

PURCHASING-POWER DEPRECIATION
UNDER
RISING PRICE LEVEL

by

SAMUEL KWANG-KING CHENG

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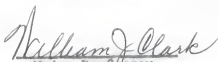
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KANSAS STATE UNIVERSITY
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Approved by:


Major Professor

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INTRODUCTION

Modern methods of production and distribution require large investments in fixed tangible assets such as land, plant, machinery and equipment. To be included in this classification an asset must be expected to have a relatively long useful life and must have been acquired for use in business operations with no intention of purchase for resale.

All fixed tangible assets, other than land, deteriorate with time and use. Several factors which may contribute to this process are (1) ordinary wear and tear, (2) unusual damage, (3) inadequacy, and (4) obsolescence. No matter what the cause, the end result is the same: the capital invested is exhausted over its productive service life. One thing which should be emphasized here is that, in most cases, the original capital is a definite amount of money invested in the fixed tangible assets at one time, but the fixed tangible assets will last to a definite time in the future and the wear and tear increases with time and use. So the capital consumption is a periodic charge. This is depreciation. The problems involved in depreciation are complex and are mainly concerned with a periodic equitable allocation of the original cost as a part of the cost of production. In most cases, the amount of periodic depreciation charged to operation is a matter of judgment. The procedure is to apportion the original cost of an asset in a systematic manner during its useful life.

The problem of depreciation is becoming increasingly important to both business and government. First, they have realized that capital consumption through depreciation is an inescapable and important part of the cost of operation. This cost must be recouped before net income results. Second, depreciation is involved in legislative and administrative policies, such as federal and state income taxes and price regulations. Third, many business organizations recognize an obligation to furnish stockholders, creditors, management, employees, and governmental agencies with a more informative and current financial statement.

Under the present managerial system, accounting is considered a tool for business management. In other words, accounting is an aid to, not a substitute for, business management. The accountant keeps and summarizes the operating records in a generally accepted and systematic manner, and interprets the operating results to management. Then management makes use of such data to make the final decisions regarding the operating policies, prices of product, salaries, wages, dividends, etc.

Money is a medium of exchange. Money represents a certain amount of purchasing power which can be used for purchasing almost anything one needs or wants. When we purchase we take some goods or services in and pay some purchasing power out. When we sell we give some goods or services out and take some

purchasing power in. When the purchasing power obtained is more than the purchasing power spent we have profit, and when the purchasing power obtained is less than the purchasing power spent we have loss.

The purchasing power is a fixed amount and does not change itself. The same fixed amount of purchasing power may be represented by different amounts of monetary units under different economic conditions. This is referred to as price level fluctuation. For instance, in year one a certain amount of purchasing power is enough to exchange for a certain machine and represented by \$1,000. In year two, the same amount of purchasing power is still enough to exchange for the same machine but represented by \$2,000. This shows that the amount of purchasing power equal to the value of a certain machine is represented by different amounts of monetary units, \$1,000 and \$2,000.

In the accounting field, the "dollar" is used as the recording unit. Furthermore, under the present accounting system, it is assumed that the monetary unit ("dollar") remains fixed. In other words, it is assumed that the purchasing power (value) of the "dollar" remains stable.¹ All accounting records, reports, statements and related operating policies are made and judged under this assumption.

¹H. A. Finney and Herbert E. Miller, Principles of Accounting, Introductory, Fifth Edition, p. 357.

Generally speaking, the trend of prices has been upward during the entire economic history of mankind. The main variation is the speed with which it rises. Sometimes it goes upward rapidly and attracts much attention. Occasionally the price level falls sharply. But most of the time it changes gradually and is overlooked by most people.

Since World War II, the U. S. economy has experienced an almost continuously rising price level, and as a result the purchasing power of the "dollar" has been cut almost in half.¹ (Many other countries suffered much more seriously from inflation.) Because of this fact, many scholars, writers, accountants, and business operators began to consider seriously the changing purchasing power of the "dollar". A widespread interest in this problem has developed among the members of both industrial accounting and public accounting professions. They have paid much attention and devoted considerable time to this subject and tried to find a solution.

Those who doubt the basic assumption (stable-dollar) mentioned above recognize that the purchasing power of money has varied throughout time, especially during the last two decades. Money is worth only what it can buy and it has no intrinsic value in itself. It represents general purchasing power in a storable form. It is frequently misleading to add or subtract dollars with the same nominative unit but different purchasing power.

¹William A. Paton and William A. Paton, Jr., Corporation Accounts and Statements, p. 536.

