

Comparing NIPA Profits with S&P 500 Profits

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THE users of the national income and product accounts (NIPA's) often compare the growth rates of NIPA profit measures with those of other publicly available profit-type measures, such as Standard & Poor's 500 (S&P 500) earnings.¹ In this article, NIPA profits before tax and NIPA profits after tax—components of corporate profits from current production—are compared with S&P 500 reported earnings and operating earnings.²

The long-term trends of the NIPA profits measures and the S&P profits measures are roughly similar, but the year-to-year changes sometimes differ substantially (chart 1). For example, NIPA profits after tax decreased 7.5 percent in 1998, while S&P 500 operating earnings (after tax) increased 3.7 percent. In contrast, the two measures reflected similar growth in 1997; profits after tax increased 10.4 percent, and S&P operating earnings increased 10.6 percent.

The differences between the NIPA profit measures and the S&P 500 earnings measures reflect differences in purpose, definitions, and methodologies. In particular, the S&P earnings measures are broad market measures that serve as benchmarks for assessing the performance of individual companies or groups of companies, while the NIPA profits measures serve as time series that provide consistent coverage of all the Nation's corporations.

NIPA estimates of profits

Corporate profits in national income is the income earned from current production by corporations. Because national income is defined as the income of U.S. residents, its profits component includes

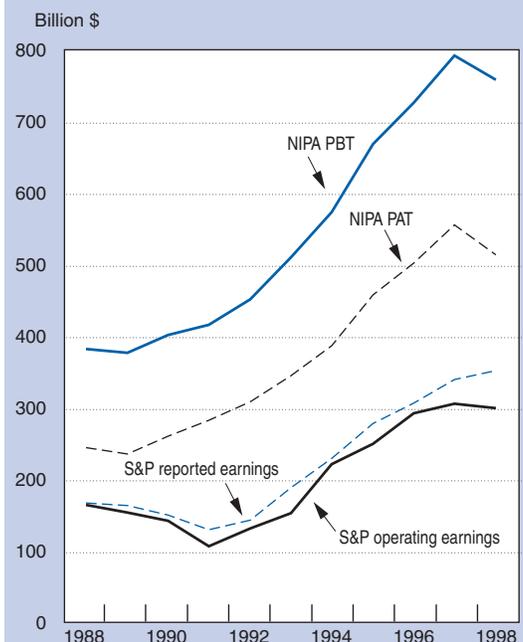
income earned abroad by U.S. corporations less income earned in the United States by foreign corporations.³ Income consists of receipts that arise from current production less associated expenses. Receipts exclude income in the form of dividends and capital gains, and expenses exclude bad debts, depletion, and capital losses.

The estimates of corporate profits are based on tabulations of data that are reported by corporations under two sets of accounting principles—financial accounting and tax accounting. Financial-accounting measures that reflect “generally accepted accounting principles” underlie the reports

3. These “rest-of-the-world” profits consist of receipts by all U.S. residents of dividends from their incorporated affiliates, their share of reinvested earnings of their incorporated affiliates, and earnings of unincorporated foreign affiliates, net of corresponding payments.

CHART 1

S&P and NIPA Profits



U.S. Bureau of Economic Analysis

1. Information about the S&P 500 index is available at <www.spglobal.com/indexmain500.html>.

2. Corporate profits from current production in the NIPA's is the sum of profits before tax, the inventory valuation adjustment, and the capital consumption adjustment. Profits before tax is largely based on tax-return information and thus reflects the charges used in tax accounting for inventory withdrawals and for depreciation. The two adjustment items restate the historical-cost basis used in tax accounting for inventory withdrawals and depreciation to the current-cost measures used in the NIPA's.

to stockholders and to government regulatory agencies, and tax-accounting measures underlie corporate income tax returns. Both financial accounting and tax accounting calculate profits as the difference between receipts and expenses, but they differ with respect to the definitions of some receipts and expenses and the timing of when some receipts and expenses are recorded.

The tax-accounting measures published annually by the Internal Revenue Service (IRS) in *Statistics of Income: Corporation Income Tax Returns (SOI)* are the primary source data for the annual NIPA estimates of corporate profits.⁴ These comprehensive tabulations are only available annually and with a considerable lag. As a result, data from financial-accounting measures are used to interpolate and extrapolate the tax-return-based profits estimates to current periods.⁵

Neither set of accounting measures is entirely suitable for implementing the NIPA concept of profits. Consequently, the procedure for estimating NIPA corporate profits mainly consists of adjusting, supplementing, and integrating the two measures.

