September 10, 2003

Monthly Stock Market Report

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Market Analysis for Period Ending Friday, September 5, 2003

This document presents technical and fundamental analysis commonly used by investment professionals to interpret direction and valuation of equity markets, as well as tools commonly used by economists to determine the health of financial markets and their impact on the domestic United States economy. The purpose is to provide a synopsis of equity markets from as many disciplines as possible, but is in no way an endorsement of any one mode of study or source of advice on which one should base investment decisions.

Definitions of terms and explanations of indicator interpretation follow the charts in the Endnotes section.

Technical Trends

Figure 1 presents price trends and daily volumes for the New York Stock Exchange and Nasdaq Composite Indices.

The New York Stock Exchange Composite Index (NYSE Index) closed Friday, September 5 at 5747.68. Friday's close just barely exceeds the June 17 peak, which had been the index's highest value since June 2002. Since hitting its low on March 12, the NYSE has risen 28.1 percent, and is up 15.0 percent for the year.

The National Association of Securities Dealers Composite Index (Nasdaq Index) closed at 1858.24, just off its highest point since March 2002. Since the opening of the Iraq conflict the Nasdaq has risen 46.1 percent and is up 39.1 percent year-to-date. (figure 1).

Figures 2, 3, and 4 present some technical indicators commonly cited by stock market analysts.

Whereas on August 1 the technical indicators forecasted nothing but blue skies, the current technicals could portend some dark clouds, though probably not a downpour. The relative strength index for the NYSE Composite had a value of 66.1 percent as of September 5, flirting with overbought territory (figure 2, upper panel). The number of stocks making

new 52-week highs has begun to climb again, and remains well above the number of new lows, which is negligible (figure 3 upper panel). The middle panel shows that momentum (overbought/oversold oscillator) is in overbought territory and continues to rise, a bearish indicator. The Market Breadth indicator (figure 3, bottom panel) has trended slightly upward since the beginning of August.

For the Nasdaq Index, the relative strength index has climbed into bearish territory (figure 2). The upper panel of figure 4 shows the number of new highs remains large, while the new lows are in single digits. Advancing stocks have outnumbered declining ones since June (lowest panel, figure 4). The momentum indicator is in overbought territory and rising slightly, a somewhat bearish indicator (figure 4, middle panel).

Volatility

Indicators of market volatility are shown in figure 5.

The Chicago Board of Options Exchange (CBOE) provides daily measures of volatility for the S&P 100 (VIX) and for the Nasdaq 100 (VXN). Both volatility indicators dropped sharply in the spring and remain low; the VIX is still near its lowest point since May 2002, while the VXN was last this low in December 1998.

Put/Call ratios appear in figure 6.

Monthly data are shown from January 1997 through August 2003. The CBOE individual equity put/call ratio increased slightly and remains in bullish territory. The S&P 100 put/call ratio increased slightly and is in neutral territory.

Sector Performance

Figure 7 compares the performance of the various economic sectors within the S&P 500 as well as other international and style indices.

Nine of the ten economic sectors in the S&P 500 have a positive year-to-date return as of September 5. The information technology and consumer cyclicals sectors have been the strongest sectors in 2003, rising 35.8 and 25.9 percent respectively. The telecommunications sector, which had the largest loss in the last five years, continues to lag the field, with a loss of 2.0 percent in 2003 (figure 7, top panel).

The Wilshire 5000, composed of all U.S. equity issues, is now up 18.7 percent year-to-date. The German DAX has

enjoyed 2003 even more, rising 24.7 percent, while Japan's Nikkei 225 (24.2 percent) has taken off in the past two months. The U.K's FTSE 100 has not had the same level of success, but is still up 8.0 percent for the year. (figure 7, middle panel).

Each of the Russell style indices has increased more than ten percent in 2003. The Russell 2000 Small-Cap Index has seen the biggest increase this year, after experiencing negative returns on average over the last five years (figure 7, bottom panel).

Valuation

Figure 8 displays historical and current price-earnings ratios for the S&P 500 economic sector groups described above in the top panel, and analyzes earnings growth in 5-year, 3-year, and 1-year increments for each sector in the bottom two panels. Figure 9 graphs the current and previous earnings forecasts for several calendar years in the top panel, and lists the current and previous growth of earnings forecasts for each S&P 500 sector in the two tables. Figure 10 shows three measures of historical and future valuation: historical PE ratios in the top panel, forward and trailing PE ratios using analysts' estimates of operating earnings in the middle panel, and strategists' two-year forecasts of earnings growth in the lower panel.

Recent increases in prices have caused price-earnings ratios to increase for most S&P 500 economic sectors. Due to negligible earnings, the consumer cyclical and information technology sectors have unreliable PE ratios. Otherwise, the materials and utilities sectors have risen the most since the fourth quarter of 2002, to 42.2 and 56.9, respectively. The PE for the energy sector has been cut nearly in half, from 39.5 to 20.2, due to declines in stock prices and strengthened earnings (figure 8, top panel).

The analysts surveyed by Thomson Financial/First Call expect a 14.5 percent increase in earnings for the S&P 500 in the third quarter of 2003, and a 16.6 percent increase for calendar year 2003. In the third quarter, the growth of earnings are expected to be greatest for the energy and technology sectors, while earnings for the telecom, utilities, and capital goods sectors are expected to fall. Though most numbers are down slightly since January, the relatively small decreases in the projections are seen as a positive sign for earnings growth (figure 9).

The macro projections from strategists for the growth of earnings for the Standard and Poor's 500 index over the next two years have been revised downward to 14.4 percent in the second quarter of 2003. The **S&P 500 trailing price-earnings ratio** was 28.0, unchanged between the first and second quarters. During the

second quarter, the price-earnings ratio for the Russell 2000 index increased to 26.8 from 24.6. The 2003 third quarter forecast for the **S&P 500 forward price-to-operating-earnings ratio**, using bottom-up forecasts from analysts, increased to 17.6 from 17.5 in the second quarter (figure 10).

Breadth of the S&P 500

Prices rose from a year ago for 43.8 percent of stocks in the S&P 500 in the second quarter of 2003, up from 11.2 percent in the first quarter and 26.3 for calendar year 2002 (figure 11, middle panel). Although the median price to operating earnings ratio stayed roughly the same for all deciles of the S&P 500, only four deciles have median ratios below the historical average price-to-earnings ratio of 14.4 (figure 11, bottom).

Comparative Returns

The dividend-price ratio, an indication of the yield investors receive through dividends by holding stocks, decreased to 1.72 percent in the second quarter from 1.88 percent in the first quarter. The earnings-price ratio increased to 3.70 percent in the second quarter from 3.52 percent in the first quarter. Both of these ratios are still substantially below the 4.1 percent real rate of interest on corporate bonds and their respective historical averages, 2.92 percent and 5.99 percent (figure 12). Typically, the earnings-price ratio falls below the real return on bonds when analysts expect earnings to rise rapidly.

As earnings have begun to recover, the operating profit payout rate for nonfinancial corporations has declined, from 61.7 in the first quarter to 56.9 in the second quarter (figure 13, lower panel). It remains to be seen if the elimination of the dividend tax will have any effect on the payout rate.

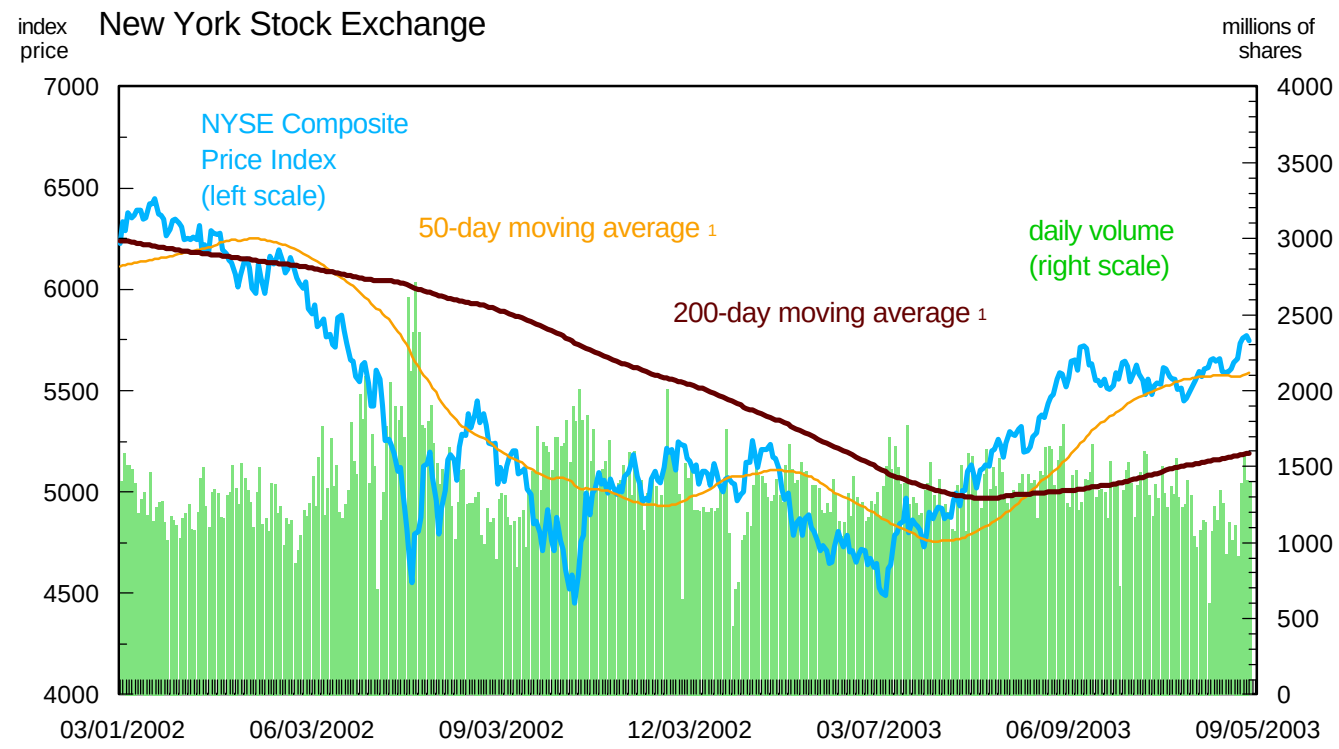
Moody's did not make many changes to the ratings of investment grade securities, but the upgrades of speculative grade securities increased sharply, while the number of downgrades declined (figure 15, top and middle panels). The default rate on junk bonds decreased sharply in July to its lowest point since March 2001 (figure 15, lower panel).

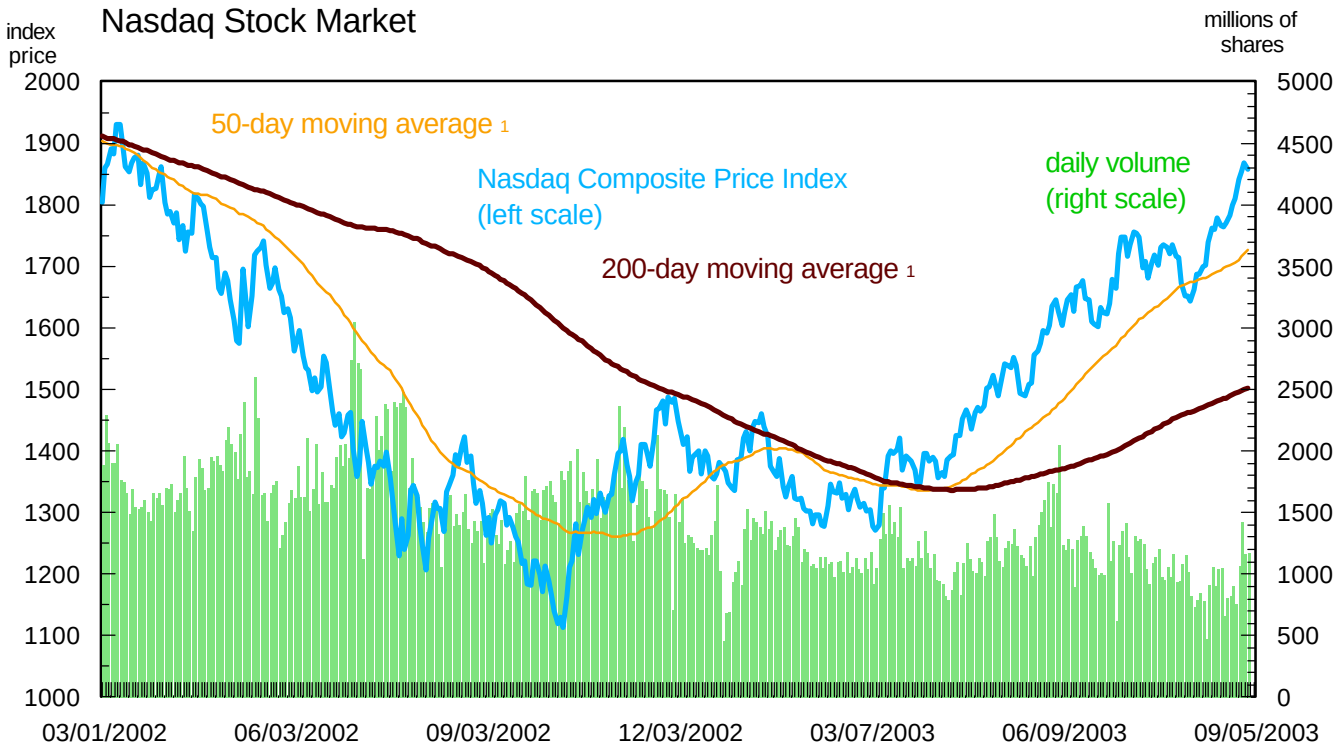
The Stock Market Report is available online (internally) at http://bosweb.bos.frb.org/bnkgrps/msmr/index.htm.

