PRICE-LEVEL ACCOUNTING

A CASE STUDY

OF TWO MANUFACTURING FIRMS

A THESIS

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CHAPTER I

THE PROBLEM, DEFINITIONS OF TERMS USED, AND THE METHOD OF PROCEDURE

The purchasing power of the consumer's dollar is now less than half of what it was at the beginning of World War II, according to the Consumers' Price Index compiled by the Bureau of Labor Statistics. Many economists believe that the forces of inflation have not been checked. They note that, in spite of temporary periods of stability, the long-term trend of prices has been consistently upward and they predict that the trend will continue.

The rapid increases in prices in the United States from 1941 to 1948 and from 1950 to 1953 increased the search by accountants for methods that would minimize the effect of price-level changes on accounting statements and reports based on historical costs. Fortunately, accountants were unwilling to abandon historical costs completely until adequate research and experience had indicated the right road. However, the door was left wide open for the adoption of techniques that only partially adjusted for the inflation. Among these are the last-in, first-out inventory procedure and the use of accelerated depreciation when it is not otherwise justified.

Financial statements generally ignore the decline in purchasing power of company funds invested in productive facilities and other types of assets. The reason is that financial reporting for industrial and

commercial enterprises in this country is based, for the most part, upon the historical cost principle of valuation.

Thus, when a certain number of dollars are expended to acquire an asset, the asset will continue to be reported at the same dollar valuation throughout the period that it is owned, regardless of changes in price levels during that period. Furthermore, if the asset is subject to depreciation, the amount charged against each period's income is a fraction of the cost at the time of purchase, not of the current value of the article. Mason commented:

> A useful analogy can be drawn between price-level adjustments and the conversion of foreign currencies. It would not occur to anyone to add amounts stated in pounds, pesos, francs, or even Canadian dollars to amounts stated in United States dollars without first converting the foreign currencies with the use of appropriate exchange rates. Yet we are in the habit of treating dollars of different years as identical even though, like the foreign currencies, they represent different amounts of goods and services and should be converted to a constant-dollar basis in order to make them comparable.[1]

Most executives agree that one of the major responsibilities of business managements is the conservation of the enterprise capital entrusted to its care. Accordingly, if a company's financial statements disclose that it has been operating profitably for a period of time, and that it has not distributed as dividends more than it has earned, presumably management's responsibility for protecting capital has been met. However, there are indications that this may not necessarily be so.

For example, critics of conventional accounting practices point out that reported earnings include depreciation charges based on the

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[1]Perry Mason, Price-Level Changes and Financial Statements, Basic Concepts and Methods (American Accounting Association, 1956), p. 10.

historical cost of plants and equipment and that the earnings would be much lower, perhaps non-existent, if depreciation charges were related to the current values of the facilities. They contend that, as a result, many companies, instead of conserving capital, are actually paying income taxes on fictitious earnings and are, in effect, unintentionally distributing liquidating dividends to their shareholders. Moreover, they point out that the results of research studies that have been made seem to prove their contentions.

The high cost of replacing facilities is also a cause of concern to business managers because they have found that funds equal to depreciation charges are far from adequate to pay for needed replacements. Furthermore, high reported earnings create pressures by workers for higher wages and by stockholders for increased dividends. These pressures make it difficult to retain sufficient funds to finance purchases of fixed assets at rising prices.

Thus, it happens that many companies are forced to incur new indebtedness or to issue additional capital stock in order to obtain needed funds. Critics of conventional accounting methods say that it makes no sense for companies to be forced into the capital markets to finance fixed asset replacements. They contend that companies should be able to finance such purchases with funds provided by operations and that accounting methods should aid rather than hinder management in accomplishing this objective.

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to develop and test methods for the preparation of supplementary statements adjusted for changes in the price-level; (2) to compare the supplementary statements with the conventional statements expressed in historical dollars; (3) to present quantitative data which will give business managements and individual accountants some basis for judging the need for figures and statements in dollars adjusted for changes in purchasing power.

Questions to be answered. Among the questions to be answered are the following: How much effect has inflation had on the two companies studied? Which price index is most acceptable for the companies? Would it be more feasible for the companies to develop supplementary statements or to present results in only one set of adjusted statements? Are the prospective tax savings after price-level adjustments more illusory than real? After adjusting the financial statements for price-level changes, are dividends being paid in excess of earnings?

Hypothesis. The major hypothesis for this study is that net income adjusted for price-level changes is more useful than the unadjusted figure in financial reporting.

Importance of the study. Price-level accounting is one of the most complex problems facing the accounting profession at the present

time. Much progress has been made in recent years in exploring the nature of the problem and in gaining public recognition of its importance to a fair presentation of financial position and results of operations. Greater interest in taking some positive steps in this direction has also come from practicing accountants, as indicated by the 1957 opinion survey of the American Institute of Certified Public Accountants.

There are many areas of specific application that require further study. Very few case studies have been made on this problem. The last case study that involved two manufacturing firms was published in 1955.

Due to the vibrant economy and the fluctuating price-level, this study should be highly useful in providing needed current data. Also, comparisons of this study with previous investigations should be interesting.

Edward S. Lynn, Educational Director of the American Institute of Certified Public Accountants, stated that this problem should be appropriate for a thesis.[2]

The writer made careful checks in The Accountant's Index, The Business Education Index, and The Bulletin of the Public Affairs Information Service to determine if similar studies could be located. Reports of related and partial studies of the problem may be found in the review section.

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[2]Letter from Edward S. Lynn, to Daniel D. Busby, December 14, 1962.

II. DEFINITIONS OF TERMS USED

Adjusted. "Adjusted," as used in this study, shall be interpreted as meaning fully adjusted for general price-level changes and expressed in dollars of uniform purchasing power.

Constant-value units. Throughout the report of this investigation the term "constant-value units" shall be interpreted as meaning dollars of uniform purchasing power measured by a general index of prices. The Consumers' Price Index was used in this study.

Depreciation accounting. The term "depreciation accounting" shall be interpreted as meaning 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.

Historical costs. The term "historical costs" relates to the practice of including, in current statements, dollar costs of prior periods, with the result that many of the figures in current statements do not reflect the value of the dollar at any specific period of time.

Price level. If it were possible to prepare a chart showing the prices of all commodities and services for any period of time, it would be observed that some prices were going up, some were going down, some were rising faster and some falling faster than others, but it would also

be possible to observe a general trend. In general, or on the average, prices would be rising, falling, or remaining at about the same level. It is this general tendency or trend, and the resulting average situation at any one point of time, that was interpreted as meaning the "price level" in this study.

III. METHOD OF PROCEDURE

The purpose of this study is to test the proposed adjustment procedures in actual situations and evaluate the claims for them and the possible limitations restricting their usefulness. Complete adjustment procedures were used in the study within the limitations of the available data. Two manufacturing firms, Caterpillar Tractor Company and Westinghouse Air Brake Company, were selected for study because of the similarity of their operations, the availability of data, and the importance of long-lived assets in the financial reporting. These companies represent typical firms and it should be possible to draw implications for other firms from these case studies.

Supplementary statements were developed to show economic results and conventional statements were left in substantially their present form to report the results in monetary terms only. The statements that were prepared covered the years from 1953 through 1962, a period of relatively stable prices.

Conversions to price-level accounting were made by using the Consumers' Price Index of the United States Bureau of Labor Statistics for the following reasons: (1) it is now widely used and generally

accepted as an index of the general price level; (2) it agrees rather closely with the Gross National Product implicit indicator; (3) it is less affected by technological changes than are the more specific indexes; and (4) it is more stable than other general price indexes.[3] These criteria will be discussed and evaluated in Chapter 4.

The adjustment process involves the conversion of all accounting statement data into the constant-value dollar of either a base year, the average for the current year, or the end of the current year.[4] For the income statement, the average dollar value for the current year is the easiest to use and more understandable than the dollar value of some earlier year. The balance sheet is more easily comprehended if it is converted into the price level at the end of the year (the average for December may be taken as a close approximation). For comparative purposes, both statements can be converted into the year-end dollars. In this study, all figures have been converted into the dollar value at December 31, 1962.

Starting with the balance sheet, assets and liabilities are classified as either monetary or nonmonetary. Monetary assets include cash, receivables, and investments in bonds and preferred stocks. All liabilities other than obligations to be performed in the form of services should be classified as monetary. If the statements are to be

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[3]Ralph Coughenour Jones, Price Level Changes and Financial Statements, Case Studies of Four Companies (American Accounting Association, 1955), p. 3.

[4]For a somewhat simplified demonstration of the conversion of financial statements to a common-dollar basis, see Appendix A of this study.

expressed in year-end dollars, the monetary assets and liabilities are not adjusted, as they already represent current valuations.

Nonmonetary assets and liabilities are converted into the dollar value at the end of the year by the multiplication of a conversion factor representing the ratio of the price-level at the date of acquisition of the asset or liability to the price-level at the statement date. For example, if a parcel of land were purchased in 1954 when the price-level index was 100, the conversion factor (1.20) is the current price-level index of 120 for December, 1962, divided by 100, the average index for 1954, the base year. Assuming the land cost $1,000 in 1954, the valuation appearing on the adjusted balance sheet as of December 31, 1962, would be $1,200. Other fixed assets must be aged and adjusted by the conversion factor relating to the specific year of purchase.

Accumulated depreciation must also be aged and associated with specific asset purchases. The conversion factors are then applied in a manner similar to the adjustment of the asset costs.

The procedure for adjusting inventories depends upon the inventory method used. For example, if the first-in, first-out method is used, the inventory can be assumed to have been purchased at fairly recent prices. If the inventory turnover is four a year, the inventory can be assumed to have been purchased during the last quarter of the current year, and the conversion factor will be calculated from the average price-level of the last three months.

The stockholders' equity is the residual after substracting the adjusted liabilities from the adjusted assets. It may be useful to maintain some of the conventional classification of equity, although it is not usually possible to maintain a complete classification of retained earnings.

Unless preferred stock is convertible into common stock, it should be kept on the balance sheet at its original par value. Common stock and paid-in surplus, however, represent amounts originally invested and allocated as original claims of the common stockholders. In order to determine how well these claims have been maintained in terms of purchasing power, they should be converted into constant dollars by adjusting from the year of investment to the balance sheet date. The remainder of the stockholders' equity should be reported as one item, either positive or negative. It is not possible to separate this item into the cumulated excess of real earnings over dividends and the cumulated gains and losses from price changes without adjusting each year's income since the date of formation of the company.

If the income statement is to be expressed in terms of the year-end dollar values, the unadjusted figures for sales, purchases, and expenses other than depreciation should be adjusted by taking the conversion factor for the average price-level of the year and multiplying this by each item. The depreciation expense should be adjusted by applying the proper conversion factor to the depreciation relating to each year's purchase of the depreciable assets. The cost of goods sold or material used is calculated by taking the beginning inventory adjusted

from the final quarter of the preceding year (assuming a first-in, first-out method and an average turnover of four), adding the adjusted purchases, and subtracting the adjusted ending inventory.

Several features of this adjustment procedure should be noted. First, the financial statements are converted into uniform, constant dollars expressed in terms of the relative purchasing power of the dollar. No attempt is made to show valuation changes of specific items. Second, the original cost concept is maintained. Third, the procedure assumes that capital is maintained only if the purchasing power of the stockholder, as a consumer, is held intact.

The emphasis in this study is on the usefulness of the adjustment process for accounting purposes, primarily in the financial reporting to stockholders and others, and as an aid to management in the evaluation of the progress of the firm.

The balance sheet and income statement were allotted prime consideration in this study. The findings are presented in the form of a combined report for the two companies to allow the highest degree of comparison.

CHAPTER II

REVIEW OF THE LITERATURE

Many students of the problem of changing price levels believe that general acceptance of price-level adjustments will not materialize until the two sources of authoritative pronouncements on the acceptability of accounting practices, the professional accounting societies and interested government agencies, give their approval. However, such organizations have, so far, shown little inclination to authorize departures from the conventional historical cost basis of accounting.

The professional societies in some countries take the lead in passing judgment on accounting practices, while governmental bodies in other countries establish accounting rules by force of law.

In the English-speaking countries, where the accounting profession is strong, accounting practices usually evolve through custom and acceptance by the business community and by innovators among the accounting practitioners. The professional societies sometimes express formal opinions on such practices if the need arises. Governmental agencies usually accept the accounting practices that develop in this way, sometimes with modifications to fit their particular needs.

However, there are some other countries such as France, Italy, and Argentina, in which the government takes the lead in establishing accounting rules. In such countries, relatively little consideration is given to accounting for managerial purposes or for purposes of

accurate reporting to shareholders. Instead, accounting is intended to serve primarily as an aid in such activities as economic planning and the levying of taxes. Therefore, accounting societies in such countries do not conduct extensive research or issue many opinions on accounting principles.

Accounting practices are developed in this country by the business community and by the accounting profession. Pronouncements by professional accounting societies usually influence industry practices and are generally influential in assisting governmental agencies in establishing accounting rules for tax and regulatory purposes. The opinions of such organizations should therefore indicate to business executives the future for price-level adjustments in company financial statements.

The American Institute of Certified Public Accountants is the national organization of professional accountants. It numbers among its members more than half of the approximately 70,000 certified public accountants in the United States. Through its Accounting Principles Board and its committee on auditing procedure, it issues statements on accounting and auditing matters that are acknowledged by the accounting profession, the courts, and governmental agencies as authoritative definitions of acceptable procedure.

The American Accounting Association is a nationwide society of accounting educators. However, a large portion of its membership consists of accountants in public practice and in industry. The association, through its various committees, engages in research and issues opinions from time to time on accounting principles and practices.

In 1951, the Committee on Concepts and Standards Underlying Corporate Financial Statements of the American Accounting Association issued Supplementary Statement No. 2 presenting recommendations with respect to "Price-Level Changes and Financial Statements."[5] The main conclusions of this statement were: (1) the primary financial statements included in reports to stockholders should continue to reflect historical dollar costs; (2) periodic reports to stockholders may properly include supplementary statements that present complete adjustments for price-level changes and that reconcile the adjusted figures with the unadjusted; and (3) all statement items affected should be adjusted in a consistent manner in terms of the over-all purchasing power of the dollar. Specifically, the Committee recommended that the Bureau of Labor Statistics Index of Wholesale Prices should be used for adjustment purposes until a better index could be developed.

The 1957 Committee on Accounting Concepts and Standards recommended, in "Accounting and Reporting Standards for Corporate Financial Statements, 1957 Revision,"[6] that while primary statements should be based on cost, supplementary data should be furnished to help in evaluating the significance of price-level changes in the interpretation of the financial reports of the enterprise. This recommendation, however,

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[5]Committee on Concepts and Standards Underlying Corporate Financial Statements of the American Accounting Association, "Price-Level Changes and Financial Statements," The Accounting Review, XXVI, No. 4 (October, 1951), p. 468.

[6]Committee on Accounting Concepts and Standards of the American Accounting Association, Accounting and Reporting Standards for Corporate Financial Statements and Preceding Statements and Supplements (American Accounting Association, 1957), p. 9.

is not as specific and definite as that presented in Supplementary Statement No. 2. Under the 1957 recommendation, the supplementary data may reflect the effect of price changes on specific assets, or the effect of movements in the general price level on the enterprise, or both. "Adjustment for individual price changes may be effected by determination of replacement cost or by the use of specific price indexes; adjustment for changes in the general purchasing power of money requires the use of general rather than specific price indexes."[7]

The American Institute of Certified Public Accountants has not been as explicit in making recommendations regarding adjustments for price-level changes. The Committee on Accounting Procedure of the Institute recommended the continuance of cost as the basis for depreciation both in 1940 (Accounting Research Bulletin No. 5) and in 1947 (Accounting Research Bulletin No. 33). In 1947, the Committee suggested the appropriation of net income as the proper procedure for disclosing the necessity for replacing plant facilities at higher costs. A letter to the membership in 1948 and the restatement of the bulletins in Accounting Research Bulletin No. 43 reaffirmed the position of the Institute.[8] Several of the committee members, however, dissented from the restatement on the grounds that the procedures opposed were not the only methods for handling the price-level problem.

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[7] Ibid., p. 9.

[8] Accounting Research Bulletin No. 43 was published in 1953. Chapter 9(a) is a restatement of Accounting Research Bulletin No. 33, published originally in 1947.

In 1948, the Institute sent out a questionnaire to a representative group of persons who dealt with corporate financial statements in order to determine whether a change from cost to reflect changes in the price-level was believed to be desirable. Although some of the questionnaires were sent to men who were known to be interested in the subject and thereby introducing a favorable bias, the majority replying (by about three to one) were opposed to a change. The comments returned with the questionnaires, however, indicated that many believed in the need for supplemental statements to disclose the effects of price-level changes.

