CAMBRIDGE ASSOCIATES LLC

U.S. MARKET COMMENT: DISSECTING THE U.S. EQUITY MARKET

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Dissecting the U.S. Equity Market—A Cross Section of Valuations

Between March 31, 2000 and June 30, 2002, U.S. stocks fell by more than 30%, and technology stocks fell nearly 70%. Despite these significant declines, the market remains overvalued, with the S&P 500 trading at 40.2 times earnings and the Dow Jones U.S. Total Market Index of approximately 1,600 stocks trading at 50.5 times earnings. While price-to-earnings (P/E) ratios based on trailing reported earnings are inflated by earnings figures that are depressed by significant write-offs related to big-bath accounting practices, stocks remain overvalued on the basis of other valuation criteria, such as price-to-sales (P/S) ratios. Given the continued loftiness of valuations, we thought it instructive to look at a cross section of the U.S. stock market to determine the drivers of these high market aggregate valuations. Our analysis is based on the constituents of the Dow Jones U.S. Total Market Index as of June 30, 2002 and includes both P/E and P/S ratios.

P/E Observations

- Approximately 30% of the companies in the index, representing 11% of its capitalization, had negative earnings. Given that the index P/E ratio is the total market cap divided by aggregate earnings, companies with negative earnings can significantly raise P/E ratios, even if they have a relatively low market capitalization. For example, small-cap stocks with negative earnings account for only 1.7% of the market cap of the index, but 27% of the negative earnings. Inclusion of these small-cap companies in the index brings its P/E ratio up from 38.8 to 50.5 for the aggregate index—an increase of 32.8%. If all companies with negative earnings are excluded from the index, the P/E falls to 20.9, a much more reasonable valuation, particularly in light of the depressed level of earnings, making it reasonable to assume that higher than average earnings growth might be expected over the next several years.

- No one segment of the market is entirely responsible for the negative earnings, although the information technology sector accounts for the lion's share—47.5% of companies, 36.1% of market capitalization, and 56.4% of negative earnings. However, although excluding the information technology companies from the P/E calculation does bring valuations down significantly, the resulting valuation of 31.3 is still very high by historical standards.

- The companies with negative earnings are primarily growth companies, accounting for 62.9% of the companies and 56.3% of the market capitalization. While large-cap stocks represent most of the market capitalization (56.6%) of companies with negative earnings, small-caps account for the greatest number of companies (331 companies, or 67.4%).

- Among companies with positive earnings, P/E ratios for the most expensive quartile of companies ranged from 2,311 to 33.4, with an astronomical mean valuation of 112.2, and a median valuation of 51.4. This quartile of companies included a similar number of growth and value companies, which represented 38.8% and 34.5% of companies, and 56.2% and 35.6% of market capitalization, respectively. Approximately 27% of companies (8.1% of capitalization) in the quartile exhibited neither growth nor value characteristics, as defined by Dow Jones. Small-cap stocks accounted for nearly half of the companies in this quartile, but only about 5% of the market capitalization, while large-cap stocks accounted for nearly 80% of the capitalization, but only 17.1% of the companies. Among economic sectors, information technology, industrials, and consumer discretionary each account for approximately 20% of the top quartile of companies.

- As would be expected, value companies make up most of the bottom two quartiles of the P/E distribution. However, given the strong outperformance of value stocks relative to growth stocks since March 2000, many value stocks are in the highest valuation quartiles: 31.4% of value companies were in the top two quartiles, accounting for 44.3% of the market capitalization of value stocks.

- Most of the companies in the cheapest two quartiles are small-cap stocks, but most of the market capitalization is from large-cap stocks. Small-cap stocks were fairly evenly distributed across the valuation quartiles, ranging from 14.1% of companies in the second valuation quartile to 17.6% of small-caps in the third quartile. The greatest percentage of small-cap stocks (36.8%) had negative P/E ratios.

- Among economic sectors, financial stocks account for the largest percentage of both companies and market capitalization of the least expensive stocks by a wide margin.

P/S Observations

- At 1.4, the P/S ratio of the Dow Jones U.S. Total Market Index is also high by historical standards, but not as extreme as the P/E ratio. The median P/S ratio is 1.4, ranging from a low of zero to a high of 7,046.4.