Those who support the basic assumption (stable-dollar) mentioned above recognize that generally accepted accounting principles have been recognized and used by the accounting profession for many years. Under the prevailing procedures these principles have worked well over the years, and the conventional financial statements are widely used and accepted. The idea of adjustment is a clear-cut deviation from traditional accounting concepts. There is no recognition of the change in the value of the dollar in law or in business operation. Furthermore, the introduction of new concepts or methods in accounting might confuse those who are concerned with the business operations. Of course, there are some serious technical difficulties in making adjustments from a historical cost to a current value cost basis.

As stated earlier, modern methods of production and distribution require business organizations to invest heavily in fixed tangible assets. Such assets usually have a relatively long useful life. So such investment is an important part of future productive cost. Depreciation is a periodic allocation of the original cost of fixed tangible assets in a systematical and rational manner. It is an expense and plays an important role in the productive cost of each period. Such an item of productive cost must not be overlooked. Those fixed tangible assets were purchased at earlier dates with dollars representing certain amounts of purchasing power, but the cost is allocated periodically using the same monetary unit, the purchasing power of which has changed. Such dollar amounts of depreciation

expense each year represent the dollar amount originally invested but not the purchasing power originally spent or exhausted. It appears improper to match such depreciation expense with revenues represented by current-value dollar amounts.

The operating results of a business entity are derived from the proper matching of its revenues and expenses. How could a proper net income result if a major expense is measured and represented improperly? Hence, it appears that one of the most serious problems resulting from rising price levels is the proper accounting for fixed tangible assets and the related depreciation.

The purpose of operating a business is not to make money itself, but for its purchasing power. The proper matching of revenues and expenses is one of the most important parts of the entire accounting process. The revenue is automatically stated in current-value dollars, and logically requires that expenses matched against such revenues should be stated in current-value dollars. Thus, both represent the same amount of purchasing power with the same monetary unit. The result derived from such matching will be to present the true net income. In other words, it will show how much purchasing power was made, or how much purchasing power was lost. Under conventional accounting procedures, some expenses are stated in current value dollars while others are stated in old value dollars. They represent different amounts of purchasing power with the same monetary unit. This is illogical from the standpoint of purchasing-

power matching. Accordingly, the matching will not show the true result of the operation. It is obvious that during inflationary periods real net income will be overstated because of failure to adjust cost to a common-value-dollar basis. The result may be a tendency toward an unduly liberal dividend policy--possibly a distribution of capital under the guise of earnings, income taxes will be inequitably high in many cases, and may be paid out of capital. The expenses stated in old-value dollars should be adjusted to current-value dollars in order to match properly with the revenues stated in current-value dollars.

Quite a few scholars and professional accountants have suggested the adjustment of the original cost invested in fixed tangible assets by an index number as a basis for depreciation. The result of a survey conducted by the Technical Services Department of the American Institute of Certified Public Accountants in July 1957 showed that a major part (74 per cent) of replies received agreed to adjust the original cost to current value cost if an acceptable means of measuring the price level change is available.¹

Before this introduction is closed, three basic assumptions should be mentioned as the basis for discussion in this report. They are:

- (1) Ordinary wear and tear is assumed as the only factor causing the fixed tangible assets to become useless.

¹The details can be found in The Journal of Accountancy, April, 1958, pp. 36-43.

There are many factors which may cause the fixed tangible assets to be abandoned, such as ordinary wear and tear, obsolescence, inadequacy, supersession, and accidental damage. In this report, it is assumed to be consumed by only ordinary wear and tear. All other factors are omitted for simplicity.

(2) The straight-line method will be used to compute the depreciation expense.

There are many methods for computing depreciation expense, such as straight-line method, operating-day method, working-hours method, production method, declining-balance method, and sum-of-the-years-digits method. Since the basic principle is the same, the straight-line method will be used exclusively in this report.

(3) The economic situation differs from country to country, and fluctuates irregularly within a country. In this report, the United States, with a smoothly rising price level during the recent decades, is employed as the background. It is also assumed that there is no expense other than depreciation.

DEPRECIATION

What is depreciation? Some people contend that depreciation represents a recovery of earnings sufficient to replace facilities consumed in the production of those earnings. No

profits are realized in a particular year until an amount has been recovered that is equal to the cost of replacing fixed tangible assets consumed that year in the productive process. This position may be summed up by the following reply received from one business executive by the American Institute of Certified Public Accountants' price-level depreciation survey in 1958:¹

Certainly the accounting professional should recognize that any amount that must be reinvested in the business to maintain assets at the same level of productivity cannot constitute profit.

This concept of depreciation is inconsistent with generally accepted accounting principles because it computes the depreciation expense on the basis of the cost of replacement of the facility. Replacement is a matter of management. Accounting's function is just to allocate the cost systematically and rationally, and to try to match the revenues and expenses properly for each period. It is only an aid to, not a substitute for, management. Moreover, the business entity does not deposit a certain amount of money for replacing the assets when the depreciation is made periodically. This concept of depreciation cannot be accepted.

