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Inflation Accounting and Nonfinancial Corporate Profits: Financial Assets and Liabilities

THIS ARTICLE is the second of two complementary papers by the authors concerning inflation accounting and nonfinancial corporate profits. The companion piece, which appeared in *BPEA*, 3:1975, discussed definitions of real corporate profits and suggested as a meaningful and attractive candidate the accrual of purchasing power by equity holders. A second definition, based on the concept of maintaining capital intact, was presented as an alternative. The paper asserted that each balance-sheet entry warrants restatement relative to current practice in order to compute real profits and provide an accurate detailed picture of the position of the firm in periods of inflation and of adjustment in relative prices. The accounting treatment of inventories and depreciable assets was examined in detail, and micro and macro estimates were made of the impact of adopting account-

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ing practices consistent with the two definitions of real income for balance-sheet entries involving physical assets. This paper, on the other hand, will examine the accounting practices for nominally denominated financial assets and liabilities. It also will aggregate and summarize the results of the two papers.

We take corporate income (profits) as a measure of the increase in the “economic power” of the equity holders of the firm. To be fully consistent with a Haig-Simons accrual definition of income, as we argued in our previous study, depreciable assets and inventories should be carried on balance sheets at their current market value. Further, any real appreciation or depreciation of these assets relative to the general price level should be computed as income. This policy had to be compromised somewhat due to the paucity of data and the inadequacies of the available price indexes for specific capital goods. In practice, we recommend general-value depreciation and constant-dollar FIFO (first in, first out) inventory accounting, and estimated the impact of implementing them. We demonstrated that the universal adoption of these techniques would reduce aggregate profits, and therefore profit taxes, of nonfinancial corporations in the presence of inflation. However, the two policies would affect individual companies represented in the Dow Jones industrial averages very differently.

The earlier paper also asserted that the definition of income based on capital maintenance conceptually suggested very different accounting procedures than did the definition based on purchasing-power accrual. If one accepts the idea of capital maintenance, the relative appreciation of depreciable assets and inventories does not constitute income. It follows that LIFO (last in, first out) would be the appropriate inventory-accounting technique to implement the capital-maintenance income concept.

The Accounting Treatment of Financial Liabilities

We open this analysis of financial assets and liabilities by concentrating on the accounting for liabilities.

The Haig-Simons, or purchasing-power-accrual, concept of corporate income requires recording all assets and liabilities, physical or financial, at their market values in order to determine changes in net worth. Further, computing the real rather than the nominal change in net worth (and the

real value of each entry) demands stating the balance-sheet figures for the beginning and the end of the year in the same units. We have adopted the year-end dollar as the appropriate unit and are using the domestic-spending deflator (covering GNP minus exports plus imports) as the measure of the change in the purchasing power of the dollar.

The capital-maintenance definition of income is briefly summarized by Pigou:

From the joint work of the whole mass of productive factors there comes an (annual) in-flowing stream of output. This is gross real income. When what is required to maintain capital intact is subtracted from this there is left net real income.¹

This definition makes absolutely no reference to financial liabilities. One could argue that, to be consistent with the accounting treatment of physical assets under this concept, the firm's short position on bonds should be handled with a LIFO-type procedure. This follows the "going concern" assumption of accountants and its basic emphasis on realization. It implies that accrued changes in the market value of bond liabilities would not enter the computation of income. A possible justification for this treatment is that the firm issued its liabilities with their particular coupon rates and maturity structure because it desired the implied periodization of nominal debt costs and had no intention of repurchasing prematurely in the event of rising interest rates. The argument is that the firm is in the business of selling, not buying, such long-term financial contracts as bonds. This position conflicts with the fact that many firms do buy out their debt at discount. Again, as with physical assets, the fundamental issue is whether an accrued but unrealized gain should be recorded as income.

While capital-maintenance income, on this interpretation, would not reflect changes in the market value of long-term liabilities, it would include the decrease in the real burden of nominal net liabilities that accompanies inflation. This correction, which amounts to deducting as costs only real, not nominal, interest payments would be made with both real-income concepts and is part of the reform of corporate accounting proposed by the Financial Accounting Standards Board (FASB).² The only difference is that

1. A. C. Pigou, "Maintaining Capital Intact," *Economica*, n.s., vol. 8 (August 1941), p. 271.

2. FASB, Proposed Statement of Financial Accounting Standards (Exposure Draft), "Financial Reporting in Units of General Purchasing Power" (December 31, 1974; processed).

with the purchasing-power-accrual concept, a firm's net liability position would be determined using market values, while with the capital-maintenance concept or the FASB proposal, book values would be used.

Present accounting practices for financial liabilities in the income statement of nonfinancial corporations are based on simple cash flow. The only reporting with respect to retained liabilities is the deduction of nominal interest paid. Thus, the treatment is not consistent with either of the two real-income concepts we have presented, and, in particular, differs from the Haig-Simons concept in two major respects. First, such entries are not corrected to their current or market value but are listed at their issue or maturity price. Second, no adjustment is made for the decline in the value of a firm's real liabilities that results from any decrease in the purchasing power of a dollar even if their nominal value remains constant. The following paragraphs report estimates of the effects of these two accounting changes on the thirty Dow Jones industrial companies and on nonfinancial corporations in the aggregate.

CORRECTING BONDS TO NOMINAL MARKET VALUE

In recent years not only has the rate of inflation increased substantially, but so has the expectation of future inflation, as reflected in movements in long-term interest rates. These changes have precipitated a large drop in the market price of many long-term bonds. The owners have experienced a loss, which they can realize by selling their bonds in the market. Essentially, bond holders can trade bonds among themselves in order to realize the losses and obtain the resulting tax deductions. Against these losses, no profit is reported for tax or financial-statement purposes. Nonetheless, under the accrual concept, the bond issuer enjoys a symmetric economic profit when the nominal value of its debt obligations declines due to an increase in interest rates. Consider a bond whose value was \$1,000 at issue, but has fallen to \$800 by the end of one year. The company has made a \$200 gain in the sense that it can buy this obligation in the open market for \$800.³ To be consistent with an accrual definition of profit, we would argue, the income of the firm should be independent of realization.⁴ This can be accomplished if companies carry their marketable long-term debt obligations (and long-term financial assets) at market value on their balance

3. The same effect can be achieved by buying a similar bond of another company.

4. Currently, a profit is reported only if the bond is repurchased at a discount.

sheets, and report the change in market value as income.⁵ Liabilities that are not traded on active markets would be carried at their calculated present values; the discounting would be determined using the interest rate the firm faces on similar marketable debt issues.

Two aspects of this proposal should be clarified. First, it may seem paradoxical for the case of a fall in bond values due to a perceived deepening of default risk. Such a change may correspond to a decrease in value of the assets of the firm that clearly makes the equity holders worse off, and which, under the purchasing-power-accrual concept of income, would be reported as a loss. However, to the extent that the greater risk of bankruptcy depreciates the value of the bond liabilities, some of this loss is transferred from the equity holders to the bond holders. As a result, stockholders realize a partially offsetting gain, which would be recorded as accrual income with the procedures described in this section.

Second, as with depreciation and inventory accounting, market-value reporting of financial liabilities involves the timing of income (and presumably tax payments). If the bond is not repurchased prematurely, its price will return to 100 (percent of issue price).⁶ The net change in value will be zero, and the tax payments over the life of the bond will be the same with or without market-value reporting. Firms offer many bond issues, some with rather long maturities, and the empirical data to be presented will show that the long run is long enough that the adoption of market-value statements would have a sizable effect on earnings.

As has already been stated, firms do not now revise the value of their outstanding liabilities to the market level. In terms of present value, this omission is compensated for by the deduction of interest expense according to the historical coupon rate and not the market rate, but the timing of reported income diverges from that of the actual accrual of economic power. To clarify this phenomenon, consider a firm that issues a ten-year, \$10,000 bond at 4 percent interest. If interest rates jump to 10 percent immediately after the bond is issued, its market value falls to \$6,313. If the company does not repurchase this obligation, current accounting practice would have it report \$400 annual interest expense on

5. A similar proposal for accounting in the financial sector is contained in George J. Staubus, "Current Value Accounting in Financial Industries" (lecture delivered at University of California, Berkeley, November 18, 1974; available as a pamphlet from University of California, Berkeley, Institute of Business and Economic Research).

6. Bonds that never mature, termed consols, need not return to par, however.

a \$10,000 loan, \$600 less interest than what would be required at the market rate. With a 10 percent discount rate, the present value of this \$600 annual "saving" for the next ten years is \$3,687, exactly the amount of the drop in market value. Thus, the gain is spread over the life of the obligation. With market-value accounting, a \$3,687 profit would be recorded when the spurt in the interest rate occurred. If the 10 percent rate persists, the value of the bond would be \$6,544 after one year and \$6,798 after two. Following the extraordinary (one-shot) gain of \$3,687, the firm would report \$400 in interest and a \$231 rise in obligations the first year (for a total of \$631, or 10 percent of \$6,313), and \$400 plus a \$254 increase in obligations during the second year. The total debt cost would always be consistent with the market interest rate and the market value of the debt, and the profits or losses due to interest-rate changes would be reported when they were experienced. Proponents of accrual accounting would argue that these calculations more accurately reflect the income flows and economic position of the business enterprise.

Table 1 details the unreported and unrealized profits that each of the Dow Jones industrial companies experienced in 1974 on its outstanding bonds. The double column 1 records the value of the open-market bonds outstanding for each company in 1973 and 1974. Column 2 shows the net bond-market borrowing by each company during 1974. The figure is positive if the company issued more debt than it repaid, and negative in the opposite case. The net gain on open-market bonds is shown in column 3; a similar figure for closely held, foreign, and nonlisted long-term obligations is shown in column 4, but it is approximate since the present value of these items had to be estimated given their maturity and coupon rate, the credit rating of the company, and market interest rates. No adjustment was made for the exchange-rate income or loss from holding foreign-currency obligations. The total unreported profits of these firms resulting from the decreases in the market or present value of their long-term obligations is given in column 5, while the corresponding numbers for unconsolidated credit-company subsidiaries are shown in footnote *c* of the table.⁷ The table indicates that all of the Dow companies experienced unreported profits on their bonds in 1974, with American Telephone and Telegraph and its consolidated subsidiaries accounting for more than one-

7. The numbers for Chrysler's credit subsidiary and Westinghouse and its unconsolidated subsidiary are swollen somewhat because investors apparently felt that the riskiness of their debt obligations increased during 1974.

half of the total gain of \$3.3 billion. The income corrections that would be made by individual companies to arrive at the accrual of purchasing power depend primarily on the amount and maturity structure of the firm's outstanding debt. These elements determine the sensitivity of the value of total liabilities to interest-rate changes.

The corresponding macro time-series data on changes in the market or present value of long-term liabilities are contained in tables 2 and 3. These tables report calculations of the accrued but unrealized profit that nonfinancial corporations have experienced on their long-term bond and mortgage liabilities from 1945 to 1974. Column 2 of table 2 indicates that at the end of 1974 the average bond was selling at 76 percent of its price at issue. The difference between the par and market value of bonds is shown in column 4; as of December 31, 1974, the total value of the outstanding bonds of nonfinancial corporations was \$53.7 billion less than their combined issue (par) value. This number represents the cumulative accrued gain of bond issuers and the symmetric loss of bond holders. Because this statistic would tend toward zero with stable interest rates, it is rather remarkable that it has remained positive for the twenty-nine years 1946-74. At no time during that period was the average market price of bonds above par. The year-to-year change in gains is shown in column 5 and should be interpreted as the year's decrease in the market value of outstanding bonds. These numbers, then, are the annual unreported profits of nonfinancial corporations due to changes in the value of bond liabilities. The severe credit crunches of 1966, 1969, and 1973-74, which resulted in sharply higher interest rates and lower bond prices, show up clearly in this column.

Table 3 sets out the similar gain that nonfinancial corporations have enjoyed on their mortgage liabilities. A substantial fraction of these entries are reported by real estate companies, and in aggregate they are slightly over half as important as long-term bonds. We have assumed that the average ratio of present to par value for these obligations is the same as that observed for marketable bonds. This assumption implies that the longer average maturity of mortgages exactly balances the fact that the principal is gradually paid off during the term of the liability. If one combines the results of the two tables, the 1974 figures are \$84.7 billion and \$37.9 billion, respectively, for cumulative and annual gains on bond and mortgage valuation.

One result of the current accounting practice should be mentioned.

