Volume Title: The Financial Effects of Inflation

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Volume Publisher: NBER

Volume ISBN: 0-88410-486-9

Volume URL: http://www.nber.org/books/caga78-1

Publication Date: 1978

Chapter Title: Appendix: Survey of Adjustments of Corporate Accounts

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Chapter URL: http://www.nber.org/chapters/c3879

Chapter pages in book: (p. 73 - 78)

Appendix

Survey of Adjustments of Corporate Accounts

Adjustments of corporate accounts for various effects of inflation give rise to a variety of possible measures of profits, profit rates, and ratios of market value of equity and debt to adjusted book value of assets. Several recent estimates for U.S. nonfinancial corporations in addition to our own are brought together in Table A-1 with an indication of the major adjustments for inflation that each one includes. Those of Shoven and Bulow [1976] are shown separately in Table A-2 because they did not calculate a rate of return, and their figures are therefore not comparable to those in Table A-1. None of the calculations go as far as ours in including all the adjustments listed,[1] but all include some or most of the major ones.

Some authors express the results as a rate of return on capital, and others, as we do, as a rate of return on net worth. The two concepts differ considerably in the level of the rates (the return on capital includes interest, that on net worth excludes it), but much less in general movements. The adjustments of financial assets and liabilities for inflation (items 2 and 3) affect the allocation of total returns on capital between bondholders and stockholders and are only applicable to the return on net worth. There are also differences among the sources in whether land is included in tangible capital and whether financial assets are treated as a resource contributing to profits. Minor differences exist owing to the use of different methods of estimating certain items and revisions in the basic data.

The market value of corporations including debt outstanding is compared with capital, and the market value of equity with net worth. The former has been denoted "q" by Tobin and is used to

Table A-1. Various Adjustments of Nonfarm Nonfinancial Corporate Accounts for Inflation.

Adjustment of	*Profits plus Interest as Percentage of Tangible Capital*		*Profits as Percentage of Net Worth, After tax*				*Ratio of Market Value of Corporations to Replacement Cost*			
							Equity plus Debt			*Equity*
N = numerator	*Before tax*	*After tax*					*Tangible Capital*			*Net Worth*
D = denominator										
	Feldstein and Summers	*Holland and Myers*	*CEA*	*Malkiel and von Furstenberg*	*Kopcke*[a]	*Cagan and Lipsey*	*CEA*	*Ciccolo*	*Holland and Myers*	*Cagan and Lipsey*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
1. Capital and inventories for change in replacement cost[b]	N,D	N,D	N,D	N,D	N,D	N,D	N,D	N,D	N,D	N,D
2. Market value of long-term debt for change in interest rates	not applicable			D	N,D	N,D			N	D
3. Real value of net financial liabilities for change in price level	not applicable		N	N		N	not applicable			
4. Real value of tangible capital for change in relative prices		N			N	N	not applicable			
5. Value of land in D and change in relative value in N	D					N,D			D[c]	D
1955	12.4	11.0	6.5			11.4	.93	1.04	0.86	0.94
1956	10.6	8.3	5.8			13.0	.92	0.95	0.89	0.89
1957	9.8	5.4	4.9	4.8		6.3	.86	0.83	0.82	0.75
1958	8.5	4.3	3.8	3.9		4.4	.87	1.06	0.79	0.99
1959	10.7	5.7	4.9	5.0		7.2	1.05	1.20	1.01	1.00

Table A-1 (continued)

1960	9.9	4.7	4.4	4.6		4.8	1.02	1.14	0.97	0.98
1961	9.8	4.9	4.3	4.3		3.3	1.15	1.44	1.13	1.19
1962	11.2	6.4	5.6	5.9		5.9	1.09	1.26	1.09	1.02
1963	11.9	6.7	6.1	6.2		7.7	1.20	1.46	1.22	1.14
1964	12.8	8.6	7.1	7.4		8.6	1.29	1.58	1.28	1.20
1965	13.7	10.0	8.1	7.9	17.0	11.5	1.36	1.68	1.37	1.26
1966	13.4	10.5	8.8	8.5	18.0	14.4	1.20	1.22	1.23	1.05
1967	11.9	8.8	7.7	7.4	19.0	12.0	1.21	1.36	1.22	1.20
1968	11.7	7.7	7.0	7.1	14.0	10.6	1.26	1.47	1.19	1.31
1969	10.2	6.1	6.3	5.8	22.0	14.4	1.13	1.21	1.13	1.04
1970	8.1	5.2	5.0	4.4	11.0	4.3	.91	1.00	0.84	0.99
1971	8.4	6.5	4.5	4.8	11.0	4.0	1.01	1.15	0.98	1.10
1972	9.2	7.8	6.2	5.5	13.0	9.0	1.09	1.25	1.04	1.16
1973	8.6	7.9	5.8	5.4	18.0	16.7	1.03	1.10	1.02	0.76
1974	6.4	4.4	9.9	3.6	18.0	16.0	0.76	0.73	0.94	0.42
1975	6.9	6.1	6.1	4.9	12.0	4.8	0.75	0.87	0.73	0.52
1976	7.9	3.5	5.8	5.1		0.6	0.84	1.03		0.62
1977			5.9			9.2	0.79	0.91		0.50

[a]On a current value basis. Kopcke also gives the decline in purchasing power of net financial liabilities, but it is not included in his figures for the rate of return.