Some people contend that depreciation represents a recovery of real capital and should be large enough to prevent any decrease in the real capital invested in the business entity. The

¹Carman G. Blough, "Accounting and Auditing Problems (Depreciation Not A Provision for Replacements)", The Journal of Accountancy, July, 1958, p. 8.

current year's depreciation charge would be the decline in the real value of the assets used in production. However, this concept of depreciation involves much more than depreciation alone for changes in the real value of other items, such as bonds, securities, and facilities obtained through long-term lease arrangements must also be considered and dealt with appropriately.

The modern concept of depreciation may be considered to represent an allocation of original cost. This is the definition proposed by the Committee on Terminology of the American Institute of Certified Public Accountants, and also the position taken by the Internal Revenue Service, practicing accountants and accounting educators. The American Institute of Certified Public Accountants defines depreciation as:

Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation. Depreciation for the year is the portion of the total charge under such a system that is allocated to the year....."¹

This concept of depreciation recognizes that depreciation is a process of allocating periodically the original cost invested in fixed assets to the revenues derived from the operation of those assets. According to this position, there is a close similarity between prepaid expenses and such assets--both represent outlays of funds in payment for some services or goods

¹Committee on Terminology, American Institute of Certified Public Accountants, Accounting Terminology Bulletins, Number 1, p. 25.

that will contribute to the entity's earning capacity in the future periods. There are some differences between them, e.g., useful life of a fixed asset is estimated whereas the duration of a prepaid expense is definite. The portion of fixed assets to be absorbed in expenses annually must be estimated, whereas the portion of prepaid expenses to be absorbed in expenses annually is definitely determinable. But as far as the nature of expense is concerned, the cost exhaustions in both cases represent expenses. Depreciation accounting is nothing more than an attempt to allocate the original cost as equitably as possible to the periods that benefit from the expenditure. If depreciation is recognized as an allocation of cost, another problem presents itself--that of selecting the proper cost base from which depreciation estimates will be made. This will be considered later in this report.

In the early days depreciation was overlooked or treated arbitrarily. Business entities preferred to write off little or no depreciation in years of poor earnings or of losses, and to make large provisions for depreciation in prosperous years. Profits were stated before depreciation was deducted, and their directors then decided how much to credit to the depreciation allowance and how much to pay for dividends.¹ Later on accountants developed the theory to explain the concept, and

¹H. A. Finney and Herbert E. Miller, Principles of Accounting, Intermediate, Fifth Edition, pp. 355-356.

methods to treat it in the books. Depreciation is an expense which must be provided for regardless of the level of earnings. In other words, depreciation must be treated equally in bad years as well as in good.

As stated at the beginning of this report, modern methods of production and distribution require business organizations to invest heavily in fixed tangible assets. Accordingly, depreciation expense must play an important role in the cost of production and should be matched properly with corresponding revenues. It cannot be ignored.

The main purpose of most business entities is to make a profit, which will be used in a report to the stockholders. It serves as a measure of the efficiency of management, and as an aid to management in planning for the future. The important point here is how to arrive at the most nearly accurate net income figure. Net income is the residual after the revenues and corresponding expenses have been properly matched. The matching process may become quite complex, and one complicating factor is depreciation.

During the last two decades, the price level rose rapidly. This has posed a serious problem in depreciation accounting: Should the originally invested cost, or the originally spent or exhausted purchasing power, be matched with the current revenues? As stated earlier, money represents a certain amount of purchasing power. We spend or exhaust a certain amount of purchasing power when we buy fixed assets. Depreciation

accounting, according to the traditional viewpoint, is an allocation or matching of originally invested monetary units against revenues currently received. But many feel that depreciation should be based on purchasing power originally spent or exhausted. The purchasing power is a fixed and hidden factor. Usually it is represented by different amounts of monetary units and shown at different price levels under different economic conditions. This concept is usually referred to as price-level depreciation. The writer would like to suggest the title "Purchasing-Power Depreciation". Thus, purchasing-power depreciation means: allocating periodically the purchasing power originally invested in fixed tangible assets against corresponding revenues derived from such assets through the exhaustion of purchasing power. The purchasing power periodically allocated will be represented by relative amounts of monetary units according to the economic situation in each period. This concept of depreciation will conform to the actual economic situation at any time.

Usually the so-called inflation or rising price-level means only that the same amount of purchasing power is represented by more monetary units. As far as purchasing power itself is concerned, it is still the same. Accordingly, when we work on depreciation accounting and allocate the originally spent or exhausted purchasing power under a rising price-level, the part allocated or depreciated must be represented by a larger amount of monetary units than that based on the originally invested

cost. Conclusively, depreciation accounting should follow and conform to the price level and reflect the real amount of purchasing power allocated during the period. On the other hand, current revenues represent a certain amount of purchasing power obtained recently. The most nearly accurate net income (meaning purchasing power, but represented by monetary units) will be derived from proper matching of such expenses and revenues.