In order to estimate NIPA corporate profits, the SOI tabulations of “total receipts less total deductions” are adjusted to conform to NIPA concepts.⁶ In particular, the adjustments for capital gains and losses and for bad debt expenses result in significant differences between the NIPA measures of profits and both the financial-accounting and the tax-accounting measures. Capital gains and losses are not included in the NIPA profits measures, because they result from the revaluation and sale of existing assets rather than from current produc-

tion. Similarly, bad debt expenses are not deducted in calculating the NIPA profits measures, because these charges represent a rearrangement of assets and liabilities in the Nation’s balance sheet rather than costs of current production.

S&P 500 profits measures

The S&P 500 measures of profits—which consists of reported earnings, operating earnings, and earnings per share—reflect the aggregate earnings of the 500 corporations that compose the S&P 500 stock index, and they are measured on a financial-accounting basis. Reported earnings are based on the after-tax earnings that are publicly reported by corporations; operating earnings are reported earnings that exclude the impact of cumulative accounting changes, discontinued operations, extraordinary items, and special items.

The S&P 500 stock index is intended to gauge changes in the total market value of 500 leading corporations chosen by S&P. The inclusion of a corporation in the index is based on its market value, capitalization, trading activity, and industry-group representation. As a market-based index, the S&P 500 universe is continuously changing because of corporate actions—such as mergers and acquisitions, bankruptcy, or restructuring—and because of market actions that limit liquidity or industry representation. In 1998, the S&P 500 index reflected 48 corporate compositional changes; in 1999, it reflected 42 changes; and in 2000, it reflected 58 changes. To prevent discontinuities in the overall S&P 500 index, a scaling factor, referred to as the “divisor,” is used to derive the index; the S&P 500 index is calculated as the overall market capitalization of the 500 corporations divided by the divisor.⁷

Because the S&P 500 earnings measures reflect a shifting market basket of corporations, the series for reported and operating earnings are discontinuous over time. Thus, the estimates of growth derived from these series reflect changes in the composition of the index as well as changes in the actual earnings.

4. U.S. Department of the Treasury, Internal Revenue Service, *Statistics of Income: Corporation Income Tax Returns*, No. 16, (Washington, DC: U.S. Government Printing Office).

5. Interpolation is a method that is used to prepare estimates between two periods; it applies a mathematical formula to preserve the quarterly pattern of the indicator series consistent with the annual level of the source data. Extrapolation is a method that is used to extend estimates forward (or backward) from a given estimate; in simple terms, it applies a percentage change in an indicator series to the level of the estimate.

Preliminary SOI tabulations for a given year become available about 2 years later, and final tabulations, about a year after that. Each July, the existing estimates for the years for which SOI tabulations are newly available are replaced with estimates based on these tabulations. Preliminary annual NIPA profit estimates are prepared for the most recent year by using financial-accounting-based profits as indicators to extrapolate profits for about 75 industries. Quarterly estimates are derived by interpolating the annual industry estimates, using quarterly financial-accounting profits measures as the indicator and by using the same indicator to extrapolate into the current period.

For a detailed explanation of the process, see U.S. Department of Commerce, Bureau of Economic Analysis, *Corporate Profits: Profits Before Tax, Tax Liability, and Dividends*, Methodology Paper No. 2 (Washington, DC: U.S. Government Printing Office, May 1985), or go to BEA’s Web site at <www.bea.doc.gov> and look under “Methodologies.”

6. These adjustments are summarized in NIPA table 8.25, “Relation of Corporate Profits, Taxes, and Dividends in the NIPAs to Corresponding Measures as Published by the IRS,” on page 118 of the August 2000 SURVEY OF CURRENT BUSINESS.

7. The divisor assumes arbitrary values and is a scaling factor that equates adjacent-period estimates of S&P 500 total market capitalization. Total market capitalization and the divisor change as new corporations enter and exit the index, as new shares are issued or repurchased, or as the corporations conduct special stock-related transactions. (The divisor is also used to derive the S&P 500 earnings per share measure, which is calculated as total earnings of the 500 corporations divided by the latest available divisor.) Additional information can be found at <www.spglobal.com/indexmain500_method.html>.