Table 1. Unrealized Profit on Outstanding Long-Term Liabilities, Thirty Dow Jones Industrials, 1974

Millions of dollars

Company	Market value (Standard and Poor's bonds)		Cash flow into bond market, 1974 ^a	Gain on Standard and Poor's bonds (3)	Gain on other long-term liabilities ^b	Total gain on long-term liabilities (5)
	1973	1974				
Allied Chemical	324.4	253.4	-32.8	38.2	0.8	39.0
Aluminum Company of America	497.1	432.5	-11.0	53.6	29.5	83.1
American Brands	183.1	311.3	133.5	5.4	16.1	21.5
American Can	189.3	160.0	-5.2	24.1	7.8	32.0
American Telephone and Telegraph	5,918.8	5,958.6	500.0	460.2	1,359.0	1,819.2
Anaconda	129.7	112.5	0.0	17.2	6.8	24.1
Bethlehem Steel	481.9	431.5	-7.2	43.2	14.6	57.8
Chrysler	393.4	373.0	-11.3	9.1	0.0	9.1 ^c
E. I. du Pont de Nemours	0.0	497.2	500.0	2.8	15.3	18.1
Eastman Kodak	0.0	0.0	0.0	0.0	7.6	7.6
Esmark	48.3	45.2	0.0	3.1	7.2	10.3
Exxon	646.1	687.0	94.6	53.7	154.8	208.5
General Electric	545.1	788.9	276.1	32.3	21.4	53.7 ^e
General Foods	143.4	237.0	100.0	6.4	3.5	9.9
General Motors	25.9	25.5	-0.4	0.0	44.8	44.8 ^c
Goodyear Tire and Rubber	294.2	249.4	0.0	44.8	38.7	83.5
International Harvester	213.7	325.7	144.7	32.7	16.2	48.9 ^c
International Nickel	121.4	108.2	0.0	13.2	21.7	34.9

International Paper	162.7	145.9	0.0	16.9	24.5	41.4
Johns-Manville	75.0	61.9	0.0	13.1	2.8	16.0
Owens-Illinois	123.4	251.2	147.5	19.7	20.3	40.1
Procter and Gamble	118.4	102.5	-5.3	10.7	8.1	18.7
Sears, Roebuck	514.0	469.4	-19.0	25.6	6.2	31.8 ^a
Standard Oil of California	501.5	450.1	-7.8	43.7	33.2	76.9
Texaco	469.5	417.5	0.0	52.0	97.9	149.9
Union Carbide	190.0	171.2	0.0	18.7	29.1	47.9
U.S. Steel	768.7	672.6	-39.1	57.0	32.2	89.2
United Technologies	0.0	0.0	0.0	0.0	28.9	28.9
Westinghouse Electric	426.8	310.2	-24.3	92.4	0.0	92.4 ^b
F. W. Woolworth	116.9	187.0	125.0	54.8	11.6	66.4
All companies	13,622.7	14,236.4	1,858.0	1,244.6	2,060.6	3,305.6

Sources: Columns 1 and 2, Standard and Poor's Corporation, *Bond Guide*, relevant monthly issues, and various other sources; column 3 is the difference between 1973 and 1974 in column 1, plus cash flow in column 2; column 4, estimated by authors on the basis of market interest rates, and the maturity, coupon rate, and credit rating of the company (see text discussion); column 5 is column 3 plus column 4. Figures are rounded.

a. New issues less retired debt.

b. Closely held, foreign, and nonlisted obligations.

c. In addition, these companies had unreported profits on the bonds of their unconsolidated credit-company subsidiaries of: Chrysler, 107.3; General Electric, 11.2; General Motors, 235.5; International Harvester, 47.6; Sears, Roebuck, 2.6; and Westinghouse Electric, 46.8, for a total of 451.0.

Table 2. Unrealized Gain on Long-Term Bonds, Nonfinancial Corporations, 1945-74

Aggregates in billions of dollars

<i>Year</i>	<i>Par value of out-standing bonds (1)</i>	<i>Average end-of-year price (2)</i>	<i>Market value of out-standing bonds (3)</i>	<i>Cumulative unrealized gain (4)</i>	<i>Year's accrued gain (5)</i>
1945	23.5	101.25	23.8	-0.3	...
1946	24.4	95.13	23.2	1.2	1.5
1947	27.2	89.53	24.4	2.8	1.6
1948	31.4	93.22	29.3	2.1	-0.7
1949	34.2	97.08	33.2	1.0	-1.1
1950	35.7	99.50	35.5	0.2	-0.8
1951	38.9	93.16	36.2	2.7	2.5
1952	43.6	96.20	41.9	1.7	-1.0
1953	47.0	95.21	44.7	2.3	0.6
1954	50.4	99.50	50.1	0.3	-2.0
1955	53.3	97.76	52.1	1.2	0.9
1956	56.9	87.40	49.7	7.2	6.0
1957	63.2	88.09	55.7	7.5	0.3
1958	68.9	89.06	61.4	7.5	0.0
1959	71.9	83.77	60.2	11.7	4.2
1960	75.3	86.41	65.1	10.2	-1.5
1961	80.0	88.13	70.5	9.5	-0.7
1962	84.5	90.22	76.2	8.3	-1.2
1963	88.4	90.45	80.0	8.5	0.2
1964	92.4	92.31	85.3	7.1	-1.4
1965	97.8	91.32	89.3	8.5	1.4
1966	108.0	84.40	91.2	16.8	8.3
1967	122.7	82.07	100.7	22.0	5.2
1968	135.6	82.25	111.5	24.1	2.1
1969	147.6	72.12	106.4	41.2	17.1
1970	167.3	80.78	135.1	32.2	-9.0
1971	186.1	89.93	167.3	18.8	-13.4
1972	198.3	91.48	181.4	16.9	-1.9
1973	207.5	85.71	177.9	29.6	12.7
1974	227.2	76.35	173.5	53.7	24.1

Sources: Column 1, three releases from the Board of Governors of the Federal Reserve System—1945-64, "Flow of Funds Accounts, 1945-1972" (1973; processed), pp. 85-86; 1965-73, "Flow of Funds Accounts, 1965-1973" (1974; processed), p. 30; and 1974, "Flow of Funds, Seasonally Adjusted, 1st Quarter, 1975, Preliminary" (May 9, 1975; processed), p. 6.

Column 2, 1945-58, obtained from the New York Stock Exchange, Department of Research and Statistics; 1959-74, New York Stock Exchange, *New York Stock Exchange Fact Book, 1960* (1960), "Listed Bonds at the End of 1959—By Major Groups," and the same table in subsequent issues.

Column 3 is the product of columns 1 and 2 divided by 100; column 4 is column 1 minus column 3; column 5 is the difference between values of current and preceding year in column 4.

Figures are rounded.

Table 3. Unrealized Gains on Mortgage Liabilities, Nonfinancial Corporations, 1945-74

Billions of dollars

<i>Year</i>	<i>Par value of mortgages (1)</i>	<i>Present value of mortgages (2)</i>	<i>Cumulative unrealized gain (3)</i>	<i>Year's accrued gain (4)</i>
1945	8.5	8.6	-0.1	...
1946	10.0	9.5	0.5	0.6
1947	11.6	10.4	1.2	0.7
1948	12.7	11.8	0.9	-0.3
1949	13.5	13.1	0.4	-0.5
1950	14.4	14.3	0.1	-0.3
1951	15.2	14.2	1.0	0.9
1952	16.1	15.5	0.6	-0.4
1953	16.9	16.1	0.8	0.2
1954	18.5	18.4	0.1	-0.7
1955	20.3	19.8	0.5	0.4
1956	22.0	19.2	2.8	2.3
1957	23.6	20.7	2.9	0.1
1958	26.5	23.6	2.9	0.0
1959	29.5	24.7	4.8	1.9
1960	32.0	27.7	4.3	-0.5
1961	36.0	31.7	4.3	-0.0
1962	40.5	36.5	4.0	-0.3
1963	45.4	41.1	4.3	0.3
1964	49.0	45.2	3.8	-0.5
1965	52.8	48.2	4.6	0.8
1966	57.1	48.2	8.9	4.3
1967	61.6	50.6	11.0	2.1
1968	67.2	55.3	11.9	0.9
1969	71.8	51.8	20.0	8.1
1970	77.0	62.2	14.8	-5.2
1971	88.5	79.6	8.9	-5.9
1972	104.1	95.3	8.8	-0.1
1973	120.2	103.0	17.2	8.4
1974	131.1	100.1	31.0	13.8

Sources: Column 1, same as table 2, column 1; column 2 is the product of column 1 and table 2, column 2, divided by 100; column 3 is column 1 minus column 2; column 4 is the difference between values of current and preceding year in column 3. Figures are rounded.

Any portion of cumulative unreported and unrealized profits on long-term financial liabilities that management chooses to realize will be reported as income; the remainder will not. This large pool of potentially realizable profits thus provides a major opportunity for income smoothing. That many companies seize the opportunity is easily documented.⁸ We argue that it is better to record income as it accrues and then to provide the desired smoothing or averaging in the interpretation or taxation of the resulting profits.

REAL PROFIT ON NET FINANCIAL LIABILITIES

One more necessary correction is to express financial assets and liabilities (and the change in their value) in constant dollars. To ensure against double counting among these adjustments, reconsider the example of a bond that sold a year ago for \$1,000 but now is valued at \$800 because long-term interest rates have risen. We have just argued that the firm has experienced a \$200 profit, which we would have it report by reducing liabilities by that much. However, if there has been, say, 10 percent general inflation during the year, the firm also has gained because its obligations are in nominal terms. While it now has a liability of \$800, it previously had a real debt of \$1,100 expressed in current dollars. This extra \$100 in unreported income is the traditional inflationary gain of holders of nominally denominated liabilities. As we have already stated, while the \$200 correction would not be considered income under the capital-maintenance approach, the \$100 "debtor" profit would be recorded with either real-income measure.

The financial assets and liabilities of the Dow Jones industrials at the end of the 1973 fiscal year are shown in table 4. Unlike the previous two tables, this one includes both short- and long-term financial contracts. Columns 1 and 2 display the book value of financial assets and liabilities, respectively, while column 3 shows the net liability position of the firm using these book valuations. Twenty-eight of the thirty firms had positive net financial liabilities. Column 4 contains the decreases in the real value of the firm's net liabilities (calculated at book value). These numbers would be added to real nonfinancial corporate profits for 1974 under the capital-maintenance definition of income.

8. Staubus, "Current Value Accounting."

To calculate the corresponding income adjustments for the purchasing-power-accrual approach requires determining the net financial-liability position at market values. Most of the financial assets of nonfinancial corporations are cash, deposits with very short terms, and Treasury bills. The only major exceptions are financial leases and pension-fund assets, which are not included in these data but which will be discussed in the appendix. Therefore, we are assuming that the values of the financial assets given in table 4 do not deviate from book. As we noted above, financial liabilities do deviate, and column 5 records the difference between book and market for these balance-sheet entries. The 1973 net liabilities, at market values, are given in column 7. The figures are in 1973 dollars, however, and the same inflation adjustment made for the book figures is necessary for comparability with the 1974 balance-sheet entries and for determination of changes in real financial position. The inflation gains resulting from the net liability position at 1973 market value are shown in column 8; these are the real inflation gains of the firm arising from its net holdings of nominally denominated debt. To derive accrued income in constant dollars for these companies, these figures and the decrease in the market value of long-term financial liabilities should be added to reported earnings. As with the market-value correction, American Telephone and Telegraph displays by far the largest correction, this time amounting to \$3.26 billion, or 61 percent of the total for the thirty companies. The importance of the total correction of \$5.3 billion (and the \$3.3 billion market-value adjustment of table 1) may be more easily gauged if it is compared to the total reported net income of \$16 billion for the Dow companies. Again, the gain on nominal net liabilities is very uneven among these firms. In general, the figures are larger if book values are used (capital-maintenance approach) than if market and present values determine net liabilities.

The corresponding macro time-series data for the postwar period, given in table 5, indicate that the gains due to the net-debtor status of nonfinancial corporations have grown enormously in recent years. While our other income corrections have also surged of late, in this case the effect has been magnified by the simultaneous rapid increases in net liabilities of nonfinancial corporations and in the rate of inflation. With market values, the real profit on nominal net liabilities in 1974 amounts to \$26.2 billion (shown in column 8), compared with slightly less than \$1 billion in 1964. This enormous gain can be separated into the increase in net

**Table 4. Computation of Adjustment for Inflation of Net Financial Liabilities to Derive Profit,
Thirty Dow Jones Industrials, 1974**

Millions of dollars

Company ^a	1973 book value ^b			Difference between		1973 market value		
	Financial assets (1)	Financial liabilities (2)	Net financial liabilities (3)	Inflation-adjusted profit on net liabilities ^c (4)	book and market value for liabilities ^e (5)	Financial liabilities (6)	Net financial liabilities (7)	Inflation-adjusted profit on net liabilities ^d (8)
Allied Chemical	453.1	957.3	504.2	60.9	53.1	904.2	451.1	54.5
Aluminum Company of America	521.4	1,411.8	890.4	107.6	119.9	1,291.9	770.5	93.1
American Brands	322.0	1,086.3	764.3	92.4	22.6	1,063.7	741.7	89.6
American Can	427.1	846.7	419.6	50.7	51.1	795.6	368.5	44.5
American Telephone and Telegraph	4,807.1	35,827.8	31,020.7	3,749.8	4,051.0	31,776.8	26,969.7	3,260.1
Anaconda	451.6	641.5	189.9	23.0	40.3	601.2	149.6	18.1
Bethlehem Steel	1,067.3	1,676.9	609.6	73.7	53.3	1,623.6	556.3	67.2
Chrysler	1,434.8	3,327.0	1,892.2	228.7	83.6	3,243.4	1,808.6	218.6
E. I. du Pont de Nemours	1,320.0	1,373.3	53.3	6.4	21.5	1,351.8	31.8	3.8
Eastman Kodak	1,833.3	1,184.2	-649.1	-78.5	31.3	1,152.9	-680.4	-82.2
Esmark (10/26/74)	252.7	543.3	290.6	35.4	14.9	528.4	275.7	33.6
Exxon	8,042.3	9,694.4	1,652.1	199.7	102.4	9,592.0	1,549.7	187.3
General Electric	2,499.2	4,901.7	2,402.5	290.4	76.2	4,825.5	2,326.3	281.2
General Foods (3/30/75)	546.9	943.5	396.6	41.4	6.1	937.4	390.5	40.8
General Motors	7,227.7	7,739.1	511.4	61.8	5.7	7,733.4	505.7	61.1
Goodyear Tire and Rubber	1,031.5	2,094.3	1,062.8	128.5	78.8	2,015.5	984.0	118.9
International Harvester (10/31/74)	577.3	1,528.1	950.8	115.7	44.6	1,483.5	906.2	110.3
International Nickel	471.5	455.9	-15.6	-1.9	6.8	449.1	-22.4	-2.7