This purchasing-power depreciation concept may be illustrated by the following example: In a year "A", X Company purchased a plant for \$500,000. This means that X Company spent or exhausted an amount of purchasing power which equals the value of that certain plant in year A and was represented by the year-A-value dollar of 500,000 units. The inflation started and the general price level rose since year A. Thereafter, the same monetary unit represents a smaller amount of purchasing power, or, in reverse order, the same amount of purchasing power must be represented by more monetary units. Suppose the amount of purchasing power spent or exhausted in year A (500,000 of the year-A-value monetary units) is represented by 1,000,000 of the current-value monetary units in year B. The depreciation expense of the plant in year B should be based on the amount of purchasing power spent or exhausted in year A. Therefore, \$1,000,000 is the correct basis for depreciation of that plant in year B. The portion depreciated on that basis will be matched with the current revenues representing the purchasing power obtained recently. The result will be a more

accurate net income for year B. That net income represents the residual purchasing power after proper matching, stated in current-year-value monetary units.

PURCHASING-POWER DEPRECIATION
UNDER RISING PRICE LEVEL

During the last two decades, since the World War II, the movement of the general price level has been upward, and as a result the monetary purchasing power has been reduced--almost cut in half. This condition poses a serious problem in depreciation accounting which is being studied and discussed by both scholars and professional accountants. Depreciable assets are composed primarily of fixed tangible assets with relatively long estimated useful life. The purchasing power is represented by monetary units. Suppose that a business entity spent a certain amount of purchasing power represented by a certain amount of monetary units in exchange for a certain asset. Subsequently, the general price level rose, but the asset is still in operation. Here is the key point of contention: Should we adhere to the traditional historical cost concept and use the originally invested cost as the basis for depreciation accounting, or should we recognize the actual economic situation and take the rising price level into consideration and use the current value cost as the basis for depreciation?

(1) Arguments for historical cost: Those who advocate the historical cost concept have advanced the following arguments.

(A) Accounting itself is only a recording process.

The function of accounting is to record objectively the actual facts of operating transactions, to put down the exact amounts which have been paid or received, but should not consider outside factors, such as price level, replacement, etc., nor make any certified prediction or estimation of the future. Thus, the principle of objectivity in accounting can be protected.

(B) Depreciation accounting is a process of allocation.

A generally accepted concept is that depreciation accounting is a process of allocation of the cost originally invested in fixed tangible asset, not a process of evaluation. The acquisition cost of a fixed asset is allocated periodically to operating periods in a systematic and rational manner. This concept must be borne in mind when depreciation accounting is being discussed.

(C) Originally invested cost is more meaningful to a going concern.

The current value of fixed tangible assets is of little importance and meaning to a going concern for they are not held for the purpose of resale if the business entity is to continue in operation. The periodic estimating of current value would make the condition more

confusing and complicated. On the other hand, originally invested cost is objective and simple.

(D) Historical cost is objective.

One of the basic accounting principles is objectivity. The accounts and statements should give expression, as far as possible, to facts evidenced by completed transactions and supported by objective data. The accounting process is based on bargained transactions where the monetary amounts represent prices determined in the market place. The accountants prefer amounts that can be verified by referring to business documents originating outside of the enterprise. Objectivity is believed to be essential for many of the accounting purposes, such as the auditing process, and governmental requirements. On the other hand, estimation, surmise, and prophecy might lead to manipulation of accounting data by management to the detriment of the other related interest groups. Federal agencies have insisted on historical cost because of the need for a firm and objective basis for control, regulation, and audit. Adjusted data is said to destroy this firm and objective basis.

(E) Adjusted bases violate generally accepted accounting principles.

According to generally accepted accounting principles, the cost originally invested in fixed assets is the only adequate figure which can and should be used as the basis

for depreciation purposes. Any adjusted basis would be contrary to the cost concept, and hence it would not be in agreement with the concept of depreciation accounting.

(F) It is neither necessary nor worthwhile to adjust the historical cost basis to the current value cost basis.

The effect of the inflation or rising price level is not serious under present economic conditions and it is not necessary to adjust the basis for depreciation accounting. It would be a costly procedure. Maybe the price level trend will sooner or later be in the other direction, with a resulting restoration of the value of the monetary unit.

(2) Arguments for current value cost:

(A) Historical cost means little in real depreciation accounting.