Again in 1957 the Institute sent out a questionnaire to corporate executives and educators requesting opinions on problems relating to the disclosure of the effect of price-level changes upon depreciation of plant and equipment. Of those answering the questionnaire, seventy-four per cent were in favor of reflecting the current-dollar cost of depreciation in some appropriate manner in corporate reports to stockholders. Only a small percentage of those in favor of disclosure found acceptable the complete adjustment of both the balance sheet and the income statement. The largest group favored disclosure in a supplementary statement. Only a bare majority favored mandatory disclosure.

Because the two questionnaires were different in their approach to the subject, it is difficult to make direct comparisons and discover trends in opinion. However, the latter questionnaire does indicate a widespread awareness of the problem in 1957 and possibly an increased desire for some form of disclosure.

The current importance of the price-level problem has been pointed up by the issuance of Accounting Research Study No. 6 in October of 1963.[9] This study was compiled by the staff of the accounting research division of the American Institute of Certified Public Accountants.

This detailed study clarifies the meaning of price-level adjustments, reviews the price indexes currently available, and explores the forms that disclosure of the financial effects of price-level changes have taken or could take.

The Accounting Principles Board expressed general feeling that if price-level changes were to be introduced into financial reporting, the effects on all elements of the financial statements should be disclosed. A piecemeal or partial approach, which would adjust some items and leave all others unadjusted, was not viewed with favor.

They urge that the effects of price-level changes "be disclosed as a supplement to the conventional statements. This disclosure may take the form of physically separate statements, or of parallel columns in a combined statement, or of detailed supporting schedules."[10] Unlike previous Accounting Research Studies, No. 6 does not have a summary or conclusions chapter.

Many financial executives also share the belief that if any price-level changes are to be made, they should be applied to all items in the financial statements, not merely to fixed assets and depreciation.

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[9]Cecilia Tierney, "Price-Level Adjustments---Problem in Perspective," The Journal of Accountancy, (November, 1963), pp. 56-60.

[10]Ibid., p. 60.

Mr. Carman G. Blough, formerly director of research of the American Institute of Certified Public Accountants, agrees with this viewpoint. He says:

> I do not disagree, in principle, with those who advocate price-level adjustments for all transactions affected by inflation, whether set forth in financial statements or not. I do seriously disagree as a matter of consistency, logic, and fairness with all those who limit their adjustment proposals to depreciation.[11]

On the other hand, most companies that have experimented with price-level adjustments do not subscribe, as a practical matter, to the "all or nothing" theory. Instead, they advocate the application of price-level adjustments to fixed assets and depreciation only. They believe that fixed assets and depreciation are most seriously affected by inflation, and consequently, if adjustments are made in these accounts, most of the effects of inflation will be offset.

Those who favor such limited uses of price-level adjustments contend that this is the more practical approach even though they admit that complete adjustment may be more logical. They argue that the adjustment of depreciation alone is easier to accomplish than adjustment of all statement items. Consequently, more companies would be willing to experiment with price-level adjustments. Furthermore, they believe that such limited adjustments would be more easily understood than complete statement adjustments.

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[11]Carman G. Blough, Letters to the Editor, National Association of Accountants Bulletin, (August, 1959), p. 49.

The leading proponent of the adoption of price-level accounting is Arthur Andersen and Company. Although they admit that the use of supplementary schedules to disclose the effects of price-level changes would be an improvement over present practices, they do not consider this to be a satisfactory substitute for full price-level adjustments. They state that "a fair determination of net income requires that all cost charged to income be stated in dollars having the same general purchasing power as the dollars in which revenues are stated."[12] Therefore, it is desirable that all items in the statements be expressed in terms of current dollars.

They stress that comparisons of data in financial statements are considered by analysts to be of major importance in evaluating the financial condition, earning power, and performance of business enterprises. Accordingly, such comparisons, ratios, and trends can be reliable only when all the component factors are expressed in terms of a common unit of measurement.

Hendriksen presented a critical evaluation of suggested methods for adjusting financial statements for the effects of price-level changes. He favored the presentation of adjusted data in only one set of statements. His study contains a rather lengthy evaluation of the adjusted

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[12]Arthur Andersen and Company, Accounting and Reporting Problems of the Accounting Profession (Chicago: Arthur Andersen and Company, 1962), p. 13.

[13]Eldon S. Hendriksen, Price-Level Adjustments of Financial Statements (Pullman, Washington: Washington State University Press, 1961).

financial data and concludes that net income adjusted for price-level changes is more useful than the unadjusted figure. Some interesting observations as to the particular problems of regulated companies are also included.

Kohler recently presented the case against price-level adjustments in financial statements, based on the premise that "transactions are the raw material of accounting."[14]

I. EXPERIENCE WITH PRICE-LEVEL ADJUSTMENTS

By 1962 very few firms had attempted to incorporate price-level adjustments into annual financial statements or include adjusted data in annual reports as supplements to financial statements.

The Reece Corporation was one of the four companies included in the American Accounting Association study conducted by Ralph C. Jones.[15] Ever since the completion of this study, The Reece Corporation has included in its annual report a special section in which comments and charts have kept the reader up to data as to the effect of price-level changes upon certain selected phases of its operations. As far as the author knows, this is the only case where presentations have been based upon completely adjusted financial statements.

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[14]Eric L. Kohler, "Why Not Retain Historical Cost?," The Journal of Accountancy, (October, 1963), p. 35.

[15]Ralph Coughenour Jones, Price-Level Changes and Financial Statements---Case Studies of Four Companies (American Accounting Association, 1955).

The N. V. Phillips' Gloeilampenfabrieken Company of the Netherlands, which is known in the English-speaking world as Phillips' Industries or Phillips' Incandescent Lamp Works Company, has used replacement costs in its accounts and statements for many years. It maintains a special department to watch trends in prices, and adjustments are made in the accounts when price changes have been significant, not necessarily each year. Two types of adjustments are made. With respect to inventories and fixed assets, specific commodity price indexes are applied to each category. When prices increase, the offsetting credit is to the appropriate revaluation surplus account. When prices decrease, the adjustments are charged to revaluation surplus until that account is exhausted. Any further decreases are charged to income. Depreciation expense and cost of sales are calculated on the basis of these replacement costs.

With respect to the monetary items, a general price-level index is applied to the amount of the net monetary items at the beginning of the period. When the price level increases, income is charged and a "reserve for diminishing purchasing power of capital invested in monetary items" is credited. When the price level decreases, the entries are reversed until the reserve is exhausted, after which no recognition is given to this type of gain.[16]

In 1958, the Iowa-Illinois Gas and Electric Company began charging fair-value depreciation to operating expenses based on the fair value of

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[16]A. Goudeket, "An Application of Replacement Value Theory," The Journal of Accountancy, (July, 1960), pp. 37-47.

the property in those districts where such depreciation had been allowed in the determination of rates. This procedure was adopted following the 1957 decision of the Iowa Supreme Court in the case of the City of Fort Dodge v. Iowa-Illinois Gas and Electric Company, which gave recognition to the increased price-levels and permitted the recovery, through rates charged customers, of the fair value of the property used to serve customers. The amount in excess of cost depreciation, less the estimated income tax on such increased revenues, has been credited to the item "Capital maintained by recovery of fair-value depreciation" included under the caption "Shareholders' equity." In the accountants' certificate relating to these statements, the certified public accounting firm of Arthur Andersen and Company stated:

> Although generally accepted accounting principles presently provide that depreciation shall be based upon cost, it is our opinion that these principles should be changed with respect to depreciation to recognize increased price levels. We approve of the practice adopted by the Company, since it results, in our opinion, in a fairer statement of income for the year than that resulting from the application of generally accepted accounting principles . . .[17]

Beginning with its annual report for the year 1955, the Indiana Telephone Corporation has prepared its financial statements in two-column form, one column showing the results under conventional accounting methods and the other reflecting adjustments of depreciation and the related asset accounts.

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[17]Annual Report for 1961, Iowa-Illinois Gas and Electric Company.

The Sacramento Municipal Utility District includes among its operating expenses the item "Additional provision to reflect increase in the price level" following "Provision for depreciation---Computed on historical cost."[18]

The Hercules Powder Company discloses the effect of cost and price-level changes in the "General Statistics" section of its annual report. Three selected items are restated---research expenditures, gross fixed assets, and net income.[19]

The Eastman Kodak Company, in the "Management Comments" of its annual report, presents a chart which compares the sales of the company with the Gross National Product for a ten-year period, both sets of data having been expressed in "constant dollars."[20]

II. ADVANTAGES OF PRICE-LEVEL ACCOUNTING

As might be expected in the case of any unsettled accounting question, particularly one as complicated as price-level adjustments, there are many arguments presented both by the proponents and by the opponents of the debated reforms.

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[18] Annual Report for 1962, Sacramento Municipal Utility District.

[19] Annual Report for 1960, Hercules Powder Company.

[20] Annual Report for 1961, Eastman Kodak Company.

Those who favor the use of price-level accounting adjustments offer the following arguments in support of their beliefs: (1) the conventional accounting assumption that changes in price levels may be ignored is unrealistic, (2) recognition of price-level changes encourages conservatism in dividend declarations and aids management in setting realistic prices for products, (3) price-level adjustments may eventually gain acceptance for income tax purposes if they first achieve recognition by the business world, and (4) price-level adjustments may promote more realistic wage negotiations.

Offsets instability of money. Advocates of price-level adjustments point out that money, as a standard of value, is actually variable and it is therefore unrealistic to assume that changes in the value of the monetary unit may be ignored for accounting purposes.

Furthermore, they contend that readers of financial statements do not customarily interpret them in such a way as to make allowances for changes in price levels. On the contrary, they say, most readers take monetary expressions in financial statements at face value, regardless of the fact that some amounts may represent expenditures made many years ago. As a result, users of financial statements may be seriously misled as to the earnings of an enterprise and as to the current values of items in its balance sheet.

Encourages dividend conservatism. Proponents of price-level adjustments believe that the proposed procedures will reduce the possibility of over-declaration of dividends during inflationary periods.

The reason for this is because earnings adjusted for price-level changes are lower than earnings computed by conventional methods. An illustration of this appears in the price-level study made by the American Accounting Association covering the years 1941 to 1951.[21] In that study, the financial statements of four companies were adjusted for price-level changes to determine the effect of inflation upon the statements. One of the findings of the researchers was that three of the four companies had declared dividends that exceeded their income after applying the price-level adjustments. This was so despite the fact that the earnings computed by conventional accounting methods were well in excess of the dividends.

Income tax considerations. Whether the effects of price-level changes should be taken into account in computing taxable income is a complex question which cannot be answered in terms of accounting or statistics alone. Social and political factors are important. The expansion of basic industries, however, is a major objective of national economic policy and existing tax laws and regulations unquestionably discriminate against these very industries during and after a period of inflation. It would seem, therefore, to be in the national interest to seek a reconsideration of the question of allowances for the effects of general price-level changes.

More realistic wage negotiations. Some of those who favor price-level adjustments believe that the use of adjusted financial statements

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[21] Ralph Coughenour Jones, Price-Level Changes and Financial Statements---Case Studies of Four Companies (American Accounting Association, 1955).

would help to refute the accusations of excessive profits that some labor leaders make against business. A partner in a large accounting firm who holds this view made the following observation concerning the use of financial statements during the steel strike of 1959:

> If anyone doubts that the size of reported corporate income plays an important part in stimulating wage demands, I suggest they study the recent series of advertisements by the United Steel Workers of America. All of these make prominent use of the reported income of the largest steel company. In the full-page advertisement I have here, Mr. David J. McDonald emphasizes that labor costs in 1958 are about the same proportion of each sales dollar as they were in 1952. He then invites an examination of the dollar net profits of United States Steel: $143 million in 1952 and $201 million in 1958, and points out that profits have doubled. Mr. McDonald does not disclose by footnote or otherwise that, if depreciation costs were stated in current dollars, the reported profits in 1958 would have been cut in half. I am not suggesting that he is to be criticized for not doing so, because he is carrying on his part of an economic contest over the division of the fruits of production. I do suggest, however, that an accounting bulletin which prevents the statement of plant exhaustion costs in current dollars, comparable with other costs, must bear a share of the responsibility for further inflation.[22]

III. DISADVANTAGES OF PRICE-LEVEL ACCOUNTING

In support of the position that price-level adjustments are not practical or desirable are the following objections: (1) price-level adjustments have no effect on management decisions, (2) price-level adjustments applied to the principal financial statements are not generally accepted accounting practice, (3) the Securities and Exchange Commission does not accept financial statements that are adjusted for

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[22]Paul Grady, "Depreciation---To Measure Income or to Provide Funds for Replacement?," National Association of Accountants Bulletin, (August, 1959), p. 60.

price-level changes, (4) legal problems arise from use of price-level adjustments, and (5) many company managements are apathetic toward the use of price-level adjustments.

Management decisions not affected. One of the claims of some proponents of price-level adjustments is that certain types of management decisions, such as dividend declarations, for example, would be different if the effects of inflation were reported in the financial statements used by top management. Nevertheless, despite this claim, the senior executives of a few large companies, after studying prior year's financial data that had been retroactively adjusted for price-level changes, and reviewing their own actions during the same period, have stated that their decisions would have been no different had adjusted data been available. These executives conclude that well-informed managements take inflationary factors into account during the decision-making process whether price-level information is reported to them or not.

Not accepted accounting practice. Price-level adjustments, unless confined to supplementary schedules or footnotes, are not presently regarded as generally accepted accounting practice. Therefore, it is necessary for public accountants to disclose this fact in their opinion on a company's financial statements in which price-level changes have been made. This is true even in cases where the auditors approve of the use of price-level adjustments.

Securities and Exchange Commission requirements not met. Income statements and balance sheets of United States corporations that have been adjusted for price-level changes are not accepted by the Securities and Exchange Commission. Such adjustments, if used, must be confined to footnotes or other supporting data.

Legal problems. Some accountants note that a great many legal agreements contain accounting provisions of one kind or another. Common examples are: bond indentures, corporate charters, by-laws, and preferred stock agreements. Such accountants believe that the use of price-level accounting adjustments probably would not comply with the provisions of such agreements and a large number of revisions in the agreements would have to be made.

Management apathy. Most senior managements so far have shown little enthusiasm for price-level adjustments. Their reluctance is due mainly to the effect that such adjustments would have in reducing reported earnings below the amounts determined by conventional accounting methods. Furthermore, price-level adjustments tend to inhibit directors in the declaration of dividends, to the dismay of shareholders. Finally, since price-level adjustments are not acceptable for income tax purposes, many managements see little immediate benefit to their companies from the use of such adjustments and are not particularly impressed by arguments that stress the desirability of improving the accuracy of financial reports.

IV. SUMMARY

The opposition of many persons, both inside and outside the accounting profession, is a major obstacle at present to the proposed adoption of price-level accounting methods. However, while they are not yet convinced that price-level adjustments are a desirable development in accounting, many people in the accounting profession and in management agree that further study of the subject is needed. Some believe that such a study should be part of the effort by the accounting profession to establish a well-defined set of accounting principles. Others hope that, as a result of experimentation with such novel ideas as price-level adjustments, the accuracy and usefulness of financial reports will gradually be improved.

CHAPTER III

COMPARISON OF ADJUSTED AND UNADJUSTED FINANCIAL STATEMENTS

The major financial statement elements presented for comparison in this chapter are: (1) gross income; (2) net income based on the current operating concept of income; (3) plant and equipment at cost; (4) the total investment; (5) the rate of return on total investment; (6) the total stockholders' equity; (7) purchasing power gains and losses; (8) the rate of return on stockholders' investment; (9) dividends and retained earnings; and (10) real and nominal rates on Federal income tax. In general, the comparison indicates significant differences between adjusted and unadjusted data.

The adjustments were made for all balance sheet and income statement items on the basis of the procedures described in Chapter I. The Consumers' Price Index was used in this study. All figures were converted to the dollar value at December 31, 1962, in order to obtain inter-period comparisons. The period of the study included the years from 1953 to 1962.

