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U.S. MARKET COMMENT: MAKING SENSE OF U.S. EQUITY EARNINGS

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MAKING SENSE OF U.S. EQUITY EARNINGS

"If the stock price goes up, why should anyone complain, even if earnings are being manipulated a bit? This game only works as long as the bull market continues. In a bear market, the most aggressive players are likely to have the biggest falls. Investors have a right to be better informed about earnings. They may be putting too much of their capital in the stocks of companies that have good earnings managers rather than good business managers."

Dr. Edward Yardeni—August 16, 1999

In the fall of 2001, we evaluated the difference between Generally Accepted Accounting Principles (GAAP), or reported, earnings and company-defined operating earnings.[1] The impetus for this analysis was the growing disparity between earnings measures—operating earnings were a record 89.8% higher than reported earnings—and the low, but accurate drum beat of pundits like Yardeni, who had been warning of the earnings game for years. The subsequent meltdown of companies such as Enron, Global Crossing, and WorldCom revealed that investors had been misled by the legal, but questionable treatment of certain accounting items, as well as vehicles financially engineered to deceive (e.g., asset swaps and special purpose entities). These revelations have led to a renewed focus on the inconsistency between corporate reality and accounting statements, and a search for a more genuine measure of earnings.

As a result, we compare the merits and limitations of four prominent definitions of corporate earnings—reported earnings, National Income Product Accounts (NIPA) earnings, S&P Core earnings, and operating earnings—and provide our view of an ideal definition of earnings. Finally, we assess the relative value of U.S. equities using these various earnings figures.

Earnings Definitions

The aftermath of the bull market has included a good old-fashioned corporate scrubbing, in which aggressive earnings tactics that were ignored in boom times are scrutinized to determine the quality of reported earnings and the extent to which investors have been misled. It seems as if each time the Financial Standards Accounting Board (FASB) proposes an amendment to the treatment of GAAP items, additional mistreated items surface. In addition, operating earnings have been revealed to be too optimistic, as they are typically more reflective of corporate skill in managing earnings, than of skill in managing operations. As a result, investors have begun to focus on other earnings series, such as the NIPA earnings

[1] See our November 2001 report, *Writing Down Current U.S. Equity Valuations*.

figures maintained by the Bureau of Economic Analysis and the newly developed S&P Core earnings. The table below provides a comparison of these earnings definitions, as well as a definition of our ideal earnings measure.

DEFINITIONS OF EARNINGS

	Included in?				
Item	**GAAP**	**NIPA**	**S&P Core**	**Operating Earnings**	***Ideal Earnings***
Employee Stock Options Expense	No	Yes	Yes	No	*Yes*
Pension Gains	Yes	No	No	Yes	*No*
Pension Costs	Yes	Yes	Yes	No	*Yes*
Gains/Losses on Investment Portfolios	Yes	No	Yes	Yes/No*	*Yes*
Infrequent/Nonrecurring Items					
Goodwill Impairment Expenses	Yes	No	No	No	*No*
Gains/Losses on Asset Sales	Yes	No	No	Yes/No*	*Yes/No***
Write-Downs from Discontinued Ops.	No	No	No	No	*No*
Write-Downs from Continuing Ops.	Yes	No	Yes	No	*Yes*
Merger/Acquisition-Related Costs	Yes	Yes	No	No	*Yes*
Severance from Continuing Ops.	Yes	Yes	Yes	No	*Yes*
Depreciation	Yes	Yes****	Yes	Yes	*Yes*

* The general tendency with company-reported operating earnings has been to include gains from investments and asset sales, while excluding charges for investment or asset sale losses.

** Asset sales that are part of long-term strategic operations should be included, such as asset sales and purchases for financial corporations, or large conglomerates, while other asset gains and losses would be excluded.

*** NIPA makes depreciation adjustments—inventory valuation and capital consumption adjustments—to reflect the current replacement costs of inventory and other assets.

Given that no single measure of earnings will be truly ideal and universally admired, it is important to consider the major advantages and limitations of these different earnings definitions.

The Trouble with GAAP

While GAAP has the advantage of a widely known and consistently applied (relative to operating earnings) definition, it suffers from three primary limitations: the exclusion of a requirement to report employee options as expenses, the inclusion of pension gains, and the inclusion of goodwill impairment expenses.

Exclusion of Employee Stock Options. The current GAAP treatment of stock options is mandated by FAS 123 and states that companies have discretion to include an option expense in the income statement, and only are required to disclose the fair value of options in the income statement footnotes. In addition, FAS 123 allows firms to choose the methodology for determining the fair value of its options (e.g., Black Scholes or binomial), but requires that all firms calculate a fully diluted earnings per share figure, assuming all outstanding options have been exercised.

The main argument against expensing options is that since options require no outlay of cash, they should not be expensed against net income. However, within the GAAP framework, many expenses, such as the depreciation of long-lived assets, are not actual cash outlays, but rather represent the ongoing cost of doing business. Regardless of the source of financing, GAAP accounting requires that an expense be taken to reflect the use and replacement cost of those assets, and to match costs with revenues generated during the given period. On this basis, employees are no different than other assets and the full cost of hiring, retaining, and compensating employees should be expensed.

Expensing options also makes sense because funding options represents an opportunity cost. In general, a firm has three financing options—retained earnings, debt, and equity—that it can use to fund operations.[2] These sources are not limitless, and any use of one source of funding either reduces the ability to utilize that resource or increases its cost in the future. Issuing common stock via employee stock options has at least two opportunity costs—the additional funds forgone by not selling the same shares in the open market and a dilution in the value of the stock that can put downward pressure on stock prices, limiting the ability to raise capital at high valuations in the future.[3] Of course, many firms repurchase stock, thereby transferring rather than diluting the ownership interest of each share. However, because

[2] For simplicity reasons, no distinction is made between forms of equity (i.e., preferred or common) or debt (i.e., bonds or bank loans).

