BEA BRIEFING

Comparing NIPA Profits With S&P 500 Profits

By Andrew W. Hodge

CORPORATE profits measures from the Bureau of Economic Analysis national income and product accounts (NIPAs) and from Standard and Poor's (S&P) are widely followed by economists.[1] The measures, however, differ significantly, reflecting differences in purpose, coverage, source data, definitions, and methodologies. In this article, the NIPA measures of profits are compared with S&P 500 measures of reported earnings and operating earnings. The comparison indicates that although long-term trends of NIPA profits measures and S&P earnings measures are broadly similar, short-term annual and quarterly growth rates can differ dramatically. For example, both S&P 500 earnings measures fall by larger percentages during recessions than the NIPA profits measures and then rise faster to converge back toward NIPA profits trends.

NIPA profits measures are designed to reflect the national economic accounting concept of "income from current production" and to provide consistent coverage over time of all U.S. corporations, including private corporations and S corporations. Primarily reflecting this broader coverage, total after-tax NIPA profits are typically about twice as high as S&P 500 operating earnings during expansions. In contrast, the purpose of the S&P 500 earnings measures is to serve as benchmarks for comparing the performance of individual companies, which are reported on a financial accounting basis that reflects "generally accepted accounting principles," or GAAP, accounting.

NIPA Profits

Corporate profits in national income is the income earned from current production by U.S. corporations. Because national income is defined as the income of U.S. residents, its profits component includes income earned abroad by U.S. corporations and excludes income earned in the United States by foreign corporations or their subsidiaries. Income consists of receipts from current production less associated expenses. NIPA receipts exclude income in the form of dividends and capital gains. NIPA expenses exclude bad debts, depletion, and capital losses. NIPA profits from current production—profits before tax with inventory valuation and capital consumption adjustments—are based on valuations of withdrawals from inventories and depreciation of fixed assets at current cost that use consistent depreciation profiles based on used asset prices.

Source data

Most businesses report profits information on a financial-accounting basis and on a tax-accounting basis. While both financial accounting and tax accounting calculate profits as the difference between receipts and expenses, they differ in the definitions of some receipts and expenses and in the timing of when some receipts and expenses are recorded. Neither tax accounting measures nor financial accounting measures are entirely suitable for implementing the NIPA concept of corporate profits. Consequently, the procedure for estimating NIPA corporate profits mainly consists of adjusting, supplementing, and integrating financial-based and tax-based source data.

The tax accounting measures published annually by the Internal Revenue Service (IRS) in *Statistics of Income (SOI): Corporation Income Tax Returns* are the primary source data for the annual NIPA estimates of corporate profits.[2] This comprehensive IRS reporting of federal corporate income tax returns is only available annually and with a 2-year lag. Although financial data are less comprehensive than tax data, they are prepared quarterly, and they are available sooner. As a result, data from financial accounting measures, including financial data from the Census Bureau, publicly available financial accounting profits data, and other source data are used to interpolate and extrapolate the tax-return-based NIPA profits.[3]

The key NIPA data source for the most recent year and for the quarterly estimates for manufacturing, mining, and wholesale and retail trade sector profits is the Census Bureau's *Quarterly Financial Report.*[4] This

1. Information about the S&P 500 index is available at www2.standardandpoors.com/spf/pdf/index/SP_500_Factsheet.pdf.

2. For more information, go to www.irs.gov/pub/irs-soi/07coccr.pdf.

3. These procedures are described in www.bea.gov/scb/pdf/NATIONAL/NIPA/Methpap/methpap2.pdf.

4. For more information, go to www.census.gov/csd/qfr/view/qfr_mg.pdf.

report provides quarterly source data for operating profits for about 9,000 companies. Nearly all of the companies in the surveyed sectors that have domestic assets of over $250 million are included. Smaller corporations, including private corporations and S corporations, are sampled.

