a company to revalue PP&E on its books to fair value if fair value can be reliably measured.
- Allotment of Depreciation Expenditure to Reserves and surplus.

The companies should have enough funds whenever requirement arises so that the asset is upgraded or replaced and the production/services do not hamper.

During the study it is observed that some companies are well prepared whereas some do not as they divert this fund in some other activities like working capital or dividend etc.

The CAs are satisfied with the present investment of depreciation in reserves. In the survey 72 % CAs are found to be satisfied with present allotment of depreciation amount whereas 28 % shown their dissatisfaction.

- Consideration of Market value for depreciation calculation.

As per existing accounting procedure the subsequent book value of any assets is considered for depreciation. The book value of the asset is normally lower than market value considering the inflation. However practically the cost of assets to be upgraded/renewed is very high as compared to the old cost and or book value also.

Considering the thought of revaluation of the assets as per market value can be a crucial consideration. However more than 81 % of CAs still prefer not to consider market value as the base for depreciation calculation. This is due to the difficulties being faced to reach the proper fair value of the assets. This may be noted that IAS-16 under IFRS has given fair value revaluation model for revaluation and comparison at a common platform. The consideration of market value for calculating the depreciation is independent of the sectors of the business.

[I] Suggestions and Recommendations for Future:

1. The companies use book value for depreciation. But they do not make provisions for replacement of goods and divert the profit in other activities. It is suggested that the firms should be prepared to make provisions for replacement of assets as and when required.
2. The study also reveals that the firms should keep track of market value for depreciation. But reaching to the fair value obstructs this concept and many CAs do not want to consider this for the said reason.
3. IAS 16 gives provision of fair value concept and the CAs/ accounting professional should focus on the market value concept for depreciation for companies to be ready for replacement of assets in short duration because of technological changes.

[J] Utility of the Study:

The researcher claims that the study will help the number of beneficiaries in the process, mainly because the study has brought out the useful information about the non preparedness of companies while making arrangements of funds to replace the asset having higher market value as compared to book value or historical cost due to technological up-gradation or old asset becoming obsolete for utility.

The Utility of study will pervade as under.

- It is useful to financial executives of the industry.
- It may be useful for Companies while deciding the future planning of Capital expenses for asset procurement.
- The study will also provide help to the companies to allocate the funds between fixed assets and working capital.

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