I. GROSS INCOME

Table I shows the reported and adjusted gross income of both corporations for the years 1953 to 1962, both in dollars and as trend percentages. The reported and the adjusted dollar figures cannot be compared directly because the first money column is expressed in

TABLE I

COMPARISON OF UNADJUSTED AND ADJUSTED GROSS INCOME, 1953--1962
(in thousands of dollars)

	CATERPILLAR TRACTOR COMPANY				WESTINGHOUSE AIR BRAKE COMPANY			
Year	Unadjusted	Per Cent of 1953	Adjusted	Per Cent of 1953	Unadjusted	Per Cent of 1953	Adjusted	Per Cent of 1953
1953	$433,803	100.0	$492,366	100.0	$145,089	100.0	$164,676	100.0
1954	401,041	92.4	453,176	92.0	121,541	83.8	137,341	83.4
1955	523,893	120.8	594,095	120.7	172,502	118.9	195,617	118.8
1956	685,940	158.1	759,336	154.2	214,653	147.9	237,621	144.3
1957	649,905	149.8	701,247	142.4	236,977	163.3	255,698	155.3
1958	585,164	134.9	615,007	124.9	206,263	142.2	216,782	131.6
1959	742,337	171.1	773,515	157.1	209,448	144.4	218,245	132.5
1960	716,038	165.1	734,655	149.2	186,376	128.5	191,222	116.1
1961	734,318	169.3	745,333	151.4	170,276	117.4	172,830	105.0
1962	826,993	190.6	830,301	168.6	197,742	136.3	198,533	120.6

historical dollars and the second money column is expressed in December 1962 dollars. The trend percentages, however, can be compared because they relate to a common base; namely 1953 gross income in whatever unit it may be measured.

A comparison of these trends discloses some of the distortions which are characteristic of inflation. The gross income of 1962 of the Caterpillar Tractor Company, for example, when measured in uniform dollars, is found to be only about one and one-half times as large as it was in 1953. According to the historical figures, it was nearly two times as large.

II. NET INCOME

The net income of a firm is generally considered to be one of the most important single indications of the success and efficiency of the firm. However, accountants are not in agreement as to which of the several concepts of net income is the most relevant for general financial reporting. One of the generally accepted concepts is the current operating concept, which excludes material adjustments of prior periods and material nonoperating gains and losses from the computation of net income for the period. These noncurrent and nonoperating items are reported as adjustments of retained earnings. The analysis of adjusted net income presented in this chapter makes use of the net income computed on this basis because of its generally accepted significance.

For some purposes, however, an all-inclusive income concept is useful. Under this concept, all gains and losses recognized during the

period are included in the computation of net income. Changes in price levels give rise to additional non-operating gains and losses that should be included in the computation of net income for some purposes. These are the purchasing-power gains and losses from holding monetary assets, and monetary debt. These gains and losses are not included in the analysis of net income presented in this section but are discussed more fully in the section on "The Rate of Return on Total Stockholders' Equity" in this chapter.

The net incomes before surplus adjustments for Caterpillar Tractor Company and Westinghouse Air Brake Company for the years from 1953 to 1962 are presented in Table II. The comparison of the adjusted and unadjusted income figures indicates that reported net income figures have been significantly affected by price-level changes. The reported net income of Caterpillar Tractor Company was overstated in terms of the purchasing-power of the dollar by 29.2 per cent in 1955 and by 68.9 in 1962; the reported net income of Westinghouse Air Brake Company was overstated by 17.1 per cent in 1955 and by 38.5 per cent in 1962.

Because almost the entire adjustment of net income for these two companies is due to the adjustment of depreciation, the effect was cumulative from 1953 to 1962 as prices were rising. The relatively stable price levels from 1953 to 1955 and from 1959 to 1962 resulted in a slight decline in the percentage of overstatement.

In summary, where fixed assets are material and inventories are insignificant, the difference between reported income and adjusted income is dependent on the cumulative trend in the price-level and the

TABLE II

COMPARISON OF UNADJUSTED AND ADJUSTED
NET INCOMES, 1953--1962
(in thousands of dollars)

	CATERPILLAR TRACTOR COMPANY				WESTINGHOUSE AIR BRAKE COMPANY			
	UNADJUSTED		ADJUSTED	Ratio	UNADJUSTED		ADJUSTED	Ratio
Year	Current Dollars 1	December, 1962, Dollars 2	December, 1962, Dollars 3	Unadjusted to Adjusted 2 ÷ 3	Current Dollars 4	December, 1962, Dollars 5	December, 1962, Dollars 6	Unadjusted to Adjusted 5 ÷ 6
1953	$20,255	$22,989	$14,495	158.5%	$10,009	$11,360	$ 9,598	118.4%
1954	25,129	28,396	18,825	150.8	7,764	8,773	6,761	129.8
1955	34,773	39,433	30,518	129.2	12,358	14,014	11,965	117.1
1956	55,404	61,332	45,990	133.4	11,924	13,200	8,728	156.8
1957	39,785	42,928	29,525	145.4	12,088	13,043	8,420	154.9
1958	32,240	33,884	17,567	192.9	8,798	9,247	5,626	164.4
1959	46,518	48,471	35,194	137.7	11,394	11,873	9,165	129.5
1960	42,580	43,687	31,971	136.6	7,622	7,820	5,530	141.4
1961	55,823	56,660	45,543	124.4	8,305	8,430	6,798	124.0
1962	61,923	62,171	36,801	168.9	8,350	8,383	6,053	138.5

historical movement of prices since the earliest date of acquisition of existing plant and equipment. This difference is modified by the acquisition of new assets at current prices. It is not possible to predict the extent of the distortion in reported income caused by price-level changes because the historical and current growth rates are different for each firm. When inventories are material, the difference between reported and adjusted incomes is affected more by current price changes than by past price trends and growth rates. Therefore, the amount of the distortion is more difficult to predict when both inventories and fixed assets are significant.

III. THE INVESTMENT IN PLANT AND EQUIPMENT

The plant and equipment at cost for Caterpillar Tractor Company and Westinghouse Air Brake Company for the years 1953 to 1962 are summarized in Chart I and II. The unadjusted costs are presented as they appeared in the reported balance sheets and converted to December, 1962, dollars to obtain comparability with the adjusted figures.

One purpose of a comparison of the cost of plant and equipment in use over several years is to provide a summary of the relative size of the investment in fixed assets. The figures presented in the balance sheets of Caterpillar Tractor Company and Westinghouse Air Brake Company for the years 1953 to 1962 did serve this purpose fairly well. In 1953, for example, the total cost of plant and equipment reported by Caterpillar Tractor Company was understated in terms of the adjusted figures by $101,000. However, by 1962, the amount of understatement had increased

CHART I

PLANT AND EQUIPMENT AT COST, 1953--1962

CATERPILLAR TRACTOR COMPANY

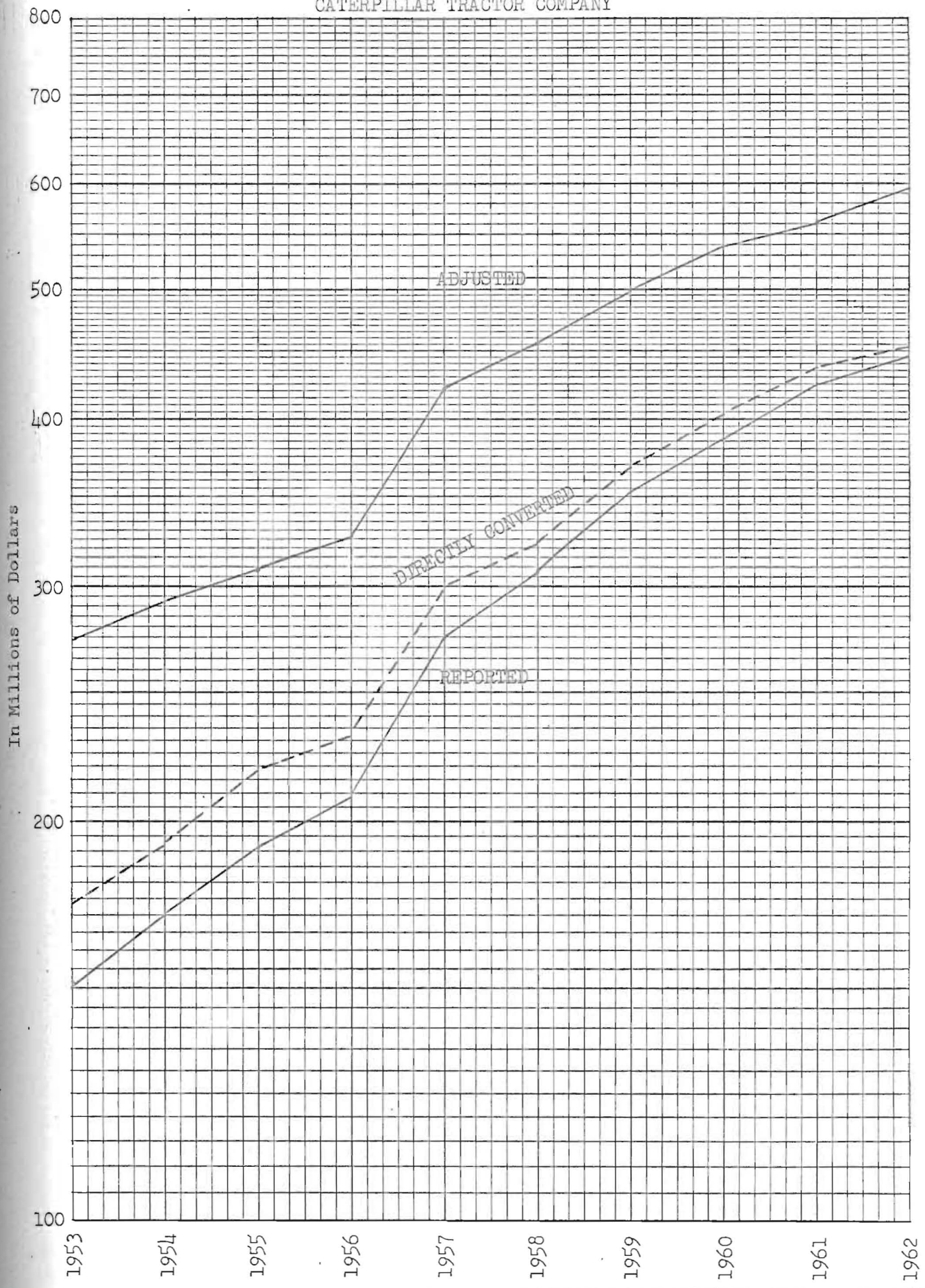
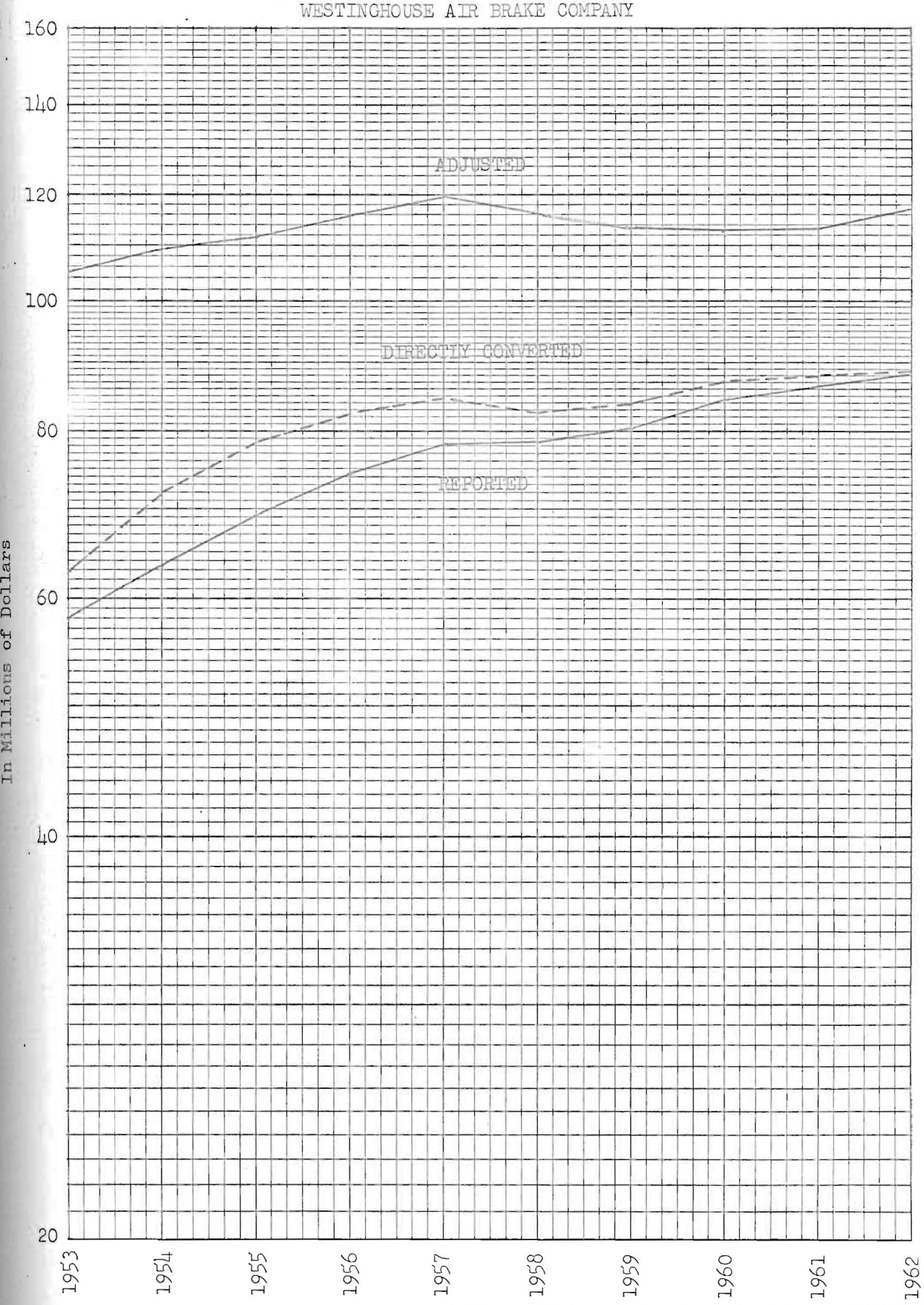


CHART II

PLANT AND EQUIPMENT AT COST, 1953--1962

WESTINGHOUSE AIR BRAKE COMPANY



to $143,000. Primarily because of the large amount of capital expenditures, the relative distortion for the two companies decreased from 1953 to 1962 except for a slight increase in the relative distortion in 1958.

The total investment in plant and equipment at cost can also be used to provide a measure of the relative growth of the firm. Between 1953 and 1962, the total unadjusted cost of plant and equipment of Caterpillar Tractor Company increased by 194 per cent (447,282 ÷ 152,231), compared with an increase of 159 per cent (449,071 ÷ 172,782) for the unadjusted figures converted into December, 1962, dollars and 116 per cent (592,269 ÷ 274,066) for the adjusted figures. The cost of plant and equipment for Westinghouse Air Brake Company shows a similar growth: 50 per cent (88,287 ÷ 58,038) for the unadjusted figures, 34 per cent (88,640 ÷ 65,873) for the unadjusted amounts expressed in December, 1962, dollars, and 12 per cent (116,902 ÷ 104,487) for the adjusted costs. For both companies, the reported figures clearly overstate the rate of growth of the firms.

IV. THE TOTAL INVESTMENT OF THE FIRM

The total investment of a corporation is assumed to represent the investment in net working capital, noncurrent investments, and plant and equipment. These investments can be classified as either monetary or nonmonetary. Nonmonetary assets are those that are expected to be recovered by the sale of the firm's products or services. This recovery must be measured in terms of a constant purchasing power if a true economic gain or loss is to be measured. Monetary assets include cash

TABLE III

COMPARISON OF UNADJUSTED
AND ADJUSTED PLANT AND EQUIPMENT AT COST, 1953--1962

Year	CATERPILLAR		WESTINGHOUSE	
	Unadjusted December, 1962, Dollars	Adjusted December, 1962, Dollars	Unadjusted December, 1962, Dollars	Adjusted December, 1962, Dollars
1953	$172,782	$274,066	$65,873	$104,487
1954	191,999	292,142	71,735	109,150
1955	216,984	309,363	78,499	111,916
1956	231,082	325,498	82,314	115,948
1957	296,303	420,965	84,447	119,890
1958	322,316	452,960	82,592	116,067
1959	366,880	497,570	83,825	113,683
1960	413,688	534,949	87,051	112,568
1961	434,737	559,975	87,765	113,048
1962	449,071	592,269	88,640	116,902

TABLE IV
TOTAL INVESTMENT, 1953--1962
(in thousands of dollars)

Year	CATERPILLAR TRACTOR COMPANY			WESTINGHOUSE AIR BRAKE COMPANY		
	UNADJUSTED	ADJUSTED	Ratio	UNADJUSTED	ADJUSTED	Ratio
	Current Dollars 1	December, 1962, Dollars 2	Unadjusted to Adjusted 1 ÷ 2	Current Dollars 3	December, 1962, Dollars 4	Unadjusted to Adjusted 3 ÷ 4
1953	$214,789	$319,726	67.1%	$117,739	$159,487	73.9%
1954	230,011	330,924	69.5	118,940	159,690	74.4
1955	234,672	329,223	71.0	126,779	164,952	76.8
1956	310,889	406,886	76.4	140,800	176,528	79.4
1957	392,052	510,045	76.9	146,931	177,561	82.7
1958	402,008	516,254	77.9	149,345	174,994	85.3
1959	424,050	533,969	79.4	149,870	170,776	87.8
1960	437,132	530,661	82.4	153,410	170,155	90.1
1961	512,150	598,519	85.6	154,952	169,293	91.6
1962	526,526	609,951	86.3	157,112	171,236	91.8

and other assets expressed in terms of the cash expected to be received through their collection or exchange. Monetary liabilities are expressed in terms of the cash expected to be paid at some future date. Monetary assets, therefore, cannot be recovered in terms of a constant purchasing power. Purchasing-power losses result from the holding of monetary assets during periods of price increases, and purchasing-power gains result from the holding of monetary liabilities during such periods.