Historical cost is the amount originally invested in fixed tangible assets. It will be less meaningful after a period of inflation, especially a serious one, when depreciation accounting is considered. The portion of original cost depreciated and represented by the same monetary unit cannot adequately represent the exact amount of purchasing power which was originally spent or exhausted and which should be allocated to subsequent operating periods. Actually, the depreciation expense derived under such conditions will be only a part of the correct amount. In other words, the depreciation expense

is less than it should be in later periods. The current value cost adjusted from the historical cost according to the price level change will avoid this. Another larger amount of monetary unit based on current value cost will be used to represent the amount of purchasing power invested and which should be allocated to each period. Such monetary unit will represent the currently depreciated purchasing power. The current value cost is much more vital and meaningful to the depreciation accounting than historical cost.

(B) Historical cost adversely affects the determination of real net income.

The determination of real net income is necessary and important for intelligent budgeting, capital replacement, and the formation of sound decisions as to financing and pricing policies. If depreciation is based on historical cost, during or after a period of inflation, especially a serious one, the true depreciation expense will be understated, and consequently the net income resulted from the matching of revenues with such expenses will be overstated. A fictitious net income results.

(C) Historical cost does not conform to the realistic necessity of the business entity.

Depreciation is an allocation of original cost and its result is an expense. If the historical cost is still in use after a period of inflation, everything else being

equal, it will automatically overstate the net income. This means that the nominal profit will be higher than the real profit. Consequently, the business entity will be taxed more than it should be by governmental agencies and may make erroneous decisions with regard to increasing expenditures, dividends, salaries, and wages, or reducing price. These would be based on fictitious gains resulting from the historical cost basis.

(D) The adjusted current value cost basis is a new trend in depreciation accounting.

The use of an adjusted current value cost as the basis for depreciation accounting is a recognized procedure in many countries which have suffered serious inflation, especially after the World War II. This means that many scholars and professional accountants have recommended that for purposes of depreciation the historical cost basis be replaced by the adjusted current value cost basis. Even though the inflation is not as serious in this country as in some others, as far as the depreciation accounting theory is concerned, the United States should keep pace with the others.

(3) Purchasing-power depreciation:

Price-level depreciation is a method of allocating the cost of fixed assets to the appropriate periods by charging each period with a portion of the historical cost of the asset, adjusted for increases or decreases in the value of the dollar."¹

¹John R. H. Gilmour, "The Need for Price-Level Depreciation Poses A Challenge to Accounting," N.A.A. Bulletin, July 1959, p. 29.

It may be further explained as follows: A certain amount of purchasing power represented by a certain amount of monetary units is spent or exhausted when a fixed asset is purchased. The same amount of purchasing power will be represented by a larger amount of monetary units after an inflation. The purpose of depreciation should be to allocate to later periods the purchasing power spent or exhausted for fixed tangible assets and represented by a certain amount of monetary units. The preceding definition of price-level depreciation may be restated as:

"Price-level depreciation is a method of allocating the purchasing power invested in fixed tangible assets to the appropriate operating periods by charging each period with a portion of the purchasing power, as adjusted to the current economic situation." It should be noted that this definition does not consider the fluctuation of the price level of specific individual assets.

(4) Price level index:

The adjustment of depreciation to a current purchasing power basis for statement purposes may be done by means of a price level index. Of course, there would be no need to change the present depreciation formulas, such as straight-line or sum-of-the-years-digits.

One of the big problems is to find an acceptable price level index. There are several indexes in use, such as consumers' price index, wholesale commodity price index,

construction price index, and gross national product index. Some are specific and some are general. The American Accounting Association recommends the consumers' price index as the best one currently available for the purpose, for the following reasons:¹

(A) It is widely used and generally accepted index of the changes in the general price level, and as a reciprocal, in the value of the dollar.

(B) It agrees rather closely with the implicit index developed by the computation of gross national product in uniform prices.

(C) It is less affected by technological changes than are some of the more specialized index numbers.

(D) It fluctuates less than any other currently available general index and therefore produces smaller and less erratic adjustments for price level changes.

An important point with regard to the price level index is to select one that would be acceptable to all companies publishing financial statements. It is not wise to attempt to compare an accounting statement adjusted for price level changes with a statement that is prepared on the basis of historical prices. However, if the price-level adjusted statements are accepted as being

¹Ralph Coughenour Jones, Price Level Changes and Financial Statements, Case Studies of Four Companies, p. 3.

more representative of what has actually occurred during the accounting period, the business community should willingly accept such accounting procedures. The accounting profession and businessmen would be encouraged even further in their acceptance of price level accounting if this would result in tax saving when compared with historical cost data, and, currently, price level accounting would yield a tax saving in most circumstances. Therefore, the use of any price level index would be preferred to the historical cost statements, once public acceptance had been obtained.

The following four steps would be followed in making the conversion to current dollars:

(A) The selection of a base year.