International Paper	710.4	1,017.3	306.9	37.1	44.7	972.6	262.2	31.7
Johns-Manville	233.5	345.1	111.6	13.5	0.0	345.1	111.6	13.5
Owens-Illinois	427.3	843.2	415.9	50.3	76.1	767.1	339.8	41.1
Procter and Gamble (6/30/74)	731.1	932.2	201.1	24.3	12.1	920.1	189.0	22.8
Sears, Roebuck (1/31/75)	4,900.2	5,434.1	533.9	61.5	34.0	5,400.1	499.9	57.6
Standard Oil of California	2,474.6	2,955.6	481.0	58.1	80.5	2,875.1	400.5	48.4
Texaco	2,642.2	4,041.9	1,399.7	169.2	142.3	3,899.6	1,257.4	152.0
Union Carbide	1,269.5	1,910.8	641.3	77.5	184.5	1,726.3	456.8	55.2
U.S. Steel	1,874.8	2,980.0	1,105.2	133.6	167.7	2,812.3	937.5	113.3
United Technologies	586.4	889.5	303.1	36.6	80.2	809.3	222.9	26.9
Westinghouse Electric	1,623.9	2,342.0	718.1	86.8	70.4	2,271.6	647.7	78.3
F. W. Woolworth (1/31/75)	316.7	1,054.9	738.2	85.1	16.2	1,038.7	722.0	83.2
All companies	51,077.4	100,979.7	49,902.3	6,019.3	5,771.9	95,207.8	44,130.4	5,321.8

Sources: Columns 1, 2, and 5, form 10-K reports filed annually by the companies with the Securities and Exchange Commission (column 5 is the difference between the par and market values of the firm's bonds at the end of the 1973 fiscal year); column 3 is column 2 minus column 1; column 4 is real depreciation from column 3, derived as explained in note c; column 6 is column 2 minus column 5; column 7 is column 6 minus column 1; column 8 is derived from column 7 in the manner described in note c for deriving the analogous book values.

a. The date beside the company name indicates the end of the fiscal year if it is other than December 31, 1974.

b. Book value approximates market value for corporate financial assets, as the vast majority of these entries are cash and very short-term deposits and Treasury bills.

c. This number represents the real depreciation of net financial liabilities at book value during 1974. It is the adjustment necessary to state these in dollars of December 31, 1974, value, using the domestic spending deflator. For companies whose fiscal year is the same as the calendar year, the column 4 entry is 12.088 percent of the figure in column 3.

d. Analogous to column 4 but applies to net financial liabilities at market value.

Table 5. Profits of Nonfinancial Corporations Due to Net Liability Position, 1945-74

Billions of dollars

Year	Book value			Difference between book and market value for liabilities			Market value	
	Financial assets (1)	Financial liabilities (2)	Net financial liabilities (3)	Inflation-adjusted profit on net liabilities (4)	(5)	Financial liabilities (6)	Net financial liabilities (7)	Inflation-adjusted profit on net liabilities (8)
1945	69.0	71.3	2.3	...	-0.4	71.7	2.7	...
1946	67.4	80.7	13.3	0.3	1.7	79.0	11.6	0.3
1947	76.2	94.0	17.8	1.2	4.0	90.0	13.8	1.1
1948	81.7	102.6	20.9	0.7	3.0	99.6	17.9	0.5
1949	85.6	101.9	16.3	-0.3	1.4	100.5	14.9	-0.3
1950	102.4	124.0	21.6	1.1	0.3	123.7	21.3	1.0
1951	110.6	137.8	27.2	0.8	3.7	134.1	23.5	0.8
1952	116.1	143.6	27.5	0.5	2.3	141.3	25.2	0.4
1953	119.1	148.5	29.4	0.2	3.1	145.4	26.3	0.2
1954	124.6	152.7	28.1	0.4	0.4	152.3	27.7	0.4
1955	142.0	174.4	32.4	0.6	1.7	172.7	30.7	0.6
1956	146.9	187.7	40.8	1.3	10.0	177.7	30.8	1.2
1957	151.7	197.1	45.4	1.2	10.4	186.8	35.1	0.9
1958	163.3	207.2	43.9	0.9	10.4	196.8	35.5	0.7
1959	178.6	225.6	47.0	0.7	16.5	209.1	30.5	0.6

1960	182.6	237.3	54.7	0.8	14.5	222.8	40.2	0.5
1961	194.5	252.9	58.4	0.5	13.8	239.1	44.6	0.3
1962	206.5	269.9	63.4	0.7	12.3	257.6	51.1	0.5
1963	222.2	292.3	70.1	1.0	12.8	279.5	57.3	0.8
1964	237.0	313.0	76.0	1.2	10.9	302.1	65.1	0.9
1965	258.7	348.9	90.2	1.5	13.1	335.8	77.1	1.2
1966	273.0	383.9	110.9	2.9	25.7	358.2	85.2	2.5
1967	291.5	414.7	123.2	3.9	33.0	381.7	90.2	3.0
1968	322.8	466.6	143.8	5.1	36.0	430.6	107.8	3.7
1969	354.0	520.7	166.7	8.1	61.2	459.5	105.5	6.1
1970	369.7	559.6	189.9	8.8	47.0	512.6	142.9	5.5
1971	395.8	600.4	204.6	6.9	27.7	572.7	176.9	5.2
1972	431.2	658.6	227.4	8.0	25.7	632.9	201.7	6.9
1973	480.2	743.8	263.6	19.2	46.8	697.0	216.8	17.1
1974	523.5	845.4	321.9	31.9	84.7	760.7	237.2	26.2

Sources: Columns 1 and 2, same as table 2, column 1; column 3 is column 2 minus column 1; column 4 is derived by the method explained in table 4, note c; column 5 is table 2, column 4, plus table 3, column 3; column 6 is column 2 minus column 5; column 7 is column 6 minus column 1; column 8 is derived from column 7 in a manner analogous to the derivation of column 4. Figures are rounded.

liabilities (which accounts for about one-third) and the jump in the rate of inflation, accounting for the remaining two-thirds. The figures on book value of net liabilities and inflation gains, which would be used with a capital-maintenance definition, are even larger (compare columns 4 and 8). In fact, the macro numbers involved with either constant-dollar adjustment were trivial prior to 1966. But the 1974 corrections of \$26.2 billion or \$31.9 billion amount to 40 or 49 percent of the net earnings of \$64.5 billion of nonfinancial corporations.

The magnitudes of these corrections to corporate earnings are too large to be ignored. Both the market-value and the net-debtor adjustments involve tens of billions of dollars and substantial percentages of reported net earnings. Both changes would bring the definition of corporate income closer to a broad Haig-Simons concept of the accrual of economic power. The two corrections are of similar magnitude, and the net-debtor adjustment would be appropriate even if one accepts the capital-maintenance concept. As neither of the inflation corrections seems difficult to accomplish, we favor adopting an appropriate definition of income and then modifying accounting practice so as to record this income as exactly as possible.

Summing Up the Adjustments to Nonfinancial Corporate Income

We have presented in this and the previous paper numerical estimates of the impact of adopting accounting practices consistent with the definition of nonfinancial corporate income based on purchasing-power accrual (omitting pension funds and leases, discussed in the appendix). We also have shown most of the estimates corresponding to the capital-maintenance concept. This section, then, will aggregate the estimates of this paper with those of the earlier one, both to offer a picture of the overall effect of implementing a consistent set of accounting procedures that adjust for inflation and to facilitate comparisons of the importance of the various adjustments. Before examining the components and the totals, we again emphasize that the estimates of these adjustments are only approximate and that the corrections for pension funds and leases discussed in the appendix may be important, if unavoidable, omissions. Both of these qualifications arise because a fully detailed financial picture of nonfinancial corporations, both individually and in the aggregate, is extremely difficult

to paint from the information in their published reports. But these difficulties are not inherent. The accountants of the companies themselves could give a more accurate appraisal of the impact of such policies as general-value depreciation, constant-dollar FIFO, and both market-value and constant-dollar reporting of financial assets and liabilities. Despite these disclaimers, we believe that our data give an accurate qualitative picture of the importance of the various accounting adjustments for inflation that we have analyzed and proposed.

ADJUSTMENTS TO THE DOW THIRTY

The impacts of these accounting changes for 1974 are shown in table 6. Two columns may need explanation. First, in column 4, which records the deferred federal and state taxes for each company, the numbers largely represent the difference between tax (accelerated) and book (usually straight-line) depreciation. As we argued in our previous paper, this money will not be required to pay future taxes as long as the investment stream of the company does not decline in nominal terms. Because this is the likely situation for companies such as those included in the Dow thirty, we assert that they should "flow-through" these deferred taxes into reported income; and we have included them in the total income adjustments (column 10). As with most of our corrections, deferred U.S. taxes are largest for American Telephone and Telegraph. While its annual report shows federal and state income taxes of \$2.04 billion, the actual cash liability for taxes associated with 1974 earnings amounted to only \$777 million. The remainder is deferred, and in all likelihood will never be paid. Obviously, to the extent deferred taxes do "come due" and thus increase the present value of future tax liabilities, we have overstated profits. Column 9 also requires some explanation. Income statements are supposed to record the financial flows of corporations. Nonetheless, they are compiled only periodically, with complete statements produced usually only once a year. Column 9 simply adjusts all of the dividend payments of 1974 to year-end dollars (using the spending deflator) to make them consistent with our other magnitudes.

The total adjustments for the Dow thirty in aggregate are \$7.4 billion for 1974, or some 46 percent of their total reported net income. The largest single correction is the more than \$5 billion in unreported profits due to the net-debtor status of these firms (calculated using market values), but

Table 6. Accounting Adjustments Necessary to Arrive at Real Haig-Simons
Millions of dollars, except as noted

<i>Company</i>	<i>Reported and state net income^a</i> (1)	<i>Income before U.S. federal and state income taxes</i> (2)	<i>U.S. federal and state income taxes, current</i> (3)	<i>U.S. federal and state income taxes, deferred</i> (4)	<i>Depreciation adjustment</i> (5)
Allied Chemical	150.8	216.9	46.2	19.9	-48.6
Aluminum Company of America	173.1	262.8	76.4	13.3	-70.0
American Brands	136.7	238.2	103.8	-2.3	-13.2
American Can	95.1	165.6	62.8	7.7	-32.8
American Telephone and Telegraph	3,169.9	5,210.3	777.2	1,263.2	-1,401.2
Anaconda	247.1	297.6	5.0	45.5	-33.9
Bethlehem Steel	342.0	594.0	241.0	11.0	-99.3
Chrysler	-52.1	-146.2	-156.3	62.2	-23.8
E. I. du Pont de Nemours	403.5	642.1	202.6	36.0	-35.9
Eastman Kodak	629.5	1,023.7	383.2	11.0	-11.8
Esmark	68.1	120.8	57.2	-4.5	-15.4
Exxon	3,142.2	3,792.2	623.0	27.0	-536.9
General Electric	608.1	909.1	270.8	30.2	-115.1
General Foods	99.4	129.3	60.7	-30.8	-16.2
General Motors	950.1	1,558.0	330.3	277.6	-355.6
Goodyear Tire and Rubber	157.5	216.6	32.1	27.0	-61.1
International Harvester	124.1	178.9	43.2	11.6	-30.4
International Nickel	306.0	323.2	8.3	8.9	-36.0
International Paper	262.6	411.4	150.2	-1.4	-54.4
Johns-Manville	71.9	79.1	3.8	3.4	-12.1
Owens-Illinois	83.5	117.8	21.8	12.5	-28.0
Procter and Gamble	316.7	515.9	182.3	16.9	-32.8
Sears, Roebuck	679.9	966.9	189.0	98.0	-50.9
Standard Oil of California	970.0	1,106.7	106.7	30.0	-191.6
Texaco	1,586.4	1,675.7	58.5	30.8	-260.3
Union Carbide	530.1	708.1	160.2	17.8	-105.2
U.S. Steel	634.9	957.7	271.3	51.5	-201.9
United Technologies	104.7	206.9	99.1	3.1	-10.1
Westinghouse Electric	28.1	60.1	75.9	-43.9	-43.5
F. W. Woolworth	64.8	71.2	7.2	-0.8	-19.6
All companies	16,084.7	22,610.6	4,493.5	2,032.4	-3,947.6

Sources: Columns 1, 2, 3, 4, from 10-K reports filed annually by the companies with the Securities and Exchange Commission; column 5 is the negative of column 3, table 1, in John B. Shoven and Jeremy I. Bulow, "Inflation Accounting and Nonfinancial Corporate Profits: Physical Assets," *BPEA*, 3:1975; column 6 is from *ibid.*, table 4, column 6; column 7 is from table 1 above, column 5; column 8 is from table 4 above, column 8; column 9 is dividends paid throughout the year as reported on form 10-K, adjusted by the authors to state them in year-end dollars; column 10 is the sum of columns 4 through 9; column 11 is the sum of columns 10 and 1; column 12 is the sum of current and deferred U.S. and foreign taxes divided