Please contact Matthew S. Rutledge for questions and comments at Matthew.S.Rutledge@bos.frb.org.

Figure 1

Daily Trends of Major U.S. Stock Exchanges

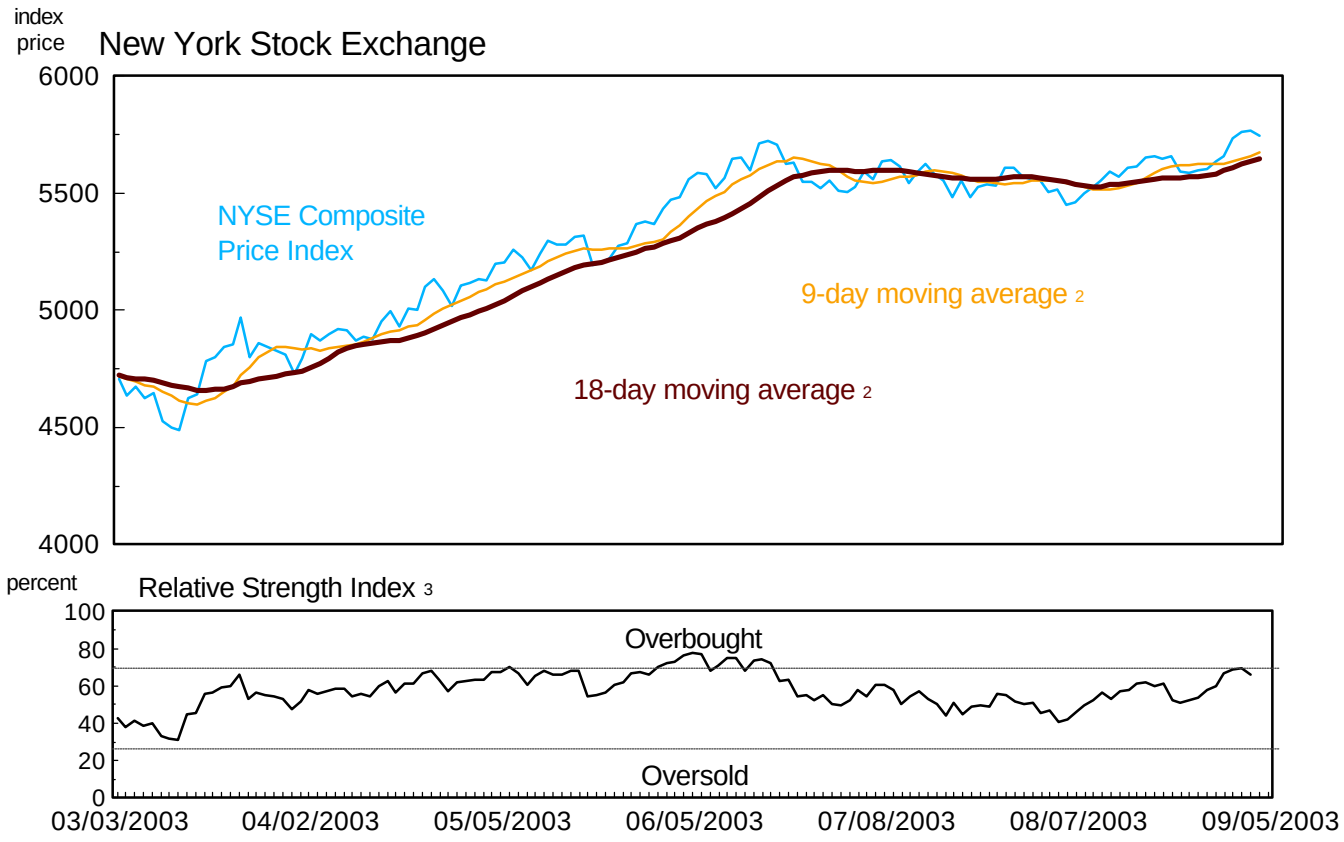


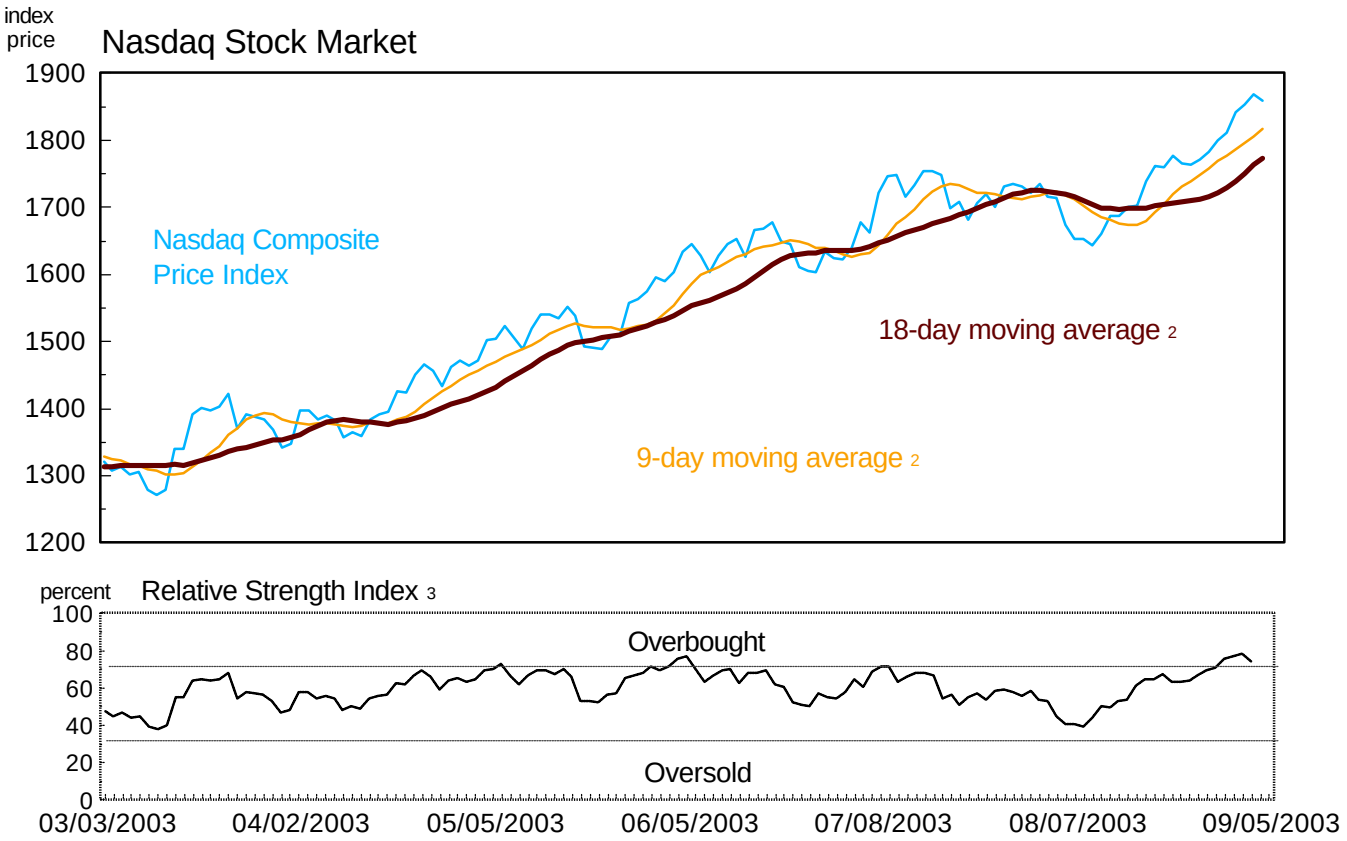


Source: Bloomberg, L.P.

Figure 2

Moving Averages and Relative Strength

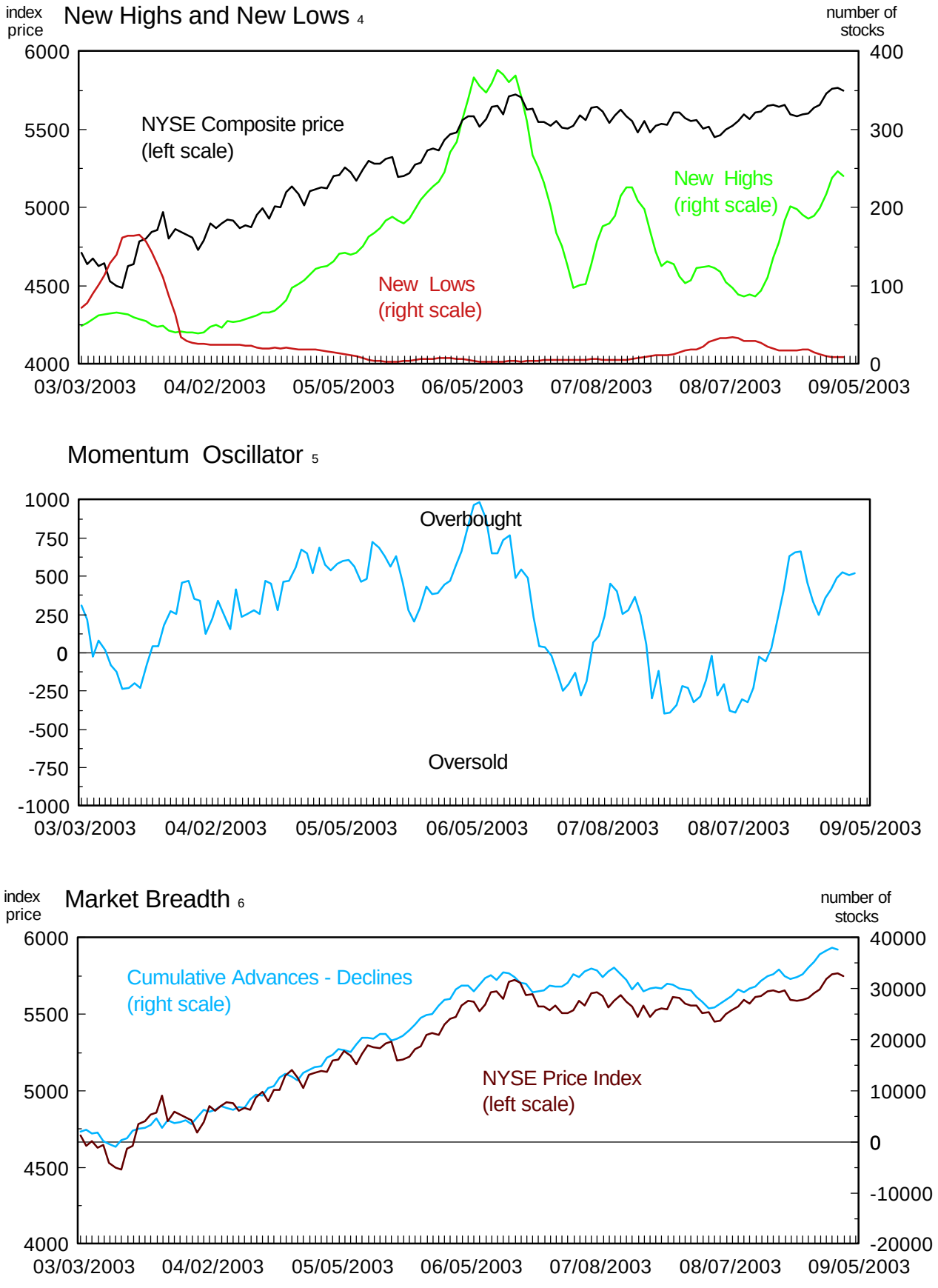




Source: Bloomberg, L.P.

Figure 3

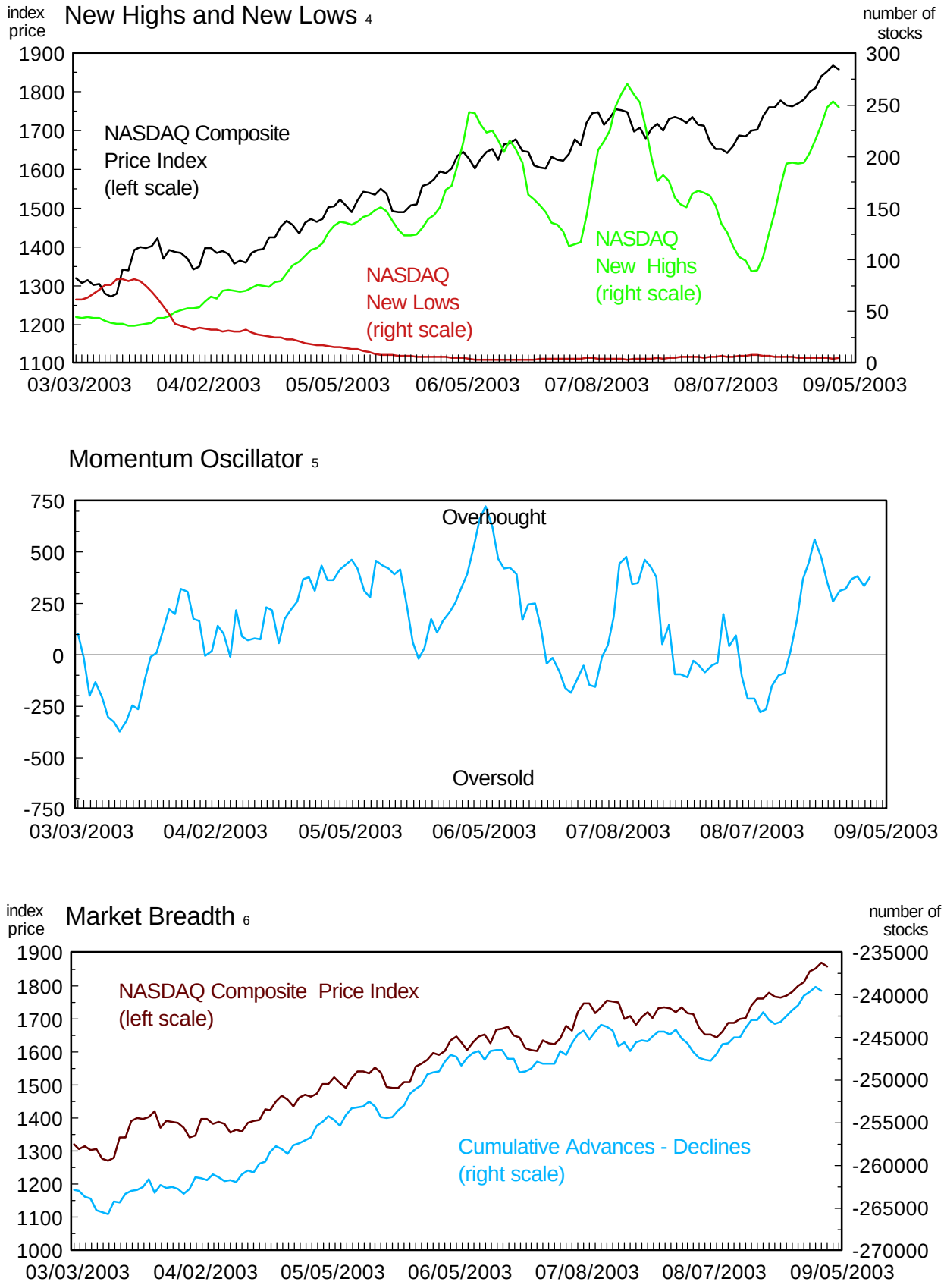
Index Breadth and Momentum Indicators - New York Stock Exchange



Source: Bloomberg, L.P.