[3] GAAP earnings also exclude the tax deduction corporations receive for issuing employee stock options. Current tax laws provide this tax break to avoid double taxation—employees pay income tax on the same value.

the firm must issue debt or use retained earnings to buy back shares, opportunity costs remain in the context of reduced retained earnings for other purposes and the potential for a higher cost for future debt issuance. According to Steven Zamsky of Morgan Stanley, 60% of debt issued in 1998 was for repurchasing shares. Some of the largest stock option issuers spent an average of 53% of their earned income on share repurchases between 1995 and 2002 (see Table A).[4]

A significant limitation in expensing options is the question of how to most accurately estimate these expenses. The Black Scholes model has become the most widely used method for determining the value of actively traded options, despite the fact that two of its assumptions—that volatility and risk-free rates remain constant—are unrealistic. While these constant assumptions have little impact when estimating the value of relatively short duration options, they significantly limit the accuracy of values derived for employee stock options, which typically vest five to ten years after issuance. Other limitations include the fact that employees' stock options are not actively traded and that many options are never exercised due to employee attrition and/or falling stock prices. As a result of these shortcomings, Alliance Bernstein takes 50% of the Black Scholes value when deducting the cost of employee stock options from earnings.

Under the NIPA earnings definition, options are expensed as the difference between the market value and the strike price at the time of exercise. This has two key advantages. First, only options that are actually exercised are expensed. Second, the value of the expense represents a true cost to the firm: the dollars that were forgone by not selling those shares in the open market. However, the flaw in the NIPA methodology is that it creates a cost/revenue mismatch, since the options are not expensed until several years after they were issued. Coca-Cola, which was one of the first firms to voluntarily expense options, is calculating the value of its options by taking the average of two investment banks' bids. This methodology, albeit appealing, may be impractical for many firms (i.e., those firms without a highly liquid market for their options or investment bankers at their disposal).

The cost of options is likely to have had more of an impact in the late 1990s than it will going forward. An Alliance Bernstein analysis estimated that counting options as an expense would have taken 2.5 percentage points off the 9% average annual growth in operating earnings between 1995 and 2000, or 30% of the annual growth over this period. However, given the scrutiny surrounding the ludicrous pay packages of top executives and the diminished expectations of option payoffs, firms are less likely to issue the same volume of options going forward. For example, Morgan Stanley reduces 2002 operating earnings by just 8% to reflect the anticipated cost of options.[5]

[4] Sources: Thomson Financial and Bloomberg Financial Markets.

[5] Source: "'True' Earnings," by Barton Biggs, Morgan Stanley, July 29, 2002.

As of September 13, 2002, 100 companies have announced that they will expense options going forward, with most opting to use the Black Scholes method. In addition, FASB recently proposed three alternatives to assist companies that choose to expense options: the prospective approach, the modified prospective approach, and the modified retroactive approach. The three methodologies vary significantly in expected impact, as the prospective approach only includes those options issued in the current year, while the modified prospective and modified retroactive approaches include options issued since 1995 (inception date of FAS 123). However, the modified prospective approach expenses previously issued options in the current year, while the retroactive approach calls for the restating of previous years' income. UBS Warburg estimates that the prospective, modified prospective, and modified retroactive approaches would lower 2001 earnings by 4%, 6%, and 14%, respectively. Finally, the International Accounting Standards Board will require all companies outside the United States to start expensing options on January 1, 2004. The rules will apply to all options that have been granted and a fair value approach will be required, though the specific model employed will remain at each company's discretion.

Inclusion of Pension Gains. By definition, a pension fund represents the accumulated (or estimated) post-retirement benefits of a firm's employees, not the discretionary assets of a firm.[6] As such, pension benefits should be accounted for as cost items, just as other forms of employee compensation are treated. The pension gains should not be an addition to earnings because the assets accrued in excess of costs cannot be used to fund operations. Furthermore, while gains do result in a reduction in required contributions, it would be double counting to both reduce the pension cost and report a gain. The second area of contention with pension income under GAAP standards is that firms can manipulate the assumptions used in defining pension gains to increase earnings in a given year. The most common method of boosting earnings relates to the use of the *expected* return rather than the actual return on portfolio assets to calculate the gain from pension assets.[7] For example, many pension funds assume returns of 9% on plan assets, despite the fact that S&P 500 companies realized returns of 7.5% in 2000 and -6.9% in 2001. This enables corporations to report pension gains even when actual asset returns are negative.

The impact of removing pension income from earnings is significantly greater than that which would occur if firms were to lower their return assumptions, but continue to include these phantom gains in earnings. Morgan Stanley estimates that S&P 500 operating earnings would fall by 2.4% in 2002 if firms reduced their pension plan return assumptions from 9.2% to 8%. However, removing pension gains from the income statement entirely would have reduced S&P 500 operating income by 5.0%, 5.3%, 7.2%, and 4.5% (estimated) in years 1999 through 2002, respectively.[8]

[6] The rare exceptions to this rule occur when a firm with an overfunded plan liquidates the plan or declares bankruptcy.

[7] For a more complete discussion of pension accounting, see our November 2001 report, *Writing Down Current U.S. Equity Valuations*.

[8] Source: "Pensions and the Cash Conundrum," Trevor Harris, Morgan Stanley, July 25, 2002.

As other definitions of earnings that exclude pension income—namely S&P Core earnings and NIPA—become increasingly popular, FASB may be pressured to revisit this issue. In addition, more than half of all pensions are now underfunded and the 20 largest plan surpluses in the S&P 500, representing 79% of the total S&P 500 surplus, fell from $163 billion in 2000 to $68 billion in 2001. With returns likely to come in negative again in 2002, pension expenses (i.e., cash contributions) may appear more frequently on income statements in 2003.

Inclusion of Goodwill Expenses. Goodwill results from use of the purchase method of accounting for acquisitions and it represents the difference between the purchase price of a company and the fair value of its assets. FASB recently decided to end the practice of goodwill amortization, requiring instead that companies take a charge (write-down for the impairment of goodwill) against earnings whenever the value of acquired goodwill falls below its purchase value. The rules are applied retroactively to all acquisitions made under the purchase method.