If adjusted statements are to be meaningful, they should indicate the changes in real invested capital and the sources of increases or decreases over time. Table IV shows the changes in total invested capital of Caterpillar Tractor Company and Westinghouse Air Brake Company from 1953 to 1962 in terms of the unadjusted and adjusted statements. The total unadjusted investment of Westinghouse Air Brake Company increased from $117.7 million in 1953 to $157.1 million in 1962; an increase of 34 per cent. This compares with an increase of seven per cent shown by the statements adjusted by the Consumers' Price Index. The total unadjusted investment of Caterpillar Tractor Company increased by 145 per cent compared with 91 per cent after adjustment.

V. THE RATE OF RETURN ON TOTAL INVESTMENT

While net operating income is a good measure of the operating success of a firm, it does not provide a good measure for comparing the relative profitabilities of different firms or of one firm over time. For these purposes, the rates of return on total investment is more useful. This is computed by dividing the net income by the total

TABLE V
RATE OF RETURN ON TOTAL INVESTMENT,
1953--1962

Year	CATERPILLAR		WESTINGHOUSE	
	Reported	Adjusted	Reported	Adjusted
1953	9.4%	4.5%	8.5%	6.0%
1954	10.9	5.7	6.5	4.2
1955	14.8	9.3	9.7	7.3
1956	17.8	11.3	8.5	4.9
1957	10.1	5.6	8.2	4.8
1958	8.0	2.1	5.9	3.2
1959	11.0	6.6	7.6	5.4
1960	9.7	6.0	5.0	3.2
1961	10.9	7.6	5.4	4.0
1962	11.8	5.1	5.3	3.5

investment in plant and equipment and working capital. Abnormal and noncurrent gains and losses are omitted in the computation of net income, as are the purchasing-power gains and losses from holding monetary assets and monetary debt.

One main disadvantage of the rate of return on total investment as a measure of profitability is that it is subject to the greatest amount of distortion from price-level changes. Net income is generally overstated during periods of inflation, while the total unadjusted investment is understated. Therefore, because the numerator in the computation is overstated and the denominator is understated, the resulting ratio is considerably overstated during periods of inflation.

Comparisons of the rates of return on total investment based on reported figures and the rates based on adjusted figures are presented in Table V for both Caterpillar Tractor Company and Westinghouse Air Brake Company. The average unadjusted rates for the entire period, 1953 to 1962, are 11.4 per cent for Caterpillar and 7.1 per cent for Westinghouse. When both income and investment are adjusted for price-level changes, the average rates become 6.4 and 4.7, respectively.

VI. TOTAL STOCKHOLDERS' EQUITY

In the adjusted statements, the total stockholders' equity is a residual figure computed by subtracting total liabilities from total assets. Therefore, the effect of price changes on total stockholders' equity is dependent upon the relationship between the monetary and nonmonetary assets and liabilities held by the firm. If monetary assets

TABLE VI
COMPARISON OF UNADJUSTED AND ADJUSTED
TOTAL STOCKHOLDERS' EQUITY, 1953--1962
(in thousands of dollars)

Year	CATERPILLAR TRACTOR COMPANY				WESTINGHOUSE AIR BRAKE COMPANY			
	UNADJUSTED		ADJUSTED	Ratio	UNADJUSTED		ADJUSTED	Ratio
	Current Dollars 1	December, 1962, Dollars 2	December, 1962, Dollars 3	Unadjusted to Adjusted 2 ÷ 3	Current Dollars 4	December, 1962, Dollars 5	December, 1962, Dollars 6	Unadjusted to Adjusted 5 ÷ 6
1953	$161,757	$183,594	$264,890	69.3%	$ 83,438	$ 94,702	$120,680	78.5%
1954	177,913	201,042	271,846	74.0	84,596	95,593	120,836	79.1
1955	199,671	226,427	289,533	78.2	92,393	104,774	126,037	83.1
1956	275,889	305,409	368,421	82.9	100,118	110,831	131,860	84.1
1957	293,874	317,090	405,110	78.3	107,428	115,915	135,374	85.6
1958	303,667	319,154	422,855	75.5	111,224	116,896	135,050	86.6
1959	325,779	339,462	432,780	78.4	113,159	117,912	132,864	88.7
1960	340,181	349,026	431,971	80.8	118,339	121,416	134,468	90.3
1961	368,130	373,652	453,103	82.5	121,939	123,768	135,989	91.0
1962	385,627	387,170	469,121	82.5	124,784	125,283	138,924	90.2

are equal to monetary liabilities, the stockholders' equity would be maintained in constant purchasing-power terms except for differences between dividends and adjusted net incomes. If monetary assets exceed monetary liabilities, the stockholders' equity will decrease in constant dollars; if monetary liabilities are greater, equity will increase. The total accumulated purchasing-power gains and losses cannot be determined without adjusting all statements since the firm organized.

The stockholders' equities, obtained from the unadjusted balance sheets of Caterpillar Tractor Company and Westinghouse Air Brake Company are summarized in Table VI and compared with the equities obtained from the statements adjusted by the use of the Consumers' Price Index. For the years 1953 to 1955 the unadjusted capitals were only about three-fourths of the adjusted amounts.

VII. PURCHASING-POWER GAINS AND LOSSES

Another important phase of price-level changes is the effect upon cash and receivables. Assume that a man has $1,000 in a bank account at January 1 when the general price-level index is 200 and still has the $1,000 at December 31 when the index has risen ten per cent to 220. Since it would now take $1,100 to buy the same amount of goods and services that he could have purchased for $1,000 on January 1, it can be said that he has suffered a purchasing-power loss of $100. If prices had fallen ten per cent, he would have had a $100 purchasing-power gain. The mere holding of cash or of any claim to money, then, inevitably results in purchasing-power gains and losses as prices fluctuate. The same

TABLE VII
PURCHASING-POWER GAINS AND LOSSES
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

Year	Reported Net Monetary Assets	Decrease in Value of Dollar During Year	Purchasing-Power Gains and (Losses)	
			In Dollar of Each Year	December, 1962, Dollars
1953	$(11,246)	0.9%	$ (101)	$ (115)
1954	10,765	(0.8)	(86)	(98)
1955	(41,250)	0.3	(124)	(141)
1956	(15,887)	2.9	(461)	(507)
1957	(38,606)	2.8	(1,081)	(1,156)
1958	(628)	1.1	(7)	(7)
1959	(40,366)	1.4	(565)	(584)
1960	(72,995)	1.6	(1,168)	(1,190)
1961	(5,738)	0.7	(40)	(41)
1962	21,388	1.2	257	257

TABLE VIII
PURCHASING-POWER GAINS AND LOSSES
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

Year	Reported Net Monetary Assets	Decrease in Value of Dollar During Year	Purchasing-Power Gains and (Losses)	
			In Dollar of Each Year	December, 1962, Dollars
1953	$18,909	0.9%	$ 170	$ 193
1954	14,593	(0.8)	(117)	(133)
1955	11,496	0.3	34	39
1956	12,725	2.9	369	406
1957	23,693	2.8	663	709
1958	39,864	1.1	439	461
1959	39,059	1.4	547	566
1960	42,794	1.6	685	698
1961	50,956	0.7	356	361
1962	43,319	1.2	520	520

situation exists in the case of current liabilities, but in the opposite direction.

The question of whether purchasing-power gains and losses should appear in any form on adjusted income statements is highly controversial. Some authors do not consider these gains and losses to be realized until the assets have been exchanged or converted and the liabilities paid. In this study, they have been excluded from income, except as described in Section IX.

Tables VII and VIII show by years the purchasing-power gains and losses on net monetary assets (cash, receivables, marketable securities, and so forth, less current liabilities) for the Caterpillar Tractor Company and the Westinghouse Air Brake Company, respectively. The gains and losses were calculated by multiplying the net monetary position at the close of the year by the increase or decrease in the value of the dollar during the year. The table shows that during these ten years the total loss of this type to the Westinghouse Air Brake Company was $3,820,000. This loss could have been reduced or avoided by carrying smaller cash balances, by using more borrowed working capital, or by securing capital by issuing bonds. It is most interesting to note just the opposite situation for Caterpillar Tractor Company as they show a purchasing-power loss only in 1962 and a net gain for the ten-year period of $3,582,000.

IX. THE RATE OF RETURN ON TOTAL STOCKHOLDERS' EQUITY

If the value of the monetary unit is relatively stable over time, the rate of return on stockholders' equity is a good measure of the

relative profitability of the investment made by stockholders. This rate is computed by dividing the net income of the firm for the year by the average stockholders' equity that includes the amounts paid for capital stock and the earnings retained in the business. The amount of equity at the end of the period provides a reasonably accurate estimate in most situations. The net income figure may be either the amount before abnormal and noncurrent charges and credits or after, depending upon how the rate is to be interpreted. In evaluating the entire position of stockholders over a series of years, the all-inclusive concept of income is more relevant.

As with the rate of return on total equity, the rate of return on stockholders' equity has little meaning when it is based on unadjusted figures after a period of significant price changes. During periods of price increases, net income is overstated and stockholders' equity is understated.

A rate of return on total equity computed by using a net income figure, which excludes the gains and losses from the holding of monetary assets and liabilities, has some merit in measuring the current efficiency of the firm. But when this same net income figure is used in the computation of the rate of return to stockholders, the result has little significance for most purposes. If the cumulated purchasing-power gains and losses from the holding of monetary assets and debt are included in the stockholders' equity, the current gains and losses should also be included in the net income. Both the rates of return based on net income including these gains and losses and those excluding them are presented

here to facilitate the comparison of the adjusted and unadjusted financial statements.

A comparison of the unadjusted and adjusted rates of return, based on net income including purchasing-power gains and losses from the holding of monetary assets and debt, is presented in Table IX for the period 1953 to 1962 for Caterpillar Tractor Company and Westinghouse Air Brake Company. The unadjusted rates exceed the adjusted rates by an average of about 87 and 82 per cent, respectively, for Caterpillar and Westinghouse.

The average rates of return on stockholders' investment, based on unadjusted figures, were 14.6 and 9.6 per cent, respectively, for Caterpillar and Westinghouse for the ten-year period compared with an average rate of 8.2 per cent for Caterpillar and 5.5 per cent for Westinghouse based on adjusted figures including the purchasing-power gains and losses from the holding of monetary assets and debt.

The purchasing-power gains and losses from the holding of monetary assets and debt are omitted in the computation of net income used in the computation of the rates of return on stockholders' equity presented in Table X. The unadjusted rates exceed the adjusted rates by an average of 89 and 58 per cent, respectively, for Caterpillar and Westinghouse. The average rates of return on stockholders' investment, based on unadjusted figures, were 14.6 and 9.6 per cent, respectively, for Caterpillar and Westinghouse for the ten-year period, compared with an average rate of 8.1 per cent for Caterpillar and 6.1 per cent for Westinghouse based on adjusted figures omitting the purchasing-power gains and losses from net income.

TABLE IX

THE RATE OF RETURN ON STOCKHOLDERS' EQUITY, 1953--1962
(including purchasing-power gains and losses from
holding monetary assets and debt)

	CATERPILLAR TRACTOR COMPANY			WESTINGHOUSE AIR BRAKE COMPANY		
Year	Unadjusted	Adjusted	Ratio Unadjusted to Adjusted	Unadjusted	Adjusted	Ratio Unadjusted to Adjusted
1953	12.5%	5.5%	227.3%	12.0%	7.8%	153.8%
1954	14.1	7.0	201.4	9.2	5.7	161.4
1955	17.4	10.6	164.2	13.4	9.5	141.1
1956	20.1	12.6	159.5	11.9	6.3	188.9
1957	13.5	7.3	184.9	11.3	5.7	198.2
1958	10.6	4.2	252.4	7.9	3.8	207.9
1959	14.3	8.3	172.3	10.1	6.5	155.4
1960	12.5	7.7	162.3	6.4	3.6	177.8
1961	15.2	10.1	150.5	6.8	2.5	272.0
1962	16.1	8.4	191.7	6.7	4.0	167.5

TABLE X
THE RATE OF RETURN ON STOCKHOLDERS' EQUITY, 1953--1962
(excluding purchasing-power gains and losses from holding monetary assets and debt)

	CATERPILLAR TRACTOR COMPANY			WESTINGHOUSE AIR BRAKE COMPANY		
Year	Unadjusted	Adjusted	Ratio Unadjusted to Adjusted	Unadjusted	Adjusted	Ratio Unadjusted to Adjusted
1953	12.5%	5.5%	227.3%	12.0%	8.0%	150.0%
1954	14.1	6.9	204.3	9.2	6.0	153.3
1955	17.4	10.5	165.7	13.4	9.5	141.1
1956	20.1	12.5	160.8	11.9	6.6	180.3
1957	13.5	7.0	192.9	11.3	6.2	182.3
1958	10.6	4.2	252.4	7.9	4.2	188.1
1959	14.3	8.1	176.5	10.1	6.9	146.4
1960	12.5	7.4	168.9	6.4	4.1	156.1
1961	15.2	10.1	150.4	6.8	5.0	136.0
1962	16.1	8.4	191.7	6.7	4.4	152.3

X. DIVIDENDS AND RETAINED EARNINGS

Some firms attempt to pay a relatively constant percentage of net income as dividends to stockholders. Other firms attempt to maintain a relatively constant dividend insofar as net income makes this possible. While the dividend policy is a financial rather than an accounting problem, the dividend payout ratio does provide some information on the effect of the dividend policy on the maintenance of the stockholders' investment in the firm.

In the tables that follow, dividends are expressed as a percentage of net income. Purchasing-power gains and losses to stockholders are not included in this computation because to do so would assume that the gains to stockholders may be distributed as dividends. While this may be debatable, the conservative position is that they are not.

Table XI shows that the dividend payout ratios for Caterpillar Tractor Company average 55.6 per cent during the period from 1953 to 1962, and for Westinghouse Air Brake Company, 56.7 per cent for the same period. When dividends are expressed as a percentage of adjusted net income, as shown in Table XII, the ratios are 80.1 and 76.8 per cent, respectively. Caterpillar Tractor Company paid out dividends in excess of adjusted net income in each of the years 1955 and 1958. Westinghouse Air Brake Company paid dividends in excess of adjusted net income in 1954, and paid out over 90 per cent of adjusted net income in three other years.