Financial reports filed with regulatory authorities provide profit indicators for commercial banks, savings and loans, and property and casualty insurers. The largest of these is the Federal Deposit Insurance Corporation report on insured institutions in the *Quarterly Banking Profile.*[5] The remaining sectors of the economy are estimated with matched sample panels of adjusted financial accounting earnings compiled from publicly available sources.

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 to exclude capital gains from NIPA receipts and capital losses and bad debts from NIPA expenses result in significant differences between the NIPA measures of corporate profits and both the financial accounting and the tax accounting measures. Capital gains and losses are excluded from the NIPA profits measures because they result from the revaluation of existing assets rather than from current production. Similarly, bad debts are not deducted as expenses, because they are not costs of current production. NIPA table 7.16 shows the relation of corporate profits, taxes, and dividends in the NIPAs to corresponding measures published by the IRS. The two largest adjustments are the misreporting adjustment and the adjustments for capital gains and losses on the sale of property.

National and domestic profits

The NIPAs include tabulations for both national profits and domestic profits. NIPA national profits are closer in concept to the GAAP and S&P 500, because like GAAP, they are the global profits of U.S.-headquartered companies only. In contrast, domestic profits are profits earned from U.S. operations regardless of where the company is headquartered. National profits are part of national income (shown in NIPA table 1.12) in the NIPAs, and domestic profits are part of gross domestic income (shown in NIPA table 1.10).

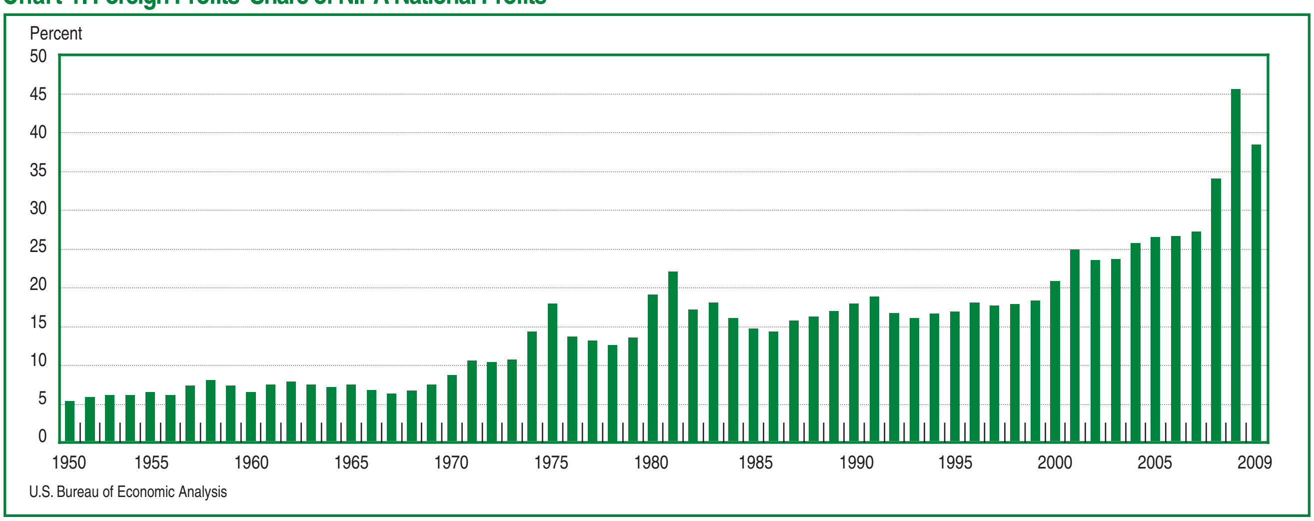
National profits have been growing more rapidly than domestic profits because of rapid foreign earnings growth, which has grown elevenfold since 1980. The share of national corporate profits accounted for by foreign profits (receipts from the rest of the world) has trended upward for the last 60 years, peaking at 45.3 percent in 2008 (chart 1).