Goodwill impairment tests may serve as a useful audit trail of a firm's acquisitions and certainly provide a useful report card on whether corporations pay a fair price for these acquisitions. However, these charges contribute to a more volatile earning series that can temporarily diverge from a firm's true earnings potential. In addition, the market has proven more efficient and timely at revaluing acquisitions than have income statements. For example, AOL Time Warner had lost more than 80% of its market value by the time the goodwill charges hit its income statement.

Impairment expenses combined for a $5 per share, or 17%, reduction in 2001 S&P 500 reported earnings, but the charges were disproportionately concentrated in a few large companies. For example, JDS Uniphase took a goodwill impairment charge of $45 billion in 2001, while AOL Time Warner wrote off $54 billion of goodwill in early 2002, with estimates of future goodwill charges in the range of $25 billion to $50 billion.

The Trouble with Operating Earnings. Like GAAP earnings, operating earnings include pension income and exclude employee stock option expenses, but suffer from additional limitations related to the lack of a standard definition and the ease with which corporations can manipulate these earnings to paint themselves in the best light possible. In theory, operating earnings could provide advantages over GAAP reporting, as it enables corporations to exclude those income, expense, gain, and loss items that are truly one-time or infrequent in nature. However, in practice, we have found that operating earnings tend to be inflated, as managers generally have chosen to more broadly include income and gains than expenses and losses, with the latter two categories typically excluded as one-time events regardless of their frequency.

One-time charges should be reserved for the write-down of expenses that are truly rare in nature. Unfortunately, however, firms often hide operating charges under the one-time category, thus expensing them against reported earnings but excluding them from operating earnings. This practice is most extreme during recessions when firms engage in "big bath accounting," taking advantage of low earnings expectations to take past, present, and future charges against GAAP reported earnings.

S&P Core and NIPA Earnings Strike a Useful Balance

Both NIPA earnings and S&P's new core earnings measure offer advantages over GAAP earnings in that they include employee stock options expenses, exclude pension gains, and exclude goodwill impairment expenses. In addition, they both attempt to exclude one-time or unusual charges and income, and include those that are truly ongoing and meaningful. S&P Core earnings and NIPA earnings differ in three main areas: gains and losses on investment portfolios, write-downs from continuing operations, and merger/acquisition-related costs. NIPA earnings exclude gains and losses on investment portfolios and write-downs from continuing operations, and include merger/acquisition-related costs, while S&P Core earnings treat each of these items in the opposite manner. Unfortunately, S&P Core earnings data are not yet available, which makes it difficult to ascertain how divergent these two measures will be over time. However, they both provide reasonable and improved earnings measures relative to reported earnings and operating earnings.

NIPA earnings, which extend back to 1929,[9] show significant trend correlations with other long-term series, but avoid the brief recessionary craters and earnings management that have plagued GAAP data in more recent years. But there are several important caveats for those using the NIPA earnings series. First, NIPA is based on tax accounting, which makes it subject to significant revision in the most recent six to 12 months. Secondly, NIPA earnings (and the market value used for valuations) cover both publicly traded and private corporations, while excluding the financial sector.

S&P Core earnings also have some limitations, the most significant of which is a history that will ultimately extend to 1996.[10] This makes it difficult to cast valuations based on S&P Core earnings in an historical context. For example, while we know that the long-term average P/E ratio based on GAAP earnings is approximately 15, we do not have a comparable long-term expectation for core earnings. In addition, not all analysts agree that S&P Core earnings offer significant advantages. Trevor Harris of Morgan Stanley feels that S&P Core earnings will create further confusion and suffer from a lack of

[9] We use data from Stephen Wright, University of London, to extend NIPA style earnings back to 1900.

[10] S&P Core Earnings are expected to be available for the trailing one year by late September, but historical figures to 1996 will be released at a later date.

balance. For example, Harris argues that S&P's exclusion of pension gains, but inclusion of income from other financial/portfolio assets is illogical—he defines both as financing costs and believes they should be treated equally.

An Ideal Earnings Measure

While recognizing that there is no such thing as a perfect earnings measure, the following two principles provide a useful basis for defining earnings: earnings should represent income that can be withdrawn without depleting the assets of the firm[11] and only income earned on the *discretionary* assets of the firm should be included in earnings available to shareholders. Our ideal earnings definition includes several key attributes of the S&P Core and NIPA earnings definitions—the inclusion of employee stock option expenses, and the exclusion of pension gains and goodwill impairment charges. However, there are some differences as well. For example, both S&P Core and NIPA earnings exclude gains and losses on asset sales. Recognizing the implementation difficulties, we believe that an ideal earnings measure would allow such transactions to be evaluated on a case-by-case basis. Asset sales represent an intermediate- to long-term strategy for financial companies (e.g., banks and real estate investment trusts) and large conglomerates that cultivate and sell off assets with some frequency over time; therefore, gains and losses from these asset sales should be included. We would agree with S&P and GAAP on the inclusion of gains and losses on investment portfolios, which are excluded under NIPA's definition. Since the ability to fund operations or payout dividends can be directly impacted by the returns earned on the discretionary assets of the firm, the gains or losses on investments should be included in net income. We also agree with GAAP that merger/acquisition-related costs (excluded from S&P Core earnings) and write-downs from continuing operations (excluded from NIPA) should be included in earnings.

On balance, S&P Core and NIPA earnings come close to our ideal earnings measure, and do an excellent job of mitigating between the availability of reliable data and the desire to reflect a pure measure of earnings.