TABLE XI
DIVIDENDS AND RETAINED EARNINGS
(historical dollars in thousands)

Year	CATERPILLAR TRACTOR COMPANY				WESTINGHOUSE AIR BRAKE COMPANY			
	Net Earnings as Reported 1	Dividends 2	Retained Earnings 3	Per Cent Distributed 2 ÷ 1	Net Earnings as Reported 4	Dividends 5	Retained Earnings 6	Per Cent Distributed 5 ÷ 4
1953	$20,255	$10,627	$ 9,628	52.5%	$10,009	$8,248	$1,761	82.4%
1954	25,129	9,008	16,121	35.8	7,764	6,601	1,163	85.0
1955	34,773	39,145	(4,372)	112.6	12,358	4,959	7,399	40.1
1956	55,404	17,867	37,537	32.2	11,924	4,997	6,927	41.9
1957	39,785	22,454	17,331	56.4	12,088	5,017	7,071	41.5
1958	32,240	22,492	9,748	69.8	8,798	5,020	3,778	59.1
1959	46,518	25,214	21,304	54.2	11,394	5,042	6,352	44.3
1960	42,580	27,923	14,657	65.6	7,622	5,049	2,573	66.2
1961	55,823	27,935	27,888	50.0	8,305	5,056	3,249	60.9
1962	61,923	27,918	34,005	45.1	8,342	5,927	2,415	71.1
1953--62	414,430	230,583	183,847	55.6	98,604	55,916	42,688	56.7

TABLE XII
DIVIDENDS AND RETAINED EARNINGS
(December 1962 dollars in thousands)

Year	CATERPILLAR TRACTOR COMPANY				WESTINGHOUSE AIR BRAKE COMPANY			
	Net Earnings Adjusted 1	Dividends 2	Retained Earnings 3	Per Cent Distributed 2 ÷ 1	Net Earnings Adjusted 4	Dividends 5	Retained Earnings 6	Per Cent Distributed 5 ÷ 4
1953	$14,495	$12,062	$ 2,433	83.2%	$ 9,598	$9,361	$ 237	97.5%
1954	18,825	10,179	8,646	54.1	6,761	7,657	(896)	113.3
1955	30,518	44,390	(13,872)	145.1	11,965	5,624	6,341	47.0
1956	45,990	19,779	26,211	43.0	8,728	5,532	3,196	63.4
1957	29,525	24,228	4,297	82.0	8,420	5,413	3,007	64.3
1958	17,567	23,639	(6,072)	134.6	5,626	5,276	350	93.8
1959	35,194	26,273	8,921	74.7	9,165	5,254	3,911	57.3
1960	31,971	28,649	3,322	89.6	5,530	5,180	350	93.7
1961	45,543	28,354	17,189	62.3	6,798	5,132	1,666	75.5
1962	36,801	28,030	11,500	76.2	6,053	5,950	103	98.3
1953--62	306,429	245,583	62,575	80.1	78,644	60,379	18,265	76.8

XI. REAL AND NOMINAL RATES ON FEDERAL INCOME TAX

One of the more serious effects of inflation is that income taxes, being based on reported income figures, actually take in terms of purchasing-power a much larger proportion of earnings than the tax rates indicate. Table XIII compares the nominal or historical rate with the rate based upon the adjusted earnings from 1953 to 1962 for the Caterpillar Tractor Company, and Table XIV shows similar data for Westinghouse Air Brake Company.

The rate on adjusted earnings was substantially higher in every year than the nominal rate for both firms. The average actual rate for Caterpillar Tractor Company was 54.5 per cent and the average nominal rate was 46.2 per cent, while the Westinghouse Air Brake Company showed an average actual rate of 50.2 per cent and an average nominal rate of 43.2 per cent.

It does not follow, of course, that income taxes would be proportionately lower if they were based upon adjusted earnings, since the tax rates might have to be raised in order to provide the necessary governmental revenue. The calculation does, however, indicate the extent to which the actual burden of taxes is concealed through the use of unadjusted figures.

TABLE XIII
REAL AND NOMINAL RATES ON FEDERAL INCOME TAX
CATERPILLAR TRACTOR COMPANY
(December 1962 dollars in thousands)

Year	Net Income Before Federal Income Taxes			Federal Income Taxes		
	Unadjusted		Adjusted			
	Current Dollars 1	December, 1962, Dollars 2	December, 1962, Dollars 3	Amount 4	Nominal Rate 4 ÷ 2	Real Rate 4 ÷ 3
1953	$ 55,859	$ 63,400	$ 54,906	$35,604	56.1%	64.9%
1954	52,353	59,159	49,587	27,224	46.0	54.9
1955	72,444	82,151	73,237	37,671	45.9	51.4
1956	115,082	127,396	112,052	59,678	46.8	53.3
1957	79,860	86,169	72,765	40,075	46.5	55.1
1958	58,364	61,341	45,022	26,124	42.6	58.0
1959	86,210	89,831	76,552	39,692	44.2	51.8
1960	73,934	75,856	64,138	31,354	41.3	48.9
1961	107,382	108,993	97,874	51,559	47.3	52.7
1962	114,136	114,593	89,223	52,213	45.6	58.5
1953--62	815,624	868,869	735,356	401,194	46.2	54.5

TABLE XIV
REAL AND NOMINAL RATES ON FEDERAL INCOME TAX
WESTINGHOUSE AIR BRAKE COMPANY
(December 1962 dollars in thousands)

Year	Net Income Before Federal Income Taxes			Federal Income Taxes		
	Unadjusted		Adjusted			
	Current Dollars 1	December, 1962, Dollars 2	December, 1962, Dollars 3	Amount 4	Nominal Rate 4 ÷ 2	Real Rate 4 ÷ 3
1953	$19,398	$22,017	$20,256	$ 9,390	42.6%	46.4%
1954	9,311	10,521	8,510	1,547	14.7	18.2
1955	19,979	22,656	20,607	7,621	33.6	37.0
1956	23,380	25,882	21,408	11,454	44.3	53.5
1957	24,601	26,544	21,922	12,513	47.1	57.1
1958	17,682	18,584	14,962	8,884	47.8	59.4
1959	22,578	23,526	20,820	11,184	47.5	53.7
1960	15,156	15,550	13,259	7,534	48.5	56.8
1961	15,619	15,853	14,223	7,314	46.1	51.4
1962	16,101	16,165	13,835	7,751	48.0	56.0
1953--62	183,805	197,298	169,802	85,192	43.2	50.2

XII. SUMMARY

If the adjustment of financial statements for price-level changes by the use of the Consumers' Price Index is valid, this study suggests that the financial data obtained from statements of Caterpillar Tractor Company and Westinghouse Air Brake Company are seriously in error when the general price-level has changed significantly over a period shorter than the average life of the plant and equipment. For example, the net income of Caterpillar Tractor Company, computed on the basis of historical costs, was overstated in 1958 by over 92 per cent. The net income of Westinghouse Air Brake Company for the same year was overstated by more than 64 per cent.

The rates of return on total investment, as calculated from historical records, averaged about 75 per cent greater than the rates calculated from adjusted figures for the period 1953 to 1962 for both companies. The average unadjusted rates of return on stockholders' equity exceeded the adjusted by nearly 50 per cent for both firms when the purchasing-power gains and losses from holding monetary debt were included and excluded. In respect to the dividend payout ratio, it was found that the firms paid dividends in excess of adjusted net income in three different years. The increase in the dividend payout ratio averaged about 25 per cent when computed on the adjusted net income rather than on the reported income. The average actual federal income tax rate when computed on adjusted earnings was about eight per cent higher than the rate as computed on historical dollars.

It is important to note the similarity in the adjustment patterns for the financial statements of Caterpillar Tractor Company and Westinghouse Air Brake Company. Also, there is considerable similarity in the adjustment patterns in this study and those presented by Professor Jones in his study of four companies published by the American Accounting Association.[23] The differences between the unadjusted and adjusted figures are dependent largely on the changes in the price-level and changes in the asset composition of the firms' investments.

Appendix C contains the unadjusted and adjusted income statements and balance sheets for both firms for the period 1953 to 1962.

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[23]Ralph Coughenour Jones, Price Level Changes and Financial Statements, Case Studies of Four Companies (American Accounting Association, 1955).

CHAPTER IV

THE CHOICE OF A PRICE INDEX

The use of index numbers to express the relationship between existing conditions and some base condition is familiar to all. The changes in the "cost of living" are commonly expressed in terms of the Consumers' Price Index. The public has been introduced to the United States Department of Agriculture's Parity Index in discussions of agricultural price supports, while increases or decreases in industrial activity are expressed in terms of the Index of Industrial Production published by the Federal Reserve Board.

Adjustment for fluctuations in the value of money is not new. Irving Fisher in The Money Illusion gives many examples of cases both here and abroad of contracts that provided for payment of money equal in value to a specified amount of a commodity or group of commodities.[24]

Labor has used an index of the "cost of living" as a lever for raising wages during inflation since prior to the entry of the United States into World War I. Beginning in 1922, subsistence and rent allowances for all commissioned officers in the armed services were determined by changes in the cost of living figures of the United States Bureau of Labor Statistics.

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[24]Irving Fisher, The Money Illusion (Adelphi Company, 1928), pp. 114-22.

In the previous chapter, the Consumers' Price Index of the Bureau of Labor Statistics was used in the adjustment process. However, there is some question whether this index is appropriate from either a theoretical or a practical point of view. This chapter discusses several of the available indexes.

I. THE CONSUMERS' PRICE INDEX

The full name of the Consumers' Price Index is "Index of Change in Prices of Goods and Services Purchased by City Wage-Earner and Clerical-Worker Families to Maintain Their Level of Living." As the title implies, the index measures the average change in the prices of a specific "market basket" of goods and services bought by families of wage earners and clerical workers living in cities. However, in spite of the specific nature of the index, it is widely used in measuring the wages and salaries of several million workers, for the repayment of debt in terms of constant purchasing-power, and sub-groups of the Consumers' Price Index have been used in computing last-in, first-out inventories for retail firms. However, the use of the Consumers' Price Index for these purposes and as a very general measure of purchasing-power does not necessarily make it appropriate for the adjustment of accounting data of all large corporations in the United States.

If the Consumers' Price Index is used under the concept of maintaining the specific purchasing-power of the stockholders, it is appropriate only in a very general way. The "market basket" of goods and services purchased by stockholders, except for those in the middle-income brackets, is not likely to be similar to that purchased by city

wage earners and clerical workers. However, no index has been prepared, or is likely to be prepared, that can be considered representative of the price changes of the specific goods and services purchased by stockholders.

Proponents of the Consumers' Price Index as an adjustment index usually recommend it on the basis of its usefulness as a measure of the general purchasing-power of the dollar rather than as a measure of the purchasing-power of stockholders. Jones preferred the Consumers' Price Index for this purpose because of its general acceptability, its sound construction, and its ready availability.[25] There is certainly some merit in this viewpoint, but the limitations are serious and the results can be considered rough approximations at best.

The Consumers' Price Index is deficient in three main respects. Comparisons of price changes over long periods of time tend to be considerably inaccurate because of changes in relative prices. This particularly affects the conversion of fixed asset and depreciation accounts. Changes in consumer tastes and the continual introduction of new products make it difficult to compare the prices of a "basket of goods" over time. The Consumers' Price Index does not make adjustment for improvements in the quality of the products and services purchased.

II. THE WHOLESALE PRICE INDEX

The Wholesale Price Index of the United States Bureau of Labor Statistics is designed to measure price changes in the primary markets.

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[25]Ralph C. Jones, Effects of Price-Level Changes (American Accounting Association, 1955), p. 179.

The prices included in the index are for producers' commodities at the level of the first commercial transaction for each commodity. The index includes approximately 1,900 commodities, each weighted according to its relative value in the base period, plus an indirect weight covering other products whose prices are known or assumed to move in a similar manner. The intention of the Bureau is to revise the weights every five years, or whenever a Census of Manufactures is prepared.

At first thought, the Wholesale Price Index might be considered a good index to measure the purchasing power of corporations. However, it has three major defects for this purpose. First, the index does not include commodities representative of the goods and services usually purchased by either an industrial, retail, or utility corporation. The basic weakness is the omission of wages and services. However, the commodities included in the index are not even approximately weighted according to the value of the operating expenditures of corporate enterprises. Second, the investment of most firms is largely made up of plant and equipment and inventories. Most of the current expenditures are for goods and services consumed currently and do not require adjustment. Therefore, the capital to be maintained and to be adjusted is made up mostly of capital goods. The Wholesale Price Index is a poor measure of the price changes of investment goods. Third, there is evidence that the prices included in the Wholesale Price Index are overly rigid from year to year as well as for shorter periods.[26]

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[26]Harry E. McAllister, "Statistical Factors Affecting the Stability of the Wholesale and Consumers' Price Indexes," Staff Paper No. 8, Hearings before the Sub-committee on Economic Statistics of the Joint Economic Committee, 79th Congress, Part 1, January 24, 1961 (Washington: United States Government Printing Office, 1961).

As a measure of the general purchasing power of the dollar, the Wholesale Price Index also has serious limitations. The composition of the commodities included in the index and the exclusion of retail prices make this index too limited in scope for an index of general prices.

III. THE GROSS NATIONAL PRODUCT IMPLICIT PRICE INDICATORS

The implicit price deflators are by-products of the estimates of gross national product in constant dollars produced by the Department of Commerce. They are obtained by dividing the current-dollar expenditures by the corresponding constant-dollar series. Annual estimates are available from 1909, and quarterly estimates have been prepared starting with 1947.[27]

The constant-dollar series of gross national product are derived by dividing the current-dollar estimates, in as fine a product break-down as possible, by the appropriate price indexes based on 1947 as 100. In most cases, the price indexes are available in greater detail than the annual current-dollar estimates, in which cases the various indexes are combined into composites. In some cases the indexes are adjusted to take account of quality and related changes in the products whose prices they measure. However, in general, they do not reflect quality improvement and the rise of superior products.

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[27]United States Department of Commerce, Office of Business Economics, United States Income and Output (Washington: United States Government Printing Office, 1959).

The price indexes derived by dividing the current-dollar expenditure series by the constant-dollar series have the following characteristics. First, the weights shift each year in proportion to the expenditures incurred for the goods and services they represent. Therefore, they cannot be interpreted as tracing the change in total value of an identical list of physical goods and services over a period of time. Rather, they measure the change in value of the physical goods and services in a given year with their value in the base year of 1947. Second, the quarterly data are less reliable and are not available as currently as some other price index series.

The main value of the implicit price deflator for the adjustment of accounting data is as a measure of general purchasing power. For this purpose it has the broadest base and does not relate solely to specific groups or specific geographical areas in the economy. One of the main limitations has been the lack of current data, but with the availability of quarterly series, this is not so serious a limitation. For firms with capital assets acquired prior to 1909 the series does not provide adequate measurement of earlier changes in general purchasing power.

As a measure of the purchasing power of invested capital, the gross national product implicit price deflator is based on too large a scope of expenditures, as it includes all expenditures for personal consumption, gross private domestic investment, net foreign investment, and government purchases of goods and services. As a measure of the purchasing power of corporate investment, the implicit price deflators

based on "other new construction" and "producers' durable equipment" segments of gross national product are more appropriate.

IV. PRICE INDEXES FOR INVESTMENT IN SPECIFIC INDUSTRIES

Several indexes of investment costs are available for specific industries or groups of industries. Some of these indexes are computed and published by private agencies such as Whitman, Requardt and Associates (Handy-Whitman), and Marshall and Stevens, and some are computed and published by the Engineering News-Record.

In theory, the specific industry indexes seem appropriate as an approach to reality. Most firms continually reinvest in capital assets of the same industry, although not necessarily in the same types of assets as previously. The purchasing power of invested capital is maintained if the amount recovered through use or sale can purchase an equal quantity of investment goods in the same industry. In a sense, this is a generalized replacement-cost approach, because depreciation is based upon the cost of replacing the investment with plant and equipment in the same industry.

Several disadvantages, however, limit the usefulness of this approach. Adequate indexes of construction and equipment costs are not available for many industries. For many firms, it is difficult to define the specific industry because of the wide diversification of products. Less comparability can be obtained if firms are using different indexes than if all use the same index. And finally, where inventories are important, special indexes for inventories should be used.

V. REPLACEMENT-COST INDEXES

The replacement-cost concept requires separate indexes for each type of asset. In some cases, replacement costs can be estimated on the basis of current market prices rather than by using indexes. The purpose in either case is to estimate the current cost to replace the existing asset, rather than the future cost to replace the asset or the current value of the existing asset. Therefore, this method is similar to the purchasing power methods. The economic position maintained, however, is the power to purchase assets similar to the plant and equipment in use. An index of the investment expenditures of the particular firm would provide a similar result. Therefore, the replacement concept can be considered an application of the purchasing power concept to the investment purchases of a specific firm.

As a procedure for adjusting statements on the basis of a special purchasing-power concept, this method is most appropriate from a theoretical standpoint. The investment purchasing power of each firm is determined on the basis of the specific assets purchased by that firm. Several limitations, however, make it unacceptable for application as a generally accepted accounting procedure. The expenditure experience of the firm in the past may not be a good measure of the current investment experience. The cost of obtaining and applying different indexes to each type of asset may be prohibitive for many firms. In cases where technological changes make certain assets obsolete, general indexes must be used because the replacement cost of the specific asset becomes

meaningless. Like the specific industry indexes, less comparability can be obtained if different indexes are used by different firms.

VI. SUMMARY

One of the major obstacles that governs the practicality of using price-level adjustments is the selection of a reliable index. Experiments with various indexes have shown that rather wide differences in the measurement of purchasing power shrinkage are obtained by using different indexes. On the other hand, many accountants who favor the use of price-level adjustments agree with the late George O. May, one of the pioneers of the accounting profession in this country, who commented as follows:

> People seem to look for perfect solutions to every problem. Well, there aren't any perfect solutions for the problems of accounting. Never was one, never will be. You see I can go back to the days when depreciation was a disputed concept. Exactly the same things were said then about depreciation that are being said today about reflecting monetary fluctuations. They said: "You can't measure depreciation. If you use the straight-line method you will get a figure of X; if you use the diminishing-balance method, you will get 2X. If it can be either X or 2X, it's no good trying at all." Now they are saying: "So you want to adjust by a price index. Well, one index gives you 165; another 175; still a third gives you 190. Since you can't say which index is best, we won't take any." But, surely, the answer to that kind of comment is that you would be more nearly right if you used any one of the indexes than if you made no adjustment of the figures at all.[28]

Money is the common denominator in which financial data presented in accounting reports are measured.[29] The purchasing power of the dollar, however, varies from time to time, and as a result, assets, liabilities,

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[28]George O. May, "Letters to the Editor," The Journal of Accountancy, (June, 1955), p. 31.

