INFLATION ACCOUNTING METHODS: THEIR EFFECT ON DEPRECIATION CHARGE

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Abstract

Inflation simply means fall in the general purchasing power of the money resulting from persistent rise in the general price level of goods and services. The accounts prepared on historical cost are subject to limitations. The present paper considers the impact of inflation on calculation of depreciation charge by using different inflation accounting methods.

Key words: Inflation, Inflation Accounting methods, Depreciation

Introduction

It has been universally accepted that inflation leads to the misallocation of economic resources by distorting the price levels. Confronted with a general rise in prices, people normally get confused. They are not sure whether to attribute the surging prices to a real spurt in demand, to speculation, to inflation, or to what. They often make the wrong decisions. From accounting point of view, in periods of rising prices, financial accounting information has been criticized on the grounds that it reflects the old monetary value while the value of the money is changing. According to Hughes, Liu, and Zhang (2004,), "Inflation creates an earnings illusion as an artifact of the mismatching of expenses based on allocations of historical costs with current revenues in determining earnings. This mismatching distorts mappings of aggregate earnings and book values into equity value such that value-relevant information is lost." To overcome the limitations of this historical accounting, Inflation accounting comes on the stage with its foremost objectives of keeping the capital intact in real terms and to depict the true and fair view of operations.

Definition of Inflation

According to **Chambers,** "Inflation is a concomitant fall in the general purchasing power of the money resulting from persistent rise in the general price level of goods and services. If the prices of many goods rise, it is highly likely that the general level of prices has risen and that is what is meant by inflation. If the prices of some of the goods move up and the price of other move down, there may not, in fact be any inflation."

Webster's Dictionary defines inflation as, "a disproportionate and relatively sharp and sudden increase in the quantity of money or credit, or both, relative to the amount of exchange business that always results in decline in the general purchasing power."

Accounting Principles Board (1969) in its statement No. 3 defines inflation," As a decline in the general purchasing power of money as general level of prices of goods and services rise."

Following is the statement issued by council of **The Institute of Chartered Accountants in England and Wales** in 1952 in relation to the limitation of historical costs and assumption of stable monetary unit. It says, "The significance of accounts prepared on the basis of historical cost is subject to limitations, not the least of which is that the monetary unit in which the accounts are prepared is not stable unit of measurement. In consequence, the results shown by accounts prepared on the basis of historical costs are not a measure of increase or decrease in wealth in terms of purchasing power; nor do the results necessarily represent the amount which can prudently be regarded as available for distribution, having regard to the financial requirements of the business."

Discussion

Inflation or price level changes have general effect on two accounting principles i.e. stable monetary unit and realization principle. During the price-level changes period, the historical cost accounts fail to serve the purpose as the inflation causes distortion of reported profits. Under such circumstances comparability under conventional accounting records is not possible, as there are different values of currency at different points of time. Further inflation affects the plans, budgets, standards, etc., which may lead to the lack of control over individual activities.

In today's world of persistent and seemingly endless inflation, the old rules are found by many to be inadequate and misleading. For instance, under generally accepted accounting principles, which carry productive assets at cost of acquisition, true cost of replacing such equipment in an

inflationary environment, are not reflected. The result is that costs are understated, that income is overstated and that often earnings are nothing more than phantom profits. (Morgan Guaranty Survey, 1977)

Some of the accounting bodies have been showing their concern about the problem of inflation whereas some others have proposed the solution in the form of inflation accounting or price-level accounting. Following are certain objectives of inflation accounting as proposed by various accounting bodies:

1. To reflect the true and fair view of the operations of the concern.
2. To keep the capital intact so as to facilitate replacement of assets.
3. To facilitate the interested parties to the business for making rational decisions.
4. To get tax benefits by providing depreciation on replacement cost.
5. To report for gains and losses on holding monetary assets and monetary liabilities.