Figure 4

Index Breadth and Momentum Indicators - Nasdaq Stock Market



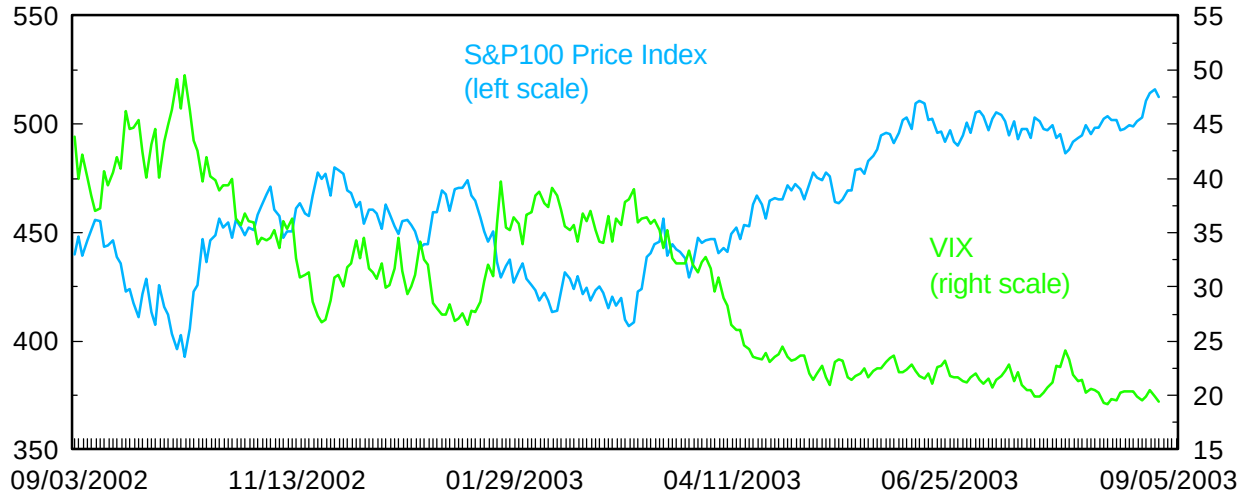
Source: Bloomberg, L.P.

Figure 5

Volatility [7]

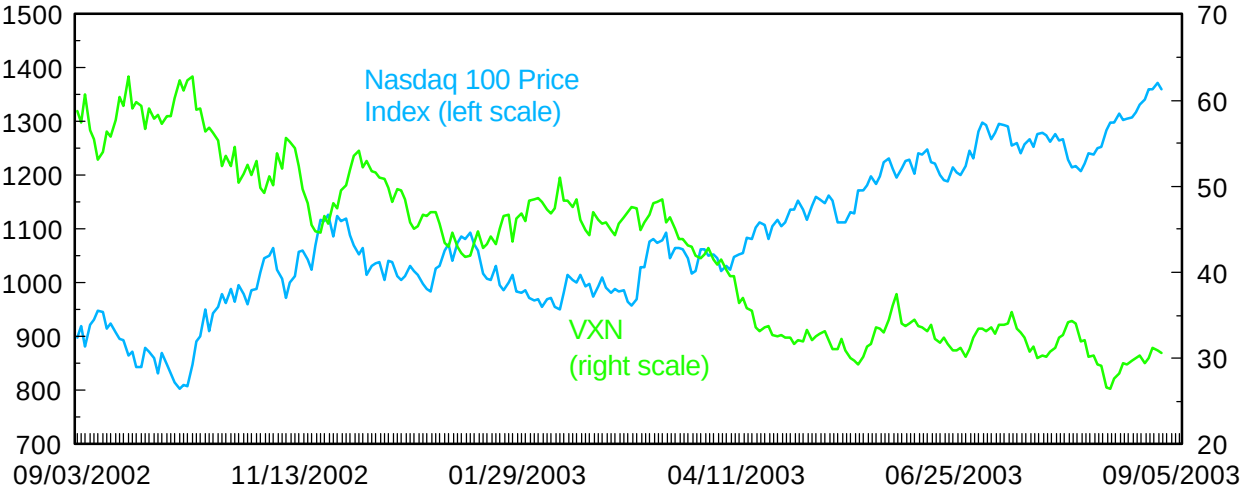
index price

S&P100 and CBOE's OEX Volatility Index [8]



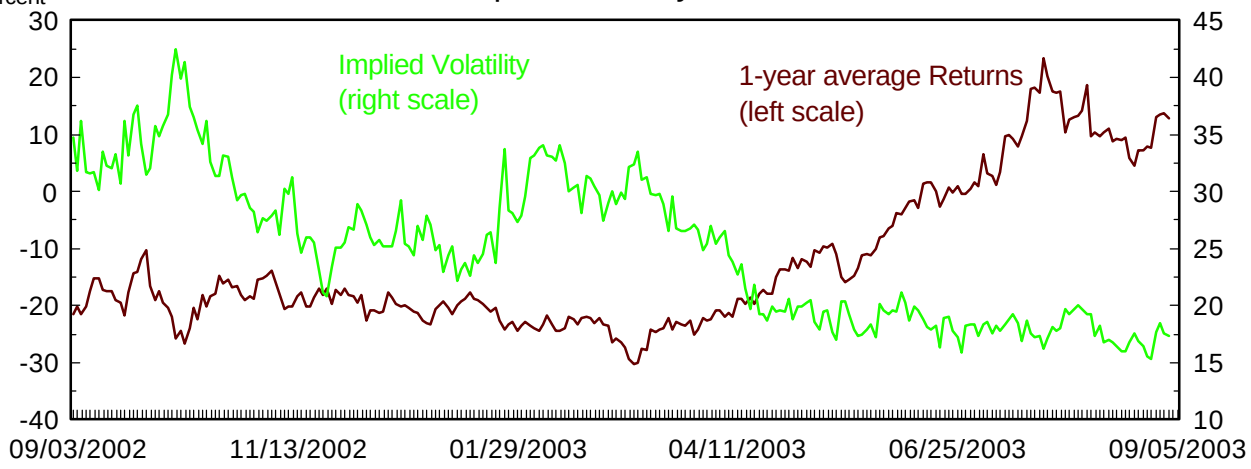
index price

Nasdaq 100 and CBOE's NDX Volatility Index [9]



percent

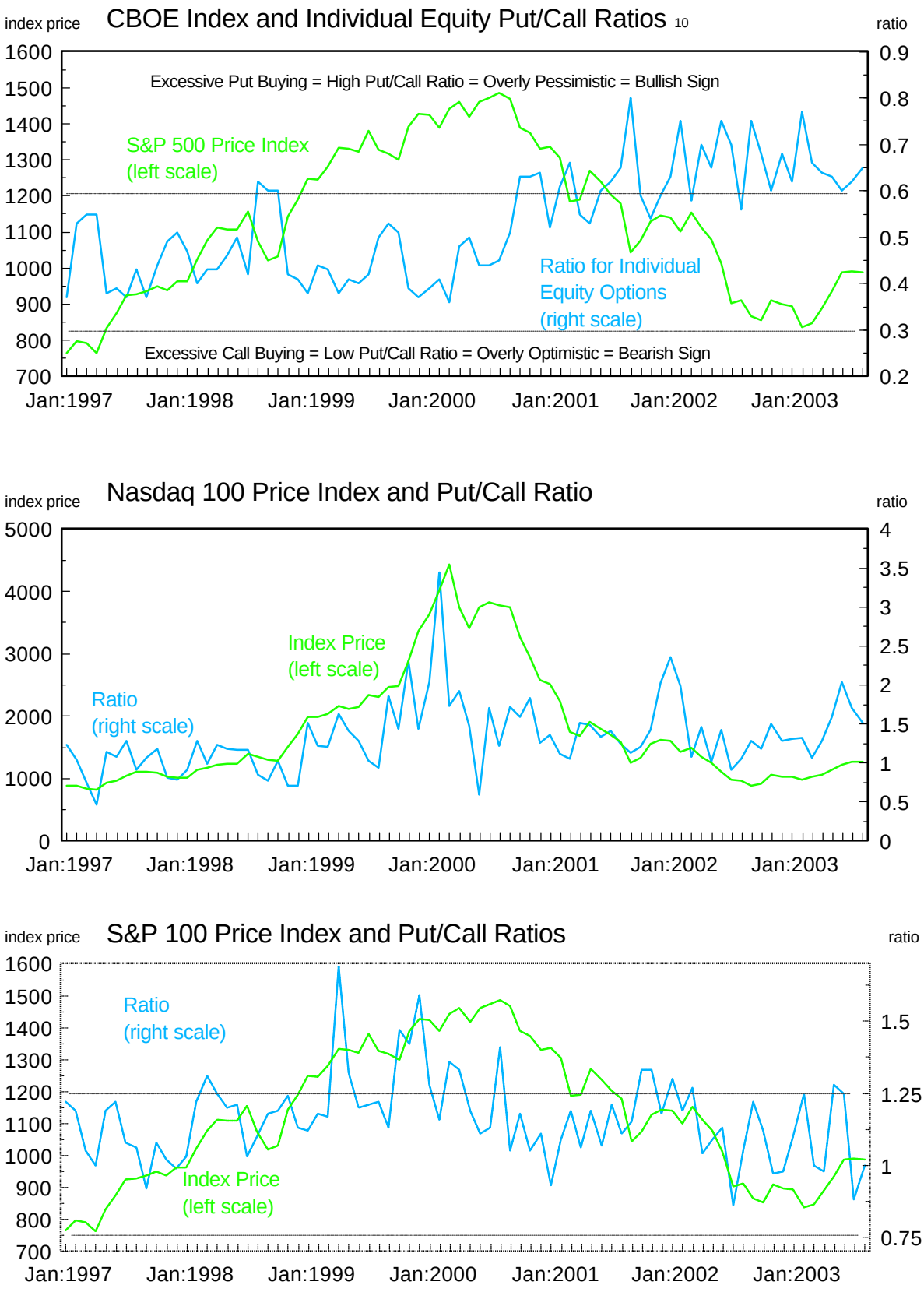
S&P500 Index Return and Implied Volatility



Source: Bloomberg, L.P.