[29]Maurice Moonitz, "The Basic Postulates of Accounting," Accounting Research Study No. 1 (American Institute of Certified Public Accountants, 1961), p. 22.

revenues, and expenses are expressed in dollars which represent different purchasing powers.

The Gross National Product Implicit Price Deflator is the only index currently compiled which measures the over-all or general level of prices. Its main limitations are in the method of sampling and the absence of control over data collection by the Office of Business Economics.

The Gross National Product Implicit Price Deflator is an outgrowth of national income and product accounting which is one of the chief tools for formulation of Government economic policy. The report of the National Accounts Review Committee in 1957 termed the estimates "as good as the primary data and funds available for their processing and analysis permit."[30] The Implicit Price Deflator reflects an average of all goods and services exchanged in all segments of the economy. It is an index of the prices of final products, consumer purchases, and business investment. The national economic accounts from which this index is constructed "constitute a systematic record of basic information about economic activity."[31] The Consumers' Price Index only measures change in prices of goods and services purchased by city wage-earner and clerical-worker families.

There has been a high degree of correlation between price movements measured by the Gross National Product Implicit Price Deflator and

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[30]United States Congress, The National Economic Accounts of the United States, Hearings before Sub-committee on Economic Statistics, October 29 and 30, 1957 (Washington: United States Government Printing Office, 1957), 110.

[31]Ibid., p. 133.

the Consumers' Price Index. There is, however, no guarantee that this relationship will continue because the Consumers' Price Index does not attempt to measure price movements for the economy as a whole.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

An evaluation of corporate financial statements of the two firms studied indicates that changing price levels have affected their validity for some purposes. The need for new techniques to cope with this problem has resulted in the widespread adoption of procedures that only partially adjust for the inflation. It has also stimulated research in this area, and several methods for partial and complete adjustment have been suggested and tested.

Pronouncements on accounting measures designed to deal with inflation have been made by various accounting societies in the United States and Great Britain. The societies generally indicate a reluctance to abandon conventional accounting practices. All of them agree on the need for further study and experimentation.

The Securities and Exchange Commission does not accept financial statements of United States companies that have been adjusted to remove inflationary distortions because such adjustments do not conform with generally accepted accounting principles. Under certain conditions, however, footnote or other supplementary disclosures are accepted. The United States Treasury, of course, does not permit the application of price-level adjustments in computing taxable income.

In contrast with the relative lack of enthusiasm displayed by accounting societies and regulatory bodies in the English-speaking countries, price-level adjustments have won acceptance by the

governments and by accountants in some other nations. France, for example, passed laws providing for elaborate methods of revaluing fixed assets according to tables of coefficients published by the government.

Other countries, such as the Netherlands, have not passed revaluation laws, but business customs in such countries give much freedom to accountants and business concerns in selecting valuation bases for use in financial reporting.

The issues involved in the choice of a proper method to adjust for price changes are far from settled. This study was undertaken in the hope that experience in the application of adjustment techniques would aid in an evaluation of their usefulness. While the complete adjustment procedure by the use of the Consumers' Price Index was used in this study, no initial bias was held toward this method. An attempt has been made to apply critical analysis in the hope of presenting an unbiased evaluation.

The objectives of this study were: (1) to develop and test methods for the preparation of supplementary statements adjusted for changes in the price-level; (2) to compare the supplementary statements with the conventional statements expressed in historical dollars; (3) and to present quantitative data which will give business managements and individual accountants some basis for judging the need for figures and statements in dollars adjusted for changes in purchasing power.

As a testing ground for this evaluation, the annual statements of two manufacturing firms, Caterpillar Tractor Company and Westinghouse Air Brake Company, were adjusted by the use of the Consumers' Price Index for the period from 1953 to 1962.

The main financial measurements emphasized in this evaluation are gross income, net income, plant and equipment at cost, total investment, rate of return on total investment, total stockholders' equity, purchasing-power gains and losses, rate of return on stockholders' investment, dividends and retained earnings, and real and nominal rates on Federal income tax. The use of adjusted accounting statements for financial analysis is emphasized.

This study does not discuss the impact of price-level changes on rate regulation of public utilities or on tax policies. These and other similar questions of social policy are beyond the scope of this study.

A summary of the study and its conclusions follows. No attempt is made to restate here the entire basis for the conclusions nor all of the qualifications presented in previous chapters. Appendix A should be read for a description of the procedures used in aging the relevant accounts.

I. SUMMARY AND CONCLUSIONS

The substantial inflation which has cut the purchasing-power of the dollar by about half since 1940 has considerably impaired the usefulness of financial statements based entirely on historical costs. It is desirable, therefore, that costs be computed in current dollars and presented to management in the form of supplementary information. This does not imply that the historical statements are unnecessary but rather that the conventions on which they rest are not adequate to meet expanding needs for financial and economic information.

A second general observation is that the procedure does provide results based on objective evidence. If a consistent index is applied to all accounts in a uniform manner, the adjusted statements are not subject to manipulation by the accountants or managements of the individual firms, and they are capable of being audited.

As a measure of the net income to the enterprise, the adjusted net income is more useful than the unadjusted. However, gains and losses from the holding of net monetary assets and current liabilities should be disclosed because they may have a significant effect on the capital maintenance of the enterprise.

The major difference between net income reported on a historical basis and net income computed in current dollars arises from the difference between depreciation on original cost in historical dollars and depreciation on that same original cost measured in current dollars of less purchasing power.

Regardless of the consistency of any adjustment procedure, the amount of adjustment cannot be predicted for any one firm. The degree of adjustment depends primarily on the historical distribution of plant additions and retirements in the firm, on the size and timing of inventory flows, and on the relationahip between monetary and nonmonetary assets and liabilities. The correlation ratios showing the relationahip between the unadjusted and adjusted data suggest that there is no simple relationship between the two. This implies that those who suggest that the readers of financial statements are capable of making their own adjustments for price changes are seriously in error.

There is no acceptable substitute for the adjustment by the use of price indexes.

Although the Consumers' Price Index was used in the adjustment procedure in this study, it appears that the Gross National Product Implicit Price Deflator is a more suitable index. It is the only index currently compiled which measures the over-all or general level of prices.

An evaluation of adjusted financial data suggests that the adjusted information is not equally useful for all types of managerial or financial analysis. For some problems, such as those encountered in capital budgeting, the use of adjusted data is questionable and of doubtful validity. For other purposes, such as the evaluation of firm efficiency, the adjusted statements may be extremely useful.

The adjustment procedure is usually criticized on the basis of its increase in accounting cost. There is no question that some increase in cost is entailed, but the amount of additional cost is exaggerated. The greatest cost would be the original aging of the accounts. Less cost is required to carry these agings forward each year by corrections for additions and retirements. Modern electronic computers and data processing machines simplify the aging process and the multiplication by conversion factors.

The limitation of depreciation deductions for income tax purposes to original cost in historical dollars raises real rates of taxation

well above statutory rates during periods of inflation and thereby discriminates against firms having substantial plant investments.

It is important to note the distinction between replacement costs and price-level adjustments because much of what has been written on the subject displays a failure to recognize the difference. The calculation and recording of depreciation on replacement cost is frequently said to be a type of price-level adjustment when actually it is not. Only by coincidence would the results be the same, and the underlying valuation philosophy is entirely different. Changes in the replacement cost of specific items take place even though there has been no change in the general price-level.

Many of the critics of price-level adjustments have asserted that certain counterbalancing effects have made the adjustments unnecessary or erroneous. Some of these claims have been partially correct; others have been in error.

The claim that recent additions to plant and equipment have partially offset the effect of the price-level changes since World War II is correct. This holds true for the two firms studied. However, at no time in the years covered by this study have the additions to plant and equipment been large enough to offset completely the effect of price-level changes for these two firms. At current rates of expansion, it is estimated that it would take about eight to ten years of stable prices before the discrepancy between unadjusted and adjusted figures would become insignificant for reporting purposes.

The effect of technological innovations is not a basic part of the price-level problem. The effect exists regardless of price changes, but there is no evidence that accounting statements should be adjusted for gains in productivity.

In conclusion, financial data adjusted for price-level effects provide a basis for a more intelligent, better informed allocation of resources, whether those resources are in the hands of individuals, of business entities, or of government.

II. RECOMMENDATIONS

It is the author's opinion that there has been enough theoretical discussion of the merits of financial statement adjustment. The weight of evidence seems to be in favor of doing something constructive about the problem instead of continuing to argue the pros and cons. It is hoped that the Accounting Principles Board will issue a statement requiring that complete financial statements be presented in both the conventional historical form and the adjusted form. Business and the accounting profession can save a great deal of time and make a great improvement in current-day accounting presentation by adopting some fairly simple rules for the preparation of adjusted financial statements which will adequately demonstrate the effects of monetary inflation in terms which the average stockholder can understand.

It is suggested that business corporations undertake a program to prepare and publish financial statements in their annual reports to stockholders in two forms: (1) expressed in historical dollars, as at

present, and (2) expressed in current purchasing power or uniform dollars. All the basic financial statements should be so adjusted. To guide the readers of the annual reports when presented with two versions of the results of operation or of financial position, an explanation of the meaning and significance of the adjusted amounts would be needed.

Implications for further research. On the basis of the information presented in this study, the following implications for further research are offered:

1. Additional case studies of different firms would be useful in evaluating the need for price-level adjustments.

2. A study and comparison of several of the available price indexes would be valuable in determining which indexes are the most suitable for price-level adjustments.

3. In a few years, a follow-up study on Caterpillar Tractor Company and Westinghouse Air Brake Company would be very appropriate to determine if the need for price-level adjustments is as pressing as it is today.

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APPENDIXES

APPENDIX A

SUMMARY OF PROCEDURES USED IN AGING THE RELEVANT ACCOUNTS

One of the steps in the adjustment of financial statements for price-level changes is the aging of certain balance sheet accounts by years of acquisition and the aging of the related depreciation account in the income statement. These include specifically three types of accounts: the plant and equipment accounts expressed in dollars of original cost, the accumulated allowances for depreciation, and the current depreciation expense accounts. Other accounts requiring analysis by date of acquisition include investment accounts, other assets, paid-in surplus, and common stock.

The primary limitation of this study is that the author worked from statements and data furnished by the officials of the respective firms, and not from the original books of the companies. Therefore, certain approximations were necessary in the aging of the relevant accounts. A summary of the procedures used in aging the accounts follows.

In corresponding with officials of the firms studied and other manufacturing firms, it was determined that a detailed aging of each firms' plant and equipment account was considered to be confidential data. After further correspondence with firms in the manufacturing field, a number of aging estimates were received by the author. The

following approximate aging was assumed to be applicable to the two firms studied:

1 - 5 years	27%
6 - 10 years	27
11 - 15 years	25
16 - 20 years	5
21 - 25 years	6
26 - 35 years	5
36 - 45 years	5
	100%

The major portion of other assets shown on the balance sheets of Caterpillar Tractor Company consists primarily of investment in Caterpillar Credit Corporation. This wholly-owned subsidiary was formed in 1954 and it was possible to age the account from that date through 1962.

At December 31, 1962, nearly 75 per cent of other assets on the balance sheet of Westinghouse Air Brake Company consisted of investments in foreign subsidiaries. These investments were begun in 1953 and a close approximation of aging on this account was obtained.

The Caterpillar Tractor Company supplied the author with a complete aging of capital stock and paid-in surplus. Although such detailed data was not provided by Westinghouse Air Brake Company, the author was able to determine an approximate aging on the capital stock by tracing back the account on prior year's financial statements. The paid-in surplus account on the books of Westinghouse did not have a balance until 1953, and it was possible to age the account through the years covered by the study.

It is probable that the approximations in aging the accounts have not seriously affected the validity of the findings in this study.

However, these approximations would have a tendency to remove the significance of the findings to the individual firms studied, and rather, make the findings more applicable to typical manufacturing firms.

APPENDIX B

SUMMARY OF OPERATIONS OF THE FIRMS STUDIED

I. CATERPILLAR TRACTOR COMPANY

The Caterpillar Tractor Company, with headquarters in Peoria, Illinois, manufactures earthmoving machinery and equipment such as crawler and heavy-duty off-highway wheel tractors and trucks, motor graders, front-end loaders and pipe-layers, and Diesel engines sold as industrial, truck and marine power units.

The company is the largest producer of crawler tractors and is also a leader in the sale of heavy-duty off-highway wheel tractors, motor graders and other earthmoving equipment. Their machines are used principally for road building and maintenance, heavy construction, earthmoving, logging, housing, snow removal, oil field work, mining, quarrying, freighting, industrial and agricultural operations.

II. WESTINGHOUSE AIR BRAKE COMPANY

The Westinghouse Air Brake Company, with the home office in Pittsburgh, Pennsylvania, is a leading manufacturer of air brake equipment and switch control and signal systems. Since 1952, through the acquisition of new businesses, it has become a major supplier of equipment to the construction, petroleum and mining industries. Principal operations are conducted through the following divisions and subsidiaries.

The Air Brake division makes air brake systems for all types of railway and rapid transit service. It is the largest producer of such systems in the United States.

The Industrial Products division sells graduated pressure control valves, flow control valves and cylinders, which are all made by the Air Brake division.

The Union Switch and Signal division produces railway switch control and signal systems.

The Le Roi division makes portable and stationary air compressors, and a complete line of pneumatic tools and supplies used in the mining industry.

The Le Tourneau-Westinghouse Company is one of the largest factors in the earthmoving equipment field. Its output includes earthmoving and hauling equipment, tools, machinery, off-highway trucks, tractors, motor graders, and wire rope.

The George E. Failing Company makes portable rotary-type drilling rigs.

Melpar, Incorporated engages principally in electronic research and development work for the Armed Forces.

APPENDIX C

FINANCIAL STATEMENTS

APPENDIX C

FINANCIAL STATEMENTS

UNADJUSTED COMPARATIVE INCOME STATEMENTS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
Operating Revenues	$433,803	$401,041	$523,893	$685,940	$649,905
Costs and Expenses:					
Cost of Goods Sold	$309,630	$275,446	$366,414	$474,755	$475,839
Depreciation	12,764	15,904	18,463	22,329	21,849
Selling, General and Administrative Expenses	53,994	55,786	65,027	72,364	70,231
	$376,388	$347,136	$449,904	$569,448	$567,919
Earnings from Operations	$ 57,415	$ 53,905	$ 73,989	$116,492	$ 81,986
Other Expenses	1,556	1,552	1,545	1,410	2,126
Earnings Before Income Taxes	$ 55,859	$ 52,353	$ 72,444	$115,082	$ 79,860
Provision for Income Taxes	35,604	27,224	37,671	59,678	40,075
Net Income	$ 20,255	$ 25,129	$ 34,773	$ 55,404	$ 39,785

UNADJUSTED COMPARATIVE INCOME STATEMENTS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
Operating Revenues	$585,164	$742,337	$716,038	$734,318	$826,993
Costs and Expenses:					
Cost of Goods Sold	$425,489	$546,545	$530,009	$509,406	$585,422
Depreciation	27,710	28,012	28,314	31,642	39,803
Selling, General and Administrative Expenses	69,498	77,305	76,789	78,337	81,102
	$522,697	$651,862	$635,112	$619,385	$706,327
Earnings from Operations	$ 62,467	$ 90,475	$ 80,926	$114,933	$120,666
Other Income	537	419	463	577	420
	$ 63,004	$ 90,894	$ 81,389	$115,510	$121,086
Other Expenses	4,640	4,684	7,455	8,128	6,950
Earnings Before Income Taxes	$ 58,364	$ 86,210	$ 73,934	$107,382	$114,136
Provision for Income Taxes	26,124	39,692	31,354	51,559	52,213
Net Income	$ 32,240	$ 46,518	$ 42,580	$ 55,823	$ 61,923

