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For many years, the National Bureau of Economic Research has been making major studies on income, wealth, prices, business conditions, and inflation. These studies have contributed to the public's understanding of the procedures for and results of economic calculations under varying circumstances, including changes in price levels. In his present paper, Solomon Fabricant traces the development of thinking over the past forty years on what has come to be called "inflation accounting," as well as the role the National Bureau has played in clarifying this thought and in evaluating the data essential to its implementation. He also describes the recent or contemplated changes in both national accounting and business accounting practices to deal with the problem of inflation. Finally, he assesses the progress made so far in developing the procedures and data needed for rational accounting in an era of unstable money, and notes the issues that remain open.

The paper will be of interest to businessmen, accountants, government officials, and economists, as well as other producers and users of financial statements, for the nation as a whole or for individual business enterprises.

**TOWARD RATIONAL ACCOUNTING  
IN AN ERA OF UNSTABLE MONEY,  
1936—1976**

**Solomon Fabricant**

By rational accounting in an era of unstable money we mean accounting that deals in a reasonably adequate way with the accounting problem created by a changing general price level. The problem is, of course, that the dollar—the conventional accounting unit—does not buy a fixed bundle or basket of the goods and services on which money is spent. As economists have argued for a long time, a more rational accounting unit is one of constant general purchasing power, an imaginary unit that corresponds to what used to be called the tabular standard of value.

We concentrate on accounting for income, national or business. The question we ask is how the official national accounts and the certified financial statements of business firms have been modified to meet the

INTRODUCTION

problem of unstable money and how far they still fall short of what is reasonable under the circumstances.

The changes in *relative* prices that incessantly occur in a dynamic economy create separate accounting problems; they arise even when the value of money is stable. But we shall have to deal with them here, too, because a discussion of inflation accounting inevitably broadens out to embrace the accounting problems caused by both types of price change.

Our review starts with 1936, not because that year saw the beginning of rational accounting, even from the particular standpoint of inflation or deflation. In fact, the movement toward rational accounting has a history at least as long as the history of price indexes. Certainly, the recasting of national income estimates in "constant prices" is an old story. Nor were business accountants blind to the implications, for their calculations, of the hyperinflations associated with war or of the price declines after wars and during great depressions (Zeff, 1976).<sup>1</sup>

Yet 1936 is a good year in which to pick up the thread of the story. As Don Patinkin pointed out in his presidential address before the Econometric Society in December 1974, important macroeconomic developments that greatly influenced one another surfaced in 1936 (Patinkin, 1976). These are alluded to in the title of his address, "Keynes and Econometrics: On the Interaction between the Macroeconomic Revolutions of the Interwar Period." One of these revolutions was in the currency and consistency of the articulated macromeasurements provided by the newly developed national accounts. Patinkin mentions the use in the *General Theory* (Keynes, 1936) of the national income estimates prepared at the National Bureau of Economic Research by Simon Kuznets (1934); the correspondence between Keynes and Kuznets concerning the estimate of depreciation that followed publication of the *General Theory*; and the subsequent correction Keynes made in his use of that estimate in a note in the September 1936 issue of the *Economic Journal*.<sup>2</sup> Patinkin also states that in one of Keynes's letters to Kuznets, and then in the *Economic Journal* note, Keynes had indicated a definite preference for the NBER estimate of depreciation measured in terms of current (or replacement) costs rather than original costs, both of which had just been completed, along with an estimate in "constant prices" (Fabricant, 1936). It is precisely this preference that is of interest here, for it reveals Keynes's immediate

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NOTE: Preliminary sections of this paper were presented on June 5, 1975, at a conference of the Canadian Tax Foundation in Montreal; on April 16, 1976, at the second annual meeting of the Eastern Economic Association, Bloomsburg, Pennsylvania; and on May 27, 1976, at a seminar of the New York chapter of the National Association of Business Economists. The author's current research on the subject of economic calculation under inflation is being financially supported by the Liberty Fund, Inc., of Indianapolis, to which grateful acknowledgment is made. It should be understood that the opinions expressed by him do not necessarily reflect the views of that institution.

<sup>1</sup> Full references appear at the end of the paper.

<sup>2</sup> The author is greatly indebted to Patinkin for reminding him of the Keynes-Kuznets correspondence and for providing a draft of the address to the Econometric Society.

recognition and acceptance of the more rational measurement. If the authority of "scripture" is needed, there it is.