Quantitative Impact on Earnings

An assessment of S&P Core earnings relative to GAAP reported earnings, suggests that 2001 S&P Core earnings would have been 83% of reported GAAP earnings (excluding JDS Uniphase write-downs of $56 billion) and 66% of operating earnings, or approximately $30 per share. Option expenses

[11] This definition was originally postulated by Nobel Laureate John Hicks, and can be further referenced in, "The Trouble With Earnings," Peter L. Bernstein, September 1, 2002.

make up the majority of the disparity with GAAP earnings, as the effects of other differences merely canceled each other out. A comparison of historical S&P 500 and NIPA earnings reveals that NIPA earnings growth (9.1%) was 2.1 percentage points higher than S&P reported earnings growth (7.0%) between 1900 and 2002 (see Table B). Much of the divergence occurred in 2001, when NIPA earnings growth was 3.1% compared to -50.6% for S&P reported earnings. Although the NIPA data are unlikely to be as artificially depressed as GAAP data because of its exclusion of many infrequent or nonrecurring items, 2001 NIPA earnings are likely to undergo revision. NIPA earnings growth significantly lagged that of S&P reported earnings from 1986-2000 and that of operating earnings from 1986-2002, most likely because NIPA earnings include option expenses and exclude pension gains.[12]

Valuations

While the definitions of earnings can vary greatly, when comparing current price-to-earnings (P/E) ratios of equities with their own historical valuations, equities are at or near fair value according to most earnings measures (see Table D). The P/E ratios using trailing operating earnings are slightly below fair value, while those using forward operating earnings and normalized GAAP earnings (trendline) are 0.4 and 0.2 standard deviations above fair value, respectively. Normalized GAAP earnings based on a trailing five-year average show a slightly higher valuation, 0.8 standard deviations above fair value, while GAAP reported P/Es remain the outlier at 28.6, or approximately 2.3 standard deviations above fair value. However, it should be noted that GAAP earnings remain artificially depressed by inventory and goodwill write-offs, which amounted to $48.5 billion or $5 per share in the second quarter of 2002.[13] In fact, normalizing GAAP earnings provides a truer picture of valuation trends, since this tends to smooth out the craters and peaks in GAAP data.

P/E ratios using S&P normalized GAAP earnings (trendline and five-year historical average), NIPA earnings, and S&P trailing operating earnings are in a relatively tight range of 20.9 to 17.6 as of September 30, 2002. The similar valuation readings produced by these earnings definitions provides a rather strong consensus that equity markets are approximately fairly valued. However, given the opacity of earnings, many researchers and pundits have diverged from relying solely on P/E ratios—a move we encourage—and have focused on dividend discount models, and other valuation ratios.

[12] The starting point for comparison is 1986 because this is the first year for which earnings growth data is available for S&P historical operating earnings.

[13] Source: "Slow Grow: Not Much of a Profit Rebound Yet," by Edward Kerschner, UBS Paine Webber, September 30, 2002.

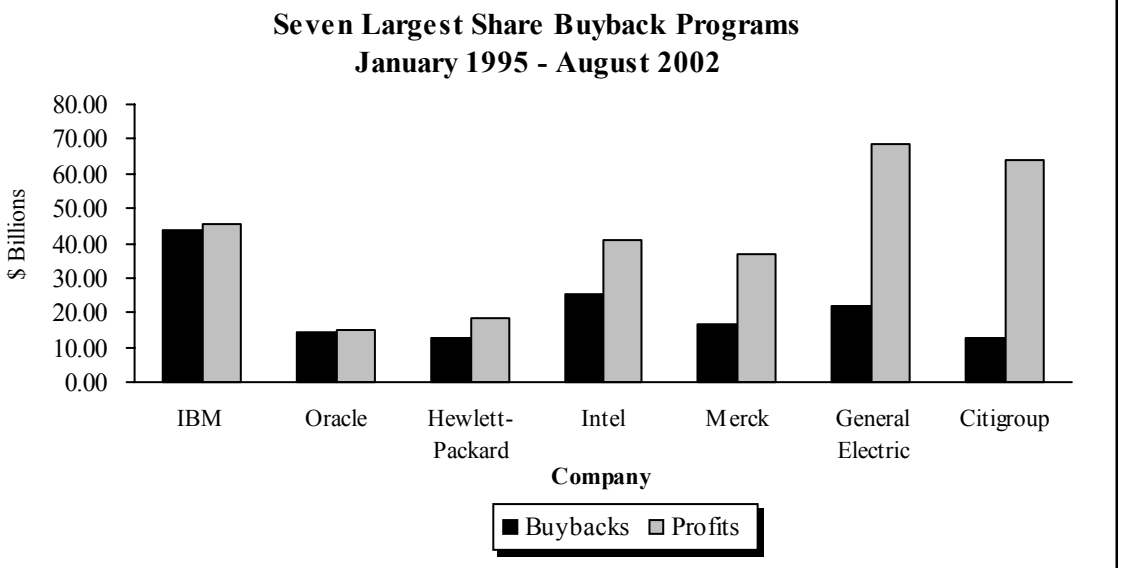
Dividend discount models are highly sensitive to the inputs used, and not surprisingly, the results using different types of earnings are somewhat divergent. As shown in Table E, assuming a 3% equity risk premium, a 4.83% risk-free rate (the yield on the 30-year Treasury), 7% earnings growth over the next ten years, and 5% earnings growth thereafter, the S&P 500 is only 7% overvalued (essentially a fair value reading) using operating earnings per share of $46, but is 23% overvalued (slightly overvalued) using reported earnings of $29. While the model suggests that the S&P 500 is more expensive when using reported earnings than when using operating earnings, the assumptions above assume that both earnings grow at the same rate over the next ten years. Given that reported earnings are at depressed levels and have contracted by a much wider margin than have operating earnings, it is reasonable to assume that reported earnings will grow slightly faster than operating earnings in the short- to intermediate-term.

