

C A M B R I D G E A S S O C I A T E S L L C

U.S. MARKET COMMENT: INDEXING TO S&P 500—RISKY?

July 31, 2001

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Indexing to the S&P 500 - How Risky is it Now?

In January 1999, we wrote about the high risk of indexing to the S&P 500 based on historical index characteristics. Has the dramatic fall in equity prices since March 2000 pushed risk levels down to historical norms? How does the current risk of the market, as measured by the S&P 500, compare with recent years?

We measure the risk of the S&P 500 on the basis of four factors:

- its level of diversification;
- its valuation relative to that of the broader market;
- its weightings in more and less volatile economic sectors; and
- the relative dependence of future returns on dividends or capital appreciation.

Table A shows that the S&P 500 remains highly concentrated in a few companies, though it is slightly down from 1999's levels. As of July 31, 2001, the market-cap weight of the 50 largest companies in the S&P 500 was 55.3%, while it was 36.1% for the 20 largest companies. These figures are only modestly below their 1999 peaks, when the largest 50 and 20 companies carried weights of 59.7% and 37.8%, respectively. Not surprisingly, companies in these two categories are concentrated in two sectors, technology and health care. However, the sectoral composition of the largest 20 companies has become more diversified since January 1999. Then, the market cap of the largest two sectors was 53.2%, while that of the largest three sectors was 64.5%. Two and a half years later, the market cap of largest two sectors has shrunk 13.3 percentage points to 39.9%, and the largest three, 11.0 percentage points to 53.5%. The sectoral concentration of the largest 50 companies, however, has remained roughly constant. The market cap of the largest two sectors has fallen only 2.8 percentage points, from 43.3% to 40.5%, and the weight of the largest three sectors has fallen only 0.6 percentage points, from 57.0% to 56.4%. The slight decline in concentration levels over the last two and a half years is likely due to the relative underperformance of large-cap growth stocks, which dominate the S&P 500. Small caps have outperformed large caps by 18.4 percentage points, while value has outperformed growth by 12.5 percentage points since April 1999 (see Table B). The current level of concentration is high but not unprecedented, as it was also reached during the early 1970s (not shown in exhibit). Nevertheless, because a more concentrated portfolio generally experiences greater volatility than one that is more broadly diversified, today's S&P 500 contains a fairly high degree of intrinsic risk.

The P/E multiple of the S&P 500 declined substantially over the last ten quarters, but came roaring back in July as prices fell, but earnings fell harder. The P/E of the index now stands at 35.6, its highest point on record, and nearly two standard deviations above its long-term average. While valuations of the largest stocks have declined, valuations of smaller stocks have increased, resulting in the average stock in the index carrying a P/E of 36.1—slightly higher than that of the index as a whole. In contrast, in the first quarter of 1999, the S&P 500 P/E reached its former peak of 33.5, while the P/E of the average stock in the index was 28.1.

While earnings growth rate estimates for the S&P 500 in 2001 have indeed fallen from their earlier highs, analysts are quite optimistic about 2002, and they are positively exuberant about the prospects for the technology sector (see Table C). For the S&P 500 in 2001, consensus analyst earnings growth rate estimates have dropped from 16.0% on July 28, 2000 to -8.7% one year later. Meanwhile, expectations for the index's growth in 2002 have increased from 17.8% on April 6, 2001 to 20.2% at the end of July. For the S&P 500's tech sector in 2001, consensus estimates have plunged from 24.8% in July 2000 to -56.5% a year later. However, growth estimates for the sector in 2002 have soared from 42.7% in the beginning of April to 70.0% nearly four months later. Admittedly, these high growth rate estimates follow the heavy declines in 2001, but expectations of 70% are extremely aggressive.

Growth estimates for the S&P 500 ex tech in 2001 have fallen from 9.7% as of December 8, 2000 to 0.2% as of July 27, 2001. For 2002, analysts currently expect the S&P 500 ex tech to grow 16.2%. The sharp fall in tech expectations for 2001 has not taken an even sharper toll on expectations for the S&P 500 because analysts expect robust growth from utilities, 15.6%; health care, 12.6%; and consumer staples sectors, 8.2%. The sectors that are expected to grow the most rapidly in 2002 (other than technology) are materials, 75.0%; consumer discretionary, 26.0%; telecom, 22.5%; and industrials, 21.6%.

