

Depreciation Methods of the Listed Companies in Bangladesh

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Abstract: Annual charge of depreciation is regarded as an important accounting practice in every business organization. It affects net income, assets value, income tax and so on. Methods of calculating depreciation play a vital role in this regard. It was an attempt to study the current depreciation practices of the listed companies in Bangladesh. It is revealed from the study that most of the Public Limited Companies of Chittagong Stock Exchange follow reducing balance method followed by straight-line method and these two methods differ significantly. It is also obvious from the study that there is a relationship between accounting recording system and depreciation method. The study also observed a tendency of change to the straight-line method from the reducing balance method.

Keywords: Depreciation methods, Straight-line depreciation, and Reducing balance depreciation

Introduction

The word 'depreciation' is derived from a Latin word 'depretium' where de means decline and pretium means price. Thus it means decrease in the value of fixed and capital assets (Tandon, B. N. et al, 1997). There are many thoughts and ideas about depreciation. Vatter, W. J. (1937) narrated depreciation as a charge that should be constant with reference to certain factors (which may themselves be variables) but independent of variations in volume of operations. Sharma, B. K. (1988) stated the depreciation as a cost of consuming service potentials that is directly related to the maintenance of capital or capital conservation and not to the replacement of assets. On the other side, The Committee on Terminology of the American Institute of Accounting has defined depreciation accounting 'as a system of accounting which aims at distributing the cost or other basic value of tangible capital assets, less salvage value (in any) over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner' (Tandon, B. N. et al, 1997 p.179). However, the term depreciation may be précised as a gradual diminution, shrinkage or loss in the utility value of an asset due to wear and tear in use, effluxion of time or obsolescence.

There are different methods of providing for depreciation. Choosing a particular method suited to the entity is a matter of discretion left with the management of the entity. Different methods may be applied for different classes of assets of a certain organization. For example machinery may be depreciated on straight-line method while building may be depreciated on reducing balance method. However,

once a method of depreciation is chosen for a certain class of assets, it is to be applied consistently year after year until new method is required by a statute or necessary for compliance to any accounting standard (Tandon, B. N. et al, 1997, p. 192).

There are many researches conducted in the field of depreciation. Most of the articles are concerned with the concerns of western countries. A few studies are found available from Bangladesh perspectives on conceptual issues of depreciation, but no study is seen on the methods of depreciation. Therefore, the authors took interest to somewhat cover this wide research gap. The study was undertaken to examine the depreciation practices of the listed public limited companies of Chittagong Stock Exchange Ltd.

Deprecation Methods

The depreciation is to be determined and provided in the accounts to find out the correct cost of production. As an asset is put to use for earning profit, it loses its value over a period of time. That is, part of the asset is consumed year after year in the process of its usage. If depreciation is not provided, the asset will appear in the balance sheet at a value higher than its worth. The real object of providing depreciation is to keep the capital intact. By charging depreciation in income statement, though the amount of net income is reduced, but it accumulates a gradual fund to replace the asset when the asset is scrapped. Lastly, it is necessary to provide depreciation legally as per Companies Act 1994 in case of Public Limited Companies. (Tandon, B. N. et al, 1997, p.181).

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International Accounting Standards mentioned three depreciation methods that include the straight-line method, the diminishing balance method, and the units of production method (IAS-16). Straight-line depreciation results in a constant charge over the useful life if the asset's residual value does not change. The diminishing balance method results in a decreasing charge over the useful life. The units of depreciation method results in a charge based on the expected use or output. The entity selects the method that mostly reflects the expected pattern of consumption of the future economic benefits embodied in the asset. Whatever method is selected it is required to be applied consistently from period to period unless there is any change in the expected pattern of consumption of those future economic benefits (IASB, 2007).

The calculation of depreciation requires the determination of depreciation cost, the estimate of a proper depreciable life, the choice of method of determining the annual charge (Huefner, R. J. and Jen, F. C., 1970). In addition to the depreciation methods stated in the IAS Manual, a variety of other depreciation methods can be used to allocate the depreciable amount of an asset on a systematic basis over its useful life. These methods may include the depreciation fund method, the annuity method, the insurance policy system, the revaluation method, the usage or mileage method, the efficiency hours method, the global method, the depletion unit method and single charge method. (Tandon, B. N. et al, 1997).

Objectives & Hypotheses

The main objective of the study is to know the depreciation methods followed by the listed companies in Bangladesh. The specific objectives of this study are:

- i. To know about depreciation accounting systems of the listed companies;
- ii. To know about the use of software for measuring depreciation;
- iii. To identify reasons regarding adoption of a particular depreciation method;
- iv. To justify the compliance regarding depreciation methods of IAS / BAS;
- v. To suggest necessary measures in adopting depreciation methods by the listed companies in Bangladesh

In the light of the above objectives, the following two hypotheses would be tested:

- 1. $H_0 =$ There is no association between depreciation methods and accounting recoding systems.
- 2. $H_0 =$ There is no significant difference between Reducing Balance Method and Straight-Line Method of depreciation.

Scope and Methodology

Both primary and secondary data were used in this study. Primary data were collected through opinion survey on randomly selected listed companies. In this regard Tipex Random Table was used. A questionnaire having 27 opened and closed-ended questions were prepared in this regard. The survey was conducted during September to November 2007. Secondary data were collected from various research publications and annual reports of the concerned listed companies. The study was confined with 100 listed companies of Chittagong Stock Exchange (CSE) Ltd.