Another way of using the model is to solve for the average annual earnings growth required over the next ten years for the S&P 500 to be fairly valued at today's prices. Using the above assumptions, reported earnings must grow 9.5%, and operating earnings must grow 6.1% in order for the market to be fairly valued. Adjusted for the roughly 1.5% inflation expectations priced into the bond market for the next ten years, reported earnings would need to grow about 8% and operating earnings, 4.5%, in real terms. These growth rates are high relative to historical averages, but are reasonable given the 63.5% decline in earnings between September 30, 2000 and March 31, 2002. Since 1926, net income has grown an average of 5.6% over rolling five-year periods, and 5.8% over rolling ten-year periods. In real terms, earnings have grown an average of 2.1% over both five- and ten-year periods. We would expect that earnings growth following periods of significant earnings decline to be above average, which historically has been the case. There are two periods for which earnings fell a comparable amount to the current period: reported earnings fell 59% (60% in real terms) in 1937-38 and fell 75% (67% in real terms) in 1929-32. For the ten years following these periods, earnings increased at an average annual rate of approximately 7% in real terms for both periods, and 12% and 10% in nominal terms, respectively. The risk that economic conditions will deteriorate remains; however, that appears to be discounted into the market today, as earnings expectations have fallen throughout the year, and have been significantly trimmed in recent weeks.

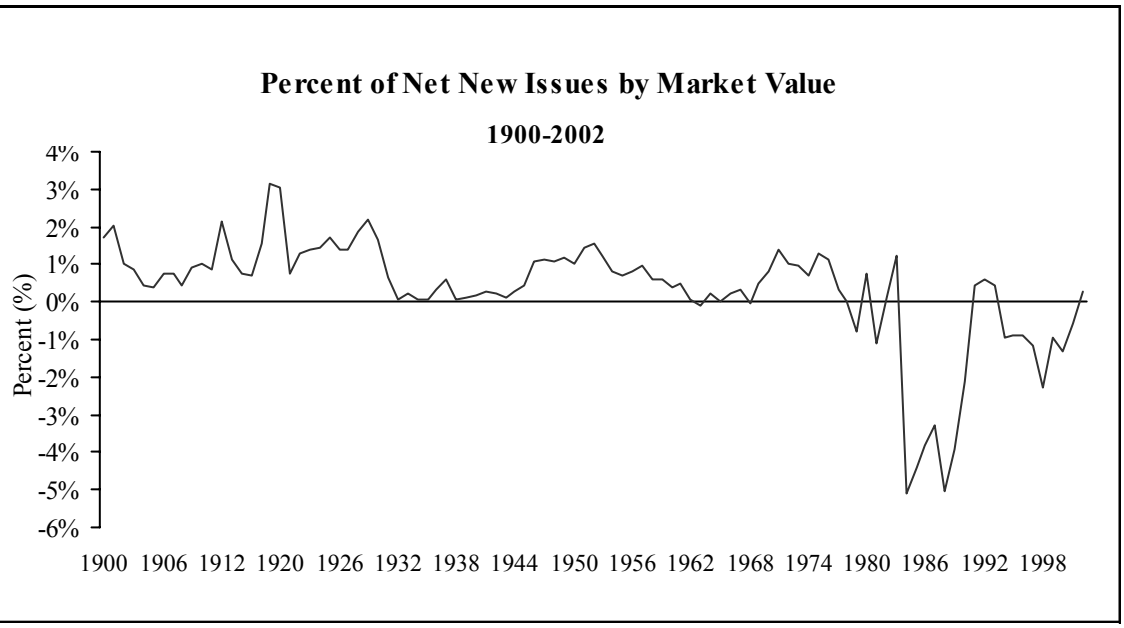
Given that most P/E measures are at or approaching fair value and that dividend discount model analysis suggests similar valuation levels on the basis of operating and reported earnings, we now characterize the S&P 500 as fairly valued. Reported earnings are still somewhat depressed relative to historical reported earnings, and yet dividend discount model analysis still suggests the market is approximately fairly valued using reported earnings. This occurs because the model accounts for the higher than average earnings growth expectations over the next ten years and the low interest rate environment. However, we would caution that as a bear market progresses, it typically passes from overvalued to fairly valued, to undervalued on the way to the bottom.

Table A

STOCK BUYBACKS



	Buybacks ($ bil)	Earnings ($ bil)	Buybacks/Earnings (%)
Average of Seven Firms	$21.04	$41.38	53.3