As Table D shows, the *economic* composition of the S&P 500 remains weighted towards more risky sectors, especially relative to 1979. The weight of the four riskiest economic sectors (as measured by beta) rose from 39.7% at the beginning of 1979 to a high of 61.0% at the end of 1999, falling slightly to 54.5% at the end of July. At the same time, the weight of the four least risky sectors fell from 40.1% at the beginning of 1979 to a low of 18.0% at the end of 1999, increasing slightly to 18.8%. In addition, the two riskiest sectors, technology and finance, currently comprise 37.2% of the S&P 500, down somewhat from the 1999 peak of 43.4%.

Investors who anticipate a return at least equal to the S&P 500's historical average must expect that price appreciation will constitute a far higher percentage of that return than has been the case in the past, because today's dividend yield is far below its long-term average (see Table E). Since dividends are

far more stable and predictable than capital appreciation, total return is at greater risk if investors depend on the latter rather than the former. Events over the last year have shown that stock buyback programs are more vulnerable to corporate cutbacks than are dividends.

In short, although the market is beginning to broaden out in some respects, today's S&P 500 still carries a great deal of intrinsic risk relative to its past. Over the last two and a half years, the risk of the index has decreased on balance, but is still lofty on an historical basis. Our conclusion today remains the same as in January 1999: the changed composition of the index has transformed its risk profile to one that resembles an aggressive, high-beta, growth-stock portfolio. This reflects the continuing pre-eminence of technology and finance in today's economy, as well as the decline of more stable, lower-beta issues.

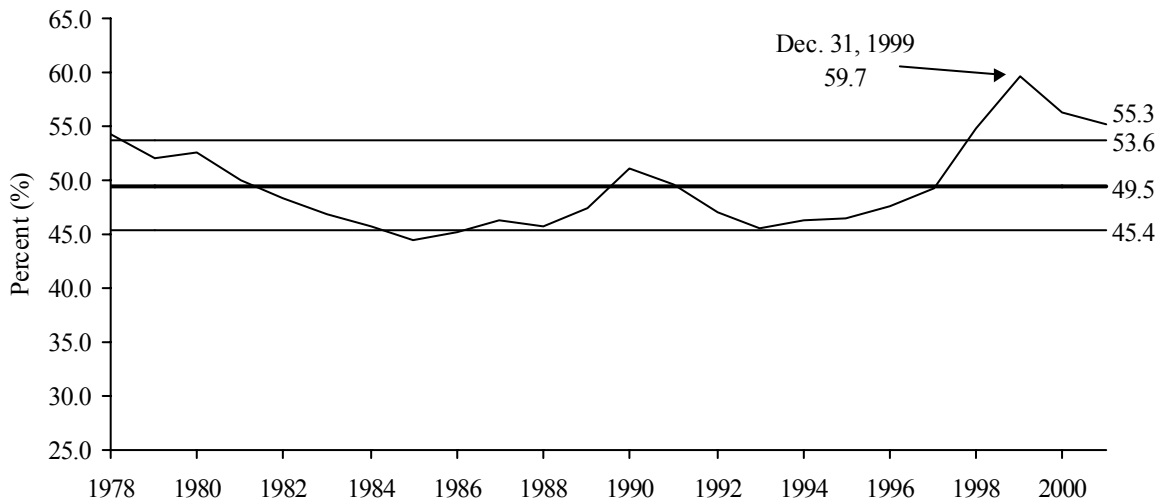
Table A

S&P 500 MARKET CAPITALIZATION CONCENTRATION

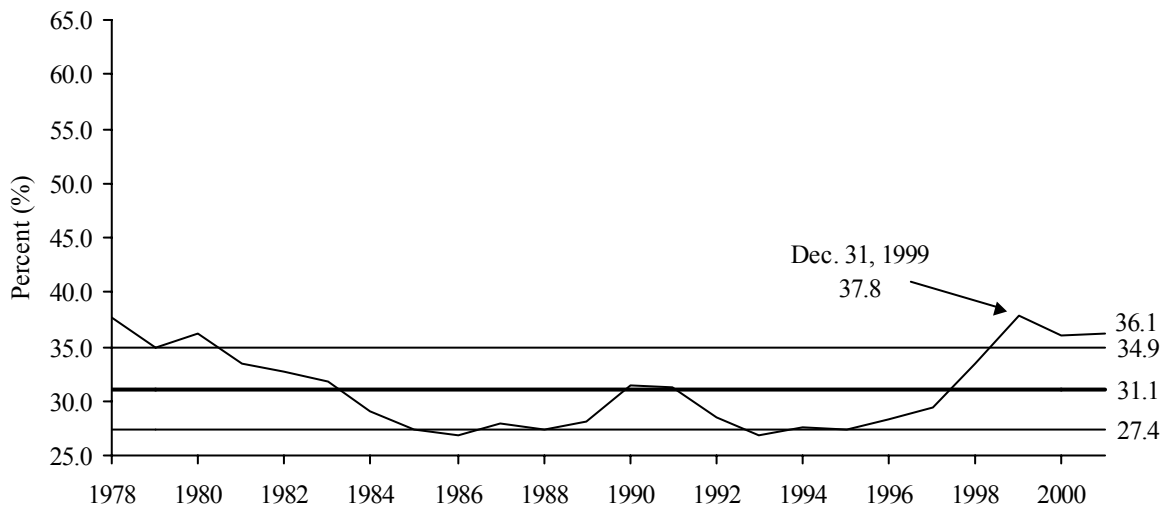
Market Share of the Top 50 and Top 20 Companies