Turning now to the last year of the period under review, 1976 is not merely the current year. It is also the year in which the Bureau of Economic Analysis of the Department of Commerce finally included in its national accounts an estimate of depreciation and obsolescence (the main components of capital consumption) in current and constant, as well as original, cost prices. That is, the Bureau now accompanies its inventory valuation adjustment with a capital consumption adjustment (BEA, 1976).<sup>3</sup> Further, in March 1976 the Securities and Exchange Commission promulgated a requirement that large corporations include in their financial statements information on the replacement cost of inventories and drafts on inventories, and of fixed assets and depreciation (SEC, 1976). Finally, the year marks a new high in the discussion of these and other aspects of inflation accounting by professional accountants, which may pave the way for further steps toward rational business accounting.

What has been happening in 1976 is not a bolt from the blue. In the preparation of "unofficial" national accounts, the idea of converting original cost depreciation to replacement cost before deflating to reach depreciation (and thus also net investment, product, and income) in constant prices became generally accepted years ago. Reference need be made only to Raymond Goldsmith's savings study (1955-1956) and Helen S. Tice's article (1967). In the "official" literature, the idea came to be accepted in the United Nations' standard system of national accounts as revised in the middle 1960s (U.N., 1968). And the BEA, also at about that time, began its capital stock study, the results of which started to appear in the early 1970s and eventually provided the estimates incorporated in its 1976 capital consumption adjustment (Grose, et al., 1966; BEA, 1974).

The corresponding inventory valuation adjustment was discussed and introduced into the National Bureau's national income estimates at the same time as the capital consumption valuation adjustment.<sup>4</sup> In the official accounts, the IVA was introduced shortly after World War II when the so-called Tripartite Agreement on a system of national accounts was announced (Denison, 1947).

As for the financial statements of business, the only practical step toward rational accounting taken between 1936 and 1976 was in the application of the last-in-first-out (LIFO) method of inventory account-

DEVELOPMENTS  
BETWEEN 1936  
AND 1976

<sup>3</sup>The latter adjustment provides for the replacement of accelerated depreciation charges by straight-line charges, as well as for the price adjustment. The BEA believes that the straight-line charges provide a better estimate of the economic depreciation and obsolescence than do the accelerated charges accepted for tax purposes. The question involved was extensively discussed in a meeting of the National Bureau's Conference on Research in Income and Wealth held in Toronto in October 1976 on the measurement of capital. The proceedings will be published in due course.

<sup>4</sup>The basic ideas are worked out in the first volume of *Studies in Income and Wealth* (Fabricant, 1937; Kuznets, 1937).

ing. LIFO requires pricing of withdrawals from inventory at the current price paid for additions to inventory. When physical inventories remain constant or grow in size, LIFO has essentially the same effect as the IVA. LIFO was first permitted for only two industries (nonferrous metals and tanners, both subject to exceptionally violent changes in prices of materials) in the Revenue Act of 1938 and then generally under the Revenue Act of 1939. But only a small minority of firms (by number or even by inventory value) took advantage of the option to use LIFO; and it is still a minority even today, after the recent rush to LIFO when inflation accelerated.

Discussion of depreciation and obsolescence accounting on a current price basis in financial statements of U.S. corporations, under way before World War II, widened after the wartime and postwar rises in the price level. George Terborgh, for example, began a notable series of publications on the subject shortly after the war (Terborgh, 1947);<sup>5</sup> the Conference Board devoted some meetings to the subject in 1948 (N.I.C.B., 1948) and later; the American Institute of Accountants (as it was then called) set up a "Study Group on Business Income," which in its 1952 report concluded, among other things, that financial results measured in units of equal purchasing power "would be significant and useful for many of the purposes for which income determinations are commonly used"; and by 1969 we find the Accounting Principles Board of the American Institute of Certified Public Accountants in its Statement No. 3 recommending, though not requiring, some recognition of changing price levels in financial statements—a recommendation that met virtually no response. Not until December 1974 did the Financial Accounting Standards Board, successor to the Accounting Principles Board, propose to require, not merely recommend, that the effects of general price level changes be reported in financial statements (FASB, 1974).

Before specifying the main points of the Financial Accounting Standards Board proposal and comparing them with the SEC requirements and the proposals by others, three of the general issues that arise require some discussion.<sup>6</sup>

#### *Historical Cost, Current Value, General Purchasing Power*

One of the major unresolved issues in the adjustment of each year's account for inflation involves a choice among three alternatives. One, should historical costs simply be replaced by current costs? Or, two, following this step by another, should the adjusted current income be converted to "real" income, that is, to income measured in the constant prices of an appropriate base year? Or, three, should only the second step be taken; that is—bypassing the problem of converting historical to current costs—should the historical costs statement be adjusted only for changes in the general price level? Only if both steps were taken would the incomes of successive years be fully adjusted for all price changes, general and relative, and be entirely comparable with one another.