Usually, the earlier year is selected as the base year. For example, machine A was purchased during year 1 for \$30,000. Machine B was purchased at year 2 for \$20,000. At the end of year 3, year 1 would be used as the base year.

(B) The selection of an acceptable index.

The index selected should be one which appears to most nearly reflect the change in purchasing power of the dollar.

(C) Computation of the conversion factor.

A conversion factor is computed by dividing the price level index of the current year by the price level

index of the year being converted. In other words, the conversion factor is the quotient of current year price level index divided by the price level index of the year of acquisition. For example, assume the index for year 1 to be 100, year 2 to be 160 and year 3 to be 200, the factor for converting year 1 to year 3 is computed by dividing year 3 price level index 200 by the year 1 price level index 100, i.e., $200/100 = 2$. The factor for converting year 2 to year 3 is computed by dividing year 3 price level index 200 by the year 2 price level index 160, i.e., $200/160 = 1.25$.

(D) The application of the conversion factor.

The conversion to current value cost is accomplished by multiplying the cost originally invested in fixed tangible assets by the conversion factor. In the preceding example, the current value cost of machine A purchased in year 1 is computed as $\$30,000 \times 2 = \$60,000$. The current value cost of machine B purchased in year 2 is computed as $\$20,000 \times 1.25 = \$25,000$.

Theoretically, this price level index would be applied to all statement accounts, not to the fixed tangible asset accounts only. Adjustment of financial statements by a price level index has the advantage of stating all balance sheet and income statement items in comparable dollar figures.

(5) Illustration of purchasing-power depreciation:

After the current value cost of a certain fixed asset is converted, we are able to make the entry for the purchasing-power depreciation. Assuming a 30-year life for machine A and a 20-year life for machine B, annual depreciation on original cost would be \$1,000 on each machine.

The original cost of machine A \$30,000 times the factor of 2.0 for converting year 1 to year 3 equals \$60,000. The \$60,000 divided by the estimated useful life, 30 years, is \$2,000. Then the depreciation entry may be made as follows:

Depreciation Expense	\$2,000.00	
Accumulated Depreciation	Machine A . . .	\$1,000.00
Capital Adjustment		\$1,000.00

Using the factor 1.25 for converting machine B, we arrive at the following entry:

Depreciation Expense	\$1,250.00	
Accumulated Depreciation	Machine B . . .	\$1,000.00
Capital Adjustment		\$ 250.00

The same result may be obtained by applying the conversion factors of 2.0 and 1.25 to the annual depreciation based on historical cost.

The "Accumulated Depreciation" account is still the same as it should be on the historical cost basis and should be deducted from the asset accounts. Finally, the "Capital Adjustment" account is an extra account from the standpoint of historical cost. It represents a revaluation surplus and goes to the

"Surplus" group of the "Stockholders Equity" section of the balance sheet. It will be treated as the other surplus items.

Such adjustment is made for the current year only and does not trace to the prior years. The reason is: The purpose of accounting is to match properly the current revenues with current expenses in order to arrive at a more reasonable amount of real net income for the year.

This adjustment would not be recommended if the inflation is not significant, or if the business entity does not have a considerable investment in fixed assets, i.e., if the depreciation expense is a relatively small fraction of the total cost of operation. On the contrary, if the inflation is a serious one, the general price level changes rapidly, and/or the business entity engages in manufacturing operation with a large investment in plant assets, the depreciation expense would be a significant portion of the total production cost, and will affect the real net income figure materially. Under those conditions, such adjustment is desirable.

Although it has not been discussed in this report, it should be understood that purchasing power accounting would involve much more than the adjustment of the assets and related depreciation accounts. All accounting statements might be affected. All balance sheet and income statement items might be stated in current value dollars.

EVALUATION OF
PURCHASING-POWER DEPRECIATION

Depreciation accounting based on the historical cost has been used for years. It filled the situations and worked very well over the years when the economic circumstances were stable, and even when they were changing gradually. But during the last two decades the price level changed rapidly and the purchasing-power depreciation was suggested. This is a new depreciation accounting concept. There are both pros and cons to this new concept.

(1) The argument against purchasing-power depreciation:

Typical objections which have been made against the use of purchasing-power depreciation may be summarized as follows:¹

(A) Index numbers are not accurate.

The main instrument in purchasing-power depreciation is the index number. But an index number is only a statistical average. It represents only the general situation of a certain period and cannot be applied to individual cases. So it should not be used as a means of adjusting fixed assets from the historical cost basis to the current value basis.

¹ Russell Bowers, "Objections to Index Number Accounting," The Accounting Review, April, 1950, p. 149.

(B) It is difficult to select a suitable price level index number, as discussed in a previous section.

(C) The result of management will be confused.