UNADJUSTED COMPARATIVE BALANCE SHEETS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
ASSETS					
Current Assets:					
Cash and Receivables	$ 35,226	$ 44,558	$ 59,476	$ 72,889	$ 62,246
Merchandise Inventory	110,299	95,594	135,072	180,474	230,938
	$145,525	$140,152	$194,548	$253,363	$293,184
Property, Plant and Equipment	$152,231	$169,911	$191,344	$208,746	$274,609
Less: Allowance for Depreciation	38,026	50,234	60,637	67,449	81,895
	$114,205	$119,677	$130,707	$141,297	$192,714
Other Assets	$ 1,531	$ 3,975	$ 10,143	$ 5,005	$ 8,827
Total Assets	$261,262	$263,804	$335,398	$399,665	$494,726
LIABILITIES					
Current Liabilities	$ 46,472	$ 33,793	$100,726	$ 88,776	$100,852
Long-Term Liabilities	53,033	52,097	35,000	35,000	100,000
	$ 99,505	$ 85,890	$135,726	$123,776	$200,852
CAPITAL					
Capital Stock	$ 63,240	$ 64,447	$106,177	$111,434	$110,926
Balance of Stockholders' Equity	98,517	113,466	93,494	164,455	182,948
	$161,757	$177,913	$199,671	$275,889	$293,874
Total Liabilities and Capital	$261,262	$263,804	$335,398	$399,665	$494,726

UNADJUSTED COMPARATIVE BALANCE SHEETS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
ASSETS					
Current Assets:					
Cash and Receivables	$ 89,926	$ 70,353	$ 84,319	$113,406	$130,264
Merchandise Inventory	175,388	206,372	227,117	239,131	238,282
	$265,314	$276,726	$311,436	$352,537	$368,546
Property, Plant and Equipment	$306,676	$352,092	$403,205	$428,312	$447,282
Less: Allowance for Depreciation	87,393	102,433	129,042	158,979	187,269
	$219,283	$249,659	$274,163	$269,333	$260,012
Other Assets	$ 9,624	$ 10,113	$ 11,897	$ 12,155	$ 9,446
Total Assets	$494,222	$536,498	$597,496	$634,025	$638,004
LIABILITIES					
Current Liabilities	$ 90,554	$110,719	$157,314	$119,144	$108,876
Long-Term Liabilities	100,000	100,000	100,000	146,750	143,500
	$190,554	$210,719	$257,314	$265,894	$252,376
CAPITAL					
Capital Stock	$109,672	$143,411	$143,156	$143,217	$126,709
Balance of Stockholders' Equity	193,996	182,368	197,025	224,913	258,919
	$303,668	$325,779	$340,181	$368,130	$385,628
Total Liabilities and Capital	$494,222	$536,498	$597,496	$634,025	$638,004

UNADJUSTED COMPARATIVE INCOME STATEMENTS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
Operating Revenues	$145,089	$121,541	$172,502	$214,653	$236,977
Costs and Expenses:					
Cost of Goods Sold	$125,422	$115,090	$136,141	$167,893	$188,358
Depreciation	2,639	3,414	4,256	4,507	5,109
Selling, General and Administrative Expenses	200	174	18,305	20,697	21,072
	$128,261	$118,678	$158,702	$193,097	$214,539
Earnings from Operations	$ 16,828	$ 2,863	$ 13,800	$ 21,556	$ 22,438
Other Income	3,432	7,884	7,922	4,002	4,968
	$ 20,260	$ 10,747	$ 21,722	$ 25,558	$ 27,406
Other Expenses	861	1,436	1,743	2,179	2,805
Earnings Before Income Taxes	$ 19,398	$ 9,311	$ 19,979	$ 23,380	$ 24,601
Provision for Income Taxes	9,390	1,547	7,621	11,454	12,513
Net Income	$ 10,009	$ 7,764	$ 12,358	$ 11,924	$ 12,088

UNADJUSTED COMPARATIVE INCOME STATEMENTS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
Operating Revenues	$206,263	$209,448	$186,376	$170,276	$197,742
Costs and Expenses:					
Cost of Goods Sold	$167,283	$167,039	$150,287	$134,414	$159,873
Depreciation	5,159	4,889	4,597	4,702	5,270
Selling, General and Administrative Expenses	17,959	17,763	18,717	18,689	20,080
	$190,401	$189,691	$173,601	$157,805	$185,223
Earnings from Operations	$ 15,862	$ 19,757	$ 12,775	$ 12,471	$ 12,519
Other Income	4,177	5,161	4,772	4,655	4,932
	$ 20,039	$ 24,918	$ 17,547	$ 17,126	$ 17,451
Other Expenses	2,357	2,340	2,391	1,507	1,350
Earnings Before Income Taxes	$ 17,682	$ 22,578	$ 15,156	$ 15,619	$ 16,101
Provision for Income Taxes	8,884	11,184	7,534	7,314	7,751
Net Income	$ 8,798	$ 11,394	$ 7,622	$ 8,305	$ 8,350

UNADJUSTED COMPARATIVE BALANCE SHEETS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
ASSETS					
Current Assets:					
Cash and Receivables	$ 35,601	$ 32,612	$ 49,150	$ 62,108	$ 70,265
Merchandise Inventory	52,946	54,477	66,407	79,154	72,822
Marketable Securities	9,663	2,704	550	1,021	837
Prepaid Expenses					1,382
	$ 98,210	$ 89,793	$116,106	$142,283	$145,306
Property, Plant and Equipment	$ 58,038	$ 63,482	$ 69,223	$ 74,358	$ 78,264
Less: Allowance for Depreciation	20,649	23,331	27,143	30,989	35,158
	$ 37,389	$ 40,151	$ 42,081	$ 43,369	$ 43,106
Other Assets	$ 9,195	$ 10,375	$ 7,410	$ 7,393	$ 7,883
Total Assets	$144,794	$140,319	$165,597	$193,043	$196,294
LIABILITIES					
Current Liabilities	$ 26,355	$ 20,723	$ 38,204	$ 51,626	$ 48,791
Long-Term Liabilities	35,000	35,000	35,000	41,300	40,076
	$ 61,355	$ 55,723	$ 73,204	$ 92,926	$ 88,867
CAPITAL					
Capital Stock	$ 41,244	$ 41,262	$ 41,416	$ 41,733	$ 41,826
Balance of Stockholders' Equity	42,194	43,334	50,977	58,385	65,602
	$ 83,438	$ 84,596	$ 92,393	$100,118	$107,428
Total Liabilities and Capital	$144,794	$140,319	$165,597	$193,043	$196,294

UNADJUSTED COMPARATIVE BALANCE SHEETS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
ASSETS					
Current Assets:					
Cash and Receivables	$ 72,060	$ 77,949	$ 72,468	$ 63,042	$ 74,302
Merchandise Inventory	58,195	61,759	59,407	54,206	65,261
Marketable Securities	731	705	745	12,345	907
Prepaid Expenses	1,061	1,262	1,128	940	813
	$132,047	$141,675	$133,748	$130,533	$141,283
Property, Plant and Equipment	$ 78,584	$ 80,446	$ 84,845	$ 86,468	$ 88,287
Less: Allowance for Depreciation	37,848	41,386	43,668	46,978	50,213
	$ 40,736	$ 39,060	$ 41,176	$ 39,491	$ 38,074
Other Assets	$ 11,077	$ 10,479	$ 10,481	$ 10,708	$ 10,832
Total Assets	$183,862	$191,215	$185,405	$180,733	$190,191
LIABILITIES					
Current Liabilities	$ 33,988	$ 40,857	$ 31,547	$ 25,371	$ 32,703
Long-Term Liabilities	38,650	37,200	35,520	33,423	32,705
	$ 72,638	$ 78,057	$ 67,067	$ 58,794	$ 65,408
CAPITAL					
Capital Stock	$ 42,765	$ 43,336	$ 43,369	$ 43,708	$ 44,014
Balance of Stockholders' Equity	68,459	69,823	74,970	78,231	80,770
	$111,224	$113,159	$118,339	$121,939	$124,784
Total Liabilities and Capital	$183,862	$191,215	$185,405	$180,733	$190,191

ADJUSTED COMPARATIVE INCOME STATEMENTS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
Operating Revenues	$492,366	$453,176	$594,095	$759,336	$701,247
Costs and Expenses:					
Cost of Goods Sold	$356,352	$316,501	$422,437	$537,169	$521,230
Depreciation	22,977	27,485	29,852	34,816	33,466
Selling, General and Administrative Expenses	56,365	57,849	66,817	73,738	71,492
	$435,694	$401,835	$519,106	$645,723	$626,188
Earnings from Operations	$ 56,672	$ 51,341	$ 74,989	$113,613	$ 75,059
Other Expenses	1,766	1,754	1,752	1,561	2,294
Earnings Before Income Taxes	$ 54,906	$ 49,587	$ 73,237	$112,052	$ 72,765
Provision for Income Taxes	40,411	30,762	42,719	66,062	43,240
Net Income	$ 14,495	$ 18,825	$ 30,518	$ 45,990	$ 29,525

ADJUSTED COMPARATIVE INCOME STATEMENTS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
Operating Revenues	$615,007	$773,515	$734,655	$745,333	$830,301
Costs and Expenses:					
Cost of Goods Sold	$454,130	$574,747	$548,303	$519,657	$599,401
Depreciation	40,933	39,589	37,588	41,370	53,705
Selling, General and Administrative Expenses	70,609	78,183	77,452	78,768	81,416
	$565,672	$692,519	$663,343	$639,795	$734,522
Earnings from Operations	$ 49,335	$ 80,996	$ 71,312	$105,538	$ 95,779
Other Income	564	437	475	586	422
	$ 49,899	$ 81,433	$ 71,787	$106,124	$ 96,201
Other Expenses	4,877	4,881	7,649	8,250	6,978
Earnings Before Income Taxes	$ 45,022	$ 76,552	$ 64,138	$ 97,874	$ 89,223
Provision for Income Taxes	27,455	41,358	32,167	52,331	52,422
Net Income	$ 17,567	$ 35,194	$ 31,971	$ 45,543	$ 36,801

ADJUSTED COMPARATIVE BALANCE SHEETS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
ASSETS					
Current Assets:					
Cash and Receivables	$ 39,946	$ 50,529	$ 67,446	$ 80,105	$ 66,541
Merchandise Inventory	125,079	108,404	153,172	198,341	246,873
	$165,025	$158,933	$220,618	$278,446	$313,414
Property, Plant and Equipment	$274,066	$292,142	$309,363	$325,498	$420,965
Less: Allowance for depreciation	68,456	86,373	98,037	105,169	124,468
	$205,610	$205,769	$211,326	$220,329	$296,497
Other Assets	$ 1,790	$ 4,543	$ 11,502	$ 5,676	$ 9,910
Total Assets	$372,425	$369,245	$443,446	$504,451	$619,821
LIABILITIES					
Current Liabilities	$ 52,699	$ 38,321	$114,223	$ 97,565	$107,811
Long-Term Liabilities	54,836	59,078	39,690	38,465	106,900
	$107,535	$ 97,399	$153,913	$136,030	$214,711
CAPITAL					
Capital Stock	$ 84,887	$ 87,278	$133,710	$138,550	$139,079
Balance of Stockholders' Equity	180,003	184,568	155,823	229,871	266,031
	$264,890	$271,846	$289,533	$368,421	$405,110
Total Liabilities and Capital	$372,425	$369,245	$443,446	$504,451	$619,821

ADJUSTED COMPARATIVE BALANCE SHEETS
CATERPILLAR TRACTOR COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
ASSETS					
Current Assets:					
Cash and Receivables	$ 94,332	$ 72,745	$ 85,921	$114,540	$130,264
Merchandise Inventory	183,982	213,387	231,432	241,761	238,282
	$278,314	$286,132	$317,353	$356,301	$368,546
Property, Plant and Equipment	$452,960	$497,570	$534,949	$559,975	$592,269
Less: Allowance for depreciation	129,061	144,757	171,132	207,854	249,372
	$323,899	$352,813	$363,817	$352,121	$342,897
Other Assets	$ 20,533	$ 11,718	$ 13,004	$ 13,234	$ 10,054
Total Assets	$622,746	$650,663	$694,174	$721,656	$721,497
LIABILITIES					
Current Liabilities	$ 94,991	$114,483	$160,303	$120,335	$108,876
Long-Term Liabilities	104,900	103,400	101,900	148,218	143,500
	$199,891	$217,883	$262,203	$268,553	$252,376
CAPITAL					
Capital Stock	$176,130	$177,117	$176,881	$176,988	$160,546
Balance of Stockholders' Equity	246,725	255,663	255,090	276,115	308,575
	$422,855	$432,780	$431,971	$453,103	$469,121
Total Liabilities and Capital	$622,746	$650,663	$694,174	$721,656	$721,497

ADJUSTED COMPARATIVE INCOME STATEMENTS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
Operating Revenues	$164,676	$137,341	$195,617	$237,621	$255,698
Costs and Expenses:					
Cost of Goods Sold	$123,675	$112,683	$154,384	$188,294	$205,549
Depreciation	4,753	5,874	6,875	7,025	7,823
Selling, General and Administrative Expenses	18,910	17,560	20,758	22,912	22,737
	$147,338	$136,117	$182,017	$218,231	$236,109
Earnings from Operations	$ 17,338	$ 1,224	$ 13,600	$ 19,390	$ 19,589
Other Income	3,895	8,909	8,984	4,430	5,360
	$ 21,233	$ 10,133	$ 22,584	$ 23,820	$ 24,949
Other Expenses	977	1,623	1,977	2,412	3,027
Earnings Before Income Taxes	$ 20,256	$ 8,510	$ 20,607	$ 21,408	$ 21,922
Provision for Income Taxes	10,658	1,749	8,642	12,680	13,502
Net Income	$ 9,598	$ 6,761	$ 11,965	$ 8,728	$ 8,420

ADJUSTED COMPARATIVE INCOME STATEMENTS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
Operating Revenues	$216,782	$218,245	$191,222	$172,830	$198,533
Costs and Expenses:					
Cost of Goods Sold	$177,241	$174,956	$155,104	$136,685	$161,154
Depreciation	7,617	6,900	6,099	6,148	6,981
Selling, General and Administrative Expenses	18,875	18,509	19,204	18,969	20,160
	$203,733	$200,365	$180,407	$161,802	$188,295
Earnings from Operations	$ 13,049	$ 17,880	$ 10,815	$ 11,028	$ 10,238
Other Income	4,390	5,378	4,897	4,725	4,952
	$ 17,439	$ 23,258	$ 15,712	$ 15,753	$ 15,190
Other Expenses	2,477	2,438	2,453	1,530	1,355
Earnings Before Income Taxes	$ 14,962	$ 20,820	$ 13,259	$ 14,223	$ 13,835
Provision for Income Taxes	9,336	11,655	7,729	7,425	7,782
Net Income	$ 5,626	$ 9,165	$ 5,530	$ 6,798	$ 6,053

ADJUSTED COMPARATIVE BALANCE SHEETS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1953	1954	1955	1956	1957
ASSETS					
Current Assets:					
Cash and Receivables	$ 40,372	$ 36,982	$ 55,736	$ 69,600	$ 75,113
Merchandise Inventory	60,041	61,777	75,306	86,990	77,847
Marketable Securities	10,924	3,066	624	1,122	895
Prepaid Expenses					1,477
	$111,337	$101,825	$131,666	$157,712	$155,332
Property, Plant and Equipment	$104,487	$109,150	$111,916	$115,948	$119,890
Less: Allowance for depreciation	37,171	40,117	43,884	48,316	53,859
	$ 67,316	$ 69,033	$ 68,032	$ 67,632	$ 66,031
Other Assets	$ 11,604	$ 13,218	$ 9,352	$ 8,642	$ 9,010
Total Assets	$190,257	$184,076	$209,050	$233,986	$230,373
LIABILITIES					
Current Liabilities	$ 29,887	$ 23,550	$ 43,323	$ 56,737	$ 52,158
Long-Term Liabilities	39,690	39,690	39,690	45,389	42,841
	$ 69,577	$ 63,240	$ 83,013	$102,126	$ 94,999
CAPITAL					
Capital Stock	$ 67,910	$ 67,930	$ 68,106	$ 68,937	$ 68,560
Balance of Stockholders' Equity	52,770	52,906	57,931	62,923	66,814
	$120,680	$120,836	$126,037	$131,860	$135,374
Total Liabilities and Capital	$190,257	$184,076	$209,050	$233,986	$230,373

ADJUSTED COMPARATIVE BALANCE SHEETS
WESTINGHOUSE AIR BRAKE COMPANY
(in thousands of dollars)

	1958	1959	1960	1961	1962
ASSETS					
Current Assets:					
Cash and Receivables	$ 75,591	$ 80,599	$ 73,845	$ 63,672	$ 74,302
Merchandise Inventory	61,047	63,859	60,536	54,802	65,261
Marketable Securities	767	729	759	12,468	907
Prepaid Expenses	1,113	1,305	1,149	949	813
	$138,518	$146,492	$136,289	$131,891	$141,283
Property, Plant and Equipment	$116,067	$113,683	$112,568	$113,048	$116,902
Less: Allowance for Depreciation	55,899	58,483	57,933	61,422	65,237
	$ 60,168	$ 55,200	$ 54,635	$ 51,626	$ 51,665
Other Assets	$ 12,561	$ 11,883	$ 11,885	$ 11,854	$ 11,384
Total Assets	$211,247	$213,575	$202,809	$195,371	$204,332
LIABILITIES					
Current Liabilities	$ 35,653	$ 42,246	$ 32,146	$ 25,625	$ 32,703
Long-Term Liabilities	40,544	38,465	36,195	33,757	32,705
	$ 76,197	$ 80,711	$ 68,341	$ 59,382	$ 65,408
CAPITAL					
Capital Stock	$ 69,545	$ 70,152	$ 70,187	$ 70,553	$ 70,799
Balance of Stockholders' Equity	65,505	62,712	64,281	65,436	68,125
	$135,050	$132,864	$134,468	$135,989	$138,924
Total Liabilities and Capital	$211,247	$213,575	$202,809	$195,371	$204,332

APPENDIX D

CONVERSION FACTORS

In this study, the value of the dollar is defined in terms of the Consumers' Price Index of the United States Bureau of Labor Statistics. It is assumed: (1) that all monetary transactions of each year, except inventories, are in average dollars of that year, (2) that the conversion factor for inventories is calculated from the average price-level of the last three months of the year, and, (3) that the value of the dollar on December 31 is determined by the price index for the month of December.[1]

The Consumers' Price Index for the base date used in this study, December, 1962, was 105.8 (1957-59 average = 100). The purchasing power of the dollar on that date is arbitrarily taken as 1.00 (189.1/189.1 = 1.00). The purchasing power of the dollar, that is, the purchasing power factor, for any other date or period therefore is 105.8 divided by the index for this other date or period. The average index for 1955, for example, was 93.3. Thus the average value of the dollar in 1955 was 105.8/93.3, or 1.134. This is the average 1955 dollar stated in terms of the December 1962 dollar.