<sup>5</sup>The latest appeared in October 1976.

<sup>6</sup>Other issues are described in Fabricant, 1974.

Note that advocates of either current value or historical cost accounting could agree on the usefulness of general purchasing power accounting. Because all prices do not move closely together their results would differ, but by not nearly as much as they would did not the application of general purchasing power accounting eliminate a major part of the difference between current value and historical cost.

In the end, if and when assets have been sold or become fully depreciated and when liabilities are finally settled, current values will have entered the books under either system of accounting, whether historical cost or current value. But the timing will be different; the periods in which current values are recognized and recorded will not be the same. Under historical cost accounting, recognition of any difference between original cost and current value will be delayed until final "realization." Under current value accounting, the gain or loss, whether "realized" or not, will enter the calculations of every period in which prices differ from those in the preceding period.

Although current value accounting and general purchasing power accounting deal with rather different questions, the distinction between them is not always drawn or drawn sharply. Most of the published estimates of what corporate profits, or such items as depreciation charges, would look like when adjusted for inflation (including the estimates mentioned earlier) combine the adjustment to current value and the adjustment for change in general purchasing power without drawing any special attention to that fact. One reason has already been mentioned. When inflation is substantial, it does not matter too much whether or not conversion to current value is made before correction for change in the general price level, considering the necessarily rough character of the published estimates. There is another reason. Most of the estimates mentioned are prepared by economists who generally favor current value accounting coupled with the conversion of current values to units of general purchasing power.

### *Real Income Produced, Real Income Earned*

The second main issue concerns the deflators to use for converting adjusted current income to real income. The question is whether the year's real income is to be derived by deflating adjusted current income by an index of the general price level, or by deflating separately each item of receipt and of cost by the price index specific to that item—in the case of depreciation, for example, by an index of the prices of the capital goods being depreciated.<sup>7</sup>

<sup>7</sup>Some readers may wonder whether converting the historical cost of a given class of equipment to its current value, using the price index appropriate to that class, and then deflating the current value by the same price index would not simply return the current value to the equipment's historical cost. The answer is no, with the exception noted below. In the first step, the cost when the equipment was acquired—say, in 1970, 1971, et cetera—is replaced by the value current in, say, 1976, the year for which the financial report is being prepared. In the second step, the current values in the financial statements of all years to be compared—1970, 1971, et cetera—are replaced by the values of the equipment in a common base period. If that base is 1970, the current values in all years will be converted to 1970 values. In this example, then, the exception for which the current value is historical cost is 1970.

Both procedures are appropriate—but for different purposes. One purpose is to measure income produced; the other, to measure income earned. The distinction between the two income concepts was made quite clearly by Kuznets in 1936. Apart from the foreign balance (of minor importance in the United States, except in 1973–1974, for example, when the price of imported petroleum was pushed up by the cartel), changes in income produced and income earned are the same for the nation as a whole; not so for most individual firms. A change in a firm's "terms of trade" will affect the calculation of its real income earned, but not of its real income produced.

### *Treatment of the Monetary Items*

The third main issue concerns the treatment of the so-called "monetary items," the purchasing power of which changes when the general price level changes. In an inflationary economy interest rates are sooner or later bound to include an inflation factor. Interest charged to operations in the current income account of a business firm with outstanding debt is, then, a gross charge, against which there is implicitly credited the "depreciation" on the purchasing power of its debt. The issue is whether the latter should appear explicitly somewhere in the financial statements.

It will be evident that a gain on net monetary liabilities or loss on net monetary assets under inflation, when recorded in any year's financial statement, may constitute more or less of an offset to the inflation factor in the high interest costs agreed upon when inflation was anticipated by both parties. In fact, the inflation factor built into a contract will seldom come out exactly equal to the rate of inflation actually experienced. There will be a corresponding net gain or loss in each period, fluctuating rather sharply with the rate of inflation.

Various questions are then involved. One is how the credit for depreciation of the purchasing power of debt should be estimated—on a year-to-year basis, as the rate of inflation changes, or at some average expected rate (when the debt was incurred), as is done in estimating depreciation or bad debts. Another question is whether the credit should be treated as a current or as a capital item, and, in either case, whether it is to be considered as realized in the current period or realized only when the liability is finally paid off. Involved, as well, is the old question of the appropriate length of the fiscal period in an economy subject to fluctuation.