Accrual Income, Thirty Dow Jones Industrials, 1974

<i>Adjustment</i>							
<i>Effect of constant- dollar FIFO (6)</i>	<i>Decrease in bond values (7)</i>	<i>Gain on net financial liabilities (8)</i>	<i>Dividend adjust- ment (9)</i>	<i>Total adjust- ments (10)</i>	<i>Adjusted U.S. profit (11)</i>	<i>Tax rate (percent)</i>	
						<i>Apparent (12)</i>	<i>Adjusted (13)</i>
42.7	39.0	54.5	2.5	110.0	260.8	35.9	15.9
97.7	83.1	93.1	2.7	219.9	393.0	41.3	16.9
-57.8	21.5	89.6	4.1	41.9	178.6	51.2	38.0
86.7	32.0	44.5	2.6	140.7	235.8	47.3	21.9
-44.6	1,819.2	3,260.1	120.0	5,016.7	8,186.6	39.3	9.1
27.1	24.1	18.1	1.3	-8.8 ^b	238.3	17.3	2.1
213.9	57.8	67.2	5.9	256.5	598.5	44.5	29.8
-218.0	9.1	218.6	4.6	52.7	0.6	n.m.	n.m.
255.1	18.1	3.8	16.1	293.2	696.7	41.9	23.5
71.3	7.6	-82.2	18.9	14.8	644.3	45.5	38.5
-41.8	10.3	33.6	0.8	-17.0	51.1	47.6	54.1
325.2	208.5	187.3	65.8	276.9	3,419.1	71.3	16.1
62.0	53.7	281.2	17.1	329.1	937.2	37.9	23.3
-48.8	9.9	40.8	3.9	-41.2	58.2	40.2	52.4
-625.7	44.8	61.1	58.1	-539.7	410.4	30.5	45.9
50.1	83.5	118.9	4.3	222.7	380.2	27.2	8.2
-155.8	48.9	110.3	2.6	-12.8	111.3	42.8	29.1
-45.0	34.9	-2.7	7.0	-32.9	273.1	44.8	3.1
-14.1	41.4	31.7	4.5	7.7	270.3	43.5	36.9
-14.2	16.0	13.5	1.3	7.9	79.8	33.7	4.8
1.3	40.1	41.1	1.5	68.5	152.0	41.2	13.1
0.8	18.7	22.8	7.7	34.1	350.8	46.4	35.4
-216.6	31.8	57.6	15.6	-64.5	615.4	30.9	24.5
457.9	76.9	48.4	19.2	440.8	1,410.8	44.7	7.4
215.7	149.9	152.0	33.6	321.7	1,908.1	45.7	3.1
68.0	47.9	55.2	7.8	91.5	621.6	41.6	21.4
125.4	89.2	113.3	7.0	184.5	819.4	39.1	25.9
-49.7	28.9	26.9	1.6	0.7	105.4	48.0	49.8
-114.5	92.4	78.3	5.0	-26.2	1.9	69.5	98.0
-94.1	66.4	83.2	2.1	37.2	102.0	43.7	6.9
360.2	3,305.6	5,321.8	445.2	7,426.6	23,511.3	51.0 ^c	16.8

by the sum of those taxes plus reported net income; column 13 is current U.S. taxes adjusted to year-end dollars divided by those taxes plus adjusted U.S. profits (column 11).

a. Includes the following extraordinary items: American Can, 5.1; Anaconda, 140.4; Eastman Kodak, -9.4; General Foods, -21.4; International Harvester, 6.1; Johns-Manville, 21.3.

b. Net of \$91 million adjustment in timing of expropriation loss.

c. Rate is 40.8 percent if Exxon Corporation is excluded.

n.m. Not meaningful.

the other adjustments are also extremely significant. For instance, these companies underdepreciate (and therefore exaggerate earnings) for book purposes by some \$3.9 billion, comparing straight-line general-value and the present original-cost book depreciation methods. At the same time, they report approximately \$2.5 billion more depreciation to the IRS than to their stockholders (by using accelerated techniques for tax purposes), reducing their tax bill by about \$1.2 billion. Requiring these companies to use general-value straight-line depreciation in the presence of the current corporate tax system would cause a modest decrease in their total tax obligations (by some \$0.6 billion) and a large decrease in earnings reported for book purposes (approximately \$3.3 billion). In table 6, however, we have assumed that the tax bill would remain constant after all our changes, with the tax rules and rates adjusted as necessary to accomplish this.

Table 6 also reveals that the Dow companies experienced \$3.3 billion in unreported gains in 1974 due to the decline in the value of their long-term liabilities (column 7). While this number dwarfs the aggregate effect of switching to constant-dollar FIFO (column 6), for many individual firms the latter correction is the more important. In general, the oil companies that used LIFO had the largest unreported real inventory gains; hence, their earnings would show the greatest increase under a switch to constant-dollar FIFO. The firms that are already using FIFO-type accounting, such as General Motors, Chrysler, International Harvester, and Sears, Roebuck, would experience the largest decline due to the constant-dollar correction.

The final two columns of table 6 display the apparent tax rate and our adjusted tax rate for each of the Dow firms in 1974. The apparent total rate is that which a casual reader of annual reports would infer and equals reported taxes (including U.S. and foreign taxes, both paid and deferred) divided by those taxes plus reported net income (column 1). The contrasting adjusted U.S. tax rate of column 13 equals current U.S. taxes (column 3 of the table adjusted to year-end dollars) divided by these taxes plus adjusted U.S. profits (column 11). The adjusted U.S. tax rate is a good measure of the rate facing a firm that earns most of its income in the United States; of course, it understates the total tax burden of companies that pay large foreign income taxes.⁹ The adjusted U.S. tax rate for the

9. While, for example, International Nickel pays very little U.S. income tax, it pays substantial sums in Canada that do not show up in the table. The oil companies, of

thirty companies combined (16.8 percent) is startlingly lower than the apparent total tax rate of 51 percent. One reason is that our adjusted figure for the U.S. profits of these companies is substantially higher than their reported net income. Another is that we have excluded foreign current and deferred taxes and U.S. deferred taxes from the numerator in the computation of the adjusted tax rate. The effect of this exclusion is most significant for international corporations, particularly oil companies such as Exxon. Because the oil royalties that Exxon pays to producing countries are treated as foreign taxes, it reports foreign taxes of \$7.1 billion and a total tax bill of \$7.7 billion, including its current U.S. taxes, which amount to only \$623 million. The magnitude of these Exxon numbers can be appreciated by noting that excluding the company from the Dow list would lower the apparent total tax rate from 51 percent to 40.8 percent.

As with each individual adjustment, their sum has a very uneven impact among the Dow thirty companies. The two extremes are American Telephone and Telegraph and General Motors. The 1974 profits of the first would have been vastly increased under purchasing-power-accrual accounting primarily due to its large deferral of taxes, the decrease in the value of its debt, and its enormous \$27 billion net-debtor position. While the adjusted profits of the Dow thirty in total exceeded reported profits by 46.2 percent, this figure would be substantially reduced—to 18.7 percent—simply by excluding American Telephone and Telegraph. Unrealized extraordinary gains account for most of the additional profit attributed to this company. Their regulated-profit constraints prevent AT&T and other public utilities from realizing these gains at once. They can, however, carry them forward to be realized in a year when their profit constraint would permit. For a company, such as AT&T, that seldom if ever earns appreciably less than permitted by its regulators, the value of additional accrued gains is reduced. On the other hand, many regulated firms and industries—for example, airlines and railroads—rarely find their profit constraints binding.

In contrast with American Telephone and Telegraph, the 1974 earnings of General Motors would have been reduced by 43 percent if the accrual-accounting conventions were adopted. This reduction comes principally

course, pay notoriously low U.S. tax rates, while American Telephone and Telegraph's deferred taxes and its large profit on its debt combine to give it an adjusted tax rate of 9.1 percent.

from the increased depreciation the company would report using a general-value policy and the large correction necessary to express its inventories in constant dollars. In total, eight companies would have reported lower earnings after our corrections. For seven, the reduction can be attributed to adoption of a constant-dollar FIFO policy. The accounts of the remaining firm, Anaconda, were severely affected by the foreign expropriation of a portion of its assets.

Classifying the various adjustments into extraordinary and ordinary categories is necessarily arbitrary. Nonetheless, with the exception of the change in the market value of outstanding debt (table 6, column 7), one would expect each of our adjustments to recur annually in an environment of steady inflation. The exceptional entry reflects *changes* in interest rates (loosely linked to changes in inflation rates) and not the absolute level of these figures. In fact, should interest rates stabilize at their present levels, bond values would climb slowly for the next several years as the individual long-term issues approach maturity (and par). Thus, future entries in column 7 could turn negative even with a steady but high rate of inflation. Given the maturity structure and average selling price of the debt of the Dow companies at the beginning of 1974, the expected increase in the present or market value of such liabilities in that year was about \$200 million (assuming constant long-term interest rates). This increase was, of course, swamped by the decrease of approximately \$3.5 billion in the value of these obligations brought about by the sharp rise in the interest-rate structure.

Although table 6 lists separately each of the adjustments necessary to move to a purchasing-power-accrual definition of income, we cannot, unfortunately, use these components to calculate the impact of adopting the capital-maintenance concept. We have data for two differences: (1) the decrease in bond values (column 7) would not be included as an income adjustment; and (2) the gain on net financial liabilities (column 8) would be determined using book-value rather than market-value statistics (columns 4 and 8, respectively, of table 4). The difference that cannot be estimated with publicly available information is that which arises from requiring all of the Dow firms to use LIFO inventory accounting. We can get some idea of the relative impact of the two real-income concepts with the macro data, because the impact of a universal adoption of LIFO is approximated by the inventory valuation adjustment (IVA).

ADJUSTMENTS TO THE MACRO DATA FOR PURCHASING-POWER ACCRUAL

Table 7 contains a summary of the macro estimates of the impact on the earnings of nonfinancial corporations for the period 1946–74 of the accounting proposals consistent with the purchasing-power-accrual concept. The total adjustments (column 10) were negative for most of the first fifteen years. Use of general-value straight-line depreciation (column 4) and constant-dollar FIFO (column 5) would have resulted in reductions in nonfinancial corporate earnings outweighing the small profits resulting from the net-debtor position (column 8) and the profits and losses in the bond and mortgage markets (columns 6 and 7). The only exceptional years were 1956 and 1959, when large declines in the value of outstanding debt gave nonfinancial corporations significant unreported profits.

The sign of the total adjustments became predominantly positive in the 1960s due to the 1962 shortening of service lives for depreciation purposes and to the steady fall in the value of outstanding bonds from 1965 to 1969. From 1961 to 1969, nonfinancial corporations also experienced continuously increasing unreported gains from their net-debtor status. These factors combined more than offset the negative impact of a switch to constant-dollar FIFO. From 1970 to 1972 the bond market rebounded and tax depreciation began once again to fall below straight-line replacement cost. The increase in income from including the net-debtor gains of nonfinancial corporations was just about canceled by the negative impact of constant-dollar FIFO. The total adjustments were thus negative for these three years, with the difference between those in 1969 and those in 1971 being \$48.3 billion. This tremendously large turnabout occurred because, while the bonds and mortgages of nonfinancial corporations declined in value by \$25.2 billion in the earlier year, they appreciated by \$19.3 billion in the later one.

Since 1971 there has been another reversal in the total adjustments necessary to approximate the purchasing-power-accrual definition of profits. Again, the net effect could be largely credited to the bond and mortgage markets, but, as we have repeatedly stressed, the rising rate of inflation has lent increasing importance to the other adjustments. Even the dividend adjustment to year-end dollars (column 9) amounted to \$1.8 billion in 1974. The largest correction with a negative impact on earnings involved removing the nominal appreciation of inventories (see column 5).