Figure 6

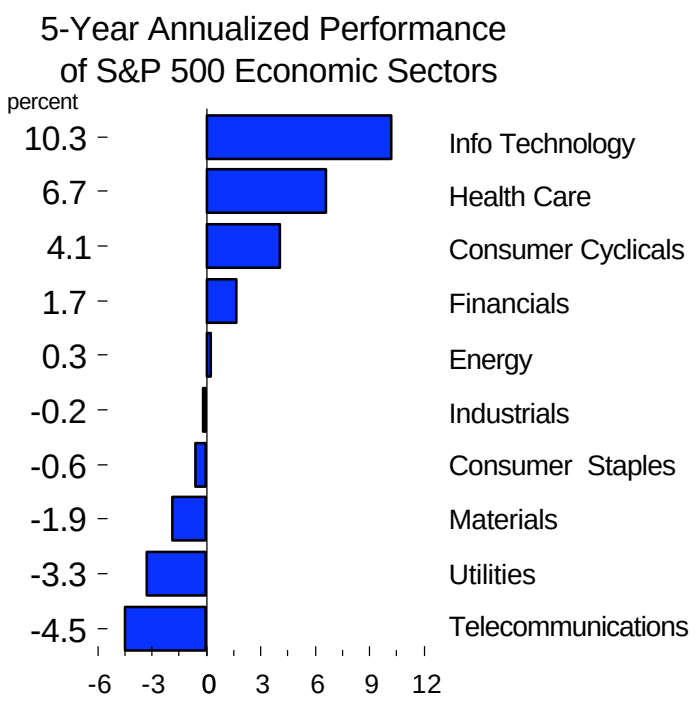
Put / Call Ratio

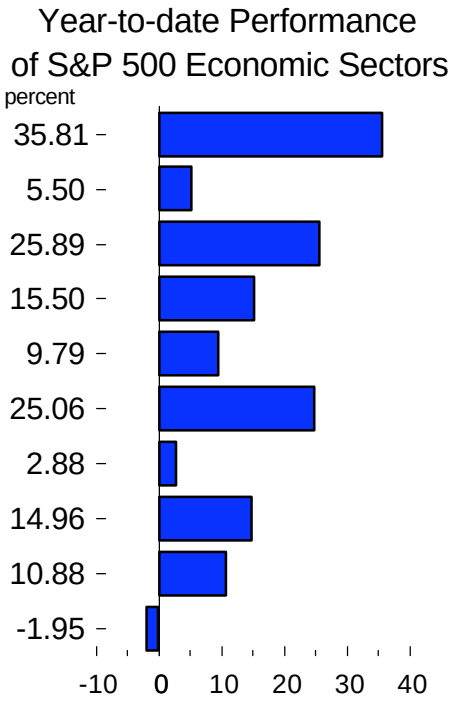


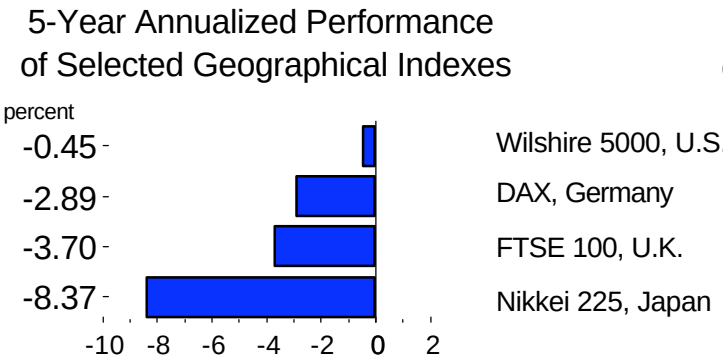
Source: Haver Analytics

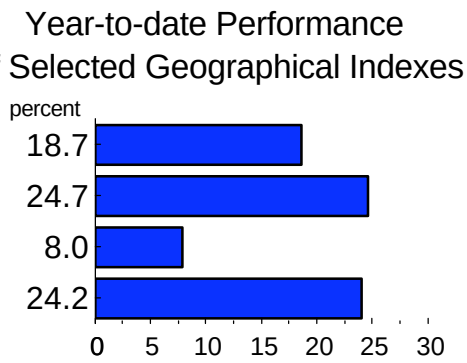
Figure 7

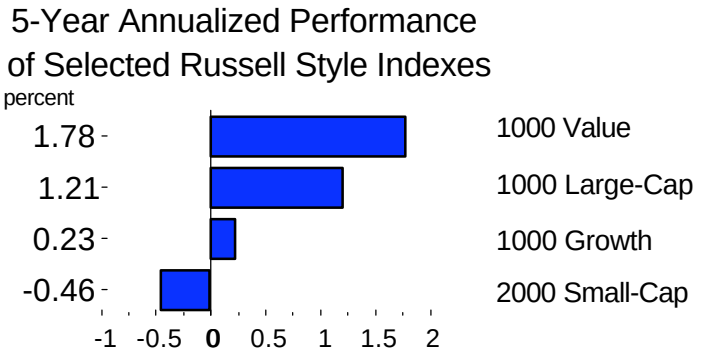
S&P 500 Economic Sectors - Index Returns











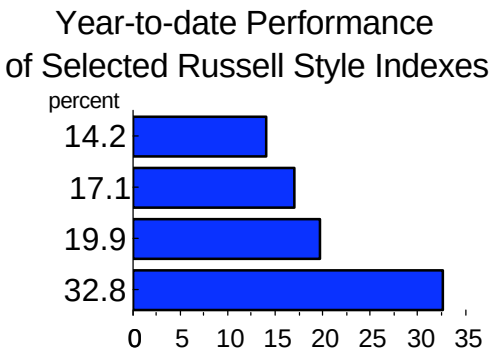
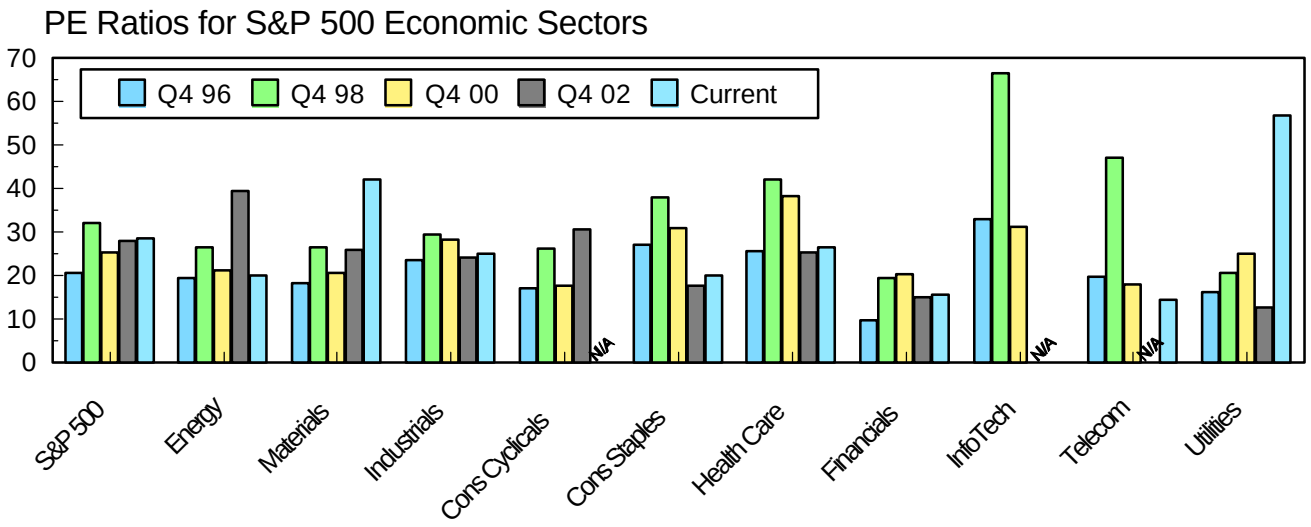
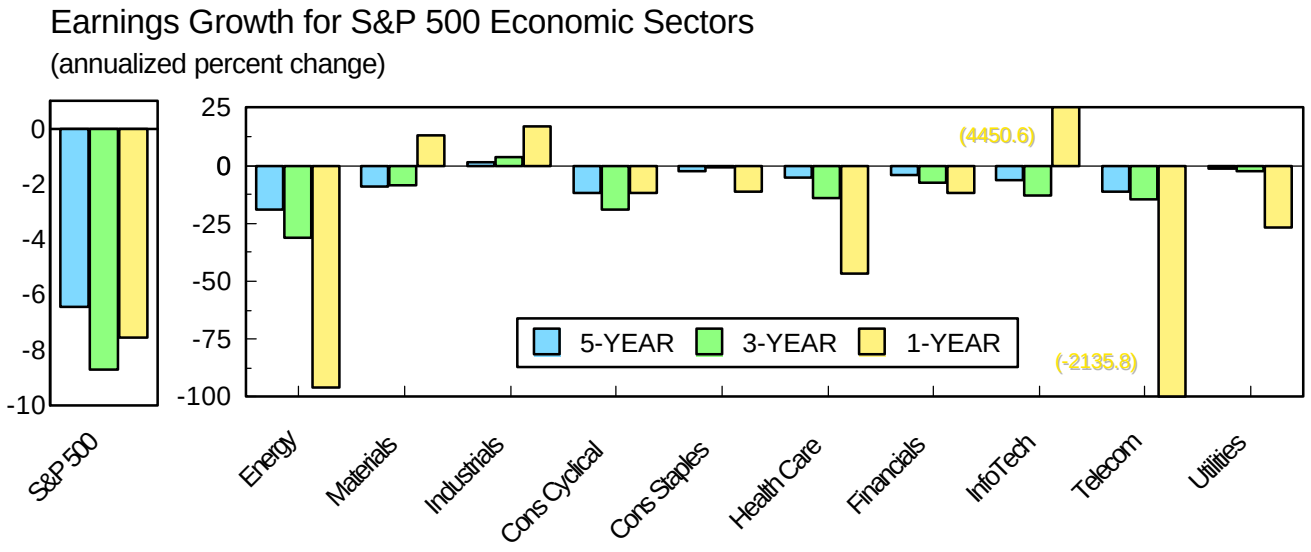
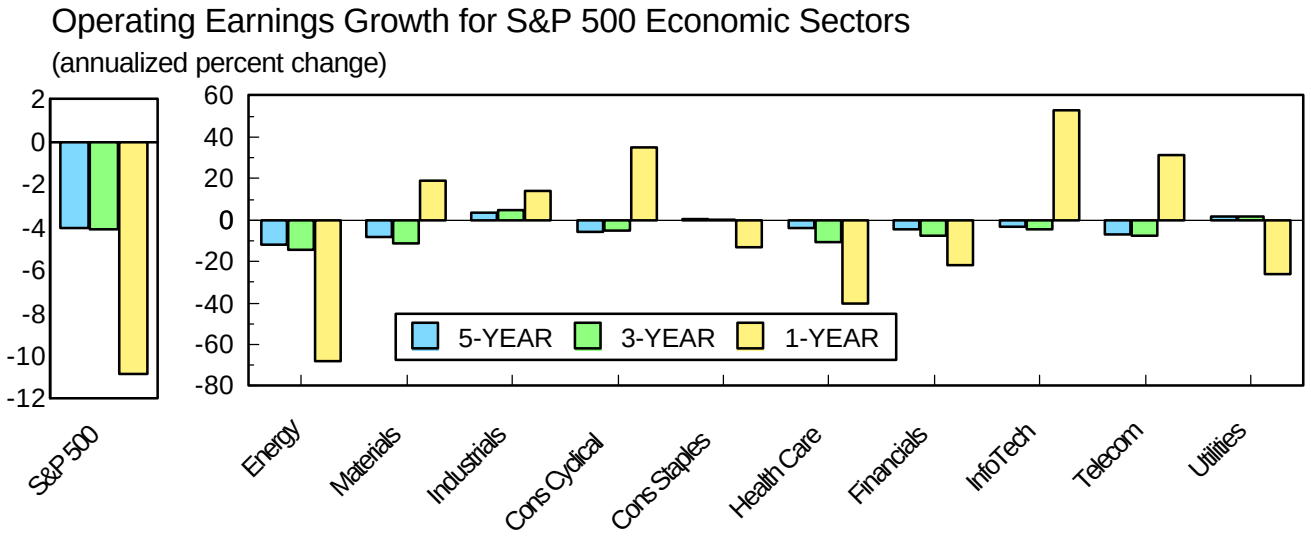


Figure 8

S&P 500 Economic Sectors - Earnings Growth







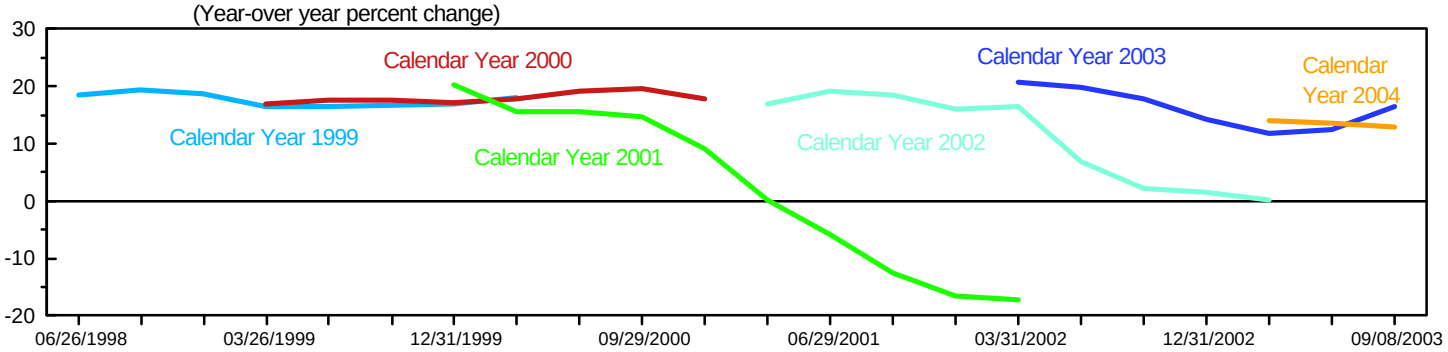
Source: Standard & Poor's Compustat Special Projects, Bloomberg, L.P.