Neglect of these gains or losses on monetary items in financial reports made on the present conventional basis means, then, another source of overstatement or understatement of current profits. If a company is in a net debtor position, as the average (though surely not every) U.S. company is, the understatement that results helps to offset the overstatement resulting from historical cost accounting of inventories and depreciation charges. Indeed, if monetary liabilities exceed monetary assets by a large enough difference, the gain in purchasing power due to inflation could more than offset the overstatement.

In the national accounts, the emphasis has been on real income produced. The deflators used are in all cases specific deflators. And gains or losses on monetary items by the economy at large and by the various industries or sectors are entirely ignored.

CURRENT  
STATUS OF THE  
NATIONAL  
ACCOUNTS

The difference between real income produced and income received is, as has already been mentioned, minor for the national economy of the United States. But it is not minor for many—perhaps most—individual firms or industries or sectors. In effect, the national accounts provide estimates of the constant-dollar income produced by (the real GNP originating in) the various activities and sections of the economy, but not of the constant-dollar income earned by them.

As for the monetary items, no one considering the economic—and political—effects of inflation could fail to take notice of the transfers of income and wealth among the different sections of our economy that are quite arbitrarily caused by inflation and changes in the rate of inflation. Yet he would have to estimate for himself the enormous magnitudes involved, as was done in a rough way in a National Bureau study some years ago (Goldsmith and Lipsey, 1963). The important series on personal money income is regularly deflated by the consumer price index in the published national accounts; and net income per farm (including income from nonfarm sources) is deflated by the index of prices paid by farmers for family living items in the publications of the Department of Agriculture. However, neither calculation of real income allows for changes in the purchasing power of monetary items, or even for realized (not to mention unrealized) gains or losses on the disposal of homes, farms, or securities.

With regard to business accounting in an inflationary era, little more than the talk reported above took place prior to 1974. Only when their concern had been awakened by the persistent and then very rapid inflation experienced by the American economy did the leaders of the accounting profession finally begin to appreciate the need to allow for changes in the general price level, and to do something more than just talk about it.

CURRENT  
SITUATION IN  
BUSINESS  
ACCOUNTING

### *The FASB's Proposal*

On December 31, 1974, the Financial Accounting Standards Board proposed a statement of principles that “would require supplemental disclosure of accounting information restated for changes in the general purchasing power of the dollar.” Subject to possible second thoughts in the light of comments, the proposal was to become effective for fiscal years beginning on or after January 1, 1976. However, in November 1975 the FASB announced postponement of the proposed effective date pending study of the many letters of comment received and of the results obtained from applying the proposed system to the financial statements for 1972–1974 of a sample of large corporations. The August 1975 proposal by the SEC, noted earlier, must also have played a part in the FASB’s decision to postpone the effective date. Finally, in June 1976, after study of the letters and tests, the FASB



announced its decision to postpone the proposal indefinitely. The Board found that companies and financial analysts did not seem to understand how to use the data adjusted for inflation according to its proposal; the cost of implementation, therefore, did not appear to be warranted. At any rate, the Board also stated that it had not itself yet come to a final conclusion about the merits of the proposal. The subject of inflation accounting is thus to be considered within the FASB's broader project, under way, on the conceptual framework for financial accounting and reporting.

As specified in its "exposure draft" on the subject (FASB, 1975), the FASB would have required financial reports in units of general purchasing power as supplements to the conventional reports of all business firms. Each year's current income—measured in units of general purchasing power—would have included the losses (or gains), also in terms of general purchasing power, from the holding of monetary assets (or liabilities) during the year. Gains or losses on nonmonetary assets and liabilities, however, would have been reflected in the determination of income only when the nonmonetary items were charged or credited to income—for example, when goods were drawn from inventory or plant was depreciated or sold. Current value accounting,<sup>8</sup> then, was put aside, to be considered at a later date in another project of the Board. No allowance was to be made, as the BEA believes necessary for its purpose, for the accelerated depreciation permitted in recent years for tax purposes—a liberalization of the tax regulations presumably made in part to offset the effects of inflation on taxable income.

### *The SEC's Requirement*

To return to the SEC, it recognized the distortions caused by inflation in conventional financial statements in 1973, when it proposed to require footnote disclosure by all listed corporations of the effect on net income of using replacement cost for valuing inventories in computing cost of sales (SEC, 1973). Pending a final decision on this proposal, the Commission urged such disclosure "in the best interest of both statement preparers and users" (SEC, 1974). There was very little response to this suggestion, however. Finally, with inflation reaching new heights, and probably stimulated also by the FASB's proposal (about which, at the time, members of the SEC's staff appeared to have had their doubts), the SEC came out on August 21, 1975, with a widened proposal to amend its Regulation S-X (SEC, 1975). This meant requiring—not merely suggesting—disclosure of replacement cost data, and on more than just inventories. It is the regulation approved in March 1976 (SEC, 1976) and effective for end-of-1976 financial statements.