December 31, 1978 - July 31, 2001

Top 50 Companies



Top 20 Companies



— Mean
 — One Standard Deviation

Source: Standard & Poor's Compustat.

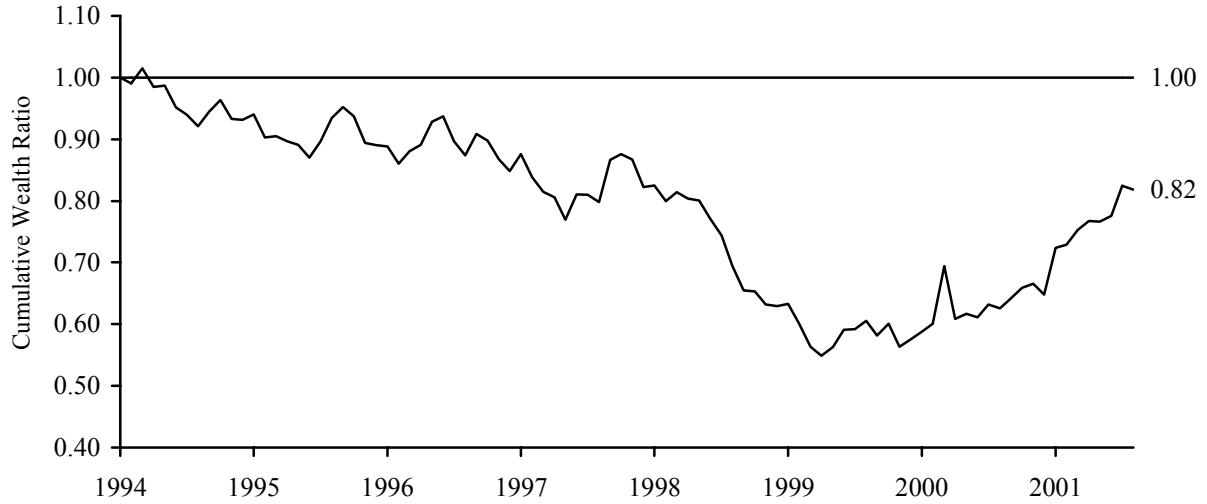
Note: 2001 data are through July 31.

Table B

RELATIVE CUMULATIVE WEALTH OF SELECTED S&P INDEXES

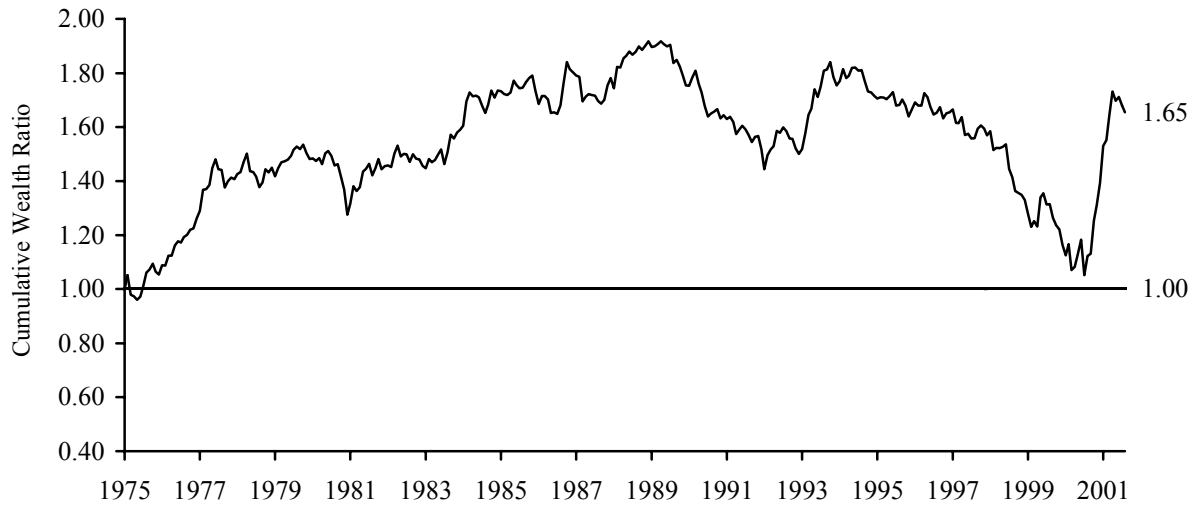
**Relative Cumulative Wealth Index
(S&P Small Cap/S&P 500)**