Table 7. Total Accounting Adjustments Necessary to Implement Real Haig-
Billions of dollars, except as noted

Year	Profit (national income account basis)		Current U.S. federal and state income tax liabilities (3)	Depre- ciation adjust- ment (4)	Effect of constant- dollar FIFO (5)	Decrease in bond values (6)
	After tax (1)	Before tax (2)				
1946	13.4	22.0	8.6	-2.2	-1.6	1.5
1947	18.2	29.1	10.8	-2.6	-3.7	1.6
1948	19.9	31.8	11.9	-3.2	-1.2	-0.7
1949	15.4	24.9	9.5	-3.3	-0.1	-1.1
1950	21.7	38.5	16.7	-3.8	-2.2	-0.8
1951	18.1	39.1	21.0	-4.3	-1.9	2.5
1952	16.0	33.8	17.8	-4.2	-1.6	-1.0
1953	16.4	34.9	18.5	-3.5	-0.5	0.6
1954	16.3	32.1	15.7	-2.4	-0.9	-2.0
1955	22.2	42.0	19.8	-1.3	-1.3	0.9
1956	22.1	41.8	19.8	-2.1	-2.6	6.0
1957	20.9	39.8	18.9	-2.4	-3.1	0.3
1958	17.5	33.7	16.3	-2.6	-1.8	0.0
1959	22.5	43.2	20.8	-2.3	-1.1	4.2
1960	20.6	40.1	19.5	-2.0	-1.4	-1.5
1961	20.5	40.3	19.8	-1.8	-0.9	-0.7
1962	23.9	44.7	20.9	0.7	-1.0	-1.2
1963	26.2	49.1	22.9	1.0	-0.8	0.2
1964	31.4	55.8	24.3	1.0	-1.6	-1.4
1965	38.2	65.8	27.6	1.5	-1.1	1.4
1966	41.2	71.2	30.1	1.3	-3.2	8.3
1967	37.8	66.2	28.4	0.7	-4.5	5.2
1968	38.3	72.4	34.0	0.0	-5.2	2.1
1969	34.3	68.0	33.7	-0.5	-6.7	17.1
1970	28.2	55.7	27.6	-2.5	-8.0	-9.0
1971	33.4	63.2	29.8	-4.1	-5.7	-13.4
1972	43.0	76.3	33.4	-3.8	-4.5	-1.9
1973	55.0	95.8	40.7	-5.5	-5.2	12.7
1974	64.5	110.1	45.6	-10.3	-16.2	24.1

Sources: Columns 1, 2, 3, 1946-63, U.S. Department of Commerce, *The National Income and Product Accounts of the United States, 1929-1965: Statistical Tables* (1966), tables 6.15, 6.13, 6.14, respectively; for later years, *Survey of Current Business* various July issues; column 4 is the difference between columns 1 and 5, table 2, in Shoven and Bulow, "Inflation Accounting: Physical Assets"; column 5 is from *ibid.*, table 5, column 7; column 6 is from table 2 above, column 5; column 7 is from table 3 above, column 4;

Simons Accrual Income for All U.S. Nonfinancial Corporations, 1946-74

<i>Adjustment</i>				<i>Adjusted after-tax profit (11)</i>	<i>Adjusted profit as a percentage of NIA profit (12)</i>	<i>U.S. tax rate (percent)</i>	
<i>Decrease in mortgage values (7)</i>	<i>Gain on net financial liabilities (8)</i>	<i>Dividend adjustment (9)</i>	<i>Total adjustments (10)</i>			<i>NIA average (13)</i>	<i>Effective (14)</i>
0.6	0.3	0.3	-1.1	12.3	91.8	39.1	42.5
0.7	1.1	0.3	-2.6	15.6	85.7	37.1	42.0
-0.3	0.5	0.1	-4.8	15.1	75.9	37.4	44.5
-0.5	-0.3	0.0	-5.3	10.1	65.6	38.2	48.3
-0.3	1.0	0.3	-5.8	15.9	73.3	43.4	52.1
0.9	0.8	0.1	-1.9	16.2	89.5	53.7	56.9
-0.4	0.4	0.1	-6.7	9.3	58.1	52.7	65.9
0.2	0.2	0.0	-3.0	13.4	81.7	53.0	58.1
-0.7	0.4	0.1	-5.5	10.8	66.3	48.9	59.4
0.4	0.6	0.1	-0.6	21.6	97.3	47.1	48.1
2.3	1.2	0.2	5.0	27.1	122.6	47.4	42.7
0.1	0.9	0.2	-4.0	16.9	80.9	47.5	53.2
0.0	0.7	0.1	-3.6	13.9	79.4	48.4	54.2
1.9	0.6	0.1	3.4	25.9	115.1	48.1	44.7
-0.5	0.5	0.1	-4.8	15.8	76.7	48.6	55.5
-0.0	0.3	0.1	-3.0	17.5	85.4	49.1	53.2
-0.3	0.5	0.1	-1.2	22.7	95.0	46.8	48.1
0.3	0.8	0.1	1.6	27.8	106.1	46.6	45.4
-0.5	0.9	0.1	-1.5	29.9	95.2	43.5	45.0
0.8	1.2	0.2	4.0	42.2	110.5	41.9	39.8
4.3	2.5	0.3	13.5	54.7	132.8	42.3	35.9
2.1	3.0	0.4	6.9	44.7	118.3	42.9	39.3
0.9	3.7	0.5	2.0	40.3	105.2	47.0	46.3
8.1	6.1	0.6	24.7	59.0	172.0	49.6	37.0
-5.2	5.5	0.5	-18.7	9.5	33.7	49.6	74.9
-5.9	5.2	0.3	-23.6	9.8	29.3	47.2	75.6
-0.1	6.9	0.3	-3.1	39.9	92.8	43.8	46.6
8.4	17.1	0.9	28.4	83.4	151.6	42.5	33.7
13.8	26.2	1.8	39.4	103.9	161.1	41.4	31.7

column 8 is from table 5 above, column 8; column 9 is from *National Income and Product Accounts, 1929-1965*, table 6.16, and *Survey of Current Business*, various July issues, dividends paid throughout the year adjusted by the authors to year-end dollars; column 10 is the sum of columns 4 through 9; column 11 is the sum of columns 10 and 1; column 12 is column 11 divided by column 1, expressed as a percent; column 13 is column 3 divided by column 2, expressed as a percent; column 14 is column 3 in year-end dollars divided by the sum of column 3 in year-end dollars and column 11, expressed as a percent.

The table indicates that a constant-dollar FIFO policy would have resulted in lowering reported earnings by \$16.2 billion. The other change that would have reduced profits is general-value depreciation. Depreciation allowances in 1974 were substantially more inadequate than ever before, with tax depreciation falling some \$10.3 billion short of straight-line replacement cost (using 0.85 of Bulletin F service lives). These two large negative factors were more than offset by the decline in market value of bonds and mortgages (\$37.9 billion) and the net-debtor profit (\$26.2 billion).

The micro and macro tables are not strictly comparable. A major difference is that the macro table records profits and tax liabilities on the national income accounts basis (column 1, table 7) rather than book profits; hence, no correction for deferred taxes is needed. In addition, the NIA average and the effective tax rates of table 7 are both U.S. rates because the macro data exclude foreign taxes, in contrast with those reported in table 6 for the Dow Jones companies.

Speculating about what the macro adjustments of table 7 will look like over the next few years, we believe that profits from net financial liabilities will likely continue to be large, while the negative effect of moving to constant-dollar FIFO may be reduced as more firms adopt LIFO. The two effects could approximately cancel one another. There is no reason to expect tax depreciation to be as large as it would be under a straight-line replacement-cost or general-value system, so that the adoption of such a method would imply a continued subtraction from reported earnings. These three effects should result in a moderate net negative correction on earnings. The implication is that the sign on the total of our adjustments may well hinge on the one extraordinary item, the gain or loss in the value of long-term liabilities. Predicting future movements in interest rates is a risky business, so we will merely point out that under the naive assumption that interest rates remain unchanged, nonfinancial corporations would experience an unreported loss of \$3 billion to \$4 billion as their debt appreciates toward par. While the overall conclusion of such difficult predictions cannot be precise, we simply emphasize that the \$39.4 billion total positive adjustment to 1974 earnings could easily reverse sign in the immediate future. In fact, table 7 reveals that purchasing-power-accrual, after-tax profits have fluctuated much more than have NIA after-tax profits, particularly in the past ten years. This variation is not surprising, considering that profits are determined as residuals and that interest rates have been anything but stable during this period.

ADJUSTMENT TO MACRO DATA FOR CAPITAL MAINTENANCE

We have compiled sufficient data to compute the macro time series of capital-maintenance income for nonfinancial corporations, as well as that for the accrual of purchasing power. The results are shown in column 6 of table 8, where columns 3 through 5 show the magnitudes of the different adjustments. Capital-maintenance income would not include changes in the value of long-term liabilities, would imply LIFO rather than constant-dollar FIFO inventory accounting, and would determine net financial liabilities using book rather than market values. The table shows that the two real-income concepts can lead to very different measures, and, further, that the numerical relationship between them is anything but constant. The absolute difference was greater in 1974 than in any other postwar year: the capital-maintenance figure, at \$52.8 billion, was just half the Haig-Simons profits of \$103.9 billion. At the same time, NIA profits were running at the rate of \$64.5 billion.¹⁰

Most of the difference between purchasing-power-accrual income and capital-maintenance income depends on two adjustments (the change in the value of long-term liabilities and the real appreciation of inventories) that do not represent sustainable sources of income. These corrections would not be expected to continue at the sizable magnitudes of 1973 and 1974 even if inflation should persist. Again, the fundamental issue is how these extraordinary gains should be treated. It is the timing of the recording of the changes in these values that differentiates the various real-income measures. The Haig-Simons approach, the one we favor, calls for recording them as soon as they occur, although they could and should be labeled as extraordinary. The capital-maintenance approach distributes gains or losses on the value of liabilities over their life, and allows an indefinite postponement of inventory appreciation. A third possibility, suggested by James Tobin, is, in a sense, the extreme opposite to the accrual approach. It involves converting extraordinary gains such as those on bonds or inventories to "sustainable" flows by treating them as if they had been used to purchase consols. Rather than bringing all gains up to the present as much as possible, this income measure would record the flow that

10. The market value of the common-stock holdings of private noninsured pension funds fell by approximately \$26 billion in 1974. These assets would be carried at market under purchasing-power accrual. A substantial, but unknown, fraction of this extraordinary loss was borne by nonfinancial corporations.

Table 8. Comparison of Income, Using Concepts Based on National Income Accounts, Haig-Simons Accrual, and Capital Maintenance, Nonfinancial Corporations, 1946-74

Billions of dollars

Year	After-tax profit		Increase in value of outstanding long-term liabilities (3)	LIFO less constant-dollar FIFO (4)	Difference between net-liability profit using book and market values (5)	Capital-maintenance-income (6)
	NIA (1)	Accrued (2)				
1946	13.4	12.3	-2.1	-3.7	0.0	6.5
1947	18.2	15.6	-2.3	-2.2	0.1	11.2
1948	19.9	15.1	1.0	-1.0	0.2	15.3
1949	15.4	10.1	1.6	2.0	0.0	13.7
1950	21.7	15.9	1.1	-2.8	0.1	14.3
1951	18.1	16.2	-3.4	0.7	0.0	13.5
1952	16.0	9.3	1.4	2.6	0.1	13.4
1953	16.4	13.4	-0.8	-0.5	0.0	12.1
1954	16.3	10.8	2.7	0.6	0.0	14.1
1955	22.2	21.6	-1.3	-0.4	0.0	19.9
1956	22.1	27.1	-8.3	-0.1	0.1	18.8
1957	20.9	16.9	-0.4	1.6	0.3	18.4
1958	17.5	13.9	0.0	1.5	0.2	15.6
1959	22.5	25.9	-6.1	0.6	0.1	20.5
1960	20.6	15.8	2.0	1.6	0.3	19.7
1961	20.5	17.5	0.7	0.8	0.2	19.2
1962	23.9	22.7	1.5	1.3	0.2	25.7
1963	26.2	27.8	-0.5	0.3	0.2	27.8
1964	31.4	29.9	1.9	1.1	0.3	33.2
1965	38.2	42.2	-2.2	-0.6	0.3	39.7
1966	41.2	54.7	-12.6	1.4	0.4	43.9
1967	37.8	44.7	-7.3	3.4	0.9	41.7
1968	38.3	40.3	-3.0	1.9	1.4	40.6
1969	34.3	59.0	-25.2	1.6	2.0	37.4
1970	28.2	9.5	14.2	3.2	3.3	30.2
1971	33.4	9.8	19.3	0.8	1.7	31.6
1972	43.0	39.9	2.0	-2.5	1.1	40.5
1973	55.0	83.4	-21.1	-12.4	2.1	52.0
1974	64.5	103.9	-37.9	-18.9	5.7	52.8

Sources: Columns 1 and 2 are from table 7, columns 1 and 11, respectively; column 3 is the negative of the sum of columns 6 and 7 of table 7; column 4 is the difference between columns 8 and 7 of table 5 in Shoven and Bulow, "Inflation Accounting: Physical Assets"; column 5 is the difference between columns 4 and 8 in table 5 above; column 6 is the sum of columns 2 through 5.

would be available to the firm if its total net worth were invested in an infinite annuity.

All three of these real-income measures would have the same present discounted value of expected future income streams. The choice concerns timing only, and firms could be asked to report more than one of these measures. Each gives a far more accurate picture of the financial condition of the enterprise than do present practices of accelerated original-cost depreciation, the choice of LIFO or nominal FIFO, and neglect of the net-debtor profit. If more than one measure were expected, simplifying assumptions might be considered so that vast accounting resources and paper work were not required to report supplementary income figures.

As our earlier paper noted, none of the current U.S. proposals for inflation accounting is sufficiently far-reaching to assure consistency with economic definitions of real income.¹¹ Although the FASB proposal loosely embodies a capital-maintenance philosophy, it is only a suggestion for supplemental reporting, allows a choice of inventory-accounting methods, and permits accelerated general-value depreciation (a policy that in our opinion understates profits). The proposal does call for including the real gain due to the net-debtor status of most nonfinancial corporations, which is called for under any real-income measure. The total impact of the FASB proposals on the 1973 and 1974 earnings of the thirty Dow industrials has been computed by Davidson and Weil.¹² A comparison with our data is blurred because these authors do not break the adjustment down into components for each company; but their conclusion that the median reduction in reported net earnings of the Dow companies was 8 percent in 1973 and 12 percent in 1974 is broadly consistent with our macro estimates of the effect of implementing accounting principles based on capital-maintenance income. Among the Dow thirty, they too found that American

11. Cost Accounting Standards Board, "Proposed Rules: Historical Depreciation Costs—Adjustment for Inflation," *Federal Register*, vol. 40, no. 197 (October 9, 1975), pp. 47517–19; 4 CFR, pt. 413; FASB, "Financial Reporting in Units of General Purchasing Power"; Securities and Exchange Commission, Notice of Proposed Amendments to Regulation S-X to Require Disclosure of Certain Replacement Cost Data in Notes to Financial Statements (S7-579).