Figure 9

S&P 500 Economic Sectors - Earnings Forecast

S&P 500 Operating Earnings

(Year-over year percent change)



Growth of Earnings - Quarterly Pattern

(4-quarter percent change)

Sector	Current Sep03Q	Jul-03 Sep03Q	Apr-03 Sep03Q	Jan-03 Sep03Q		Current Dec03Q	Jul-03 Dec03Q	Apr-03 Dec03Q		Current Mar04Q		Current Jun04Q
Basic Materials	2.0%	9.5%	25.9%	50.3%		44.4%	52.4%	69.0%		68.0%		46.6%
Capital Goods	-0.2%	3.9%	7.0%	11.1%		17.1%	18.4%	20.9%		15.8%		20.5%
Telecom	-1.6%	-4.6%	-7.3%	0.7%		3.5%	1.8%	8.0%		-3.7%		-4.7%
Consumer Cyclicals	1.7%	3.5%	6.6%	9.2%		11.0%	10.3%	11.7%		14.2%		14.9%
Consumer Staples	3.6%	1.6%	2.1%	8.6%		11.0%	13.5%	12.1%		16.3%		11.2%
Energy	31.2%	23.7%	17.3%	10.2%		5.7%	5.0%	2.7%		-27.9%		-12.0%
Financials	20.3%	16.5%	15.9%	17.7%		42.0%	39.6%	39.7%		15.6%		5.5%
Health Care	13.4%	15.6%	14.6%	15.0%		12.3%	14.7%	12.5%		13.8%		16.9%
Technology	78.2%	53.5%	53.6%	50.1%		29.5%	26.3%	27.3%		36.9%		34.6%
Transports	15.8%	22.7%	28.5%	65.7%		16.8%	20.4%	25.2%		29.1%		15.1%
Utilities	-6.7%	-0.9%	1.7%	10.8%		19.7%	27.0%	18.1%		-3.2%		8.2%
Total	14.5%	12.7%	13.2%	16.6%		21.3%	21.3%	21.5%		12.0%		11.4%
S&P ex Tech	10.2%	9.6%	10.1%	13.8%		20.3%	20.7%	20.8%		9.6%		9.1%
S&P ex Energy	13.4%	12.0%	12.9%	17.0%		22.6%	22.6%	23.0%		16.6%		13.5%

Growth of Earnings - Calendar Year

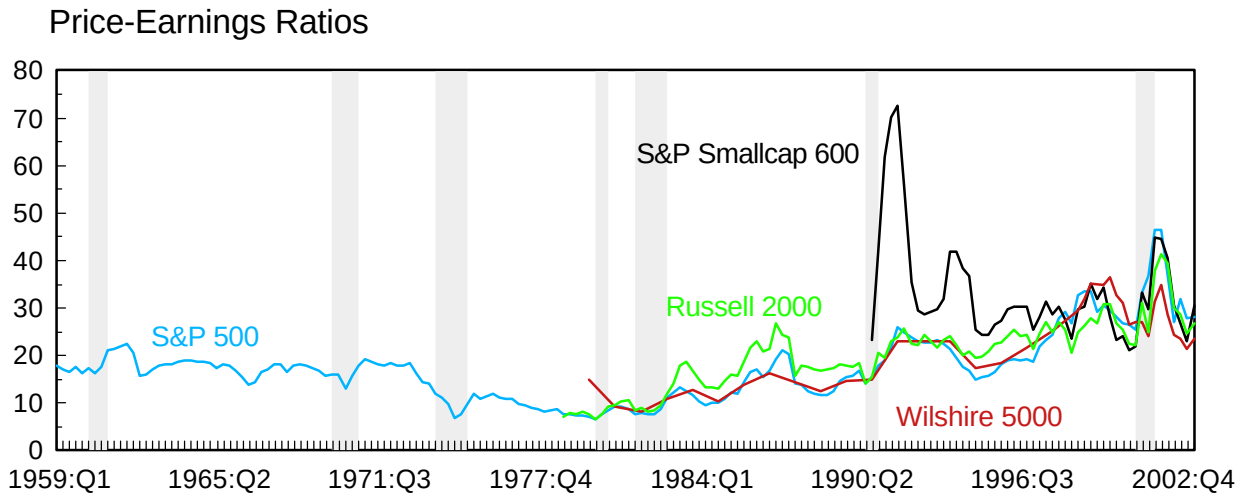
(4-quarter percent change)

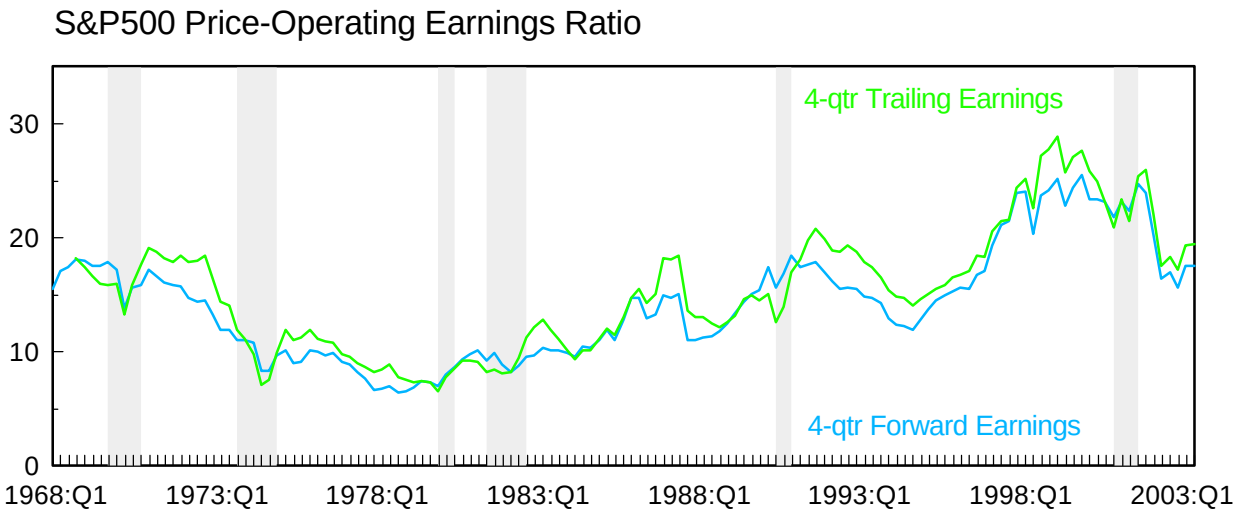
Sector	Current 03CY	Apr-03 03CY	Jan-03 03CY	Oct-02 03CY	Jul-02 03CY	Apr-02 03CY		Current 04CY	Apr-03 04CY
Basic Materials	7.7%	19.7%	43.9%	57.0%	64.7%	68.6%		53.6%	49.6%
Capital Goods	-1.2%	2.9%	7.8%	12.3%	15.5%	13.4%		15.9%	14.1%
Communications	1.5%	-4.6%	-2.6%	7.8%	9.8%	11.7%		1.1%	6.6%
Consumer Cyclicals	6.7%	6.3%	11.3%	16.2%	19.7%	23.1%		15.1%	15.7%
Consumer Staples	6.4%	4.6%	10.6%	12.7%	14.5%	15.5%		13.2%	9.6%
Energy	49.4%	33.9%	20.1%	23.3%	19.8%	24.8%		-14.4%	-1.2%
Financials	21.4%	17.7%	14.9%	15.9%	14.7%	14.2%		11.1%	12.4%
Health Care	10.6%	10.5%	12.2%	14.2%	15.1%	14.6%		15.3%	15.9%
Technology	77.9%	27.7%	36.8%	40.2%	52.5%	58.0%		30.4%	30.3%
Transports	8.2%	14.3%	74.7%	89.6%	156.8%	152.2%		34.8%	66.9%
Utilities	-10.1%	-9.7%	-2.5%	3.7%	8.1%	9.1%		5.6%	4.7%
Total	16.6%	11.8%	14.2%	17.8%	20.0%	20.7%		13.0%	14.5%

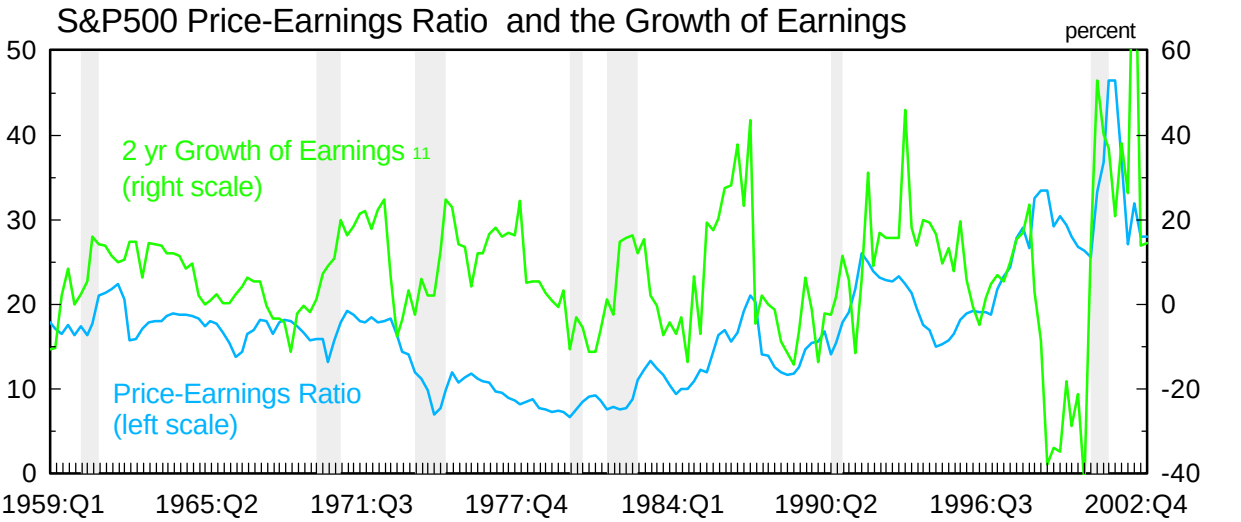
Source: Thomson Financial/First Call

Figure 10

PE Ratios and the Growth of Earnings







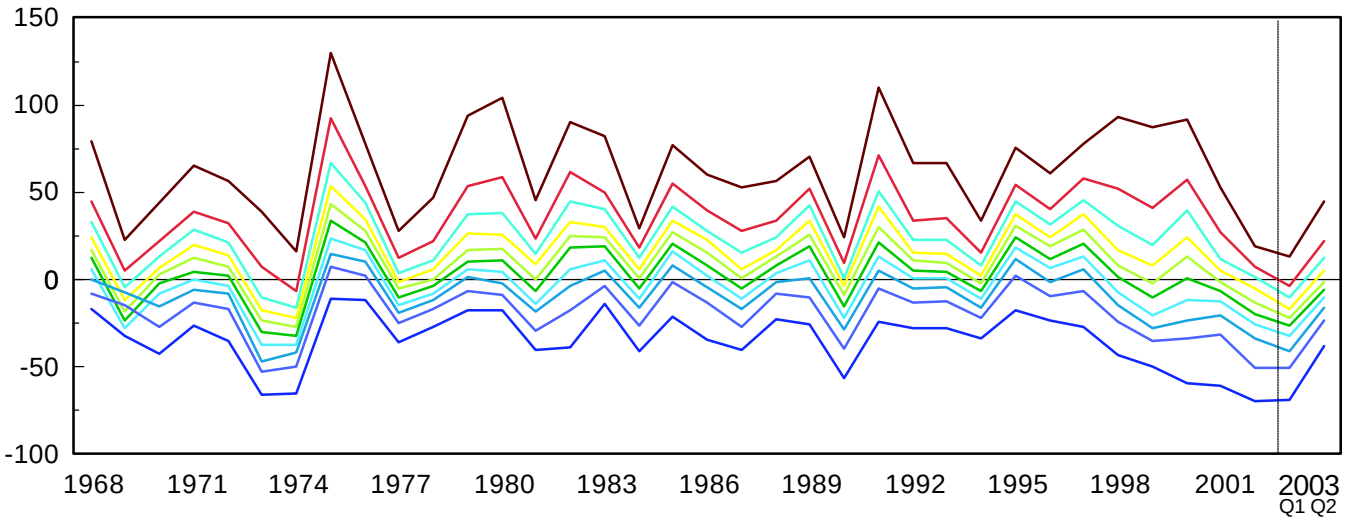
Source: Thomson Financial/First Call, Global Exchange (formerly DRI), Bloomberg L.P., Frank Russell Company

Figure 11

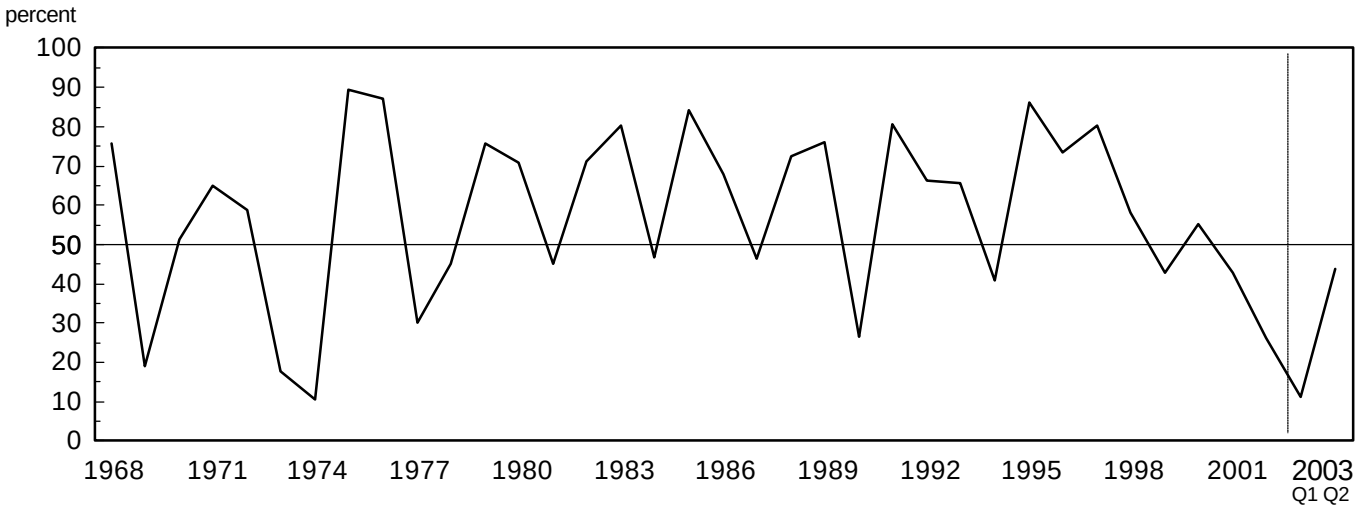
Breadth of the S&P 500

One-Year Price Changes for Companies

(median percentage change for each decile, ranked by performance)