January 1, 1994 - July 31, 2001



**Relative Cumulative Wealth Index
(S&P 500 BARRA Value/S&P 500 BARRA Growth)**

January 1, 1975 - July 31, 2001



Sources: Barra, Inc. and Standard & Poor's.

Note: Different time periods are used due to separate inception dates for the indexes portrayed in the above graphs.

Table C

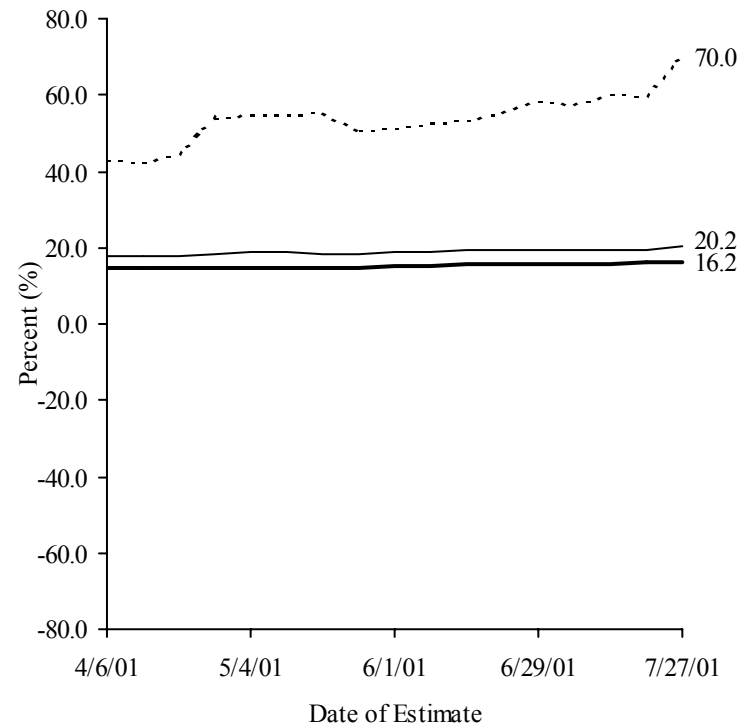
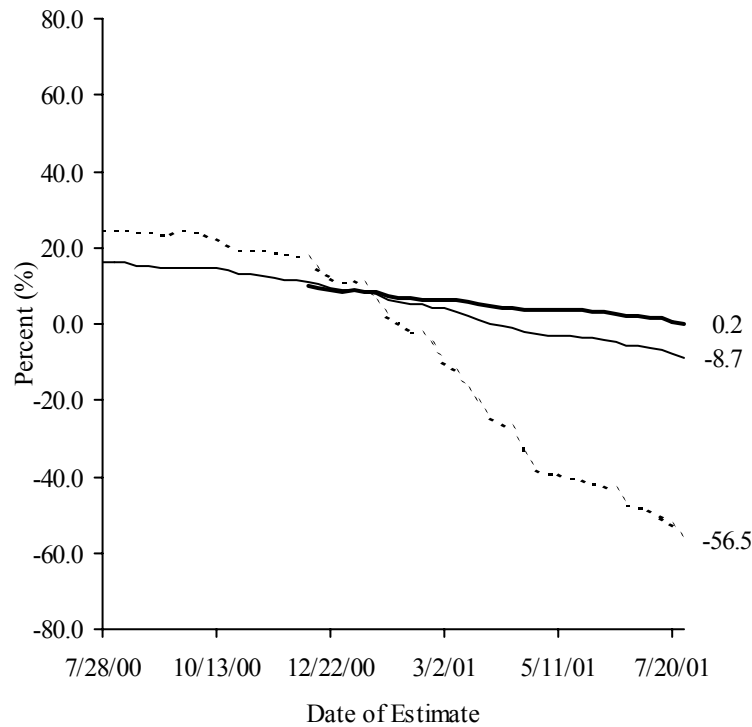
S&P 500 ESTIMATED EARNINGS GROWTH RATES