Differences between annual NIPA and S&P profits

The SOI tax return tabulations that are used to prepare the NIPA estimates of profits differ from the S&P 500 earnings in several important ways.

Coverage.—The SOI data cover all incorporated businesses—both publicly traded and privately held—and all industries. In 1998, the last year for which SOI data are available, 4.8 million corporate tax returns were filed. Because the earnings of small and mid-sized corporations do not necessarily move in concert with the earnings of large corporations, changes in NIPA profits may differ from changes in S&P 500 earnings.

Changing shares.—Because the composition of the S&P 500 is constantly changing, the share of total corporate earnings that are accounted for by these corporations varies: For reported earnings, the share ranged from 38 percent in 1991 to 67 percent in 1988; for operating earnings, the share ranged from 46 percent in 1991 to 69 percent in 1989 and 1998 (chart 2). These shares are also affected by the number of corporations losing money in the overall economy. The NIPA profit measures include all of the deficit corporations in the corporate universe, while the S&P measures are limited to the largest, and generally more profitable, corporations. Because the proportion of deficit corporations to profitable corporations varies, comparisons with a given set of corporate earnings will result in varying shares.

Industry representation.—The universe of the S&P 500 index is limited to publicly traded corporations, so representation of certain sectors of the economy—such as construction, legal services, and medical services—is likely to be limited because few corporations in these sectors meet the criteria for inclusion in the S&P 500 index. Thus, the industry composition of the S&P 500 index does not reflect the industry composition of the overall economy. In addition, the composition of the S&P 500 index is based on market values, so strong market sectors—such as technology—may have a higher weight in the S&P profits measures than in the NIPA profits measures.

Accounting principles.—Accounting principles affect the definition of some receipts and expenses and the timing with which some receipts and expenses are recorded. For example, in financial accounting, the most common type of employee

stock options (nonstatutory options) are usually not recorded as expenses, whereas under tax-accounting rules, these options are deducted from profits when exercised. In addition, the appreciation of securities in corporate-sponsored, defined-benefit pension plans can result in increased earnings under financial accounting but not under tax accounting. In financial accounting, the expenditures associated with plant closings and company reorganizations are recorded as current expenses when companies establish reserves for their estimated future costs, but in tax accounting, these expenditures are recorded only when they are actually made. Such differences can result in substantial short-term divergences between the S&P and NIPA measures of profits.⁸ In addition, the adjustment of S&P earnings to an operating-earnings concept depends on interpretations of what constitutes special or extraordinary items and the degree to which corporations disclose or quantify the amounts.

8. For additional examples, see table A-1, "Selected Differences in Financial, Tax, and National Income and Product Accounting," in *Corporate Profits*, 52.

CHART 2

S&P Earnings as a Percent of NIPA Profits After Tax



U.S. Bureau of Economic Analysis

Differences between quarterly NIPA and S&P profits

In general, the factors that contribute to the differences between the annual measures of S&P 500 earnings and of NIPA profits also contribute to the differences between the quarterly measures. The corporate coverage is more extensive in the quarterly financial-profits indicator series that underlie the quarterly NIPA estimates than the coverage of S&P 500 index. For example, the indicator series for manufacturing, mining, wholesale trade, and retail trade are from the Census Bureau's *Quarterly Financial Report*.⁹ These indicators are from a sample panel that currently consists of 8,225 corporations—including both publicly traded and privately held corporations and both large and small businesses—and that provides specific information that is used to adjust NIPA domestic industry profits for foreign source income, dividend receipts, and nonrecurring and special items. Additional tabulations of quarterly financial reports filed with regulatory authorities provide universe coverage for commercial banks, savings and loans, property and casualty insurers, airlines, and railroads. The remaining sectors of the economy are included in matched sample panels of earnings that are compiled from publicly available sources.

Because the industry coverage of the S&P earnings is more limited, short-term developments may affect S&P earnings more than NIPA profits; for example, a spike in energy prices may have a greater effect on S&P profits because of the heavy representation of large energy corporations. In ad-

dition, the quarterly NIPA estimates are seasonally adjusted, and they are affected by timing differences in the recording of expenses, such as payments by tobacco companies related to out-of-court settlements and payments by insurance companies as a result of natural disasters.