Net income being the difference between the revenues and the expenses, is used as a measuring stick of its efficiency of management. This net income will be confused or disturbed by the application of the index number since the traditional idea of historical cost has been deeply engrained in people's minds. Consequently, the interested groups such as stockholders, creditors, employees, and public readers of financial statements may be confused.

(D) It is not necessary and of little use.

The accountant's statement is only an imperfect projection of reality at best, and there is not any necessity of making it seem more complicated and less intelligible than at present. Even if it is done, the information provided would be of little use to anyone.

(E) It is not acceptable for tax purposes.

The Internal Revenue Service requires the historical cost as the basis of depreciation accounting. It is difficult to reconcile the results of the purchasing-power depreciation concept with established principles applicable to taxation.

(F) It is a violation of generally accepted accounting principles.

According to generally accepted accounting principles, depreciation accounting is an allocation of the original cost invested in fixed tangible assets. This cost is the amount originally invested, recorded in books, and evidenced by outside transaction documents. It is firm and objective. But the purchasing-power depreciation accounting is based on a different cost figure, estimated by the accountants on the basis of historical cost, but adjusted by the price level index number. It is only an arbitrary and subjective estimation. It violates the generally accepted accounting principle of objectivity.

(G) The use of price level index number is unjustified and illogical.

Fixed tangible assets do not represent a pool of purchasing power and therefore the application of an index number in purchasing-power depreciation is unjustified and illogical.¹

(2) The arguments supporting purchasing-power depreciation:

There are some scholars and professional accountants who agree with the purchasing-power depreciation concept. Their reasons may be summarized as follows:

(A) This purchasing-power depreciation concept is still in conformity with generally accepted accounting principles.

¹Maurice Moonitz, "Adaptations to Price-Level Changes," The Accounting Review, April, 1948, pp. 139-140.

As stated earlier in this report, purchasing-power depreciation concept is nothing more than an allocation of cost--a cost that is an adjusted cost as opposed to historical cost. This is the generally accepted basic accounting principle for depreciation. So this new depreciation concept--purchasing-power depreciation--is also consistent with generally accepted accounting principles. It changes none of the currently used accounting theories and practices concerning depreciation. It merely states them in current value dollars, making all dollar figures on the same level in the same financial statements comparable. In the currently published accounting statements, revenues, expenses, cash, and other items are all stated in current value dollars and easily compared.

(B) Purchasing-power depreciation is real depreciation, and consequently real net income will be obtained.

When purchasing-power depreciation is used, the depreciation expense is based on the purchasing power spent or exhausted, but represented by current value dollars. Such depreciation expense will be on the same level of dollar value as those of the revenues currently obtained from operations. The net income, computed as the difference between revenues and such expenses, will represent the purchasing power gained during this period. This gain is the real net income of a business entity, rather than the monetary or dollar gain. It will be more realis-

tic than the result computed from the difference between the revenues received from the current operation and represented by the current value dollars with the expenses incurred and represented by historical value dollars. Under the rising price level, the depreciation expense based on the historical cost is always less than the purchasing power allocated. The use of price level index to adjust the financial statements for depreciation purpose gives a more realistic picture of the asset and related depreciation, whereas, historical cost depreciation procedures would picture the situation realistically if the price level did not change.

(C) The correct amount of income taxes could be obtained.

The income tax is usually based on net income figures. If the purchasing-power concept were to be accepted by the Internal Revenue Service, the proper amount of income tax would be obtained and paid on the basis of real net income. In periods of rising prices both real net income and income tax would be smaller than under current circumstances.

(D) The problem with price level index number is not serious.

The American Accounting Association's Committee on Concepts and Standards Underlying Corporate Financial Statements believes that the errors inherent in price level

index number construction are relatively unimportant where substantial changes in price levels are involved. The Committee feels that the weaknesses do not invalidate the use of price level index number adjustments but do place practical limitations on their use. The Committee said specially: (a) Adjustments for very small changes in the general price level are ineffective, and (b) adjustments become less accurate (because of change in the real weights of index number elements) as the time period is extended.¹

The Committee has further pointed out that index number adjustments must be viewed, not as a fact, but as an indication of fact.

(E) The result of management would be shown more clearly and correctly.

Under the historical cost depreciation concept, the operating results--net income or net loss--is a mixture of the managerial skill and the general price level movement. It is difficult to tell how skillful is the management. In periods of rising price level, the expenses will be understated, net income overstated, and consequently the managerial skill overstated. But under the purchasing-power depreciation concept, the expense and revenue will be stated correctly, and consequently

¹American Accounting Association's Committee on Concepts and Standards Underlying Corporate Financial Statements, Supplementary Statements #2, The Accounting Review, October, 1951, pp. 471-472.

managerial skill will be more accurately represented. Mr.