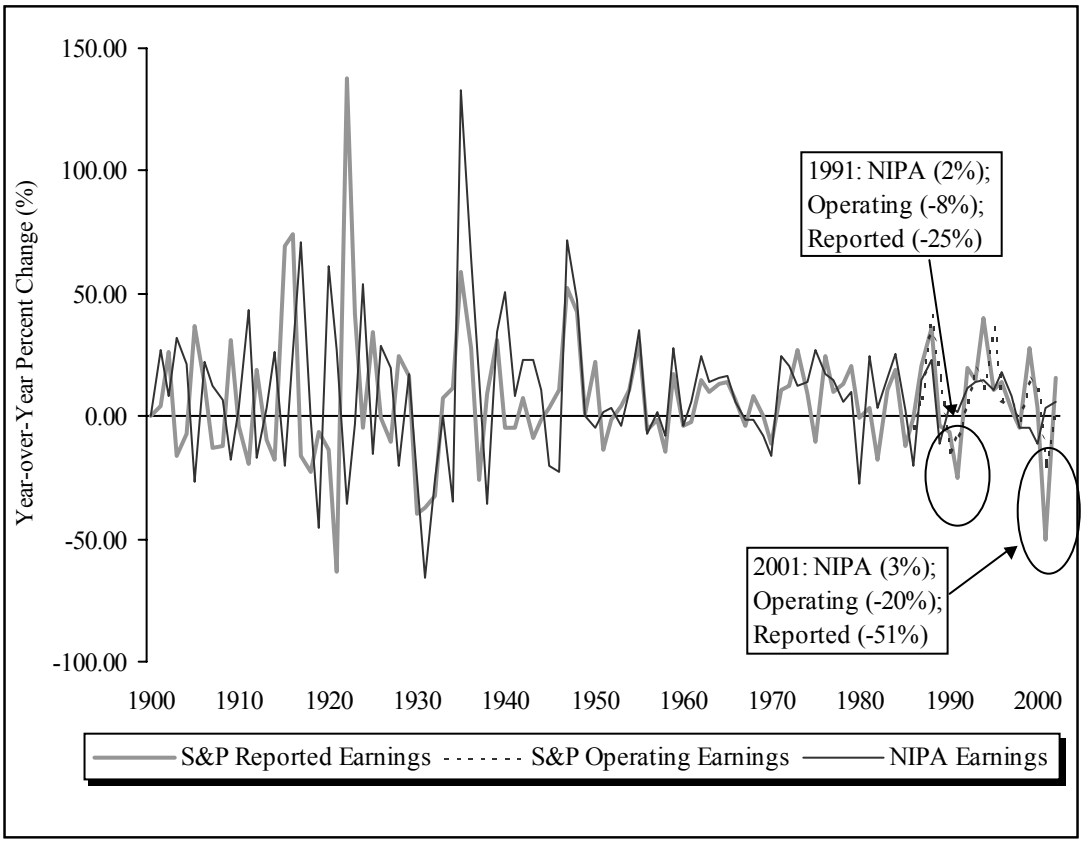


Sources: Top Chart: Thomson Financial, Bloomberg Financial Markets, and *Business Week*. Bottom Chart: "Measures of Stock Market Value and Returns for the US Nonfinancial Corporate Sector, 1990-2002," by Stephen Wright, BEA, and the Federal Reserve.

Table B

S&P AND NIPA EARNINGS GROWTH

As of September 30, 2002



	Earnings Growth Averages and Standard Deviations (%)					
Period	S&P Reported Earnings	Standard Deviation	S&P Operating Earnings	Standard Deviation	NIPA Earnings	Standard Deviation
1900-2002	7.0	25.9	---	---	9.1	26.7
1900-2000	7.5	25.5	---	---	9.2	26.9
1986-2002	6.6	22.1	7.4	15.8	4.6	11.9
1986-2000	9.9	17.5	9.6	15.0	4.6	12.7

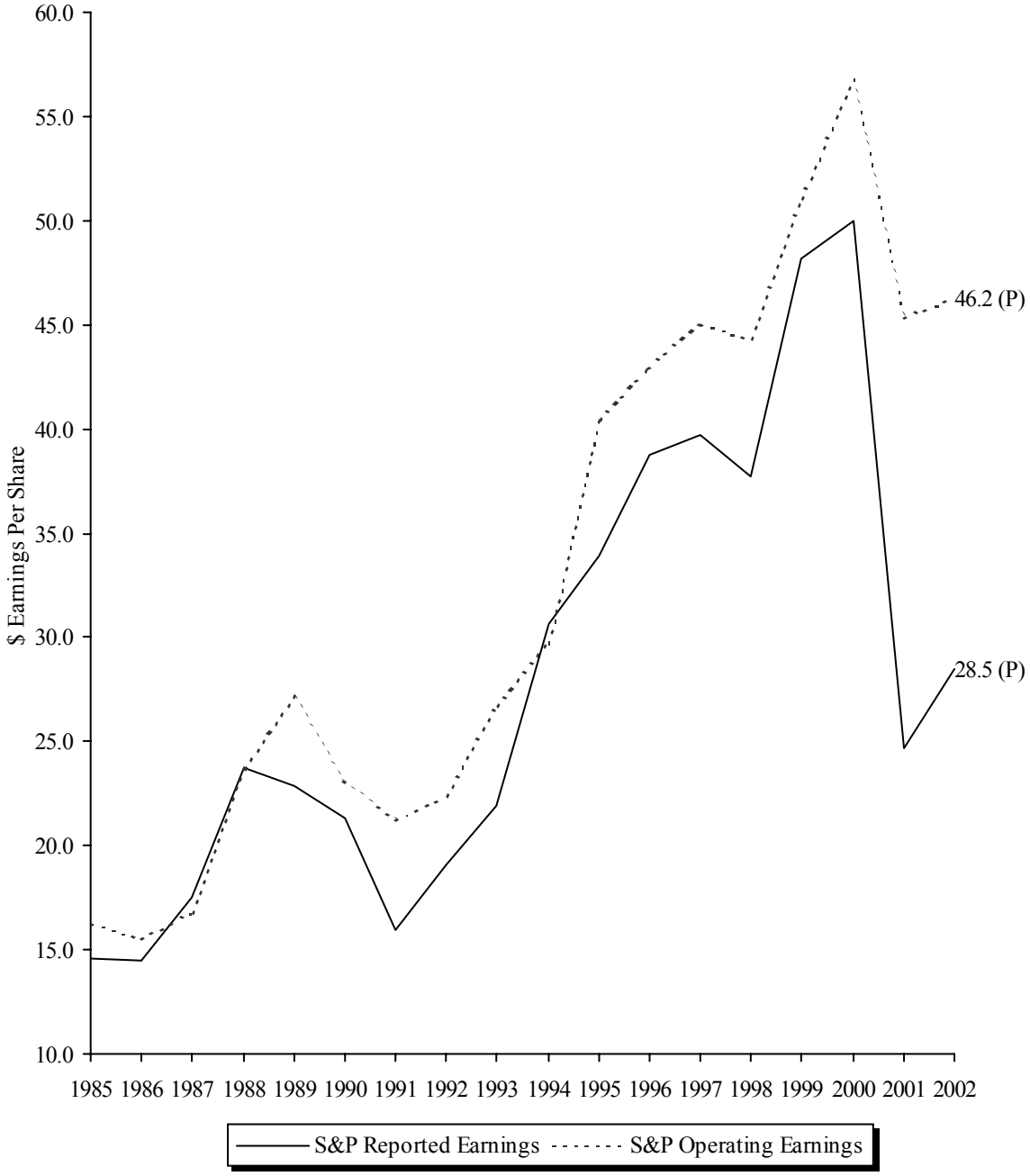
Sources: Federal Reserve, NIPA, Standard & Poor's, Standard & Poor's Compustat, Thomson Financial, and *The Wall Street Journal*.