12. The 1973 estimates are in Sidney Davidson and Roman L. Weil, "Inflation Accounting: What Will General Price Level Adjusted Income Statements Show?" *Financial Analysts Journal*, vol. 31 (January/February 1975), pp. 27–31, 70–84. The 1974 estimates are in their article, "Impact of Inflation Accounting on 1974 Earnings," in *ibid.* (September/October 1975), pp. 42–54.

Telephone and Telegraph's earnings are currently the most grossly understated, primarily because of its huge net-debtor status.

The SEC and CASB proposals omit some of the major corrections necessary to measure real income and thus, we believe, likely would aggravate rather than alleviate the distortions caused by inflation. The CASB proposal addresses itself simply to the inadequacy of original-cost depreciation and suggests a general-value basis similar to ours; however, it permits the use of accelerated techniques. We see no economic justification for focusing on the impact of inflation on one component of the determination of income, with the possible exception that U.S. treatment of profits should be similar to that of other countries.¹³ For instance, why is underdepreciation because of low original-cost bases more fundamental or important than the exaggeration of interest costs through deducting nominal rather than real debt expenses? The SEC proposal, which has recently been adopted, is slightly more general in asking for supplementary reporting of profits calculated with replacement-cost depreciation and inventory policies (LIFO), but, in a sense, is even more one-sided. All of the corrections that decrease reported income (and taxes if this policy were eventually adopted for that use) are included, while none of those that increase profits are considered. Economists should at least point out that these accounting "reforms" taken individually are not consistent with concepts of real income, and may be at best an indirect, uneven, and inefficient method of lowering corporate taxes. Even this last consideration is academic, at least now, since neither the Congress nor the Internal Revenue Service has endorsed any of these proposals. Further, the complicated mechanics of replacement-cost (rather than the simplified general-value) depreciation should be weighed against the value of the footnote disclosure requirement of the SEC.

In their recent examination of taxes and inflation, Fellner, Clarkson, and Moore suggest business-accounting reforms similar to ours (general-value depreciation, constant-dollar FIFO, and accounting for the gain on net liabilities).¹⁴ However, because they focused on the impact on aggregate

13. A survey of foreign experience with inflation accounting since 1945 is presented in George E. Lent, "Adjusting Taxable Profits for Inflation: The Foreign Experience" (paper presented at the Brookings Conference on Inflation and the Income Tax System, Washington, D.C., October 30-31, 1975, scheduled for appearance in a Brookings conference volume).

14. William Fellner, Kenneth W. Clarkson, and John H. Moore, *Correcting Taxes for Inflation* (American Enterprise Institute, 1975).

nonfinancial corporate profits (and did not consider individual balance sheets), they were able to use a simpler estimating procedure. Their technique involved general-value depreciation only on the portion of the capital stock financed by equities. The remainder of the capital stock would be carried on an original-cost basis and the liabilities that financed it would be listed at book value. The errors in carrying these assets and liabilities on an original-cost basis cancel, and the net effect (with general-value accounting) is the same as if both were adjusted for inflation. The market-value correction for bonds, called for by a purchasing-power-accrual, but not a capital-maintenance, definition of income, was not included in the study by Fellner and his associates.

INTERPRETING THE 1974 RESULTS

Our preference for the Haig-Simons accrual concept of income will hardly come as a surprise to anyone who has read this far. Income, we argue, should measure the capacity to consume and not depend on the choices about realization and actual consumption. We recognize the problems of defining the set of goods in the purchasing opportunity set and of determining the interval over which the capacity to consume is to be measured. In fact, these considerations determine whether purchasing-power-accrual, capital-maintenance, or sustainable income is most appropriate. Having stated our preference, we must explain why nonfinancial corporate income on that basis rose in 1974 to \$103.9 billion at the same time that the stock market (and other indicators) suggested that business had worsened. Of course, this same paradox is relevant to NIA profits, which rose 17 percent to an historic high in 1974.

Part of the reconciliation may lie in the fact that the economy did not begin to worsen rapidly until the third quarter of 1974. Thus, taken as a whole, the year was significantly better than the year-end position of the economy indicated. But more fundamentally, three reasons resolve the apparent contradiction. First, much of accrued income in 1974 was extraordinary and could not be expected to recur. While these gains are legitimate profits in our view, they are not so valuable as an equal increase in sustainable income. Second, internal cash flow was very tight; whether or not firms could have chosen otherwise, a very high percentage of Haig-Simons income was accrued and not realized in 1974. Investors and firms may view external financing as costly and less desirable than internal

financing. Finally, and perhaps most important, the large relative price changes of 1973–74 may have led to significant decreases in the value of the existing capital stock that we have been unable to capture. Examples are easy to come by, but estimating the total impact may be impossible. Take a firm that owned a large glass office building and an inventory of oil to heat it. With a relative rise in the price of oil, the firm experiences a real capital gain on its oil inventory (which is recorded with a constant-dollar FIFO policy), but a far larger loss in the value of the building. Conceptually, we would include both changes in value in the computation of profits, but the estimates of this paper include only the former (and smaller) adjustment. In practice, such capital losses would be difficult to estimate. In this particular case, the loss was due to an increase in the present value of uncontracted future liabilities associated with the asset (office building).

A final factor in reconciling the record 1974 profits of nonfinancial corporations with the general adverse impression of business conditions is that the real income of other sectors was not as high as reported. The equity holders' gain on the financial liabilities of nonfinancial corporations was matched by the losses of those who held those obligations as assets. This implies that the household sector and, probably to a lesser extent, financial intermediaries had substantial real losses in 1974 from their net holdings of long-term nominally denominated assets. As a result of the rapid inflation, there was a large overstatement of the incomes of net creditors in 1974, and a corresponding understatement of the experience of net debtors.

Conclusions

Our two papers establish the importance of the choice of the real-income measure and of correcting both sides of balance sheets for inflation. The procedures to adjust for inflation associated with the two real-income measures we have presented differ greatly. However, any measure of profits corrected for inflation must cover financial liabilities, a step not taken in most of the proposals for reform made in this country.

Attention in the past few years has been directed largely to "exaggerated profits" arising from nominal inventory appreciation and inadequate depreciation. Our macro results confirm that these two factors have tended to raise reported profits in the last five years. In fact, the 1974 taxable

profits of nonfinancial corporations were increased \$10.3 billion through the use of accelerated original-cost rather than straight-line replacement-cost depreciation, and were exaggerated another \$16 billion or \$35 billion (depending on the real-income measure) because of the recording of nominal inventory profits. However, accelerated original-cost tax depreciation has been more than adequate for some firms, particularly those whose capital investments have been growing rapidly. Because of the influence of this growth rate and because the adequacy of original-cost depreciation also depends on the durability of a firm's capital and the accounting technique chosen, the impact of the adoption of a uniform procedure for inflation adjustment would be very uneven. Likewise, firms that use a LIFO inventory policy do not report nominal inventory appreciation (without liquidation) and, relative to purchasing-power-accrual income, understated rather than overstated this income in 1974. Again, the impact of an inventory-accounting policy consistent with an economic definition of real income would be very uneven across firms.

It is our position (consistent with Haig-Simons accrual) that accounting for the depreciation of financial liabilities is as important as reporting the depreciation of physical assets. By December 31, 1974, the long-term liabilities of nonfinancial corporations were valued at some \$85 billion less than their book or issue value. Under an accrual system of income determination, this difference should be reflected on balance sheets and the \$37.9 billion decrease in the value of these liabilities in 1974 should be reported as income to the equity holders. Given that these issues were substantially below par at the beginning of the year, they would have appreciated approximately \$4 billion in an environment of stable interest rates. This implies that the \$38 billion gain could be classified as an ordinary (or expected) loss of \$4 billion and an extraordinary gain of \$42 billion.

Under the capital-maintenance approach, the way to treat long-term liabilities is to disregard changes in their value because they can be expected to return to par at maturity. The argument is that if such an asset or liability is going to be held until maturity, the welfare of the equity holders is independent of values before repurchase. We argue, however, that it is the opportunity to repurchase debt at discount that affects welfare and that such opportunities should be reckoned in income.

The second correction with respect to financial liabilities compensates for the traditional gain experienced by net debtors through inflation.

This correction was \$26 billion or \$32 billion in 1974 for nonfinancial corporations in the aggregate (depending on how liabilities are valued), but again the impact was uneven among firms due to the variation in their financial structure. Unlike the correction to market value, this net-liability adjustment is appropriate under all real-income measures.

When all of the adjustments necessary to implement a real-income measure are totaled, the impact on reported profits is not so one-sided as is commonly believed. In fact, our estimates of accrued profits for 1973 and 1974 substantially exceed NIA nonfinancial corporate profits. Not all of the corrections reflect inflation; in fact, two of the largest concern extraordinary items not necessarily associated with a steady deterioration in the purchasing power of the dollar. These factors can cut in the opposite direction, as they did in 1970 when, according to our calculations, accrued profits were substantially below those recorded in the national income accounts.

The purpose of these two papers has been to present and estimate the accounting changes necessary to implement measures of the real income of nonfinancial corporations. Inflation accounting is receiving much attention in both the United States and Europe by accountants, and warrants examination from the perspective of economics. The data we have assembled indicate that the magnitudes involved are extremely large both absolutely and relatively, and that net income as currently determined can be quite misleading. We hope that this work will stimulate further discussions of measures of real corporate income and lead to other investigations into the broader topic of inflation accounting. Also, we believe that several of our specific proposals warrant examination with a critical eye by the economics and accounting professions, with a view to their possible adoption.

APPENDIX

Other Corrections to Profits

In this and our previous paper, we have examined the accounting treatment of each major balance-sheet entry. However, several additional corrections would be desirable in order to establish complete consistency with a definition of profits adjusted for inflation, such as purchasing-

power accrual or income above what is necessary for capital maintenance. The most important of these “off balance sheet” adjustments involve the assets and liabilities of noninsured pension funds and practices with respect to accounting leases. In the absence of adequate information on these items, we cannot make the sort of estimates of the impact of changing accounting practices that we have with the other issues, but will simply discuss our view of some of the appropriate considerations for them.

Assets and Liabilities of Pension Funds

Accounting for the future pension obligations amassed by the firm is clearly important in determining its financial position and net income. Currently, the only impact pension funds have on reported profits is through the direct contributions of the firm. This process is completely consistent with the current treatment of bond liabilities, which requires only actual interest payments to enter the computation of income. While the situation is somewhat less clear (partially due to the rapidly changing regulations with respect to pension funds and the lack of a market for these obligations), we argue that some adjustments similar to those we have suggested for bonds may be appropriate for pension funds—for supplementary reporting if not for the computation of profits. We also want to emphasize the important impact that inflation and changes in its rate have on a firm’s pension-fund obligations.

Unfortunately, we have been able to gather only very limited aggregate data with regard to pension funds; but they are sufficient to confirm the significance of the funds in determining the net income of an enterprise. During 1974, employer contributions to private noninsured funds rose 18 percent to \$16.9 billion, while benefit payouts climbed 15 percent to \$10.7 billion. Despite the net inflow, the market value of the assets of these pension funds declined \$20.5 billion, nearly matching the 1973 decrease of \$22.1 billion. By the end of 1974, the total market value of the assets amounted to \$111.7 billion, or 72 percent of their value two years earlier. The value of the common-stock holdings of private pension funds fell by \$50.8 billion over the two years, despite net new purchases of \$4.7 billion.¹⁵ By December 31, 1974, according to a rough estimate,

15. These data were made available by the U.S. Securities and Exchange Commission. Most are reported in Richard L. Gordon, “SEC Report Shows Bear Market Bite of \$21 Billion from Funds’ Assets,” *Pensions & Investments*, vol. 4 (January 5, 1976), pp. 1, 44.

the aggregate unfunded liability of private noninsured pension funds was \$65 billion, up \$30 billion from December 31, 1973.¹⁶ It is the proper accounting for such large changes in net unfunded liabilities that we wish to explore.

THE IMPORTANCE OF ACTUARIAL ASSUMPTIONS AND INFLATION

Most of the above data refer to the assets of pension funds rather than their liabilities—for good reason: an actuarially sound measure of the present value of a pension fund's liabilities is difficult to compute. Firms are given wide leeway in making assumptions about such things as the rate of return on assets (that is, the discount rate to apply to future liabilities), the rate of inflation, and the average turnover of their labor force. The IRS guidelines simply require "reasonableness." Without thoroughly investigating this issue here, we simply note the sensitivity of net liabilities to these assumptions. Varying the assumed rate of return (also used as the discount rate) on a fund's assets by 0.25 percentage point may produce a differential of 6 to 7 percent in the present value of future liabilities if the liabilities are fixed in nominal terms.¹⁷ Further, should every pension plan raise its rate-of-return assumption 0.25 point, aggregate unfunded liabilities would decline by approximately 20 percent. Current pension costs, and hence reported profits, are also extremely sensitive to actuarial assumptions with the present accounting practices. This sensitivity was demonstrated in 1973 when du Pont raised its rate-of-return assumption 0.5 point and, in so doing, lowered its pension-fund contributions 16 percent from \$121.1 million to \$101.3 million.