Purchasing power factors showing the value of the dollar in terms of the December 1962 dollar are shown in the table on the following page by years from 1913 to 1962, for December from 1952 to 1962, and for the last quarter (October to December) from 1952 to 1962.

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[1]The Consumers' Price Index is computed as of the fifteenth of each month. For convenience it has been assumed that this middle-of-the-month index applies to the entire month, to December 31 as well as to December 15. The only feasible alternative would be to compute the December 31 index by averaging the December and January index numbers but this would delay computations for an additional month if they were being made currently and would not necessarily increase the accuracy of the results.

CONSUMERS' PRICE INDEX OF U.S. BUREAU OF LABOR STATISTICS AND PURCHASING POWER OF THE DOLLAR
(Purchasing Power Factors---December, 1962 = 100)

A. Annual Averages Only

Year	Consumers' Price Index	Purchasing Power Factors	Year	Consumers' Price Index	Purchasing Power Factors
1913	34.5	3.066	1938	49.1	2.155
1914	35.0	3.023	1939	48.4	2.186
1915	35.4	2.989	1940	48.8	2.168
1916	38.0	2.784	1941	51.3	2.062
1917	44.7	2.367	1942	56.8	1.863
1918	52.4	2.019	1943	60.3	1.754
1919	60.3	1.755	1944	61.3	1.726
1920	69.8	1.516	1945	62.7	1.687
1921	62.3	1.698	1946	68.0	1.556
1922	58.4	1.812	1947	77.8	1.360
1923	59.4	1.781	1948	83.8	1.262
1924	59.6	1.774	1949	83.0	1.274
1925	61.1	1.732	1950	83.8	1.262
1926	61.6	1.718	1951	90.5	1.169
1927	60.5	1.749	1952	92.5	1.143
1928	59.7	1.772	1953	93.2	1.135
1929	59.7	1.772	1954	93.6	1.130
1930	58.2	1.818	1955	93.3	1.134
1931	53.0	1.996	1956	94.7	1.107
1932	47.6	2.223	1957	98.0	1.079
1933	45.1	2.346	1958	100.7	1.051
1934	46.6	2.270	1959	101.5	1.042
1935	47.8	2.213	1960	103.1	1.026
1936	48.3	2.170	1961	104.2	1.915
1937	50.0	2.116	1962	105.4	1.004

B. Last Quarter and December Averages

Year	Consumers' Price Index		Purchasing Power Factors	
	Last Quarter Average	December	Last Quarter Average	December
1952	93.1	93.0	1.134	1.134
1953	93.8	93.6	1.134	1.134
1954	93.3	93.2	1.134	1.134
1955	93.6	93.5	1.134	1.134
1956	96.1	96.2	1.099	1.099
1957	98.9	99.1	1.069	1.069
1958	100.9	100.8	1.049	1.049
1959	102.3	102.3	1.034	1.034
1960	103.8	103.9	1.019	1.019
1961	104.6	104.5	1.011	1.010
1962	105.9	105.8	1.000	1.000

APPENDIX E

DEMONSTRATION OF PRICE-LEVEL ADJUSTMENTS

The following demonstration is not intended to be a complete guide for the adjustment of financial statements.[1] It is instead a simplified illustration of the essential features of price-level adjustments, which should be useful in following and comprehending the reports of individual companies and discussions of the problems of price-level adjustments.

The illustration will include an adjusted income statement and balance sheet for the year 1962. This was the opening year of business for the firm.

The following price-level index numbers are assumed for use in the demonstration:

January 1, 1962	150
1962 Average	160
December 31, 1962	200

The financial statements will be restated in terms of the dollar at the end of 1962, when the index is 200.

The following income statement and comparative balance sheet will be used to illustrate the technique of index-number adjustments.

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[1] Technical aspects of price-level adjustments are discussed in the following publications, among others:

Ralph Coughenour Jones, Price-Level Changes and Financial Statements---Case Studies of Four Companies (American Accounting Association, 1955).

Perry Mason, Price-Level Changes and Financial Statements---Basic Concepts and Methods (American Accounting Association, 1956).

INCOME STATEMENT (Historical Basis)

Sales		$900,000
Less: Cost of Goods Sold	$470,000	
Depreciation	40,000	
Other Expenses	210,000	720,000
Net Income from Operations		$180,000

COMPARATIVE BALANCE SHEET (Historical Basis)

Assets	Jan. 1, 1962	Dec. 31, 1962	Increase (Decrease)
Cash, Receivables, and Other Monetary Items	$200,000	$195,000	$ (5,000)
Merchandise Inventory	250,000	300,000	50,000
Plant and Equipment	400,000	400,000	-
Less: Allowance for depreciation	-	(40,000)	(40,000)
Total Assets	$850,000	$855,000	$ 5,000
Liabilities			
Current Liabilities	$100,000	$ 85,000	$(15,000)
Long-Term Liabilities	380,000	380,000	-
Total Liabilities	$480,000	$465,000	$(15,000)
Stockholders' Equity			
Capital Stock	$370,000	$370,000	$ -
Retained Earnings	-	20,000	20,000
Total Stockholders' Equity	$370,000	$390,000	$ 20,000
	$850,000	$855,000	$ 5,000

Note: All calculations are rounded off to the nearest $100.

ADJUSTING THE INCOME STATEMENT

Sales. It will be assumed that the sales occurred evenly throughout the year, so, in effect, they took place at the average dollar of the year. The adjustment of the sales to the December, 1962 dollar would be:

$900,000 X 200/160 = $1,125,000

Cost of Goods Sold. The cost of goods sold is the cost of the merchandise purchased for resale and delivered to customers. The calculation as shown on the records of the company is as follows:

Merchandise Inventory, Jan. 1, 1962	$250,000
Merchandise Purchases during 1962	520,000
	$770,000
Merchandise Inventory, Dec. 31, 1962	300,000
Cost of Goods Sold	$470,000

Strictly speaking, in order to adjust these figures to the December, 1962 price level, the cost and the date of purchase of each item of merchandise should be known. This is usually impracticable, so approximations must be made. It will be assumed that the first-in, first-out method of inventory pricing has been used. The beginning inventory was acquired at the opening of business when the index number was 150. The merchandise purchases were made at the average price level of the year, or when the index number was 160. The adjustments to express the cost of goods sold in terms of the December, 1962 dollar would then be:

Merchandise Inventory, Jan. 1, 1962	$250,000 X 200/150 =	$333,000
Merchandise Purchases during 1962	520,000 X 200/160 =	650,000
		$983,300
Merchandise Inventory, Dec. 31, 1962	300,000 X 200/160 =	375,000
Cost of Goods Sold		$608,300

Depreciation. The most time consuming calculation is usually the adjustment of depreciation and depreciable property. The book cost of the depreciable assets in use must be aged, that is, analyzed according to date of acquisition. Once the basic computations have been made, the annual adjustment is relatively simple. The following demonstration indicates the essential features of the depreciation adjustment. It is assumed that all acquisitions of plant and equipment occurred on January 1, 1962 and that there were no retirements during the year. The land on which the plant is located is held under a lease, so all items of plant and equipment are subject to depreciation. The average depreciation rate is ten per cent a year on the straight-line basis.

Plant and Equipment	$400,000 X 200/150	= $533,300
Depreciation	10% of $533,300	= $53,300

Other Expenses. It is assumed that all items under the classification of other expenses were incurred at the average dollar of the year, and the calculation of the adjusted amount would be:

210,000 X 200/160 = $262,500

Dividends. It is assumed that the dividends to stockholders were declared and paid at the end of the year. The calculation would be:

$160,000 X 200/200 = $160,000

Purchasing-Power Gain or Loss. A loss in purchasing-power of monetary items arises from holding monetary assets during a period of rising prices or from maintaining liabilities during a period of falling prices. A gain is the reverse; it arises from holding monetary assets during a

period of falling prices or from maintaining liabilities during a period of rising prices.

The purchasing-power gain or loss on monetary assets and liabilities appears only on adjusted financial statements. Differences of opinion exist as to the method of reporting these gains and losses, but for purposes of this demonstration, they will be treated in a statement of income and inflation gain or loss as separately disclosed elements immediately following the determination of net profit.

The amount of the accumulated net gain or loss on monetary items can be calculated by determining the amount needed to balance the financial statements after making all adjustments of the nonmonetary account. A more detailed analysis, however, is desirable as a verification of the net gain or loss and to analyze it as to types of monetary items. The calculation in the demonstration will be made in two parts: (1) the gain or loss on the net current monetary items, and (2) the gain or loss on the long-term liabilities.

NET CURRENT MONETARY ITEMS

	Jan. 1, 1962	Dec. 31, 1962
Cash, Receivables, and Other Monetary Items	$200,000	$195,000
Current Liabilities	100,000	85,000
Net Monetary Assets	$100,000	$110,000

NET CURRENT MONETARY ITEMS (Continued)

	Unadjusted Amount	Multiplier	Adjusted Amount
Net Monetary Assets--beginning	$ 100,000	200/150	$ 133,300
Add:			
Sales	900,000	200/160	1,125,000
	$1,000,000		$1,258,300
Deduct:			
Purchases of Merchandise	$ 520,000	200/160	$ 650,000
Other Expenses	210,000	200/160	262,500
Dividends	160,000	200/200	160,000
	$ 890,000		$1,072,500
Net Monetary Assets--end	$ 110,000		$ 185,800
			(110,000)
Purchasing-Power Loss			$ 75,800

LONG-TERM LIABILITIES

The $380,000 of long-term liabilities remained constant throughout the year. The calculation is as follows:

$380,000 X 200/150 = $506,600
$506,600 - $380,000 = $126,600

SUMMARY

Loss on Net Current Monetary Assets	$ 75,800
Gain on Long-Term Liabilities	126,600
Net Gain	$ 50,800

The adjusted income statement can now be prepared and it appears on the following page.

ADJUSTED STATEMENT OF INCOME AND INFLATION GAIN (LOSS)

Sales		$1,125,000
Less: Cost of Goods Sold	$608,300	
Depreciation	53,300	
Other Expenses	262,500	924,100
Net Profit from Operations		$ 200,900
Inflation Gains or Losses:		
Gain (Loss) on Short-Term Monetary Items		$ (75,800)
Gain (Loss) on Long-Term Debt		126,600
Net Inflation Gain		$ 50,800
Net Profit and Net Inflation Gain		$ 251,700

ADJUSTED STATEMENT OF RETAINED EARNINGS

Retained Earnings, Beginning of Year	$ -
Net Profit and Net Inflation Gain	251,700
Total	$ 251,700
Dividends to Stockholders	160,000
Retained Earnings, End of Year	$ 91,700

ADJUSTING THE BALANCE SHEET

Monetary Items. The amounts at the end of the year require no adjustment since they are receivable or payable in current dollars. The amounts at the opening of business, however, must be restated in order to express them in terms of the purchasing power of the dollar at December 31, 1962.

Cash, Receivables, and Other Monetary Items:

Beginning of Year	$200,000 X 200/150 = $266,600
End of Year	$195,000 X 200/200 = $195,000

Current Liabilities:

Beginning of Year	$100,000 X 200/150 = $133,300
End of Year	$ 85,000 X 200/200 = $ 85,000

Long-Term Liabilities:

Beginning of Year	$380,000 X 200/150 = $506,600
End of Year	$380,000 X 200/200 = $380,000

Inventories. The merchandise inventory at the opening of business was acquired at the price level of that date. The inventory at the end of the year was assumed to have been acquired at the average price level of the year, or 160. The adjusted amounts of inventory, therefore, are:

Beginning of Year	$250,000 X 200/150 = $333,000
End of Year	$300,000 X 200/160 = $375,000

Plant and Equipment. The adjustment of the plant and equipment was demonstrated in a previous section. The adjusted amounts are:

Beginning of Year	$533,300
End of Year	$533,300

The adjusted amount of accumulated depreciation can be derived from the adjusted annual depreciation, as follows:

End of Year	10% of $533,300 = $53,300

Capital Stock. The $370,000 of capital stock was issued at the opening of business. The adjusted capital stock appears as follows:

Beginning of Year	$370,000 X 200/150 = $493,300
End of Year	$370,000 X 200/150 = $493,300

Retained Earnings. The adjusted retained earnings is derived from the adjusted income statement. As a matter of informative disclosure for purposes of this demonstration, the retained earnings from ordinary operations will be shown separately from the accumulated gain or loss on monetary items.

Retained earnings from operations:

Carried over from previous year	$ -
Net profit from operations	200,900
	$200,900
Adjusted dividends	160,000
Retained earnings from operations	$ 40,900

Accumulated gain or loss on net monetary items:

From income statement	$ 50,800

The adjusted comparative balance sheet can now be prepared and it appears on the following page.

ADJUSTED COMPARATIVE BALANCE SHEET

	Jan. 1, 1962	Dec. 31, 1962	Increase (Decrease)
Assets			
Cash, Receivables, and Other Monetary Items	$ 266,600	$ 195,000	$(71,600)
Merchandise Inventory	333,300	375,000	41,700
Plant and Equipment	533,300	533,300	-
Less: Allowance for depreciation	-	(53,300)	(53,300)
Total Assets	$1,133,200	$1,050,000	$(83,200)
Liabilities			
Current Liabilities	$ 133,300	$ 85,000	$(48,300)
Long-Term Liabilities	506,600	380,000	(126,600)
Total Liabilities	$ 640,000	$ 465,000	$(174,900)
Stockholders' Equity			
Capital Stock	$ 493,300	$ 493,300	$ -
Retained Earnings:			
From Operations (after dividends)	-	40,900	40,900
Accumulated Gain or (Loss) on Net Monetary Items		50,800	50,800
Total Stockholders' Equity	$ 493,300	$ 585,000	$ 91,700
	$1,133,200	$1,050,000	$ (83,200)

Additional Comments. For the purposes of the demonstration, price-level index numbers were available only for the beginning, the end, and the average of each year. Index number series are usually available at monthly or quarterly intervals and should be used if greater refinement of the restated amounts is considered desirable. On the other hand, a still greater simplification than the one used in the demonstration

could be employed when the movement of the price level is relatively slow by assuming that the index number at the beginning of each year applied to all transactions during the year. The results might be sufficiently accurate for most purposes.

In the demonstration, the accumulated gain or loss on monetary items and the accumulated undistributed earnings from ordinary operations were shown as separate portions of the retained earnings. This was possible because the illustration started with the opening of business and the accumulation could readily be computed. Where the price-level adjustment technique is put into effect for a company which has been in existence for a great many years, the accumulated adjusted retained earnings is obtained as a balancing figure in the first set of financial statements. To isolate the accumulated gain or loss on monetary items would not be feasible since it would require calculating the purchasing-power gain or loss on monetary items back to the date of origin of the company. Either the accumulated amount must be left as an undivided and unidentified portion of the retained earnings, or a practical compromise must be adopted such as starting the accumulation at a practicable date and disclosing this limitation of the accumulated amount by means of a footnote.