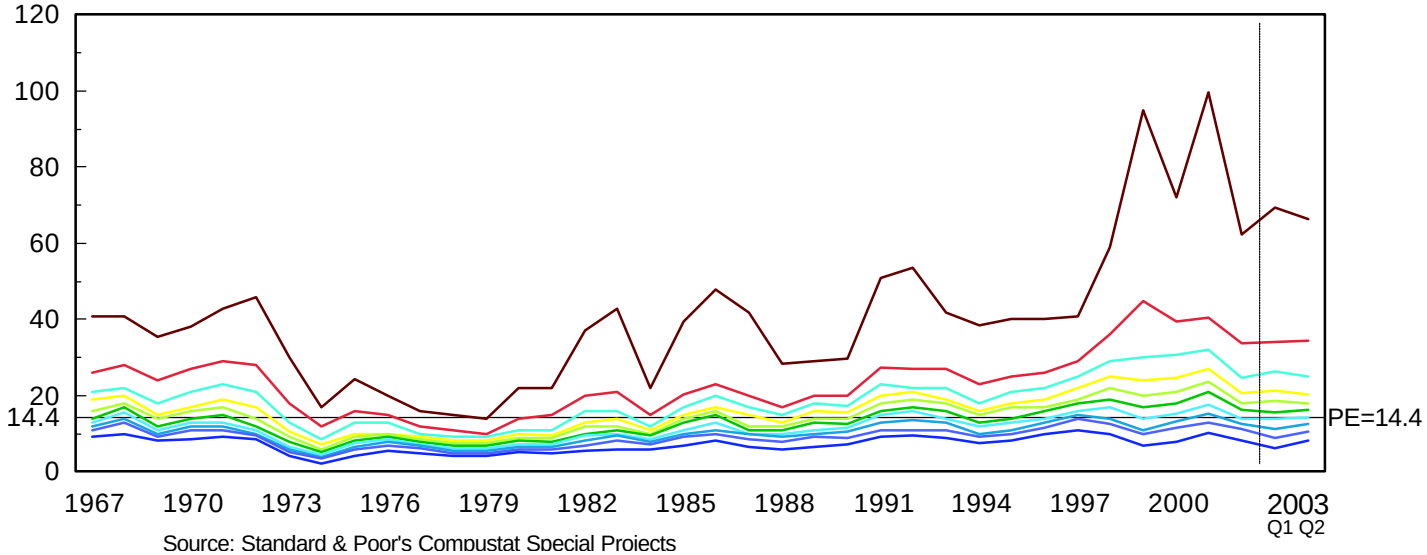


Proportion of the S&P 500 Stocks Whose Price Increased Over One Year



Price-Operating Earnings Ratios for Companies

(median ratio for each decile, ranked by PE ratio)

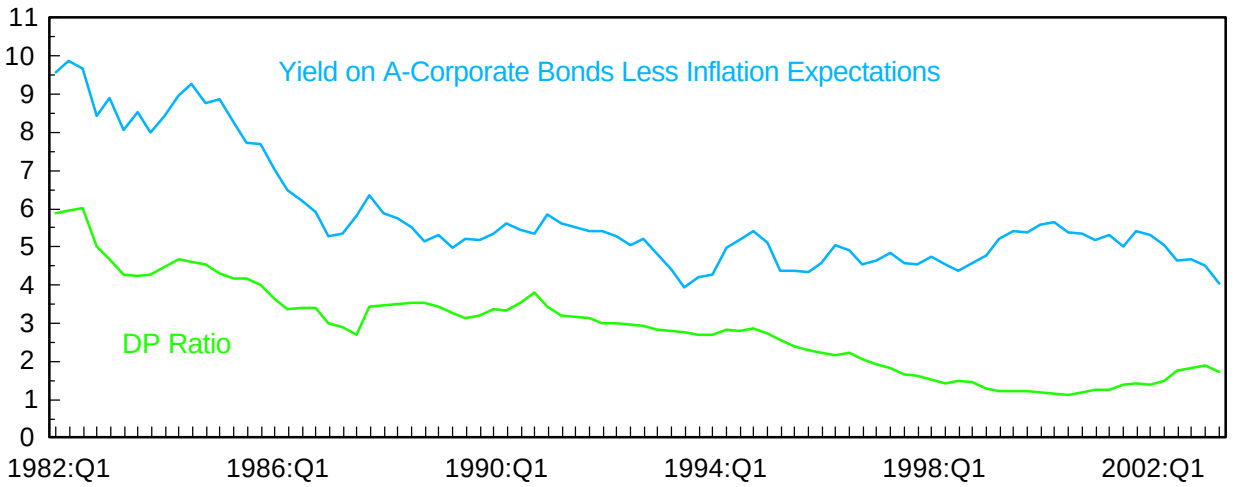


Source: Standard & Poor's Compustat Special Projects

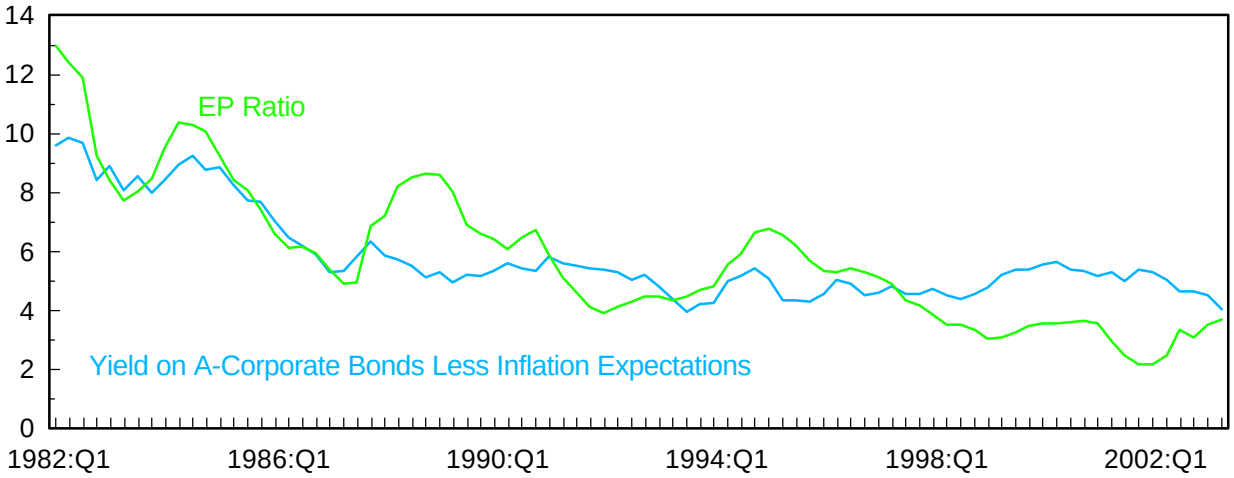
Figure 12

Comparative Returns

Dividend-Price Ratio [12] for the S&P 500 and the Real Corporate Bond Rate [13]

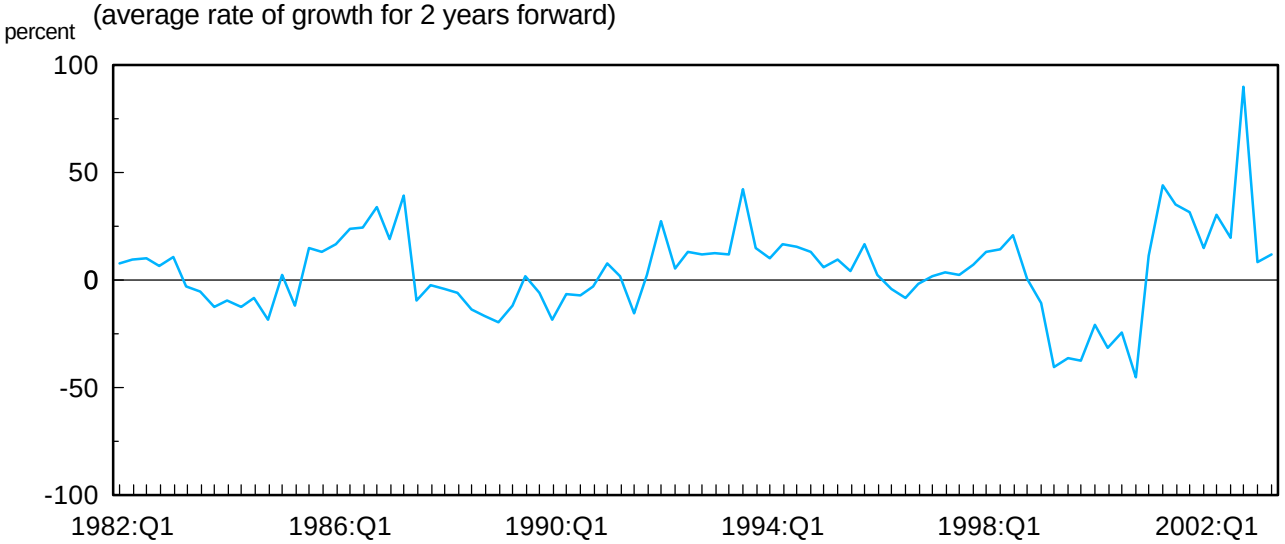


Earnings-Price Ratio [12] for the S&P 500 and the Real Corporate Bond Rate



Growth of Real Earnings for S&P 500

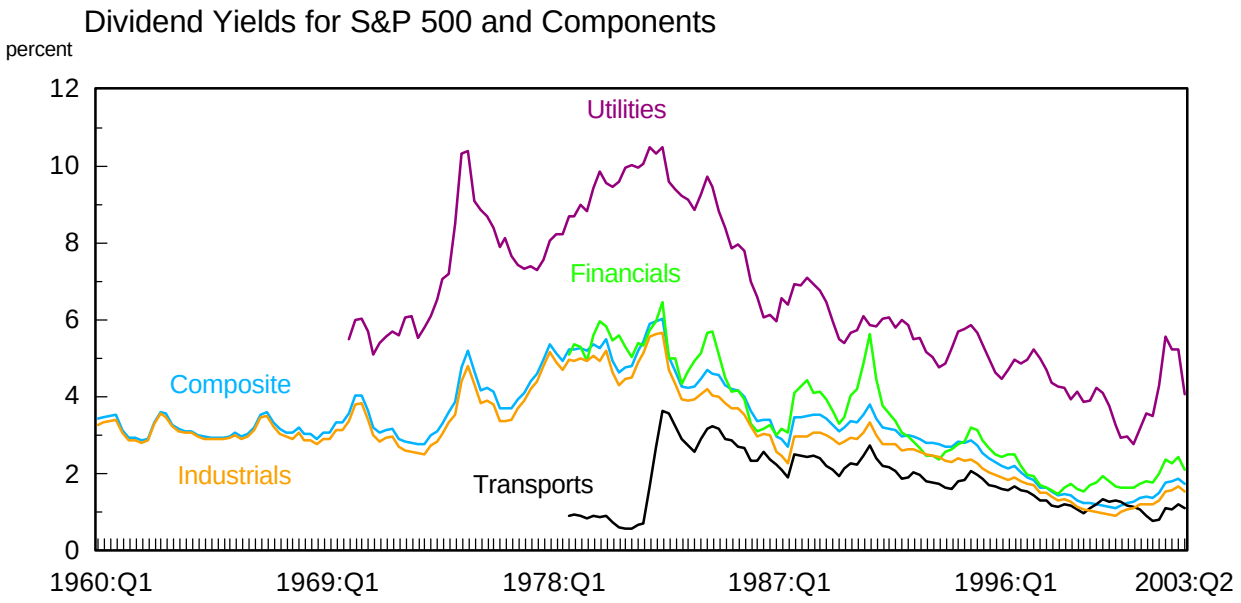
(average rate of growth for 2 years forward)