- The main differences in the distribution of companies across P/S and P/E quartiles relate to economic sectors. While information technology companies also dominate the highest valuation quartile of companies sorted by P/S (29.1% of companies) the similarities stop there. Industrials and consumer discretionary companies, which each comprise approximately 20% of the top quartile of companies on the basis of P/E ratios, comprise only 5.2% and 7.0% of the top quartile of companies on the basis of P/S ratios, respectively. At the same time, financials and health care stocks, which account for only 10.3% and 13.5% of the top quartile of stocks on the basis of P/E ratios, account for 26.9% and 25.4% of top quartile stocks on the basis of P/S ratios, respectively. While some of these differences are due to write-offs impacting the P/Es and not the P/Ss, other differences are due to definitional anomalies. For example, according to Steve Galbraith of Morgan Stanley, P/S ratios are not particularly meaningful for financial companies, particularly banks, as net interest income is viewed as sales. If gross interest income is used instead of net interest income for some financials, the P/S ratios would be lower and the P/S and P/E analysis would be more comparable.

At the peak of the bull market, it was easy to identify the main drivers of high valuations—technology stocks and mega-cap growth stocks. Today, the sources of high valuations are much broader. Technology stocks still trade at a significant (although reduced) multiples of earnings and sales, but other segments of the market that were previously inexpensive have risen in value without a commensurate gain in fundamentals, making it impossible to explain away high valuations as attributable to certain types of companies. There are still inexpensive companies—the lowest valuation quartile on the basis of P/E ratios ranges from 1.3 to 16.2, with a median of 13.3, while the lowest valuation quartile on the basis of P/S ratios ranges from zero to 0.7, with a median of 0.4—however, the number of inexpensive stocks is dwindling. According to Ned Davis Research, as of June 7, 2002, only 16 stocks in the S&P 500 had a trailing P/E ratio of less than 10, the fewest since March 1972.

Table A

U.S. EQUITY PRICE-TO-EARNINGS RATIO AND PRICE-TO-SALES RATIO QUARTILES

June 30, 2002

Dow Jones U.S. Total Market Index

Price-to-Earnings Ratio	50.5
Price-to-Sales Ratio	1.4

Price-to-Earnings Quartiles

		Top Quartile	Second	Third	Fourth
Quartile P/E		49.9	26.5	19.0	12.2
Mean P/E		112.2	27.2	19.2	12.4
Median P/E		51.4	27.0	19.0	13.3
P/E Range					
	High	2,311.0	33.4	22.6	16.2
	Low	33.4	22.6	16.2	1.3

Price-to-Sales Quartiles

		Top Quartile	Second	Third	Fourth
Quartile P/S		4.5	1.9	1.0	0.3
Mean P/S		26.5	2.0	1.0	0.4
Median P/S		4.4	2.0	1.0	0.4
P/S Range					
	High	7,046.4	2.8	1.4	0.7
	Low	2.8	1.4	0.7	0.0

Sources: Dow Jones & Company, Inc., FactSet, and Standard & Poor's Compustat.

Notes: Quartiles are arranged from highest to lowest price-to-earnings and price-to-sales ratios. Therefore, the top quartile includes those stocks with the highest price-to-earnings or price-to-sales ratios as of June 30, 2002.