To analyze income earned from domestic production activities, a measure of domestic corporate profits and other income earned in the United States is needed. Domestic profits are part of gross domestic income, which is conceptually equivalent to gross domestic product, though measurement differences generally yield a small statistical discrepancy between the two. To prepare estimates of domestic profits,

5. For more information, go to www2.fdic.gov/qbp/qbpSelect.asp?menuItem=QBP.

6. See NIPA table 7.16, “Relation of Corporate Profits, Taxes, and Dividends in the National Income and Product Accounts to Corresponding Measures as Published by the Internal Revenue Service.”

Chart 1. Foreign Profits’ Share of NIPA National Profits



adjustments remove foreign earnings of U.S. corporations and add earnings of foreign companies in the United States.

Before- and after-tax profits

The NIPAs present a variety of profits measures, including before-tax and after-tax profits. Table 1 shows the major NIPA profits concepts, their relations to each other, and the adjustments needed. National corporate profits before tax incorporates adjustments to IRS "total receipts less total deductions" shown in NIPA table 7.16.

Profits before tax reflect the charges used in tax accounting for inventory withdrawals and depreciation. The inventory valuation adjustment (IVA) and the capital consumption adjustment (CCAdj) are used to adjust before-tax profits to NIPA asset valuation concepts. The IVA adjusts inventories to a current-cost basis, which is similar to valuation of inventory withdrawals on a last-in/first-out basis. The CCAdj adjusts tax-reported depreciation to the NIPA concept of economic depreciation (or "consumption of fixed capital"), which values fixed assets at current cost and uses consistent depreciation profiles based on used asset prices. Recent depreciation adjustments, which reflect the difference between tax-based depreciation and the NIPA estimates of economic depreciation, have been large, reaching a value of –$180.5 billion in 2007. Bonus depreciation in the recent tax laws has raised tax accounting depreciation, most recently to 100 percent expensing in the same year, to reduce corporate profits taxes.

National after-tax profits without IVA and CCAdj are conceptually closest to S&P 500 profits, since S&P 500 profits measure the after-tax worldwide earnings of U.S. corporations. They also appear to have trended similarly with S&P 500 operating profits, as discussed in the final section.

S&P 500 Profits

The S&P 500 measures of reported earnings, operating earnings, and earnings per share reflect the aggregate earnings of the 500 corporations that compose the 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, which include operating and nonoperating earnings.

Table 1. NIPA Profits, Taxes on Corporate Income, and Profits After Tax

[Billions of dollars]