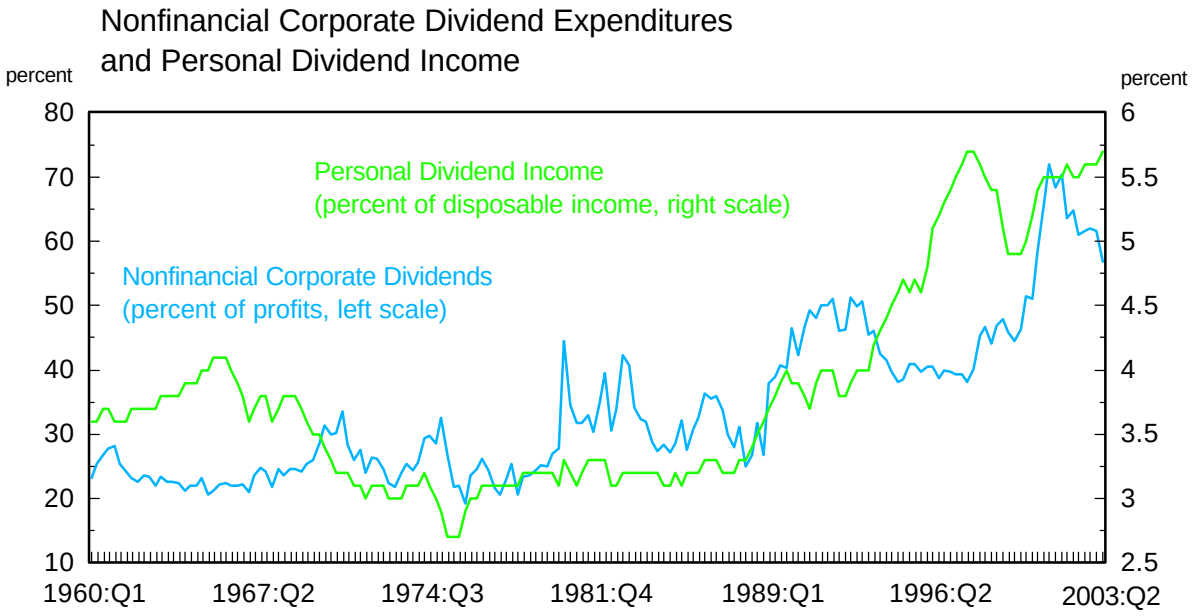


Source: Haver Analytics, FAME

Figure 13

Dividend Yields

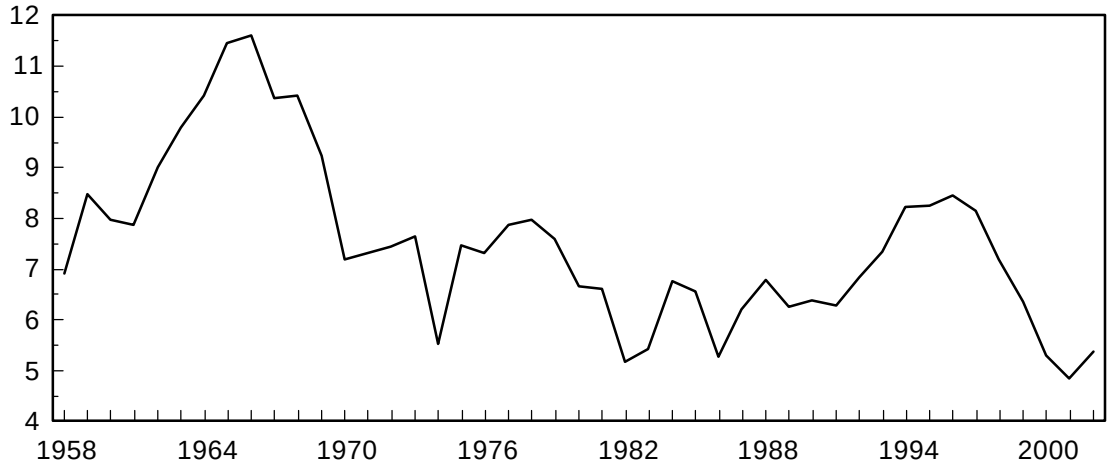




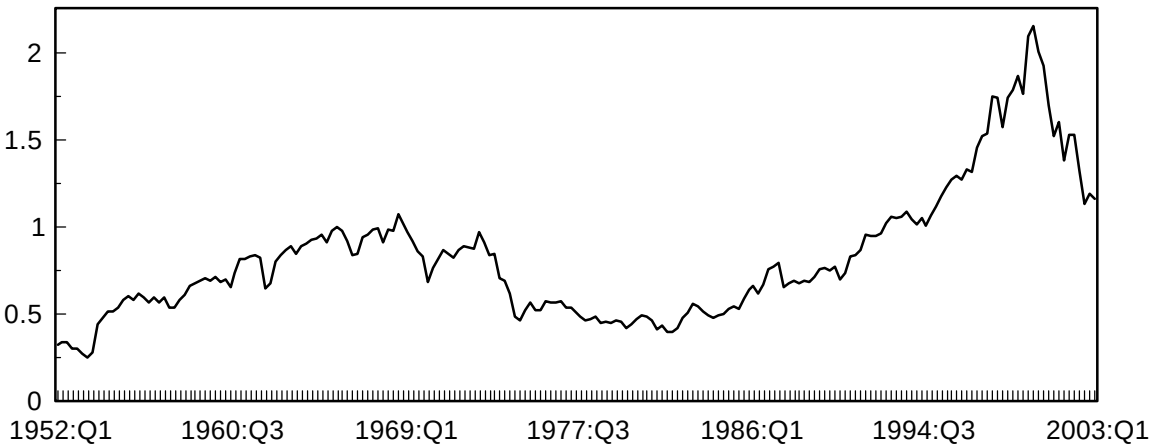
Source: Haver Analytics

Figure 14
Economic Measures of Equity Valuation

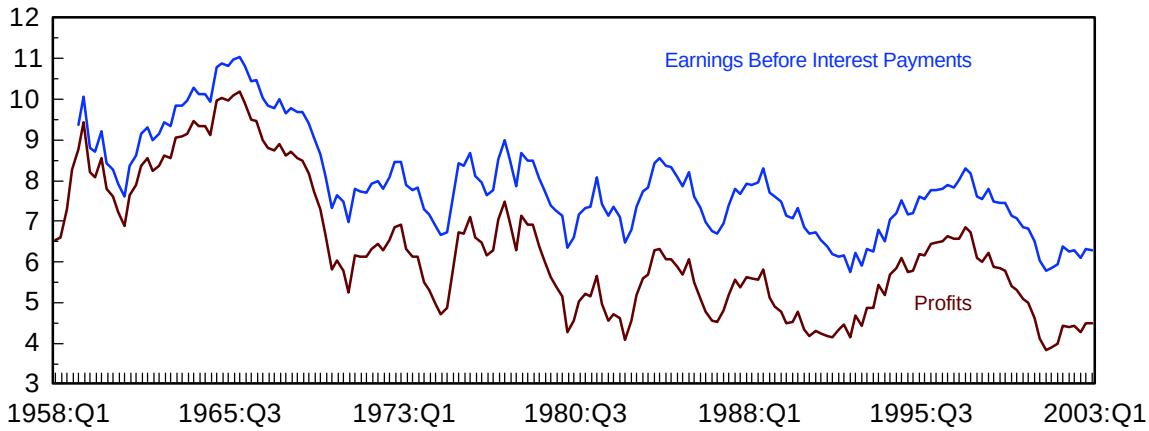
Real Rate of Return on Nonfinancial Corporate Equity
percent (from National Income and Flow of Funds Accounts)



Tobin's q [14]



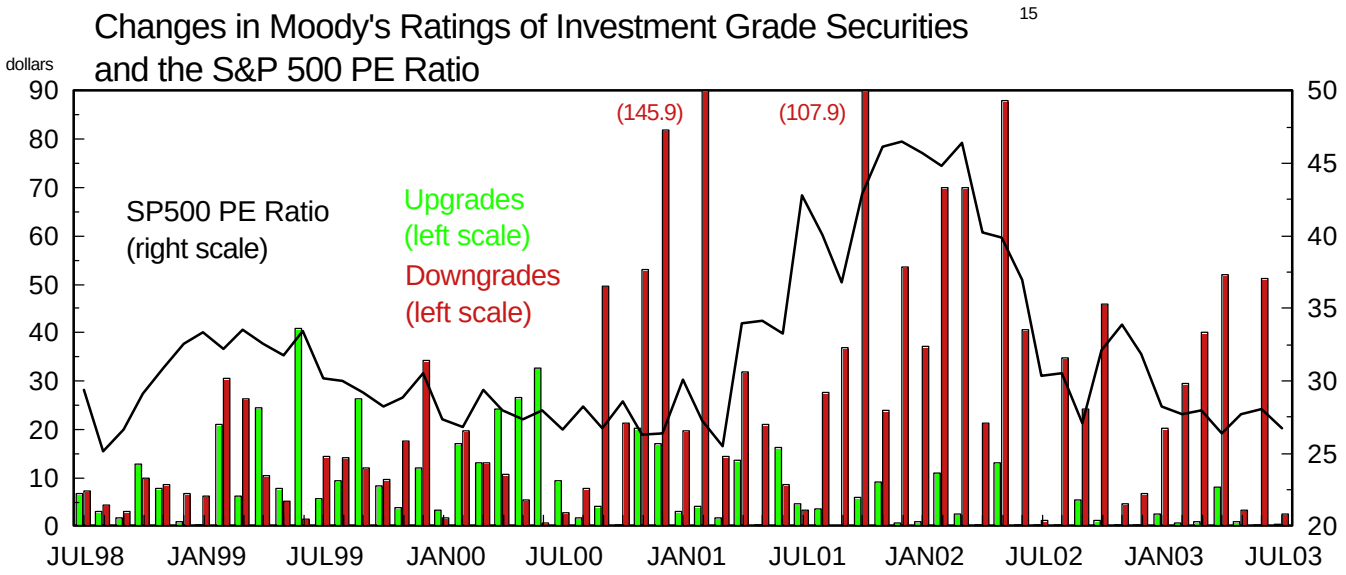
Profits of Nonfinancial Corporations
(percent of GDP)

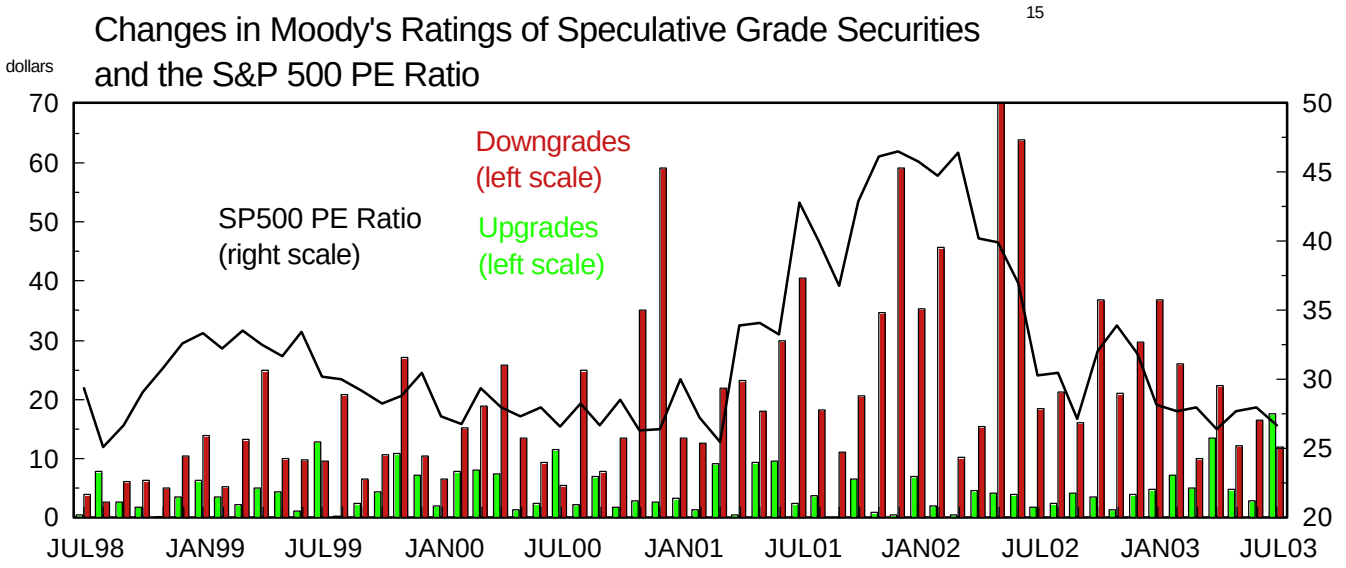


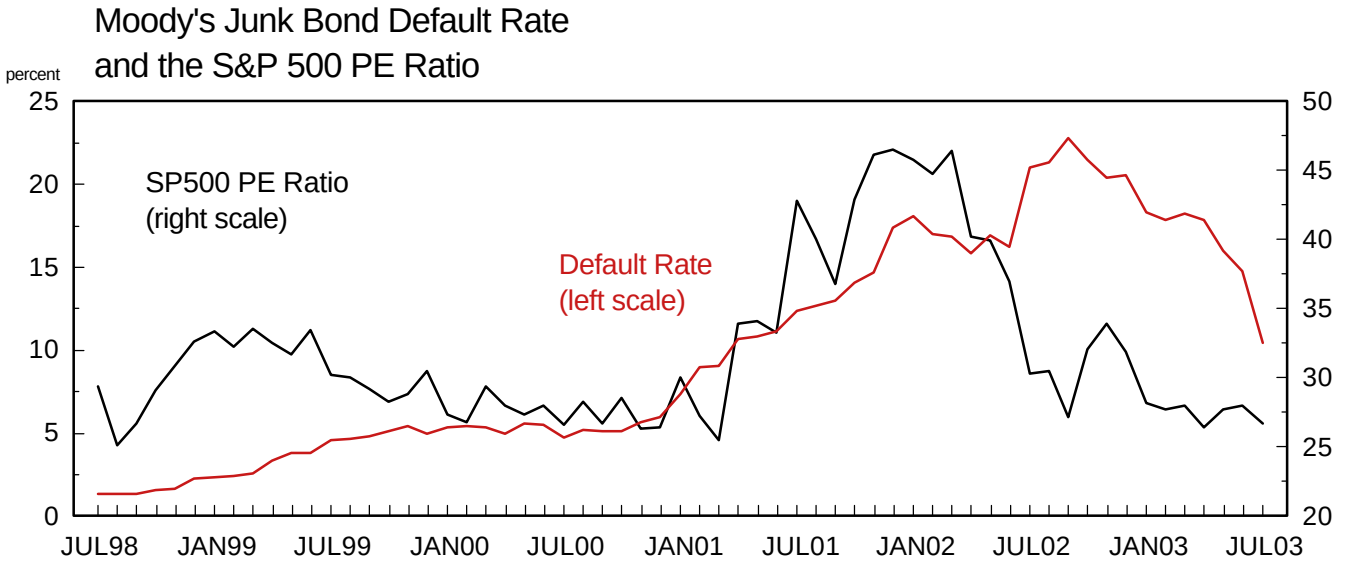
Source: Haver Analytics, NYSE Fact Book, Flow of Funds Accounts