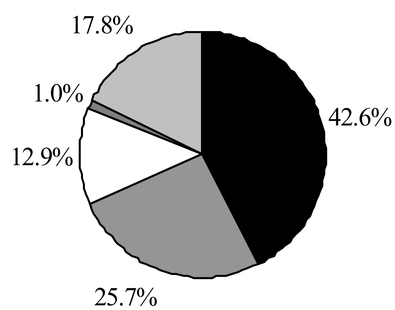
Table B

U.S. EQUITY STYLES BY PRICE-TO-EARNINGS RATIO AND PRICE-TO-SALES RATIO QUARTILES

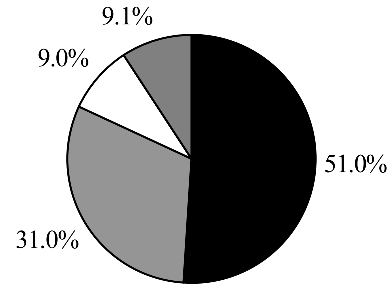
June 30, 2002

Growth Stock Market Capitalization Distribution

Price-to-Earnings Ratio

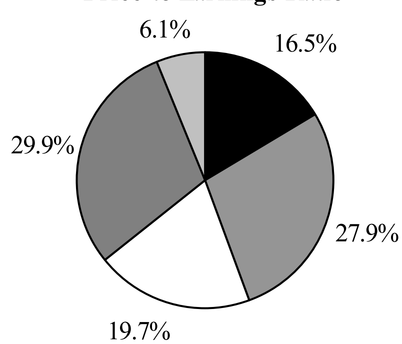


Price-to-Sales Ratio

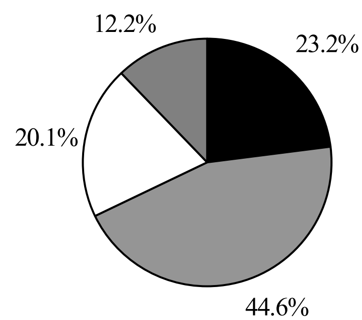


Value Stock Market Capitalization Distribution

Price-to-Earnings Ratio



Price-to-Sales Ratio



■ Top Quartile ■ Second Quartile □ Third Quartile ■ Fourth Quartile □ Negative Earnings

Distribution by Percent of Companies

	Growth Quartiles					Value Quartiles				
	Top	Second	Third	Fourth	Negative Earnings	Top	Second	Third	Fourth	Negative Earnings
Price-to-Earnings Ratio	18.5	14.4	9.2	5.4	52.5	14.7	16.7	24.1	29.7	14.8
Price-to-Sales Ratio	38.1	26.4	19.5	15.9	---	16.3	23.7	28.2	31.8	---

Sources: Dow Jones & Company, Inc., FactSet, and Standard & Poor's Compustat.

Notes: Quartiles are arranged from highest to lowest price-to-earnings and price-to-sales ratios. Therefore, the top quartile includes those stocks with the highest price-to-earnings or price-to-sales ratios as of June 30, 2002.

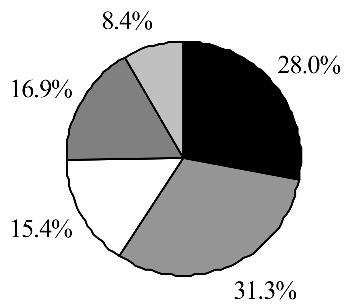
Table C

U.S. EQUITY CAPITALIZATION SECTORS BY PRICE-TO-EARNINGS RATIO AND PRICE-TO-SALES RATIO QUARTILES

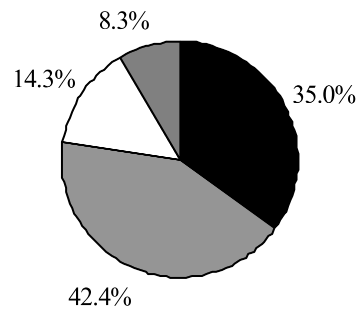
June 30, 2002

Large-Cap Market Capitalization Distribution

Price-to-Earnings Ratio

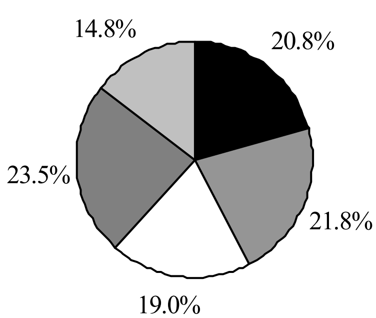


Price-to-Sales Ratio

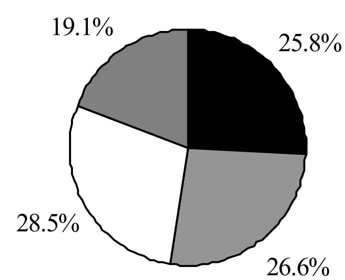


Mid-Cap Market Capitalization Distribution

Price-to-Earnings Ratio

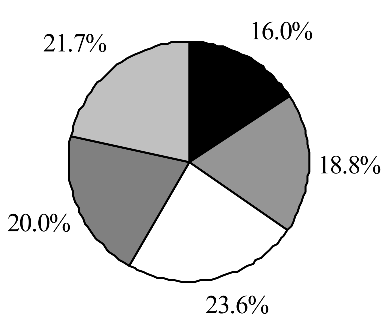


Price-to-Sales Ratio

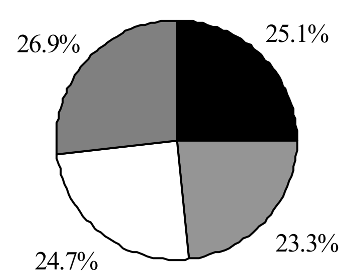


Small-Cap Market Capitalization Distribution

Price-to-Earnings Ratio



Price-to-Sales Ratio



■ Top Quartile ■ Second Quartile □ Third Quartile ■ Fourth Quartile ■ Negative Earnings

Sources: Dow Jones & Company, Inc., FactSet, and Standard & Poor's Compustat.