The above examples of the sensitivity of net liabilities and current contributions to the projected rate of return on assets have assumed

16. These rough estimates are our own. We established that the net liabilities of the 100 largest private noninsured pension funds amounted to 32 percent of the book value of their assets at the end of 1972 (from U.S. Department of Labor, Labor-Management Services Administration, "The 100 Largest Retirement Plans, 1960-1972," U.S.D.L., 1974; processed). This figure was assumed to be constant through the end of 1974, and to be relevant for all noninsured funds. The estimate of \$65 billion in net liabilities for 1974 is 32 percent of the \$133.7 billion of assets in such pension funds (at book value) plus the \$22 billion difference between book and market value for these assets. The 1973 figure of \$35 billion was estimated similarly.

17. Ernest L. Hicks, *Accounting for the Cost of Pension Plans*, Accounting Research Study 8 (American Institute of Certified Public Accountants, 1965), p. 117.

constant nominal obligations. Many pension contracts are of this form (providing, say, \$10 per month per year of service), while others are partially or even fully adjusted for inflation.¹⁸ If the increase in the rate of return on assets reflects simply an increase in the expected rate of inflation, then the net-liability position of the firm will change only to the extent that benefits are not indexed.

The level and changes in long-term interest rates (partially reflecting market expectations of inflation) are also significant for determining the overall financial condition of the pension fund. Because the firm may hold long-term nominal assets such as bonds and mortgages in its fund, the analysis of the first section of the text applies, but in reverse. Now, in the recent periods of rising interest rates, firms have suffered accrued capital losses on such assets (as well as on their common-stock holdings). Net liabilities created by such “experience losses” must now be calculated every three years and amortized over fifteen years (twenty years for multi-employer plans). At the same time, higher interest rates lower the present value of the firm’s liabilities, since most plans are not fully indexed for active workers and are completely nonindexed for those already retired.¹⁹ On balance, increases in interest rates are likely to improve the overall financial position of the pension funds. While these funds do have long-term financial assets, the liabilities of pensions defined in nominal terms also should be rediscounted at the higher rates. Probably, the average duration of the liabilities in this case exceeds that of the assets, making them more sensitive to variations in interest rates. Inflation is beneficial also because many plans “tax” the employees’ social security benefits dollar for dollar at retirement. When workers leave the company long before retirement age, inflation also favors the firm. Even if benefits are fully vested, their value is eroded during the interval before payout begins, so the higher the rate of inflation the greater the gain to the firm.

The projected rates of inflation of return on assets are only two of several important actuarial assumptions. As with depreciation and inventory accounting, there are several methods of determining pension liabilities. The most common are termed the “entry age normal” method

18. Few, if any, private pension plans are adjusted more than 100 percent for inflation as are military retirement plans and social security.

19. Howard E. Winklevoss, of the University of Pennsylvania, has estimated that an increase of 5 percentage points in the rate of inflation, interest rates, and rate of salary increase decreases the benefit liabilities by 13 percent for the average plan with no post-retirement cost-of-living adjustments.

and the "unit-credit" method,²⁰ but other techniques are widely used. The divergence in the contributions required under the various commonly used systems can be 30 percent or more.²¹

THE EFFECTS OF PENSION FUNDS ON NONFINANCIAL CORPORATE INCOME

The Employee Retirement Income Security Act of 1974 (ERISA) requires each firm to disclose the market value of its pension-fund assets and the actuarial assumptions used in calculating liabilities. When these data become available, it will be possible to evaluate numerically some of the effects just described. Lacking this information, we will discuss changes in pension accounting that would be consistent with our two definitions of nonfinancial corporate income.

The first change would sharpen the accounting and actuarial guidelines to improve comparability across firms. Second, we favor replacing the fifteen-year amortization of gains and losses on assets by their immediate reflection as corporate income or loss. Such a procedure would be consistent with an accrual definition of income. Symmetrically, we would rediscount future liabilities each year in order to determine their present value. The discount rate would depend in some deterministic way on the firms' long-term borrowing costs. The difficult issue is the appropriate accounting treatment of past-service liabilities created by the inauguration or improvement of a pension plan. Such liabilities are not strictly comparable to those involved in other forms of debt, and the appropriate accounting treatment is not obvious. The terms of this liability are vastly more complicated, and the degree of uncertainty is significantly higher, than those associated with, for instance, bonds. Perhaps as a result, there is no market for these obligations. The accounting options are (1) to reflect the increase in net liability immediately as a decrease in income; (2) to amortize the past-service costs over the life of the contract; and (3) to amortize over a long period, the current practice. Spreading the costs over many years may be justified if one views the new liability as a substitute for higher wages or makes a going-concern assumption

20. Of 500 firms surveyed in 1969 by the Pension Trust Division of the Chase Manhattan Bank, 222 used the entry-age normal method, 117 adopted the unit-credit method, 50 used the so-called aggregate method, and 111 chose various other accepted techniques.

21. See Hicks, *Accounting for the Cost of Pension Plans*, pp. 124-25, and Charles L. Trowbridge, "Fundamentals of Pension Funding," *Transactions* (Society of Actuaries), vol. 4 (April 1952), p. 36.

and argues that the liability will be incurred over a lengthy period. A possible further consideration is the amount of the liability vested with the employees. We do not have a strong opinion on the amortization of the post-service net liability created in new labor agreements, but find the current practice defensible given the complicated nature of the problem. These complications are avoided, however, in defined-contribution plans (as opposed to defined-benefit plans), such as the TIAA-CREF pension system for college teachers. Under this operation each employee has an individual pension-fund account, and his benefit is directly related to the contributions made on his behalf.²²

Leases

One other important issue is the proper accounting for leases. These are often long-term, nominal obligations, on which inflation and changes in its rate cause unreported corporate gains and losses just as they do with bonds and mortgages. Our focus here is on long-term noncancelable leases, to use the accounting profession's term. Such leases have "an initial or remaining term of more than one year" and are either noncancelable or cancelable only under a "remote contingency or upon the payment of a substantial penalty."²³ A significant number are "financing leases," involving a procedure similar to that of purchase by the lessor financed by a mortgage from the lessee.²⁴ Other long-term noncancelable leases may include contracts written for less than 75 percent of the asset's economic life and long-term supply agreements such as those often entered into by electric utilities for the delivery of fuel.²⁵

22. While this type of plan eliminates all of the difficult accounting problems for corporate pension plans, it raises the issue of how to treat the earnings of these funds in the computation of personal income. But that is not the topic of this paper.

23. Securities and Exchange Commission, Accounting Series, Release 147, Notice of Adoption of Amendments to Regulation S-X Requiring Improved Disclosure of Leases (October 5, 1973), p. 5.

24. A lease may qualify as a financing lease on either of two grounds: (1) that the original lease, plus any renewals in the initial contract that have a high probability of being exercised, covers at least 75 percent of the economic life of the asset; or (2) that the lease is written to guarantee the lessor full recovery of his investment plus a "fair return" subject only to limited risk in the realization of any residual interest in the property and normal loan risk.

25. For information on the specific accounting rules, see SEC, Notice of Adoption (October 5, 1973).

While many items are leased because the firm wishes to use them for only a short period of time, desires flexibility in its capital, or wants to avoid certain risks or conserve on financial assets, financing leases are often written for tax and accounting purposes. A lease enables a firm to “sell” or “lend” tax deductions and credits that it may otherwise be unable to use to full advantage. For example, leases generally, and financing leases in particular, are structured to increase the reported profits and taxes of the lessee in the early years of a lease and decrease them subsequently. Symmetrically, lessors pay less taxes in the initial years. Companies with large losses, and thus large tax credits (airlines provide examples), can lend these tax credits to lessors and receive interest, which they do not receive from the government. Furthermore, the investment tax credit may be used only to reduce corporate tax liability by one-half for tax liabilities above the first \$25,000. Firms with large domestic investment in long-term capital goods and low profits can arrange to “sell” these credits to lessors. The manufacturer lessor receives an additional tax advantage in that the profit and taxes on the delivery of the product are paid out only over the length of the lease.²⁶ Finally, the “off balance sheet” nature of lease financing may be an attraction itself. The indenture in a firm’s bonds may constrain it from issuing greater amounts of long-term debt but permit it to enter long-term noncancelable leases, which do not appear on the balance sheet. While long-term and financing leases are common in some industries, like airlines, they are intensively used by very few of the Dow industrials (Woolworth is the most notable exception).

Current rules on lease disclosure require firms to provide data on the minimum annual rentals under long-term noncancelable leases if that leasing constitutes more than 5 percent of the firm’s total capitalization.

26. For example, if IBM builds a computer for \$600,000 and writes a financing lease for \$1,250,000, it reports \$650,000 in profits over the length of the lease. If, on the other hand, the computer is sold for \$1 million to a leasing company that in turn negotiates the same contract, IBM immediately reports a \$400,000 gain and the leasing company reports \$250,000 over the life of the asset; thus, leasing serves to postpone the \$400,000 profit made on the sale. This is why companies like IBM often state that the rate of increase in its installations is more germane to its long-run financial performance than is its short-term profit increase. A high ratio of sales to rentals produces greater accounting profits without greater economic profits. For more specifics regarding the accounting treatment of manufacturers as lessors, see American Institute of Certified Public Accountants, Accounting Principles Board, “Accounting for Lease Transactions by Manufacturer or Dealer Lessors,” *Opinions of the Accounting Principles Board*, 27 (AICPA, 1972).

The effect of leasing on corporate profits must be reported if it amounts to 3 percent or more of the average profits earned over the previous three years (excluding loss years).

We believe all long-term noncancelable leases should be transferred from the footnotes to the balance sheet proper, and that the income statement should reflect their effect on profits. Ideally, both the asset and the liability involved should be carried at their market or present values. However, as with other depreciable assets, this procedure probably is not feasible on the asset side, and we would carry the asset on a general-value basis (original value restated for the change in the purchasing power of the dollar). Initially the value of the asset would equal the present value of the future lease payments. The asset's value would be increased by the percentage change in the general price level and would be depreciated as if it were owned by the firm for the duration of the noncancelable lease. On the liability side, all nominally denominated long-term leases should be treated as mortgages and counted in determining the net financial liability of the firm (and its corresponding "debtor's profits" with inflation). With the Haig-Simons accrual definition of corporate income, the present value of the future lease payments would be recalculated at the end of each year using the firm's borrowing cost as the discount rate. As with other long-term financial obligations, changes in the value of the liability would enter the computation of net income.

Comments and Discussion

William Fellner: At the present stage of the debate about inflation accounting, competent analytical and empirical contributions⁶ such as those⁷ of Shoven and Bulow are clearly to be welcomed. This point deserves to be stressed particularly by those of us who remain unconvinced by their specific views⁸ on controversial matters. I have remained unconvinced and because of time limitations, I must regretfully concentrate on the points with which I disagree.

The main conclusion suggested by the paper is that, with the adjustments advocated in it, the after-tax profits of nonfinancial corporations in the aggregate greatly *exceeded* their reported profits during the worst phase of the recent inflation (in 1973 and 1974). A nonnegligible excess of the authors' adjusted profits over the reported ones develops also for the period 1965–74 as a whole, even if not for each year. In most years of that decade the non-financial corporate sector was taxed at a lower rate relative to its “true” profits in the Shoven-Bulow sense than relative to reported profits. Pragmatically, this seems to me the main conclusion of the Shoven-Bulow analysis, which, under the heading of inflation accounting, focuses on business taxation.

What makes me dissent from the authors is that instead of doing their best to separate the taxation aspect of the inflation-accounting problem from other controversial problems of tax policy, they have tried to get the reader to accept their own list of far-reaching tax-reform measures in a single package with corrections of business taxes for inflation.

Even if a researcher makes an effort to separate problems, inevitably he will have to include in his analysis more than the problem of inflation adjustments for FIFO inventory valuation and for historical-cost depreciation. However, the main reason why other problems cannot be ignored is

that, as a result of debt financing, much of the nominal revaluation gains, reflecting merely the inflation rate, are at present taxable not to the investors but to direct and indirect creditors—that is, often to households in the form of taxable nominal interest earnings. Moreover, regardless of whether such taxable gains accrue to it, the household sector suffers nondeductible real losses on its liquid assets as a result of inflation. I doubt whether in practice any logically neat solution can be worked out for this specific distortion of the tax position of households; but the problem is one of economic and social significance and it should be considered jointly with such matters as inflation correction for FIFO inventories and for depreciation. Yet the authors seem to take the position that these merely nominal revaluation gains in the taxable interest earnings of households, and the nondeductible real losses on liquid assets, are not relevant to their present concerns, presumably because these problems do not refer to business taxation. In this regard, the authors obey the precept of separating areas of research, though I consider this an artificial separation of two sides of one and the same coin.

On the other hand, Shoven and Bulow discuss what would be involved in changing over to the taxation of the unrealized real capital gains of business, and also the assumed consequences of a change in the congressional attitude toward accelerated depreciation. These matters are *not* inscribed on the other side of the inflation-correction coin. The authors *merge* them with inflation accounting because, quite aside from their views on that issue, they are opposed to the exemption of unrealized gains from the tax base and also to accelerated depreciation. Hence, they adjust profits in all these respects jointly.