2001 Calendar Year Analyst Consensus Earnings Growth Rates

2002 Calendar Year Analyst Consensus Earnings Growth Rates

July 28, 2000 - July 27, 2001

April 6, 2001 - July 27, 2001

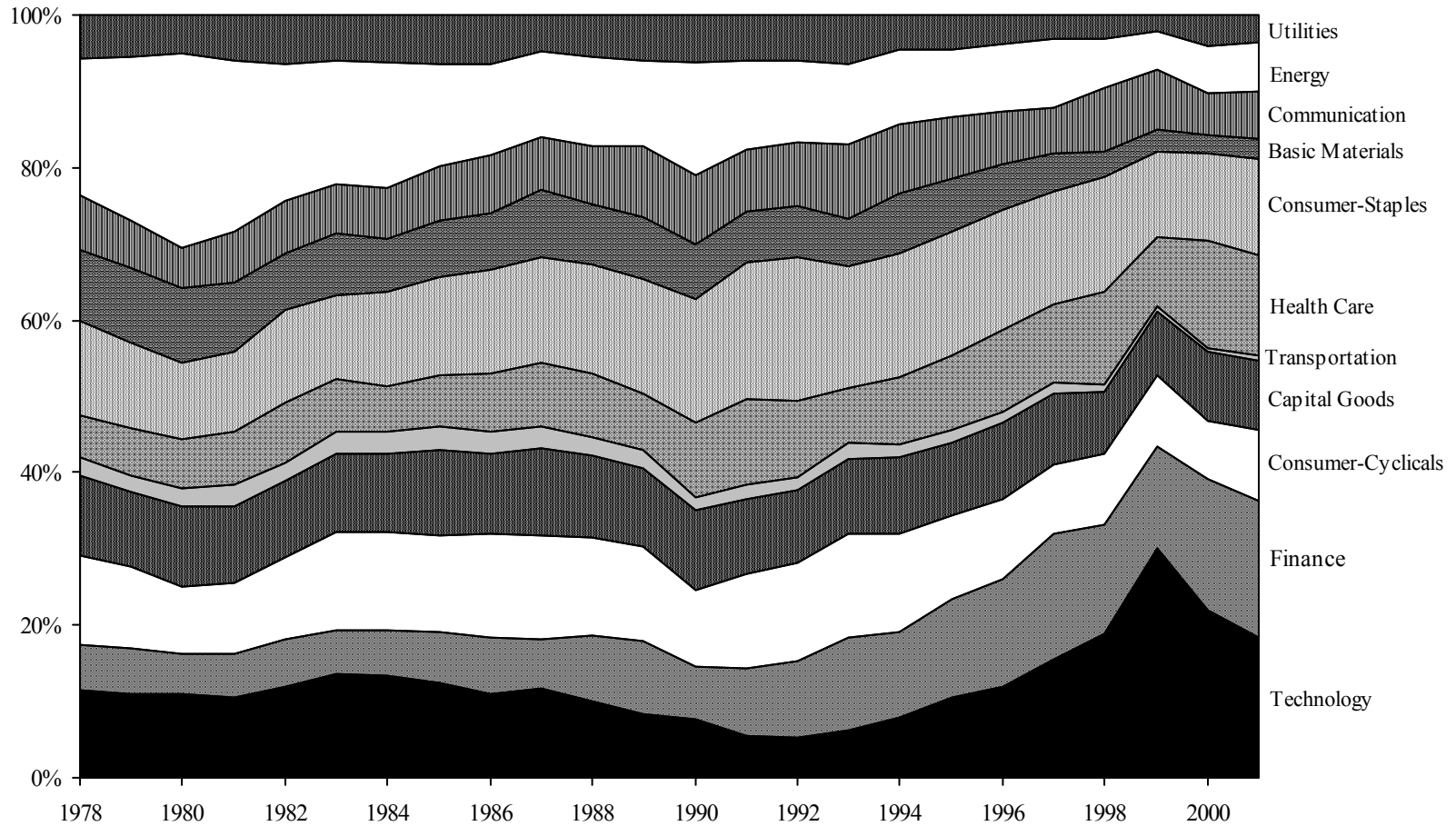


— S&P 500
 — S&P 500 ex IT
 IT

Source: Morgan Stanley.