Notes: S&P Reported Earnings represents Robert Shiller's data from 1900 through 1926. NIPA earnings data are estimated for the most recent quarter ending September 30, 2002.

Table C

S&P 500 EARNINGS: REPORTED AND OPERATING EARNINGS

December 31, 1985 - September 30, 2002



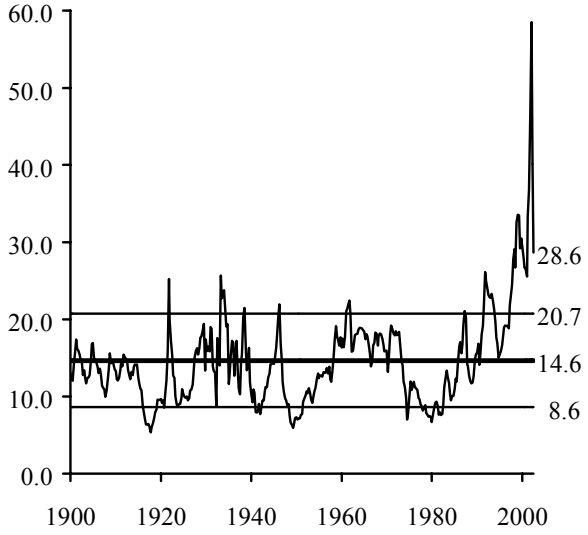
Sources: Standard & Poor's, Standard & Poor's Compustat, Thomson Financial, and *The Wall Street Journal*.

Note: (P) Preliminary.

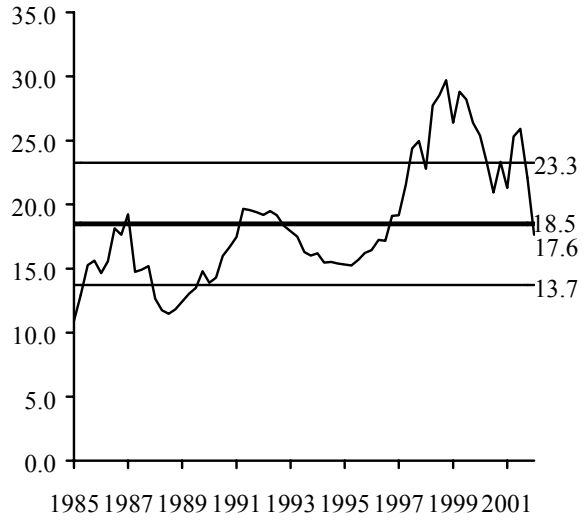
Table D

PRICE-TO-EARNINGS RATIOS UNDER VARIOUS EARNINGS DEFINITIONS

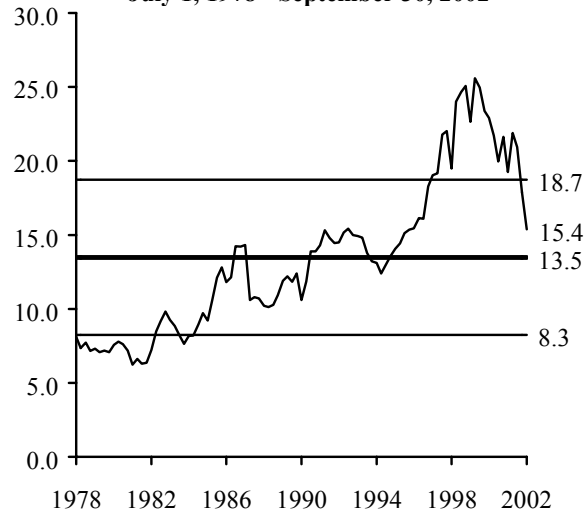
S&P 500 Price-to-GAAP Earnings
January 1, 1900 - September 30, 2002



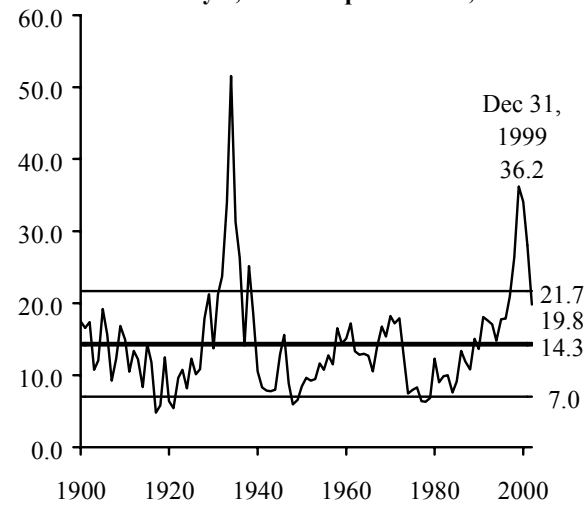
S&P 500 Price-to-Operating Earnings
July 1, 1985 - September 30, 2002

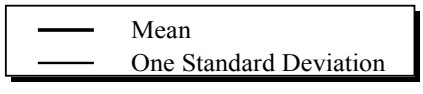


S&P 500 12 month Forward Price-to-Operating Earnings
July 1, 1978 - September 30, 2002



Price-to-NIPA Earnings
For the Corporate Non-financial Sector
January 1, 1900 - September 30, 2002*