Russell Bowers has said:

The results of managerial skill are confounded with general price movements at present because index numbers are not used. The factor or price movement effect as distinguished from the other effects which are the result of managerial skill can be isolated and both results can be reported simultaneously. But this can not be done without the use of index numbers.¹

CONCLUSION

The problem of the rising price level and its effect on depreciation accounting is certainly a challenging problem to the accounting profession, scholars and professional accountants alike. Purchasing-power depreciation comprises both the possibilities of proper disclosure of the real net income in financial statements and the resulting income tax reductions. Of course, there are other problems such as dividends, salaries, wages, manufacturing policies, and sales prices. The change or reform needed in this area of accounting is supported by the following survey of corporate and accounting executives. It indicates that business is ready for new developments in the depreciation accounting field.

The survey of 669 corporate executives on price level adjustment of depreciation conducted by the Technical Services

¹ Russell Bowers, "Objections to Index Number Accounting" The Accounting Review, April, 1950, pp. 152-153.

Department of the American Institute of Certified Public Accountants in July 1957 showed the following:

(1) Of 331 replies received, 246 or 74 per cent, thought that if an acceptable means of measuring price level changes was available, the current dollar cost of depreciation should be reflected in some appropriate manner in corporate reports to stockholders.

(2) Of those who thought the effect of price level changes should be recognized, 126 or 51 per cent, thought that disclosure of the amount of current dollar cost of depreciation should be mandatory. According to the above information, a convincing majority (74 per cent) of interested parties think some adjustment should be made, if a practical method of doing so can be found. This indicates that the business world is now ready for, and may soon demand, changes on this controversial topic. It also shows that this is certainly one area in which further study and research is warranted, even if no changes in the accounting procedures are recommended at this time.

Depreciation accounting has been defined as a process of cost allocation, although the cost basis does not necessarily have to be the historical cost of the fixed tangible assets. Other objectives of depreciation accounting that have been suggested include opinions that depreciation should be a recovery of earnings sufficient to replace fixed assets consumed in the revenue producing process, and the argument that depreciation

should be designed to prevent any decline in the capital invested in the business entity. The final conclusion reached is that depreciation accounting is the allocating to current revenue the purchasing power spent for fixed tangible assets and represented by a certain amount of monetary units, for the purpose of properly matching revenue and expense. It does not provide replacement funds for the assets consumed.

One serious problem remaining is that of selection of a proper index number for use in the statement preparation. Perhaps at the moment the best one for this purpose is the consumers' price index compiled by the United States Bureau of Labor Statistics and recommended by the American Accounting Association. The important points are, first, all firms must be convinced that the use of price level adjusted statements is advantageous; second, every firm should use the same index in adjusting financial statements in order to make the statements comparable. Neither of these objectives is likely to be reached suddenly. The process is likely to be a slow evolution from the presently used historical cost statements to the current value cost financial statements.

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PURCHASING-POWER DEPRECIATION
UNDER
RISING PRICE LEVEL

by

SAMUEL KWANG-KING CHENG

B. A., National Cheng-Chi University, 1948

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Modern methods of production and distribution require large investments in fixed tangible assets, such as land, plant, machinery, and equipment. All such assets, other than land, deteriorate with time and use. The original cost is a definite amount of monetary units, invested in the fixed tangible assets at one time, but the consumption is a periodical charge. The problem of depreciation is becoming increasingly important in the proper matching of revenues and expenses of a business entity.

Since money is a medium of exchange, its value is in its purchasing power. This purchasing power is the true measure of a firm's performance in terms of profit or loss. This is apparent because the purchasing power of a monetary unit may vary under different economic conditions.

In spite of the fact that purchasing power varies, the stable dollar concept is a traditional principle in accounting. It is assumed that the purchasing power of the dollar remains constant. But, actually, the price level has risen constantly, i.e., the purchasing power represented by each monetary unit has decreased continuously, especially during and after the World War II.

Therefore, dollar amounts of depreciation expense in each year, based on the historical cost presently in use, represents the depreciated dollar amount originally invested but not the depreciated purchasing power originally spent or exhausted. It appears improper to match such historical depreciation expenses with revenues represented by current value dollar amounts.

Purchasing-power depreciation is the process of allocating periodically the purchasing power originally invested in fixed tangible assets

against corresponding revenues derived from such fixed assets through the exhaustion of such purchasing power. The purchasing power periodically allocated will be represented by relative amounts of monetary units according to the economic situations in each period. Thus, the proper matching of revenues and expenses may be accomplished.

Purchasing-power depreciation is a relatively new concept. It comprises both the possibilities of proper disclosure of real net income in financial statements, with resulting income tax reductions. There are indications that business is now ready to accept this new development in depreciation accounting. It has not been approved by the Internal Revenue Service. Further study and research in this subject are warranted.