Year	Corporate profits before tax									Taxes on corporate income	Corporate profits after tax			
	National				Domestic industries		Rest of the world				National		Domestic industries	
	Corporate profits with IVA and CCAdj	Corporate profits before tax	IVA	CCAdj	Corporate profits with IVA and CCAdj	Profits before tax	Total	Receipts from the rest of the world	Less: Payments to the rest of the world		Profits after tax with IVA and CCAdj	Profits after tax	Profits after tax with IVA and CCAdj	Profits after tax
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1980	201.4	253.5	–42.1	–10.0	166.0	218.1	35.5	43.8	8.4	87.2	114.2	166.4	78.8	130.9
1981	223.3	243.7	–24.6	4.2	193.6	214.1	29.7	38.1	8.4	84.3	138.9	159.4	109.3	129.7
1982	205.7	198.6	–7.5	14.6	173.1	166.0	32.6	36.7	4.1	66.5	139.2	132.1	106.6	99.5
1983	259.8	234.0	–7.4	33.3	224.8	198.9	35.1	41.1	6.0	80.6	179.2	153.4	144.1	118.3
1984	318.6	268.6	–4.0	54.0	282.0	232.0	36.6	46.1	9.5	97.5	221.1	171.1	184.5	134.5
1985	332.5	257.5	0.0	75.1	294.4	219.4	38.1	46.8	8.7	99.4	233.1	158.1	195.0	120.0
1986	314.1	246.0	7.1	61.1	274.7	206.5	39.5	48.7	9.2	109.7	204.5	136.3	165.0	96.8
1987	367.8	323.1	–16.2	61.0	319.8	275.1	48.0	58.9	10.9	130.4	237.4	192.7	189.4	144.6
1988	426.6	389.9	–22.2	58.9	369.6	332.9	57.0	71.6	14.6	141.6	285.0	248.3	228.0	191.3
1989	425.6	390.5	–16.3	51.5	358.4	323.3	67.1	75.5	8.4	146.1	279.5	244.4	212.4	177.3
1990	434.4	411.7	–12.9	35.7	358.4	335.6	76.1	80.9	4.8	145.4	289.0	266.3	212.9	190.2
1991	457.3	425.4	4.9	27.0	380.8	348.9	76.5	75.5	–1.0	138.6	318.7	286.8	242.2	210.3
1992	496.2	474.4	–2.8	24.6	423.1	401.3	73.1	78.3	5.2	148.7	347.5	325.7	274.4	252.6
1993	543.7	519.0	–4.0	28.7	466.8	442.1	76.9	88.9	12.0	171.0	372.7	348.0	295.7	271.1
1994	628.2	599.0	–12.4	41.6	550.3	521.1	78.0	104.5	26.6	193.1	435.1	405.9	357.1	327.9
1995	716.2	684.3	–18.3	50.2	623.2	591.3	92.9	127.4	34.4	217.8	498.3	466.5	405.4	373.5
1996	801.5	740.7	3.1	57.7	699.5	638.8	102.0	139.4	37.4	231.5	570.0	509.3	468.1	407.3
1997	884.8	801.8	14.1	69.0	777.3	694.2	107.6	155.5	47.9	245.4	639.4	556.3	531.9	448.8
1998	812.4	722.9	15.7	73.8	709.7	620.1	102.8	146.8	44.0	248.4	564.1	474.5	461.3	371.8
1999	856.3	780.5	–4.0	79.7	734.8	659.0	121.5	176.8	55.3	258.8	597.5	521.7	476.0	400.2
2000	819.2	772.5	–16.8	63.6	673.6	626.8	145.6	202.5	56.9	265.1	554.1	507.4	408.5	361.8
2001	784.2	712.7	8.0	63.4	614.5	543.0	169.7	182.6	12.9	203.3	580.9	509.4	411.2	339.7
2002	872.2	765.3	–2.6	109.4	714.3	607.5	157.9	204.4	46.5	192.3	679.9	573.0	522.0	415.1
2003	977.8	903.5	–11.3	85.6	812.0	737.7	165.8	249.2	83.4	243.8	734.0	659.7	568.3	494.0
2004	1,246.9	1,229.4	–34.3	51.8	1,041.9	1,024.4	205.0	328.2	123.1	306.1	940.8	923.3	735.8	718.3
2005	1,456.1	1,640.2	–30.7	–153.4	1,216.6	1,400.7	239.4	384.1	144.6	412.4	1,043.7	1,227.8	804.3	988.3
2006	1,608.3	1,822.7	–38.0	–176.4	1,351.5	1,565.9	256.8	434.4	177.6	473.3	1,135.0	1,349.5	878.2	1,092.6
2007	1,510.6	1,738.4	–47.2	–180.5	1,159.8	1,387.5	350.9	510.6	159.7	445.5	1,065.2	1,292.9	714.3	942.0
2008	1,262.8	1,333.2	–44.1	–26.3	851.5	921.9	411.3	571.8	160.5	308.4	954.4	1,024.8	543.1	613.6
2009	1,258.0	1,316.7	11.9	–70.6	905.7	964.4	352.3	480.6	128.3	254.9	1,003.1	1,061.8	650.8	709.5

NIPA National income and product accounts
IVA Inventory valuation adjustment
CCAdj Capital consumption adjustment

The S&P 500 stock index is intended to gauge changes in the total stock market value of the 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 company list is continuously changing. Companies grow or shrink, undergo mergers and acquisitions, bankruptcy, or restructuring. They may no longer satisfy trading volume or stock price minimums. Because the composition of companies in the S&P 500 changes regularly, the S&P 500 earnings measures reflect a shifting market basket of corporations, and the series for reported earnings and operating earnings are discontinuous over time. Their growth rates partly reflect changes in the composition of the index.