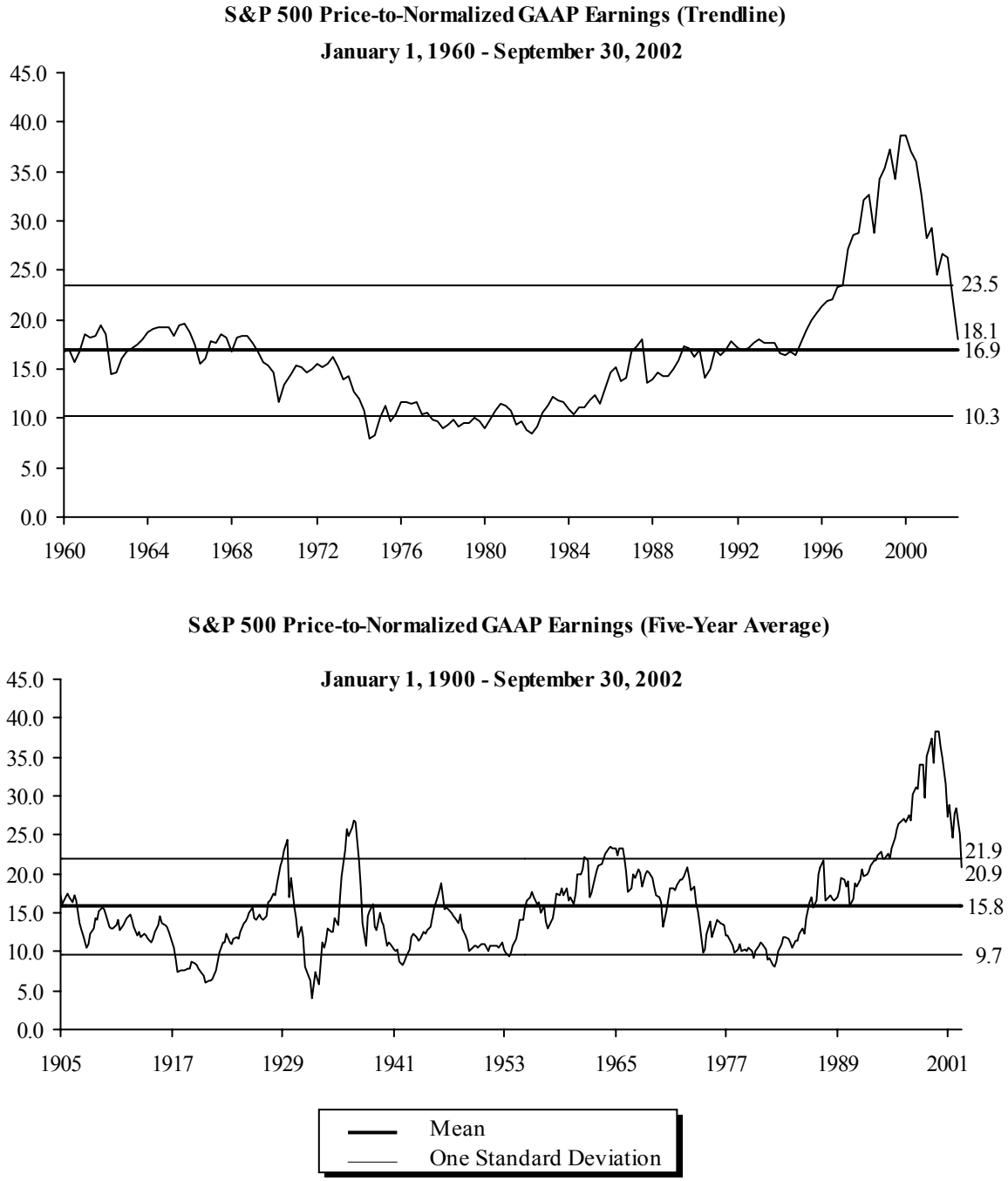




*NIPA earnings data are estimated for September 30, 2002.

Table D (continued)

PRICE-TO-EARNINGS RATIOS UNDER VARIOUS EARNINGS DEFINITIONS



Sources: Calculated from data provided by NIPA, Federal Reserve, Robert Shiller's Data, Standard & Poor's, Standard & Poor's Compustat, Stephen Wright - Department of Economics Birkbeck College University of London, Thomson Financial, and *The Wall Street Journal*.

Table E

S&P 500 DIVIDEND DISCOUNT MODEL VALUATIONS UNDER VARYING ASSUMPTIONS

S&P 500 Fair Value and Percentage Over- (Under-) Under Varying Equity Risk Premium, Earnings, and Earnings Growth Rate Assumptions

Valuations Using 12-Month Trailing Operating Earnings of $46

Equity Risk Premium	Valuations Under Various Earnings Growth Assumptions for Next Ten Years							
	1%	3%	5%	7%	9%	11%	13%	15%
1%	1,734	2,092	2,517	3,020	3,614	4,313	5,133	6,094
	(53%)	(61%)	(68%)	(73%)	(77%)	(81%)	(84%)	(87%)
2%	804	961	1,147	1,366	1,624	1,927	2,282	2,696
	1%	(15%)	(29%)	(40%)	(50%)	(58%)	(64%)	(70%)
3%	530	629	744	881	1,041	1,228	1,447	1,703
	54%	30%	10%	(7%)	(22%)	(34%)	(44%)	(52%)
4%	399	469	552	649	763	895	1,050	1,230
	104%	74%	48%	26%	7%	(9%)	(22%)	(34%)

Valuations Using 12-Month Trailing Reported Earnings of $29

Equity Risk Premium	Valuations Under Various Earnings Growth Assumptions for Next Ten Years							
	1%	3%	5%	7%	9%	11%	13%	15%
1%	1,306	1,576	1,896	2,275	2,722	3,248	3,866	4,590
	(38%)	(48%)	(57%)	(64%)	(70%)	(75%)	(79%)	(82%)
2%	605	724	864	1,029	1,223	1,451	1,719	2,031
	35%	13%	(6%)	(21%)	(33%)	(44%)	(53%)	(60%)
3%	399	473	561	663	784	925	1,090	1,282
	104%	72%	45%	23%	4%	(12%)	(25%)	(36%)
4%	301	354	416	489	574	674	791	926
	171%	131%	96%	67%	42%	21%	3%	(12%)

Other Key Assumptions

- Long-Term Earnings Growth of 5.0%
- Risk-Free Rate of 4.83%, the yield on the 30-year Treasury on September 30, 2002

Sources: Standard & Poor's, Standard & Poor's Compustat, Thomson Financial, and Thomson Datastream. The 30-year Treasury yield is an extrapolation of the Long-Term Average Rate series calculated by the Treasury following 2/18/02, when the Treasury ceased publication of the 30-year constant maturity series.

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