<sup>8</sup>In current value accounting *all* assets are valued at current market prices, and changes in these values are entered in the income account, either as part of operating profit or as a separate "holding gain." See Backer, 1973.

The SEC's proposal stands in sharp contrast to that of the FASB.

First, it covers only certain items, not all, in the income account and balance sheet. In the balance sheet, these are inventories and depreciable, depletable, and amortizable assets; in the income account, they are cost of sales and depreciation, depletion, and amortization. Supplementary disclosure is not required on monetary items, goodwill, or land.

Specifically, information would be required on what cost of sales would have been if calculated on the basis of current replacement cost at the time of sale, and on how much depreciation, depletion, and amortization would have been accrued if estimated on the basis of current replacement cost of productive capacity. The latter is explicitly stated to mean not reproduction costs of the identical plant and equipment, for example, but the current cost of an asset of equivalent operating or productive capability—a definition that raises some interesting questions. (These will be noted later.)

Second, the SEC asks only for current replacement cost, not replacement cost deflated by an index of the general price level. However, the SEC goes on to state that when implementing its rule, "some registrants may wish to use data regarding changes in the general price level as part of the analysis of reasons for changes in replacement costs." And since the SEC notes also that it does not view its proposal as competitive with that of the FASB, this could mean that some enterprises might go beyond, and perhaps even well beyond, the limited requirements of the SEC if it seemed desirable from their particular points of view.

Third, the SEC leaves to the discretion of the individual firm the detail of classification and the data to use in meeting the SEC's rule. The only requirement is that the information disclosed be prepared "with reasonable care"; have a "reasonable factual basis"; represent management's "good faith judgment"; and be accompanied by a statement that discloses the basis upon which the information was calculated and "the imprecisions inherent therein." It is suggested, also, that the firms in an industry might get together to try to establish and follow some uniform procedure.<sup>9</sup>

### *The CASB's Proposals*

In October 1975 the Cost Accounting Standards Board, established by the Congress a few years ago to set accounting standards for federal procurement contracts, published its own proposal on inflation accounting, one different from those of the FASB and the SEC (CASB, 1975). The purpose was "to establish the principle that price level adjustments are relevant in the determination of contract costs," but

<sup>9</sup>There are some other relevant points in the SEC regulation, including the treatment of certain intangible assets (other than goodwill), natural resource reserves, and leases, but enough has been said for the present purpose.

It should be remembered that the SEC's regulation applies only to large corporations listed on the stock exchanges.

the standard proposed related to historical-cost depreciation alone. Current-year depreciation charges were to reflect historical costs adjusted upward for the inflation between the year the assets being depreciated were originally acquired and the current year. The price index to be used would be the GNP implicit price deflator, not specific deflators as in the SEC requirement. Like the SEC requirement, and unlike the FASB proposal, the CASB proposal did not involve an adjustment to constant prices.

More recently, however, in March 1976, the proposal was withdrawn in response to criticism, and a substitute offered for comment. The new proposal involved including in total cost an imputation for the cost of capital, with the latter based on the prevailing rate of interest on five-year business loans. In an inflationary era the cost of money tends to include an allowance for inflation, as was pointed out earlier. Were the expected rate of inflation to decline, for example, the imputed cost of money would tend to decline by about the same amount. The idea, therefore, has a certain attraction as a simple procedure for adjusting accounts for inflation. But it is not free from objections. In the example posed, the ratio of current replacement costs of tangible assets to historical costs would not be lower than before.

Nevertheless, the proposal was approved in June 1976. The new "Standard on Cost of Money as an Element of the Cost of Facilities Capital" became effective on October 1, 1976 (CASB, 1976).

#### *The Proposals of Individual Accounting Firms*

As might be expected, most of the large public accounting firms, and some of the small ones, have expressed their views on whether, how, and when business financial statements might be adjusted to deal with the problem of inflation. These views take the form of comments, such as those mentioned earlier, on the proposals of the FASB, SEC, and CASB, or appear in speeches or published documents.

Particularly worrisome to many accountants is the possibility that readers of financial statements expressed in current prices, or in units of general purchasing power should the latter eventually become available, will not always understand just what the adjusted values mean, despite the explanations appended to them (Backer, 1973). This is one of the reasons offered by the FASB for postponing its proposal. Certainly the information required by the SEC is not entirely free from the danger of misunderstanding. Some items—not all—would be adjusted to current values, and none are required to be expressed in units of general purchasing power. Profits recalculated with the aid of the new information, then, could be reaching "new high levels" (as management and journalists like to put it) when the purchasing power of these profits might in fact be declining because of inflation. Not all who read of the new levels will understand this. Even financial analysts who undertake the task of interpreting financial statements do so with unequal sophistication and effort. Nor do all users of financial statements have access to the information worked up by analysts.