The most commonly used measure of S&P 500 total profits includes nonoperating profits and losses. The largest nonoperating expenses are pension valuation and pension interest adjustments, including adjustments for securities in defined benefit pension programs, and capital losses, including writedowns and goodwill impairments. There are no agreed upon generally accepted accounting principles (GAAP) for which “nonoperating” items should be excluded, but S&P applies a consistent methodology to produce an index of operating earnings. These nonoperating losses tend to become larger during recessions, as shown in chart 2, and further depress S&P total earnings.

S&P quarterly estimates are rarely restated. Early estimates of taxes due, for example, remain the same even when actual taxes owed are revised.

Differences Between Annual NIPA and S&P 500 Profits

The main differences between annual NIPA profits and S&P 500 profits are differences in coverage, industry representation, and accounting principles.

Coverage

NIPA profits include the profits of all U.S.-headquartered corporations. S&P 500 profits exclude unconsolidated subsidiaries, all other public corporations, all private C corporations, and all S corporations,

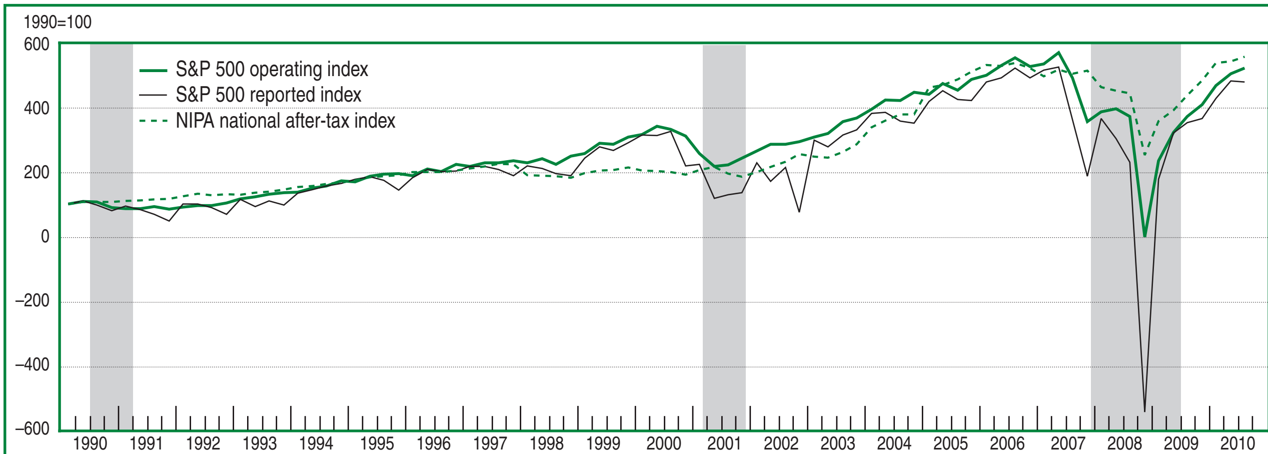
In 2007, the latest year for which IRS data are available, 5.9 million corporate tax returns were filed. Because the earnings of small and midsized corporations do not necessarily move in line with the earnings of large corporations, changes in NIPA profits may differ from changes in S&P 500 earnings. The NIPA profits measures include, for example, all the corporations, even those that show persistent losses, but the S&P 500 measures are limited to the largest, and generally more profitable, corporations. All these coverage differences will tend to produce varying earnings growth results.

Industry representation

The S&P 500 index is limited to publicly traded corporations, so certain sectors of the economy—such as construction, legal services, and medical services—may be under-represented because fewer corporations in these sectors meet the criteria for inclusion in the S&P 500 index.

Thus, the industry composition of the S&P 500 earnings does not reflect the industry composition of

Chart 2. NIPA Corporate Profits and S&P Corporate Profits



NOTE. The shaded areas mark the beginning and end of recessions as determined by the Business Cycle Dating Committee of the National Bureau of Economic Research.