Notes: Quartiles are arranged from highest to lowest price-to-earnings and price-to-sales ratios. Therefore, the top quartile includes those stocks with the highest price-to-earnings or price-to-sales ratios as of June 30, 2002.

Table D

U.S. EQUITY ECONOMIC SECTOR PRICE-TO-EARNINGS RATIO AND PRICE-TO-SALES RATIO

June 30, 2002

Economic Sector	Number of Companies	Price-to-Sales Ratio	Price-to-Earnings Ratio	% of Companies with Negative Earnings	% of MV with Negative Earnings
Consumer Discretionary	260	2.6	33.3	18.1	17.4
Consumer Staples	70	1.2	22.8	5.7	0.4
Energy	74	1.3	23.1	9.5	3.3
Financials	276	1.7	18.6	9.8	3.0
Health Care	189	2.1	26.6	34.9	4.0
Industrials	213	1.2	25.4	21.1	4.2
Information Technology	346	2.0	50.5	67.3	27.2
Materials	79	0.9	29.6	41.8	23.2
Telecom Services	31	1.3	33.3	77.4	48.0
Utilities	78	0.5	11.3	6.4	1.6

Sources: Dow Jones & Company, Inc., FactSet, and Standard & Poor's Compustat.

Note: Figures may not total due to rounding.

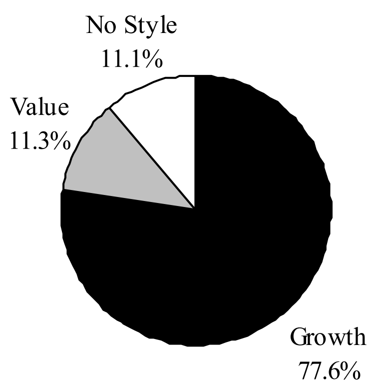
Table E

U.S. EQUITIES WITH NEGATIVE EARNINGS

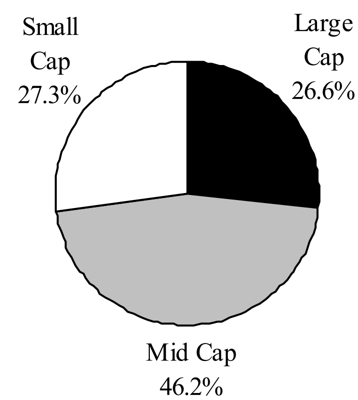
Distribution of Earnings

June 30, 2002

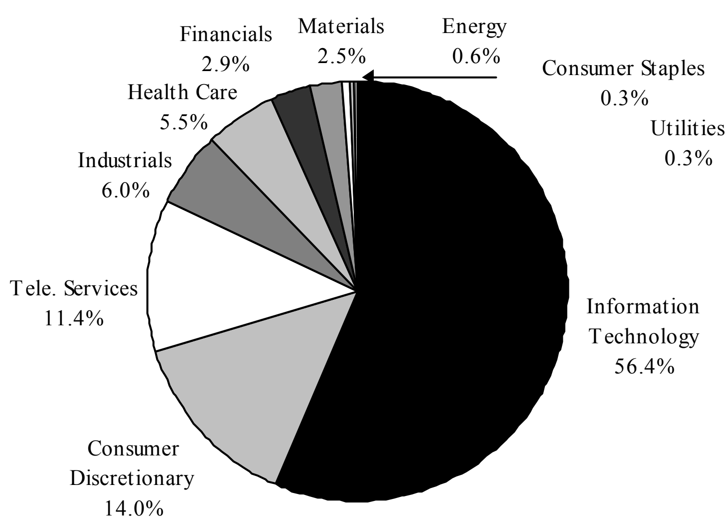
Negative Earnings by Style



Negative Earnings by Market Capitalization Sector



Negative Earnings by Economic Sector



Sources: Dow Jones & Company, Inc., FactSet, and Standard & Poor's Compustat.

Note: Figures may not total due to rounding.