Notes: Graph represents weekly data. S&P 500 ex IT data begin on December 8, 2000.

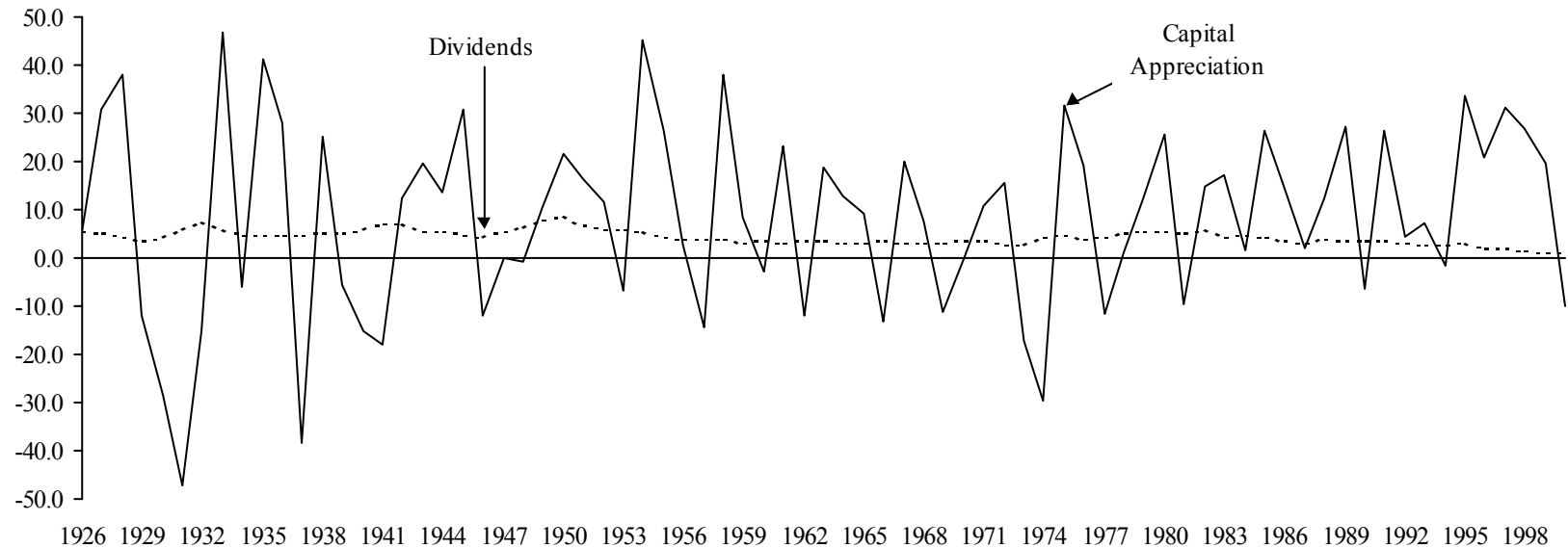
Table D
S&P 500 ECONOMIC SECTOR WEIGHTS
December 31, 1978 - July 31, 2001



Source: Standard & Poor's Compustat.

Note: Economic sectors of the S&P 500 are shown in order of the sectors' betas relative to the S&P 500, ranked from low (utilities) to high (technology).

Table E
COMPONENTS OF S&P 500 RETURNS: DIVIDENDS AND CAPITAL APPRECIATION
1926-2000



	<u>Capital Appreciation</u>		<u>Dividends</u>	
	<u>Average Annual Compound Return (%)</u>	<u>Standard Deviation</u>	<u>Average Annual Compound Return (%)</u>	<u>Standard Deviation</u>
1926-2000	6.4	19.5	4.4	1.5
1926-1959	4.7	23.8	5.5	1.3
1960-2000	7.8	15.5	3.6	1.1

Sources: Calculated from data provided by Standard & Poor's and *The Wall Street Journal*.

Also used: *Stocks, Bonds, Bills, and Inflation 1995 Yearbook*. Ibbotson Associates, Chicago (annually updates work by Roger G. Ibbotson and Rex A. Sinquefeld).
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