[b]The adjustment for capital and inventories is the capital consumption adjustment and inventory valuation adjustment of the Department of Commerce.

[c]Includes the amount of cash on hand and accounts receivable and land at book value.

Sources: CEA, *Annual Report of the Council of Economic Advisers*, 1978, Table 8, p. 68; Feldstein and Summers [1977], Table 1, column 1; Holland and Myers [1977], Tables 7 and 2, respectively; Malkiel and von Furstenberg [1977], rates of return supplied by authors; Kopcke [1976], Table VI, column 8; Ciccolo [1978], data supplied by author; and Cagan and Lipsey, columns 8 and 11, Table 2-3.

Table A-2. Comparison of Shoven-Bulow and Cagan-Lipsey Estimates of Adjusted After-tax Profits. (1964 dollars)

		Cagan and Lipsey	
	Shoven and Bulow	*Excluding Capital Gains on Tangible Assets*	*Total*
1955	25.0	24.0	34.9
1956	31.0	32.2	43.8
1957	18.7	20.8	23.1
1958	14.9	16.8	16.9
1959	27.6	29.3	27.9
1960	16.6	18.8	19.4
1961	18.2	19.3	13.2
1962	23.3	25.4	24.1
1963	28.2	31.1	32.2
1964	29.9	33.4	37.3
1965	41.6	44.5	51.3
1966	52.3	58.8	67.4
1967	41.6	48.8	60.3
1968	36.0	43.8	56.5
1969	50.0	60.8	78.9
1970	7.6	11.7	25.4
1971	7.5	9.8	23.8
1972	29.6	34.0	53.1
1973	58.3	61.3	103.0
1974	65.4	62.5	106.9

Source: Shoven and Bulow (1976), Table 7, p. 40, col. 11, deflated by CPI; and Cagan and Lipsey, Table 2-2. Total is column (12). Excluding capital gains on tangible assets is column (12) minus column (7) minus column (8).

measure the incentives for new investment.[2] The latter is used by us as an indication of the equity market's valuation of net worth.

The major adjustments listed in Table A-1 may be briefly described as follows:

1. Capital goods and inventories are valued at historical cost and therefore undervalued by conventional accounting procedures. The using up of inventories is usually calculated on the FIFO method, and an adjustment must be made to convert to the current cost of inventories used. Similarly, capital stock and depreciation must be revalued to convert to the current cost of replacement. The adjustments of the aggregate profits data by the Department of Commerce are used by all sources.

2. A rise in market interest rates, due to higher inflation or other reasons, reduces the market value of a company's long-term debt. This provides an immediate capital gain to corporations which have the use of borrowed funds at lower interest rates; the gain represents the discounted value of the saving due to lower interest costs on the funds until maturity of the loan compared with current market interest costs. Profits remaining for equity are higher, effecting a transfer from bondholders to stockholders.
3. The depreciation in real value of net financial liabilities due to inflation is a gain to corporations; it offsets any rise in nominal interest rates that occurs to compensate for the depreciation. If the offset is not exact, borrowers or lenders gain at the expense of the other.
4. If the current replacement cost of capital goods rises more or less than the general price level owing to changes in relative prices, the owners of existing capital are subject to capital gains or losses, reflecting the fact that their capital has a real market value higher or lower than they paid for it.
5. Similar capital gains or losses occur in the value of corporate land. To account for changes in the real value of land, it is of course necessary to include corporate holdings of land in the accounts, which only some of the sources do.

The major differences among the sources in the levels of the series can be attributed to the differences in definition, as noted. It was not possible without reconstructing the series to make them comparable in definition. The inclusion or exclusion of the various adjustments for inflation account not only for major differences in levels but in movements as well. Yet similarities remain: all the series show a peak in the middle 1960s, except for column (6), which has high values in 1973–1974 because of item 2; and all show quite low values in recent years.

The Shoven and Bulow [1976] figures, deflated by the CPI, are compared in Table A-2 with our total profit estimate and with our profit estimate excluding capital gains on land and other tangible assets except inventories. Shoven and Bulow would have included capital gains on land, structures, and equipment as a matter of principle but state that they omitted them because they did not trust the capital goods price indexes. While we would not endorse these indexes, we think the indicated rise in real land prices and relative decline in equipment prices for part of the period come closer to the truth than the assumption, implicit in Shoven and Bulow, that both prices moved with the general price index.

Among the other sources of discrepancies between our profit estimates and theirs are the use of different general price indexes; our inclusion of long-term bank debt among the liabilities, the value of which was affected by interest rate changes; their dividend adjustment mentioned earlier; and a different depreciation adjustment.

NOTES

1. An adjustment not listed and not given by any source in Table A-1 is that for dividends according to their real value at the time made during the year. This adjustment, given by Shoven and Bulow [1976], is small, however.
2. See Tobin [1963] and [1969]; Tobin and Brainard [1976]; and Ciccolo [1978].