U.S. Bureau of Economic Analysis

the overall economy. Specifically, energy, manufacturing, information technology, and financial corporations are disproportionately represented in the S&P 500 and in some recent years have accounted for more than 80 percent of S&P 500 operating earnings.

Accounting principles

Accounting principles affect the definition of some receipts and expenses and their timing and thus have an impact on corporate profits measures.

- The appreciation of securities in corporate-sponsored defined benefit pension plans can result in increased earnings under financial accounting but not in *SOI* or NIPA measures.
- The respective treatments of employee stock options differ significantly. NIPA accounting and tax accounting have always treated employee stock options as an expense only when (and if) options are exercised. It is an operating expense and therefore always a cost deduction in the NIPA profits calculation. However, GAAP accounting now expenses options at grant or on a schedule beginning at grant. The valuation of the options is based on a formula that is in turn based on the right to eventual exercise, and considerable discretion is allowed. Until 2006, GAAP option expense reporting was completely at a company's discretion and reported as a nonoperating expense or, often, not reported at all. Since 2006, options grant expense was mandated by GAAP. It was included in S&P reporting starting in 2006 as an operating profits deduction.[7]
- Expenditures associated with plant closings and company reorganizations are recorded as an expense under financial accounting when companies establish reserves for their estimated future costs. 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.
- 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.
- The corporate taxes deducted in preparing S&P 500 profits are early estimates of taxes that are based on future taxes due. They are not revised. Early NIPA tax accrual estimates are revised when payments and SOI data are available. S&P 500 companies report pre-tax earnings, but they tend to be less prominently featured.

It is therefore 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. However, comparisons are meaningful if adjustments are made for the differences in coverage, industry composition, and definitions.

The adjusted NIPA after-tax profits estimates, which include capital gains and losses and bad debt expenses, provide one conceptual bridge to understand the differences between NIPA growth rates and SOI growth rates (table 2). The differences between the growth rates of S&P reported earnings per share and those of S&P reported earnings and the differences between the growth rates of S&P operating earnings per share and those of S&P operating earnings reflect the impact of

7. Carol E. Moylan, "Employee Stock Options and the National Economic Accounts," Survey of Current Business 88 (February 2008): 7–13.

Table 2. Comparison of Selected Measures of Profits

	Line	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Billions of dollars:											
NIPA national profits after tax [1]	1	507.4	509.4	573.0	659.7	923.3	1,227.8	1,349.5	1,292.9	1,024.8	1,061.8
Less: Bad debt expense	2	107.7	142.2	168.0	151.1	139.7	119.0	105.9	130.0	....	....
Plus: Capital gains, net of losses	3	286.3	156.6	96.4	123.3	170.8	246.1	281.5	324.5	....	....
Equals: Adjusted NIPA national profits after tax	4	686.0	523.8	501.4	631.9	954.4	1,354.9	1,525.1	1,487.4	....	....
Percent change from preceding year:											
S&P 500 reported earnings											
Earnings per share	5	3.8	–50.6	11.7	76.7	20.1	19.4	16.6	–18.8	–77.5	242.5
Earnings	6	9.0	–48.5	13.8	77.7	21.0	16.4	15.7	–20.0	–77.8	244.8
S&P 500 operating earnings											
Earnings per share	7	8.6	–30.8	18.5	18.8	23.8	13.0	14.7	–5.9	–40.0	14.8
Earnings	8	14.2	–27.9	20.6	19.4	24.7	10.2	13.8	–7.4	–41.0	16.0
SOI total receipts less deductions	9	–1.2	–35.5	–6.7	36.1	43.6	75.9	0.4	–5.9	....	....
Adjusted NIPA national profits after tax (based on line 4)	10	–0.7	–23.6	–4.3	26.0	51.0	42.0	12.6	–2.5	....	....
NIPA national profits after tax (based on line 1)	11	–2.7	0.4	12.5	15.1	40.0	33.0	9.9	–4.2	–20.7	3.6