Growth-rate comparisons

It is misleading to directly compare the growth rates of the NIPA measures of corporate profits with those of the S&P 500 measures or others like them because these measures are designed for different purposes and are constructed differently. The S&P 500 earnings measures should not be viewed as a time series, because they are designed to be a benchmark against which to measure economic performance at a specific time, not over time. However, NIPA profits can be compared with S&P earnings by adjusting for the differences in coverage, industry composition, and definitions.

Table 1 shows the growth rates of the NIPA, *SOI*, and S&P measures of profits in 1991–98. The adjusted NIPA profits estimate shown in line 4, which adds back capital gains and losses and bad debt expenses, provides one conceptual bridge to understand the differences between NIPA growth rates and *SOI* growth rates. The differences between lines 5 and 6 and the differences between lines 7 and 8 reflect the impact of corporate turnover in the S&P 500, and the differences between line 8 and line 9 reflect the differences in coverage, industry representation, and accounting principles between the S&P 500 and *SOI* tax return tabulations. The differences between lines 9 and 11 reflect the adjustments that are made to the *SOI* data to prepare NIPA profits estimates. The differences between lines 10 and 11 reflect the adjustments to remove capital gains and losses and bad debt expenses, and the differences between lines 11 and 12 reflect the impact of corporate income tax liabilities.

The growth rates of the various measures of profits are similar in some years and differ considerably in others. For example, NIPA before-tax and after-tax profits increased 3.6 percent and 8.3 percent, respectively, in 1991, while S&P 500 operating earnings (after tax) decreased 14.1 percent; the *SOI* measure decreased 7.3 percent, and adjusted NIPA profits before tax decreased 3.5 percent. Thus, the difference in the direction of the change in the NIPA profit measures was attributable to the

9. U.S. Department of Commerce, Bureau of the Census, *Quarterly Financial Report for Manufacturing, Mining and Trade Corporations* (Washington, DC: U.S. Government Printing Office, quarterly).

Table 1.—Comparison of Selected Measures of Profits

Line		1991	1992	1993	1994	1995	1996	1997	1998
	Billions of dollars:								
1	NIPA profits before tax	416.1	451.6	510.4	573.4	668.5	726.3	792.4	758.2
2	Less: bad debt expense	100.9	89.6	80.7	67.9	67.8	74.7	83.6	88.3
3	Plus: Capital gains	62.2	70.9	90.8	71.0	115.5	132.9	200.5	205.3
4	Equals: Adjusted NIPA profits before tax	377.4	432.9	520.5	576.5	716.2	784.5	909.3	875.2
	Percent change from preceding year:								
	S&P 500 reported earnings:								
5	Earnings per share	-25.2	19.5	14.7	39.8	11.0	14.0	2.6	-5.1
6	Earnings	-24.7	22.6	16.8	44.3	13.2	17.0	4.6	-2.2
	S&P 500 operating earnings:								
7	Earnings per share	-18.8	8.1	28.9	18.0	18.7	7.8	8.3	0.6
8	Earnings	-14.1	10.9	31.3	21.7	21.2	10.5	10.6	3.7
9	<i>SOI</i> total receipts less deductions	-7.3	18.0	22.5	15.9	22.7	11.1	13.5	-5.7
10	Adjusted NIPA profits before tax (based on line 4)	-3.5	14.7	20.2	10.8	24.2	9.5	15.9	-3.8
11	NIPA profits before tax	3.6	8.5	13.0	12.3	16.6	8.7	9.1	-4.3
12	NIPA profits after tax	8.3	9.2	11.9	12.1	18.3	9.9	10.4	-7.5

NIPA adjustments to remove capital gains and losses and bad debt expense.

In 1997, S&P 500 operating earnings increased 10.6 percent, and NIPA before-tax and after-tax profits increased 9.1 percent and 10.4 percent, respectively; the *SOI* measure increased 13.5 percent, and adjusted NIPA profits increased 15.9 percent. The growth rates in NIPA profits and in S&P 500 earnings are relatively close only because of large increases in bad debt expense and in capital gains and losses.

In 1998, S&P 500 operating earnings increased 3.7 percent, while NIPA before-tax and after-tax profits decreased 4.3 percent and 7.5 percent, respectively; the *SOI* measure decreased 5.7 percent, and adjusted NIPA profits before tax decreased 3.8 percent. The difference in the direction of change between S&P 500 operating earnings and the NIPA profits measures reflected differences in coverage, industry representation, and accounting principles. 