But accountants worry also about the practical problems of imple-

menting the proposals. In part this is because approximations are required, and accountants put a high value on precision and verifiability—sometimes to the point of preferring a precise but irrelevant figure to an approximate relevant one.<sup>10</sup> In part, too, it is because of the complexity of the issues involved—on the treatment of monetary items, for example, and on the choice of deflators.

On the whole, therefore, the accountants tend to be cautious, and to view the various proposals as experimental at best, designed to provide information and experience that might or could *eventually* help to build a sound basis for adjusting the accounts.

We can take the time for only one illustration. In a monograph advocating such a cautious approach to current-value accounting, one of the big firms of CPAs (Touche Ross, 1975) points out that current values may be determined in more than one way; that because “the values are elusive and the methods are undeveloped, experimentation is required”; and that implementing current-value accounting “by necessity may have to be approached in stages,” which (it is implied) may extend over a fairly long period of time—not months, but years. In the final stage, when standards for current-value financial reports had been developed, these could “then become the primary financial statements of the entity, with historical cost statements, if they are retained at all, fulfilling a subsidiary role.”

It is recognized, further, that “in a reconciliation of changes in [current-value] financial position between measurement dates, [general] purchasing power changes are a factor and should not be ignored”; that this factor should be reported in reconciling changes in stockholders’ equity, differentiating it clearly from operating results; and that this can be done without presenting a second set of financial statements in units of general purchasing power, such as the FASB has proposed.

Even after August 21, 1975, when the SEC published its proposal to require disclosure of replacement costs of inventories and plant and equipment, its implications seemed not to be fully appreciated. Now, with the proposal applicable to end-1976 financial statements, accountants are confronted with a large and difficult problem, with limited information, and with little time. Many questions arise about procedures and availability of data, and the choices among procedures and data.

The main questions are how thorough a job *can* be done, and how thorough a job *should* be done, to meet the SEC’s requirements, at least in the initial, first year’s, effort. More specifically: How far should a company go in searching for the price data needed—including the

LEARNING TO  
MEET THE SEC  
REQUIREMENTS

<sup>10</sup>Even in national accounting this seems to be true. It has meant a slow response to the needs of economic analysts of all kinds and of econometricians in particular. In trying to follow up the problems posed by Keynes and his followers, rather *ad hoc* and generally very rough calculations have had to be made by the econometricians themselves. It might have been better had the BEA provided the required estimates, rough as they might have to be, perhaps in the form of various alternative concepts of income, investment, and other macromeasurements.

information required to estimate the cost of replacing equivalent capacity, not merely the cost of reproducing what may be obsolescent capacity? How detailed should the classification be of assets for which replacement cost estimates are to be made? How many alternative calculations are needed, if only to specify the ranges within which the estimates fall, such as the SEC suggests might be done? Should related information be included on the effect of changes in general purchasing power, following another suggestion by the SEC? If yes, how? Finally, how far should one go in explaining and qualifying the estimates?

Even when only a single deflator is needed to convert business accounts to units of general purchasing power, as in the FASB approach, there are some questions. Because relative prices are always changing in response to shifts in demand and supply, a "change in the general price level" must mean some sort of average of many different price changes. It is the problem of defining and measuring this average that led to the invention of index numbers a long time ago.

Index numbers of prices differ in many ways, however: in the markets to which they refer, in the mathematical form of the averaging process used, in the weights used to allow for differences in the relative importance of the various commodities and services (an importance that changes over time as the economy develops), and in the number of commodities and services sampled. As a result, there are various indexes of the general price level: the GNP implicit price deflator, the implicit price deflator for private GNP, the "fixed weighted price index" for GNP (which the Department of Commerce has decided to stress in preference to the IPI), the corresponding index for the private product, and the consumer price index; some would even include in the list the all-commodity wholesale price index, and the industrial-commodity wholesale price index. Most of these indexes differ, some substantially, over long as well as short periods. However, the two alternatives most often considered—the GNP implicit price deflator and the consumer price index—although different in several respects, and each imperfect in its own way, behave rather similarly on the whole. The error made in choosing between them, if any, is a minor matter compared with the error of not deflating at all. The question, then, is which to accept as the conventional measure of the general price level. The FASB chose the former, as do most economists for the same purpose.