Methods of Inflation Accounting and their impact on depreciation charge

Following are the different methods proposed by different accounting bodies in different countries:

1. **Periodical Revaluation of Fixed Assets Along with the Adoption of LIFO**

Under this method the fixed assets are periodically revalued .The main purpose of periodic revaluation of fixed assets is to charge current cost of replacement by way of depreciation to profit and loss account. The revaluation is done normally on the basis of following:

I. Opinion of technical experts like Valuers, Engineers etc ; or
II. Specific price indices; or
III. Current Price lists from suppliers / manufacturers etc. of the assets concerned

Near about all the accounting standards (including international accounting standard) as studied in earlier chapters give recognition to this method. Wikipedia, the free encyclopedia, has mentioned the following possible reasons for revaluation:

a) To show the true rate of return on capital employed.

b) To conserve adequate funds in the business for replacement of fixed assets at the end of their useful lives. Provision for depreciation based on historic cost will show inflated profits and lead to payment of excessive dividends.

c) To show the fair market value of assets which have considerably appreciated since their purchase such as land and buildings.

d) To negotiate fair price for the assets of the company before merger with or acquisition by another company.

e) To enable proper internal reconstruction, and external reconstruction.

f) To issue shares to existing shareholders (rights issue) or for an external issue of shares (public issue of shares).

g) To get fair market value of assets, in case of sale and leaseback transaction.

h) When the company intends to take a loan from banks/financial institutions by mortgaging its fixed assets. Proper revaluation of assets would enable the company to get a higher amount of loan.

i) Sale of an individual asset or group of assets.

On the other hand the application of LIFO method to the inventory calculations keeps closer the cost of material used to the current market prices which in result shows lower profits than the traditional profits.

2.Current Purchasing Power Accounting

In U.K. and Ireland, the first proposals were issued by Accounting Standard committee in 1973 and then in 1974 entitled as "Accounting for changes in the purchasing power of money". Accounting professionals in U.K., after considering the problems of rapid inflation and distortions of historical cost accounting, offered a solution in the form of current purchasing power method which seeks to adjust the financial statements by removing the effects of changes in the general purchasing power of money on traditional accounts. For this purpose a general index of retail price is used and in this exercise two index numbers are mainly required i.e. one general price index at the date of transaction and other at the end of the period.

Features of Current Purchasing Power (CPP) Method

Following are certain main features of CPP method:

a) Companies will continue to keep and present their records in historical monetary unit.

b) All listed companies will have to provide supplementary statement according to the value of monetary unit at the end of the period to which these accounts belong.

c) The conversion will be based on general price index of the purchasing power of the money.

d) According to SSAP-7 the directors will have to provide a supplementary statement and basis on which it has been prepared and comments on the significance of the figures.

Depreciation and CPP

Since under CPP method general price index is used for restating all items including fixed assets it is logical that the depreciation on these restated fixed assets must be charged on historical cost adjusted by general price index in terms of current purchasing power of money. This may be made clearer with the following example:

Acquisition price of an asset (say machine) on 1-4-2003 Rs. 20000

Estimated useful life of machine 10 years

General retail Price Index as on 1-4-2003 100

General retail Price Index as on 31-3-2004 120

Depreciation method to be used is Straight Line Method (SLM)

Following are the calculations:

a. Restated cost of machine based on CPP method :

$$\frac{20000 \times 120}{100} = \text{Rs.}24000$$

b. Depreciation charge for the year :

$$\frac{24000}{10} = \text{Rs.}2400$$

Had this adjustment been not made the depreciation charge would have been Rs.2000 as calculated below:

$$\frac{20000}{10} = \text{Rs. } 2000.$$

3. Current value Accounting

Under this method current values are applied to the measurement of income and capital for the purpose of financial reporting. Glautier and Underdown explain the following three forms of current value accounting:

A. Current cost Accounting: This is concerned with the value of the assets to the business.

B. Replacement Cost Accounting: This is based on current acquisition value of the assets.

C. Realisable Value Accounting: This is based on the current realisable value of the assets.

A. Current Cost Accounting (CCA)Method

CCA is concerned with the value of assets to the business. The concept of value to the business is based on the idea of deprival value, which the owner of an asset would suffer, if he is deprived of that asset (Bonbright, 1973, p.71). According to Statement of standard Accounting Practice (SSAP-16) following are the salient features of CCA:

a. Fixed assets are not shown at their depreciated original cost, rather these are shown at their value to the business.

b. Stocks in the similar manner are shown at their value to the business instead of historical cost or net realizable value whichever is lower principle.

c. Depreciation is to be calculated on the current value of the relevant fixed asset.

d. The cost of stock consumed during the year is to be calculated on the value to the business of the stock at the date of consumption and not at the date of procurement.

e. The effects of the loss or gains from holding monetary assets or liabilities will be shown separately in a statement.

f. The directors of a company may appropriate to a specific reserve known as revaluation reserve the amount required to maintain the scale of the business. The increased replacement cost of the fixed assets and of stocks, the increased requirement of monetary working capital and the under provision of depreciation in past year(s) may be adjusted through the revaluation reserve.