1. Without inventory valuation adjustment and capital consumption adjustment
NIPA National income and product accounts
S&P Standard & Poor's
SOI Statistics of Income

corporate turnover in the S&P 500, and the differences between the growth rates of S&P operating earnings and those of SOI before-tax receipts less deductions reflect the differences in coverage, industry representation, and accounting principles between the after-tax S&P 500 operating earnings and the pretax SOI tax return tabulations. The differences between growth rates of SOI before-tax receipts less deductions and those of NIPA national profits after tax reflect the adjustments that are made to the SOI data to prepare NIPA profits estimates.

The growth rates of the various measures of profits are similar in some years and differ considerably in others. For example, NIPA after-tax profits decreased 20.7 percent in 2008, while S&P 500 operating earnings decreased 41.0 percent and S&P 500 reported earnings decreased 77.8 percent.

Quarterly NIPA and S&P 500 Profits

Most of the differences noted above for the annual estimates also apply to the quarterly estimates. The impacts of the differences are more concentrated in quarterly profits, resulting in even larger gaps between NIPA and S&P quarterly growth rates. The quarterly differences may also reflect the fact that NIPA corporate profits measures are seasonally adjusted, while the S&P 500 measures are not.

However, the long-term trend is broadly similar, especially between S&P operating earnings and NIPA national profits after tax without IVA and CCAdj.

The quarterly S&P operating and reported earnings and quarterly NIPA profits in chart 2 are expressed as indexes to facilitate comparisons between S&P earnings and the generally much higher NIPA profits. The NIPA profits measure used is national profits after tax without IVA and CCAdj, which is the best fit to the S&P profits measures. Indexes for operating and reported earnings show large declines relative to NIPA profits during or shortly after recessions, but they then tend to reconverge with NIPA profits.

During the 1990–91 recession, S&P 500 profits fell more than NIPA profits. S&P 500 reported earnings also continued to fall in the three quarters after the end of the recession, to 40.8 percent of the NIPA profits index in the fourth quarter of 1991 from 103.5 percent in the second quarter of 1990 before the start of the recession. In the 2001 recession, S&P earnings fell sharply in the first two quarters of the recession. S&P reported earnings decreased to 54.7 percent of NIPA profits in the second quarter of 2001 from 113.8 percent in the fourth quarter of 2000 before the start of the recession. In both cases, sharp increases in S&P 500 earnings after their recession lows brought earnings indexes back close to the NIPA trend. During the 2007–2009 recession, both S&P 500 earnings levels turned negative at their lowest point before moving back up toward the less volatile NIPA trend, but S&P 500 operating earnings showed less pronounced quarterly movements.

A key source of high volatility in S&P 500 quarterly reported earnings is asset writedowns. In the most extreme case, in the fourth quarter of 2008, S&P 500 companies reported a loss of $202.1 billion (not annualized) after a third-quarter profit of $65.2 billion. This was associated with the well-publicized writedowns of prominent financial companies. AIG lost $61.7 billion, and large writedowns were also recorded by other large financial companies in the S&P 500, including Citigroup, Bank of America, and Merrill Lynch. In an earlier example, in the fourth quarter of 2002, S&P 500 reported earnings fell 64.1 percent or $51.0 billion. This roughly accords with the $45.0 billion loss reported that quarter by Time-Warner, at that time the largest quarterly corporate loss in history.

S&P 500 operating earnings in the fourth quarter of 2008 turned down, to a loss of $0.8 billion from a gain of $87.8 billion in the third quarter. Although writedowns are excluded from the S&P 500 operating earnings measures, trading gains and losses are considered part of S&P 500 operating profits and losses, and a portion of these are likely capital losses on held positions rather than spread or market-making profits. NIPA profits indicators, such as the *Quarterly Financial Report* and *Quarterly Banking Profile,* may exclude these losses more effectively and NIPA profits may give more weight to industries that did not experience large capital losses.