In current value accounting, however, the price data problem is much more serious, and the practical task of making the conversion of historical cost to current value is multiplied. The prices of individual commodities or structures, or at least of individual classes of such goods, are required. These data are not always readily available in a form suitable for the purpose of converting historical to current values, or current values to some base period value.

For goods that flow in and out of inventory and which are already accounted for on a LIFO basis, the task is relatively slight. But it should be noted that under the SEC rule, firms may not simply use LIFO prices without assurance that these do not differ materially from

replacement cost prices. And firms not already on LIFO must learn where current replacement cost information can be obtained.

The bigger problem applies to plant and equipment. It might be thought that sufficiently detailed and comprehensive information on equipment is readily available in well-organized form in the wholesale price bulletins of the Bureau of Labor Statistics. A close look reveals many gaps, however, especially in the relevant machinery and equipment category. Not for nothing is Richard Ruggles at the National Bureau of Economic Research, with the cooperation of the BLS, attempting to enlarge the scope of the WPI and improve it in other respects (Ruggles, 1976).<sup>11</sup>

Further, many of the equipment prices are of uncertain comparability over time because of the quality changes that the BLS is not able to allow for in making up its indexes. (The presence of unmeasured quality change biases also the GNP deflator, but hardly to the same extent.) Calculations of price change in some types of equipment, with and without quality adjustment, reveal rather startling differences, according to studies made at the National Bureau (Kravis and Lipsey, 1971; Gordon, 1976).

The situation with regard to plant and other structures is still more difficult. Construction cost data assembled from a variety of sources and published in the *Survey of Current Business*, for example, are of mixed quality. Some relate to the cost of the finished structure—the building—but most relate only to the cost of materials and labor used in construction, with little or no allowance for other inputs or for productivity changes.

When publicly available data are inadequate, individual enterprises may, of course, look to their own files of invoices and suppliers' catalogs. If they purchase equipment or contract for structures frequently enough, and these are held to essentially the same specifications, they could—in principle—compile the information they need. But this is seldom the case, and in any event the cost of compilation could be high.

The problem of quality change is closely related to the problem posed by the SEC of pricing not reproduction cost of the same capital good but cost of replacing the same productive capacity. If a new machine is identical in all respects, except capacity, with the old machine that is to be replaced, the price of the new machine could be used to obtain the cost of replacing capacity simply by multiplying it by the ratio of the capacity of the old to the capacity of the new. The trouble is that the new machine will not be identical in all respects but that of capacity. There will be changes in the amount of labor required per unit of capacity, in maintenance costs, in fuel and power requirements, and even in material requirements if the new machine is better able to use material economically. In other words, the problem is that of answering the question, How much of the price of the new machine is due sole-

<sup>11</sup>There are also the Department of Agriculture indexes of prices paid by farmers for equipment, some of which may be applicable to nonfarm industries, but these data also have their limitations.

ly to the increase in capacity after allowing for all other changes?<sup>12</sup> That it is not easy to answer this question is the experience of the economists, mentioned above, who have been trying to deal with it. It requires detailed (and hard-to-obtain) information on specification changes and the use of these data in rather complicated "multiple regression" analyses. A fair-sized literature has already developed on the subject, under the title of "hedonic price indexes," and the further work going on will add more (Griliches, 1971). But the results are hardly sufficient and ready for use in meeting the SEC's requirements. The requirements will have to be ignored, with an appropriate explanation, or met with the little information that is available—which would also require an explanation. Those firms aware of the work done by the BEA in its capital stock study and national accounts may use the indexes developed there—accepting also the assumptions on which the indexes are based. It is doubtful that many, if any, companies will spend the time and take the trouble required to develop a full array of their own indexes.

It is for good reason, obviously, that the SEC thought it desirable to issue Staff Accounting Bulletins, along with its decision to impose the regulation described above, in order to assist accountants and financial executives to interpret and meet the new disclosure requirements. Also, an advisory committee has been set up by the SEC for the same purpose, to assist its own staff, and meetings are being planned by private groups as well to instruct and advise those who have to make the estimates of replacement cost. It will be interesting to see how all this works out. We may be sure that much will be learned by all engaged in the enterprise.

It may turn out that the eventual solution to the problem of data will take the form of a published set of price indexes, recognized as imperfect but generally accepted for the purpose, similar to the set of depreciation rates put together by the Internal Revenue Service in its Bulletin F to meet an equally difficult problem. The publication would contain a reasonably detailed set of indexes, classified by industry and type of capital good, giving the ranges that would be acceptable. Every firm could use this set of conventional price indexes without trying to concoct its own, departing from them only when justification could be given, as in the case of depreciation rates. The indexes being developed by the industry groups now active, and the indexes pertaining to department store inventories, regularly published by the BLS, could mark a substantial beginning in this direction.