In my comments on the earlier Shoven-Bulow paper I expressed a negative view on their principle of taxing unrealized accruals. I return to it briefly because the difficulties I mentioned then have in fact prevented the authors from applying their favored principle with anything like consistency.

Every home-owning household is aware that the current valuation of a physical asset is subject to a considerable margin of error and that *all potential creditors also regard such valuations as very risky*. Because the problem here is unrealized accruals, presumably the owner of the physical asset should not be forced to sell it, and it is hard to justify including in the tax base an estimated accrual on an unsold asset as if it were comparable to the taxpayer's current income as usually interpreted. Although the authors are concerned with business units rather than with home-owning house-

holds, the same considerations apply to the plant and equipment and land owned by business (except that it is open to interpretation whether currently using up and replacing a small portion of plant and equipment is associated with realization, and hence for this portion the U.S. tax code is in fact striving for a compromise).

Including unrealized value increments in the tax base would require the taxpayer to secure for the fiscal authority a definite *realized* revenue as a counterpart of a vaguely estimated *unrealized* accrual; the question then is, what happens next? There are two possible answers: (1) the taxpayer must in fact realize promptly, or (2) we wish to raise the tax on past or current *realized* intake by imposing a levy related to unrealized gains. Unless we are willing to go along with one of these answers, the distinction between realized and unrealized gains should be allowed to stand. The qualifying proposition that additional credit may be available on the basis of revised valuations is far too weak to support the argument for taxing estimated accruals. To this I shall return below.

In their present paper, just *before* summarizing their conclusions, Shoven and Bulow seem to me to have come around to the view that some of these complications seriously damage their position, though their conclusions remain essentially unaffected. To be specific, from their estimated profit adjustments they *omit* the value accruals (positive or negative) on physical capital and land other than current replacements, because the required data are not available. Pragmatically, this amounts to keeping their hands off the unmanageable valuation difficulties I have discussed above. Since the authors cannot do what their conception suggests "should" be done, what remains in their collection of reforms concerning the taxation of unrealized accruals?

Various items representing unrealized accruals do remain on the list; the one of dominant significance for 1973 and 1974 is the diminution of the real value of the liabilities of enterprises. The very large size of this item results in good part from the Shoven-Bulow postulate that if an enterprise *could* have repurchased its bonds at a reduced price but did not in fact do so, its taxable profits should nevertheless be defined to include that reduction in value. This peculiar candidate for additional taxation looms large in the authors' list, after *de facto* exclusion of the unmanageable item that logically comes first, the value accruals (positive or negative) on plant and equipment and on land. Recognition that these latter accruals pose an insurmountable difficulty is one of the concessions the authors make, though

they subsequently repeat their advocacy of the taxation of unrealized accruals.

Prior to expressing their conclusions they make another essential concession, even if it is not meant to be one. They ask why the valuation of shares in the stock exchange did not reflect the profit trend for the years following 1972, which is a very favorable trend if the reported profits are adjusted by their method. Their discussion of this question, while deliberately and quite rightly sketchy, includes points that I have made both at this and at the last panel meeting, when arguing that estimated unrealized gains should not be included in the tax base unless the wish is to force realization. What the authors do clearly recognize is the inability of enterprises to raise funds on conditions implying the high profitability estimated in the paper.

By way of summary, I suggest, first, that neither Shoven and Bulow nor anyone else can find acceptable estimates for determining the tax base their preferred way, with the result that they cannot help being highly selective in applying their principle. Second, in either a general or a selective application of their position, it is quite unclear what decisionmaking processes are to be guided by their favored concept of profits, which they try to justify merely by relating it to the vague term “economic power.” Third, while no single operational concept of profit seems particularly relevant to the firm’s decisionmaking processes, the authors argue for including a major item that would seem to me an implausible candidate even if I could put aside general misgivings about the accrual principle. This item is the alleged gain accruing to a firm that has two characteristics: (a) the market value of its outstanding bonds has declined because interest rates have risen; (b) the firm has, however, *not* repurchased its bonds in these circumstances—that is, in markets in which new bonds could be issued only at correspondingly higher interest rates.

Since time has forced me to concentrate on points of disagreement, I wish to conclude by repeating that dissent must not be allowed to obscure the appreciation of very careful and competent research on a controversial problem of great complexity.

Edward M. Gramlich: This paper, like the first Shoven-Bulow work, is a complete and well-developed discussion of the accounting and tax conventions appropriate for defining business income in an inflationary world. As before, Shoven and Bulow show that inflation accounting has become an

important problem, and vast mistakes, or at least misleading inferences, can be made if business and corporate income are not correctly defined.

The interesting analytical issue, in this and the first Shoven-Bulow paper, is the distinction between the Haig-Simons purchasing-power-accrual definition of income and the Pigou capital-maintenance concept. Before, in the treatment of nonfinancial assets, this issue came up in the appropriate definition of inventory and capital costs when goods prices were not all rising at the same rate: was a firm that was holding inventories whose prices increased at extraordinary rates better off because of its implicit capital gain, or no better off because this gain reflected nothing more than higher inventory bills from then on? The purchasing-power-accrual concept would include the capital gain in profits (that is what Shoven and Bulow mean by constant-dollar FIFO), while the capital-maintenance concept would simply ignore the real gains on inventories by using the present optional LIFO convention. As I argued in my comment on the first Shoven-Bulow paper, a tentative answer is that it depends on the substitution possibilities open to the firm. If the firm did not have to buy the appreciated inventories, it was in some sense better off and the one-shot capital gains reflecting that fact should be included in firm income. If it did have to, these one-shot gains would in effect never be realized and should never be counted as profits.

A similar issue arises in the case of financial assets and liabilities. If the interest rate facing one firm should rise, its outstanding debt will depreciate in market value and the firm will experience a one-shot capital gain. If the debt is not a consol, that gain will be offset by future losses as the bond approaches its par value at maturity. The question then is whether the one-shot gain on outstanding debt should show as a profit in the year it occurs, to be offset by succeeding losses as the debt matures. The purchasing-power-accrual concept dictates the answer "yes"; the capital-maintenance concept, "no"; and an intermediate concept suggested by James Tobin at the last meeting of the Brookings panel, whereby all gains or losses are converted to their annuity-value income, suggests "partly." Again, I think the answer depends on whether the firm has to go to the bond market for funds (that is, whether it has substitution possibilities). If it need not rely on debt finance, it can in some sense simply buy back the debt and is better off because of its gain. If it must rely on the bond market, it is not obviously better off. Fortunately, in this paper, unlike the last one, all gains or losses will eventually be realized, so the question of whether to use the

accrual definition or the capital-maintenance definition is simply one of timing.

This issue of accrual versus capital maintenance is the hard one raised in both Shoven-Bulow papers and tends to receive the most ink and cause the most head-scratching. But the problem really has nothing to do with the general price-inflation accounting that motivated the Shoven-Bulow papers in the first place. Whether overall prices are stable, rising, or falling, there will always be shifts in relative prices and interest rates, and accounting conventions will have to record these shifts either on an accrual or a realization basis. However this is done, it is obviously necessary to deal with the accounting problems raised by general price inflation for depreciation, inventories, and financial assets and liabilities. Here, there is not much conflict among Shoven and Bulow, their discussants, and at least the conventions proposed by the Financial Accounting Standards Board: all would make adjustments in the various items affected by changing general prices. Over the five-year period 1970–74, these general price adjustments would have subtracted about \$3 billion from corporate profits using the capital-maintenance approach or added about \$4 billion using the highly volatile purchasing-power-accrual approach.¹

Finally, the reforms advocated by Shoven and Bulow would be a big improvement over present practice in inflationary times. The misstatement of corporate income could cause random shifts in the distribution of income, cycles in interest rates and stock prices, and probably some retardation in the rate of capital formation because of both accounting illusion and tax effects. None of these outcomes seems particularly desirable, and hence it seems reasonable to undertake the Shoven-Bulow reforms, or at least to acquaint the accounting profession and capital markets with the distortions in income that general price inflation can cause. Most of the paper is devoted to a discussion of the fancy purchasing-power-accrual concept of income, but even the more simple-minded inflation-adjusted capital-maintenance concept would be a long step in the right direction.

General Discussion

As was the case with the discussion of the previous paper by Shoven and Bulow, on physical assets, many of the comments by participants related

1. These numbers are the average of values in table 8. Averaging is necessary because the purchasing-power-accrual values are so volatile, and obviously the choice of years over which to average makes a difference.

to the authors' preference for the purchasing-power-accrual definition of income. Franco Modigliani agreed that accounting adjustments are needed to reflect the changing real value of outstanding debt. When the interest rate goes up in response to a rise in the rate of inflation, it just compensates the lender for his loss of purchasing power and offsets the gain to the borrower. However, if the interest rate rises subsequent to a firm's incurring debt to purchase a real asset, that firm clearly benefits because it can "sell" that extra value. According to Modigliani, a well-working stock market should be expected to reflect such gains accruing to firms. He pointed out, however, that the gains on net financial liabilities for nonfinancial corporations were largely offset by losses from inventory and depreciation adjustments. Thus, as the authors noted, the improvement in adjusted after-tax profits resulted primarily from extraordinary gains on bonds and mortgages, which accountants typically ignore because they are concerned about long-term sustainable profits. If investors have the same attitudes as accountants or if they focus on the accounting figures, they will not respond to short-term gains that cannot be maintained.

Arthur Okun expressed his reservations about purchasing-power accrual, particularly about the inclusion in the income of borrowers of the reduction in the present value of their long-term liabilities. Whether a firm is made better off by an interest-induced reduction in bond values depends on the structure of its liabilities, its long-term cash-flow plan, and, as Gramlich had stressed, its substitution possibilities. In general, firms that expect to be bond sellers over the long run are made worse off by an adverse bond market. Okun conceded that those who had issued bonds prior to the rise in interest rates were less adversely affected than those who had planned to sell at a later date; but he did not believe that the income statement should be focused on that difference.

William Poole asked Fellner to clarify his statement that some of what Shoven and Bulow treated as accrued gains were not in reality gains because they could not be realized. Was he implying that, in a macroeconomic sense, liquidity problems would preclude simultaneous realization of everyone's accrued gains? Fellner stated that this was a problem but that, even for an individual or firm, it is not necessarily true that a gain on an asset can be realized by borrowing against it, because the valuation is highly uncertain. Poole did not accept this second argument, believing that the gain could be extracted in some form—for example, through a merger agreement.

The distinction between the appropriate income definition for management and market information and that for tax purposes concerned Martin Feldstein. Whether or not accrued gains on financial assets and liabilities should be reported to stockholders as income, any proposal to include them in the tax base should recognize that accrual taxation is not the general rule. For example, other accrued gains—pension saving, Keogh-plan saving, gains on holding real and personal property—remain untaxed.

Turning to another issue, Feldstein applied to financial assets James Tobin's suggestion of converting extraordinary gains and losses into their value as an annuity. In the case of a long-term bond, the inverse relationship between market value and interest rates means that the issuer cannot convert any decline in price into an altered annuity over the life of the bond. Old bonds can be bought back at a discount but new bonds have to carry a larger coupon. From that point of view, the gain cannot be translated into an incremental annuity and hence should not be viewed as income.

Henry Aaron remarked that capital losses on pension funds should not necessarily show up as adjustments to the profits of the firm. If total wage costs per worker remain the same, the workers will be adversely affected through a reduction in real wages. If profits, real wages, and output are maintained, the customer will be affected by higher product prices. Only when real wages, output, and prices are unchanged will the authors' adjustment be correct. Shoven replied that, while the long-run incidence of the loss was an important consideration, he was concerned about the present worth of the firm, which clearly was affected by the capital loss. Aaron pointed out that their approach would be correct only if the firm were liquidating. An ongoing firm would take steps to compensate for the capital loss, such as reducing pensions, lowering money wages, offering fewer fringe benefits, raising prices. Hence, the present value of the loss in profits would be less than the initial capital loss to the pension fund.

Okun emphasized the unique situation of regulated public utilities. The authors correctly noted and qualified the large impact of American Telephone and Telegraph on aggregate adjusted profits for the Dow thirty. But they offered no measure of the impact of the adjustment for the whole public utilities sector on nonfinancial corporate profits. To the extent that pricing rules of public utility commissions are based on original cost, a utility's assets are monetized immediately; hence, increases in their value should not be treated as a gain to the stockholders.

Jeremy Bulow responded to a number of points raised in the discussion.

He agreed with Fellner that household incomes also should be adjusted for inflation and thought that government tax receipts are slightly lower than they would be with uniform adjustments. Stressing the need for adjusting corporate income even though firms may be faced with a large tax bill in a year of extraordinary accrued gains, he suggested that the problem could be solved by introducing long-term income averaging into the tax laws. On Fellner's comment that the estimated value of an asset during an inflationary period would be highly uncertain, Bulow argued that it would nevertheless be a better estimate of the asset's true value than original cost would be. Bulow conjectured that one reason that the stock market did not move with the adjusted profits measure of the paper might be that financial analysts are more concerned with the recurring inflation adjustments, such as those for inventories, depreciation, and the purchasing power of net liabilities, than with nonrecurring adjustments, such as changes in bond prices.