Proportion of the surveyed companies of different sectors is mentioned below:

Table-1: Proportion of surveyed companies

S.	Sector	Total Companies	Surveyed Companies	Proportion of Surveyed Cos (%)
1	Insurance	27	15	55
2	Textile & Clothing	30	12	40
3	Pharmaceutical & Chemicals	17	10	58
4	Food & Allied Products	20	9	45
5	Cement	9	5	56
6	Engineering & Electrical Products	18	11	61
7	Leather & Footwear	6	3	50
8	Services & Property Development	3	1	33
9	Paper & Printing	7	3	43
10	Fuel & Power	5	2	40
11	Banking	28	12	43
12	Ceramics	4	2	50
13	ICT	7	3	43
14	Leasing & Finance	16	7	44
15	Miscellaneous	14	5	36
Total	211	100	47%	

Findings and Their Analysis

A survey was conducted among 100 companies out of 211 listed companies of Chittagong Stock Exchange (vide methodology for details). As indicated earlier, the companies were selected on random sampling method and the concerned officials of the selected companies were asked different questions in the light of the research objectives regarding adoption of accounting policies, British or American recording system, computerized accounting system, software in accounts, depreciation methods in calculating depreciation, IAS / BAS and disclosure of depreciation policies in the annual reports.

It is found from the survey that most of the listed companies of CSE follow British accounting system (75% cases). The accounting system of all the companies is reported to be computerized and followed accounting software in recording transactions, analysis and preparation of statements. A good number of companies have developed their own software (38% cases). The commonly used software by different companies are Accord 3.5, Dream APS, MFG-Pro, Exact ERP, J.D Edwards, iSLALA etc. The accounting software packages are also reported to be used in calculation of depreciation by the respective companies.

It is revealed by the survey that all the companies follow the following two deprecation methods: (i) Reducing Balance Method (75 % cases); and (ii) Straight Line Method (25% cases). Some of the companies (18% cases) are found to follow both of the methods in calculation of depreciation of different assets.

Main reasons behind the usage of the above two methods among various methods of depreciation are reported to be:

- a. Ease of calculation (100% cases)
- b. Mostly used from a long time (85% cases)
- c. Supported by International Accounting Standards (65% cases)

The following rates of depreciation are charged on the depreciable assets by the listed companies, which are equally applicable to straight-line and reducing balance method:

- a. Plant and Machinery (10% to 15%) 95% cases
- b. Office equipment (10% to 20%) 100% cases
- c. Furniture and fixtures (10% to 15%) 90% cases
- d. Transportation & vehicles (10% to 20%) 100% cases
- e. Other assets (10% to 20%) 70% cases

Regarding following of IAS/BAS-16 or IAS/BAS-8 as to depreciation methods and its proper disclosure in the annual reports, it is found that 75% of the listed companies complied with them.

Hypothesis Testing

- 1. For testing whether there is any association between depreciation methods and account recoding system, a χ^2 has been conducted. The related data are shown below:

Depreciation Method \ A/C Recording System	Straight-Line Method	Reducing Balance Method	Total
British Recording System	15	65	80
American Recording System	10	10	20
Total	25	75	n = 100

The calculated value of χ^2 is found to be 8.33 and at 1% level of significance with 1 degree of freedom the tabulated value is 6.635. Since the calculated value is greater than the tabulated value, hence null hypothesis will be rejected. Therefore, there is a highly significant relationship between adopting depreciation methods and account recording systems (i.e. British Recording System and American Recording System). The result also implies that in British account recording system Reducing Balance Method is mostly used and in American recording system Straight-Line Method is mostly used.

- 2. For testing whether there is any significant difference between Reducing Balance Method and Straight-Line Depreciation, a comparison between two methods has been considered in the following table:

To demonstrate the comparison, an investment of BDT 500,000 with a life of 10 years is assumed. The annual depreciation amount, the accumulated depreciation reserve, and the book value, which remains at the end of the period, are compared in the above table for the straight-line and the declining balance methods.

It can be observed from this table that at the end of the life of the unit, BDT 48,355 or 9.67 percent of the original cost remain under the declining balance method, which would represent a reasonable

Table-2: Comparison between straight-line and reducing balance method

Year	Annual Depreciation Amount		Book Value (End of Period)		Accumulated Depreciation	
	Straight Line	Reducing Balance	Straight Line	Reducing Balance	Straight Line	Reducing Balance
½	BDT 25,000	BDT 50,000	475,000	450,000	25,000	50,000
1	50,000	90,000	425,000	360,000	75,000	140,000
2	50,000	72,000	375,000	288,000	125,000	212,000
3	50,000	57,600	325,000	230,400	175,000	269,600
4	50,000	46,080	275,000	184,300	225,000	315,680
5	50,000	36,865	225,000	147,455	275,000	352,545
6	50,000	29,490	175,000	117,965	325,000	382,035
7	50,000	23,595	125,000	94,370	375,000	405,630
8	50,000	18,875	75,000	74,495	425,000	424,505
9	50,000	15,100	25,000	60,395	475,000	439,605
10	25,000	12,080	0	48,315	500,000	451,645
11	500,000	451,645				

salvage value only by pure chance. This amount is a significant percentage of the original cost, and therefore, there is a significant difference between reducing balance method and straight-line depreciation. The result would no doubt motivate a change to straight-line depreciation at the earliest appropriate point in order to avoid delaying the recovery.

Concluding Remarks

It is revealed from the study that reducing balance method is mostly used in the CSE listed companies in Bangladesh. The reason lies on past record. But it is also evident from the study that the trend of following depreciation is towards straight-line method. Greene, Edward D., (1963) found a change of shifting from reducing balance method to straight-line depreciation in the industrialized economy of the USA. McFarland (1990) stated in his study that most of the US firms use straight-line depreciation; some use accelerated depreciation. Now it is obvious that the straight-line method of depreciation is widely used in the developing countries like the USA, Canada and the UK (Tandon, B. N. et al, 1997). It is also expected that the straight-line method would be widely accepted by the listed companies in Bangladesh in near future.

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