Many companies, we may suspect, will worry not only about how to meet the new rules, and the costs entailed, but also about the consequences of making one or another of the choices open to them. What, for example, will a company's "bottom line" look like, after it is adjusted in the light of the replacement cost estimates—as it inevitably will be by the users of its financial statements? What will it look like in

<sup>12</sup>The SEC is aware of the difficulties, for it asks registrants to describe what consideration, "if any," was given in their response to "the related effects on direct labor costs, repairs and maintenance, utility and other indirect costs as a result of the assumed replacement of productivity capacity." But it does not explain how to give this consideration.

relation to the figures, adjusted as well as unadjusted, of other companies or of other years? What if attention is paid to changes in the purchasing power of money, and to their effect on the monetary items?

Not of negligible importance, in explaining the lag in business accounting, is the interest of a business manager in showing a good "bottom line" in the income statement he reports. This interest may be related, in part, to the arrangements under which managerial compensation is determined. Salary bonuses are generally based on the conventionally calculated profits per share. Will a company, then, in making its estimates, and deciding which one or which set of alternatives to present, be seeking the best result from its point of view? Might it, in doing so, open itself to the charge of self-seeking?

Under SEC regulations liability attaches to the issuance of estimates that might mislead stockholders. However, it is for this reason that the SEC felt compelled to propose the adoption of a rule to provide a "safe harbor" (SEC, 1976). Persons preparing current replacement cost information on a "reasonable" basis and in "good faith" and presenting the information with "adequate" disclosure "would not be deemed to have made an untrue statement of a material fact. . ." as this is defined in the securities acts.

At the moment we are, at best, in midstream in the movement toward rational accounting in an era of unstable money. The issues raised, it is clear, are not closed.

CONCLUDING  
COMMENTS

In accounting for business income, the SEC now requires (of large listed corporations) supplemental information on the current values of inventories and plant and equipment, and of changes in these, but its requirements do not apply to other items in the balance sheet or income account. The SEC requires information on current values, but not on values in terms of units of general purchasing power. And what the SEC will get in response to its requirements—if these are not withdrawn before the effective date—remains to be seen. The CASB has included the high cost of money in its cost accounting standards, but only as an element of the cost of facilities capital. The FASB proposal, which would take account of changes in the general purchasing power of monetary assets and liabilities (among other things), is in abeyance.

Yet, also clear is the fact that progress is being made. The FASB proposal may be in abeyance, but it helped to intensify the thinking and discussion of inflation accounting that is a necessary step in moving forward, and it may have helped to spur the SEC to action. Also, the "trial run" of the FASB procedure, made by a substantial number of large companies, will make a contribution when the FASB completes and publishes its analysis of the results. Something has been and will continue to be learned as well from the discussions and results of the CASB's new standard on the cost of money. And while we cannot be sure just what the registrants will produce in response to the SEC's requirements, we can be sure that it will be instructive—to the companies involved, the accounting profession, and readers of financial statements, as well as the SEC itself. We will be that much closer to reaching a consensus on rational business accounting under inflation.



National accounting is further ahead in meeting the problems raised by inflation than is business accounting. But there are unresolved issues here, too, concerning real income received as against real income produced and the treatment of gains and losses caused by inflation. It is important to note, particularly, that any proposal to take account of changes in the purchasing power of monetary items—and of unrealized capital gains or losses on other items in the balance sheet—in business accounting would, at the same time, imply, or require, a parallel proposal for the recalculation of at least the aggregates of personal and of farm incomes.

The need for rational accounting extends beyond the areas covered here. Economic development has increased the relative importance of some types of household production and consumption, human capital, investment in R & D, pension systems, government activity, and environmental problems. Dealing with these and other subjects also raises issues of accounting from both the social and the private points of view. It is a sad commentary on the existing state of governmental accounting and reporting, for example, that Geoffrey Moore felt compelled to point out in a recent discussion of the federal deficit that this year's deficit should not be compared with the deficits of earlier years without allowing for inflation (Moore, 1976).

The subject of rational accounting is not a trivial matter. How we calculate costs and benefits makes a difference in how we judge the consequences of policy. Accounting also influences the choice among policies, for accounting affects the data economists use to discriminate among and test the theories on which policies are based. A plea for accounting reform, like Dr. Samuel Johnson's plan for his new dictionary, is not merely a case of "variety seeking praise by petty reformation."

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