Depreciation and CCA

Under this method, depreciation adjustment is made for the difference between the value to the business of the fixed asset consumed and the depreciation charged on the basis of historical cost. Further adjustment viz. Backlog depreciation is made. Backlog depreciation is the amount not provided out of the retained profits in spite of CCA. Despite the endeavors of accountants to ensure sufficient funds available through the use of CCA additional depreciation, it may still not be possible

to have the whole amount required at the end of the life of the asset. In such circumstances backlog depreciation is to be used. Following example may make it more clear:

Acquisition price of machine Rs. 30000

Estimated life 3 years

Increase in inflation @ 20% p.a.

Computation of Backlog Depreciation

Year A	Index No. B	Dep. Historical Cost C	Dep. Required D= C(B/100)	CCA adj. Additional dep. E= D-C	Cost of Machine F=30000(B/100)	Backlog dep. G
1	120	10000	12000	2000	36000	-
2	144	10000	14400	4400	43200	1(14400-12000)=2400
3	172.8	10000	17280	7280	51840	2(17280-14400)=5760
Total		30000	43680	13680		8160

Backlog depreciation can be calculated in the following manner:

For year 1 no backlog

For year 2 (dep. req. for yr. 2- for yr.1) X 1 = (14400-12000) X 1 = 2400

For year 3 (dep. req. for yr. 3- for yr.2) X 2 = (17280-14400) X 2= 5760

Total backlog depreciation at the end of 3rd year will be = 2400 + 5760 =8160

B. Replacement Cost Accounting Method

The U.S Securities and Exchange Commission in Accounting Series Release 190 required supplemental disclosure of replacement cost data. Replacement cost is that amount of cash or equivalent, which is required to acquire an asset to perform the same function as the owned asset. The basic concept of replacement cost accounting is that the firm is a going concern, which is continuously replacing its assets. Replacement cost accounting is based on the principle that the depreciation to be charged to the profit and loss account should be sufficient to meet the replacement cost at the time of replacement of the asset.

C. Realisable Value Accounting Method

The historical cost accounting and replacement cost accounting are based on the acquisition cost of assets, i.e. at their entry values but the realisable value accounting is based on realisable price of assets, i.e. at their exit values. This is based on concept of opportunity cost. Under this method the assets remained with the company are not valued at cost instead at realisable value.

4. Continuously Contemporary Accounting Method (CoCoA)

Prof.R.J.chambers of University of Sydney, Australia has developed this technique of exit value. Under this the charge for depreciation is the difference between the resale value of the asset at the start of an accounting period and the resale value at the end of that accounting period. Following are certain features of this method:

a) Current Selling prices are used for the valuation of assets.
b) Since the unit of measurement is the resale value rather than purchasing power of the money the purchasing power of the shareholder's equity is preserved.

Depreciation and CoCoA

Under this method if there is drop in the resale value of the asset, it is termed as depreciation. CoCoA does not take into account the useful life of an asset for computation of depreciation charge. Following example will make it clearer:

Resale value of Machinery on 1-4-2003	Rs 15000
Resale value of Machinery on 31-3-2004	Rs.14000
Depreciation as per CoCoA	Rs. 1000

Conclusion

From the above discussion we can conclude that inflation affects the purchasing power of the money which in real terms affects the value of the business. As discussed above different methods of inflation accounting are available, by applying any method the amount of depreciation charge differs from the traditional depreciation charge. Since depreciation has been considered as one of the major causes of inaccurate measurement of profit during inflation, so it seems to be more realistic if depreciation on fixed assets is charged on the estimated current cost rather than on historical cost. In this regard following are some suggestions:

- Companies may be asked to show their current cost information along with historical cost accounts so that the interests of existing and prospective investors may be safeguarded
- It is proposed that the inflation-adjusted information may be presented as “additional column” in the existing pattern of balance sheet and income statement. This may be utilised by the users of accounting information as basis of comparison between book value and current value of the concern

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