Figure 15

Ratings and Default Rates

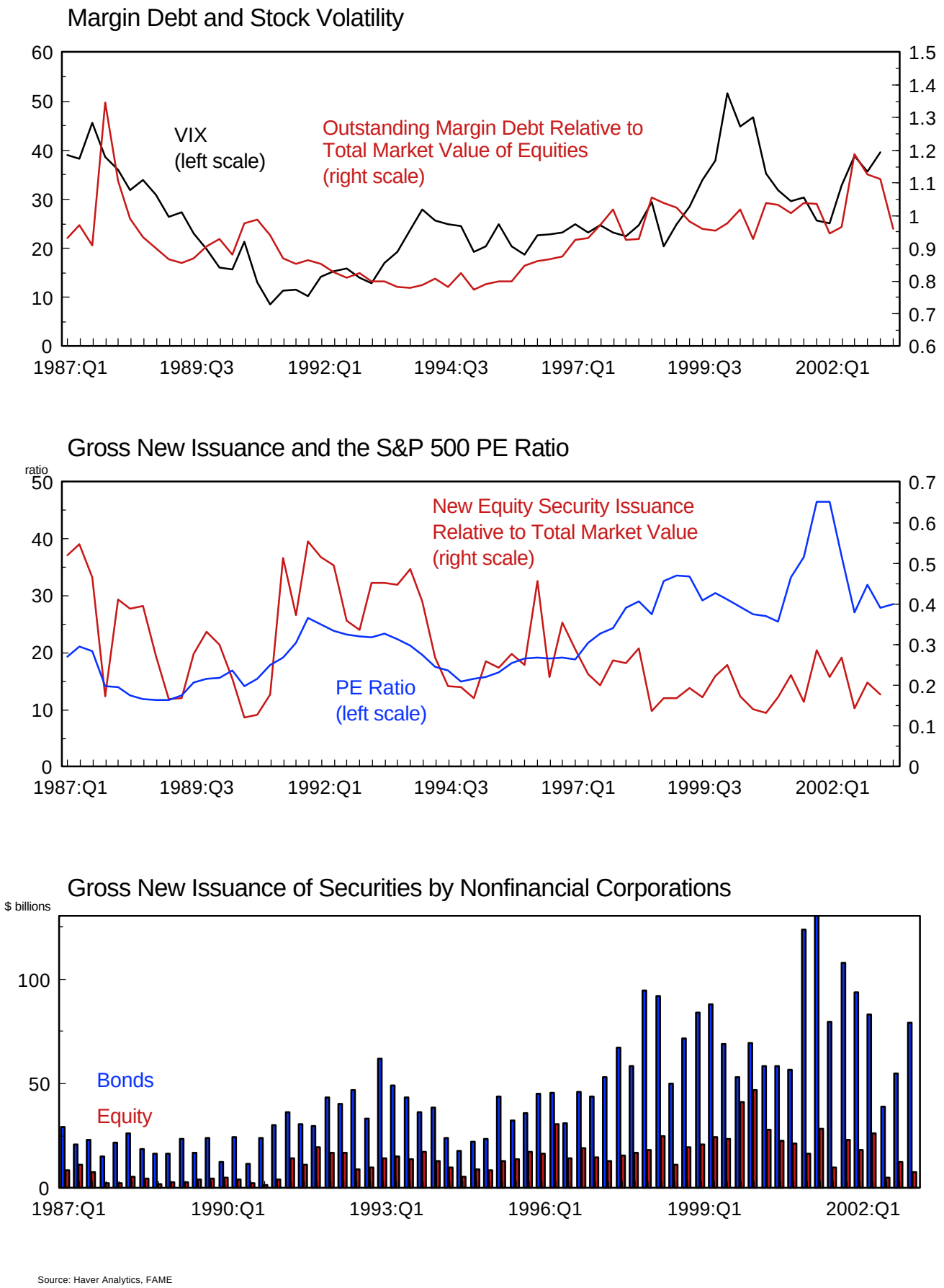






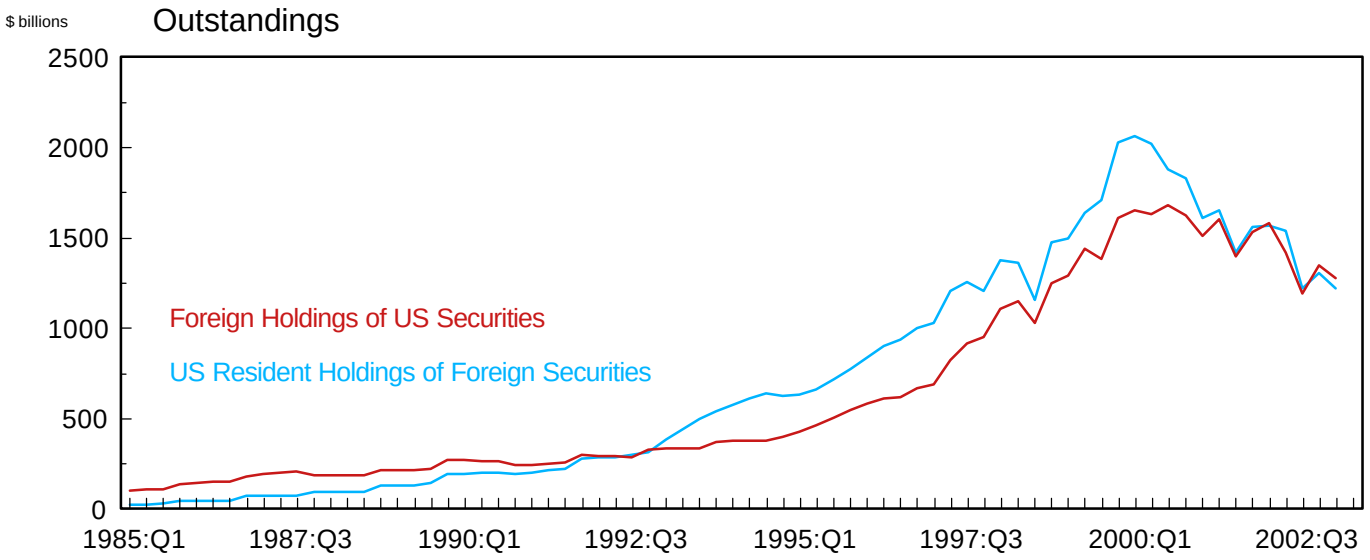
Source: Credqual database, Board of Governors of the Federal Reserve System

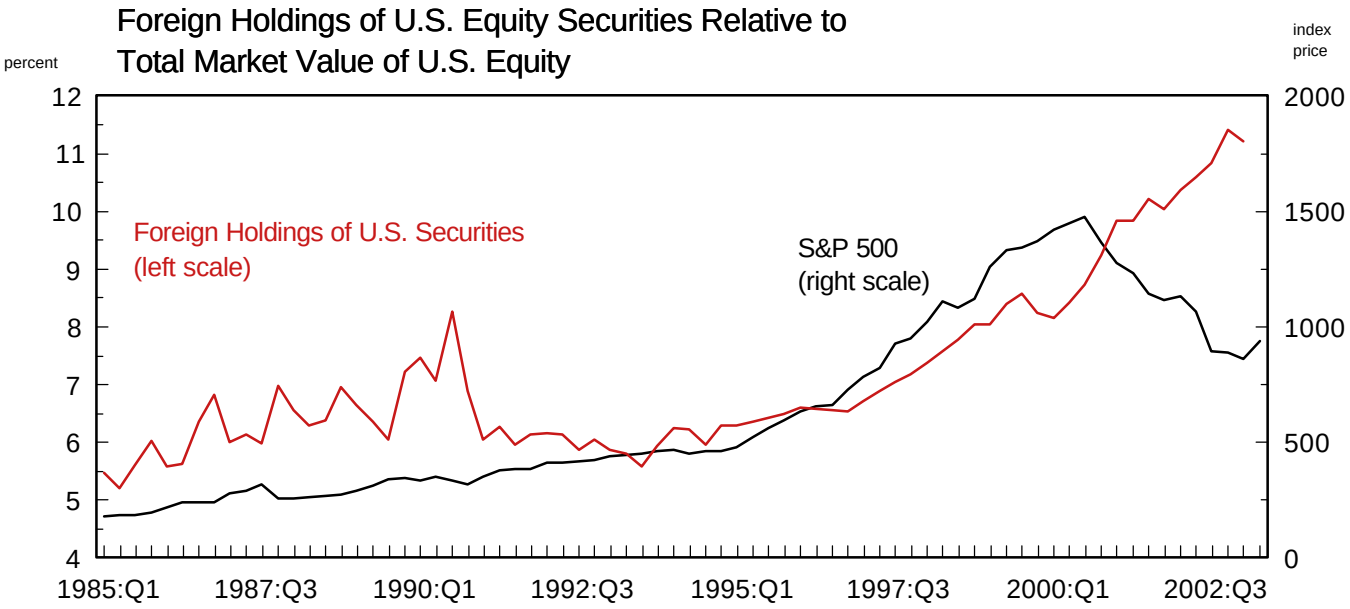
Figure 16
Margin Debt and Expected Returns

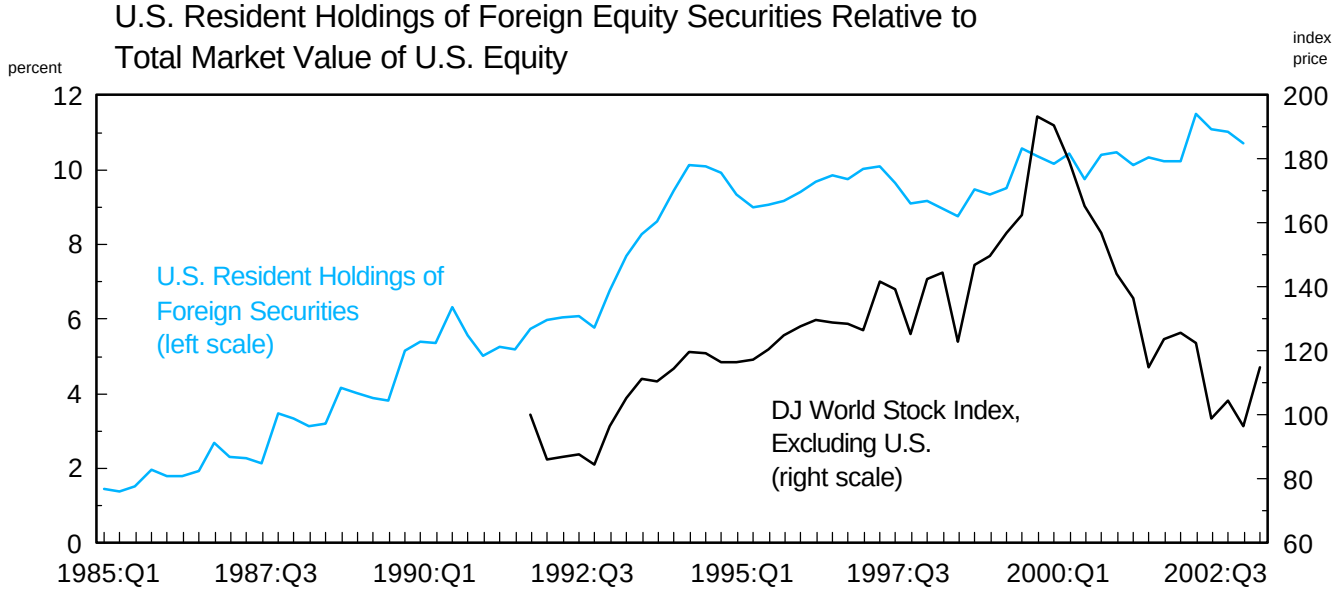


Source: Haver Analytics, FAME

Figure 17
Foreign and Domestic Holdings



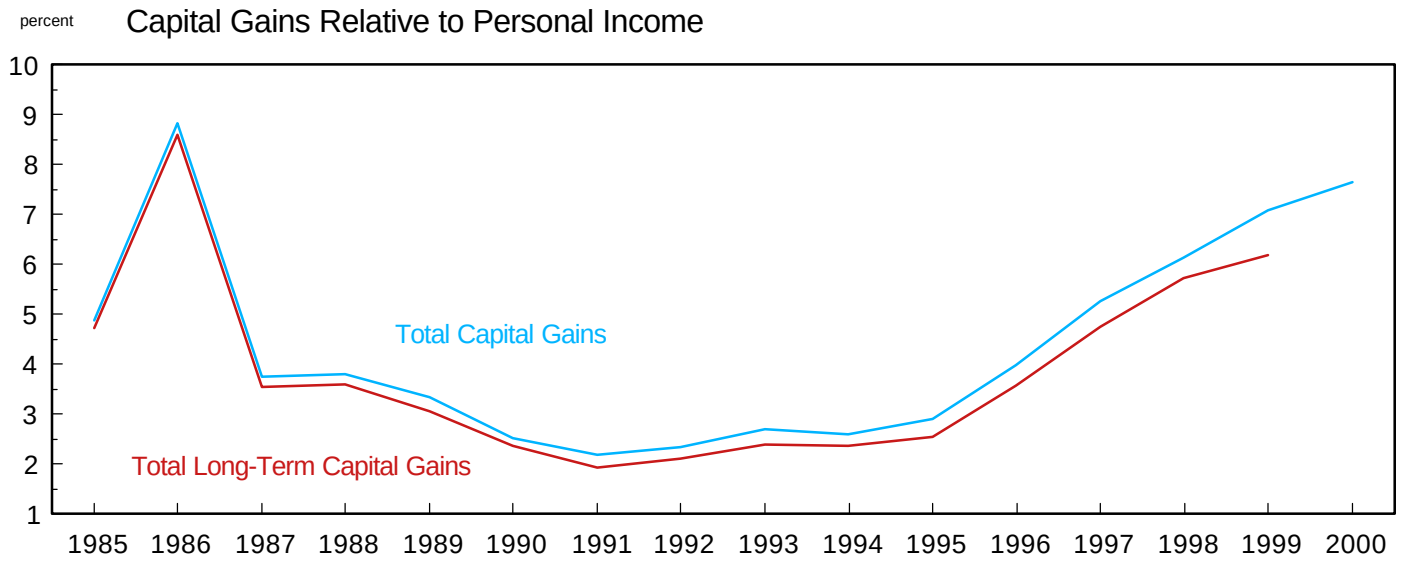


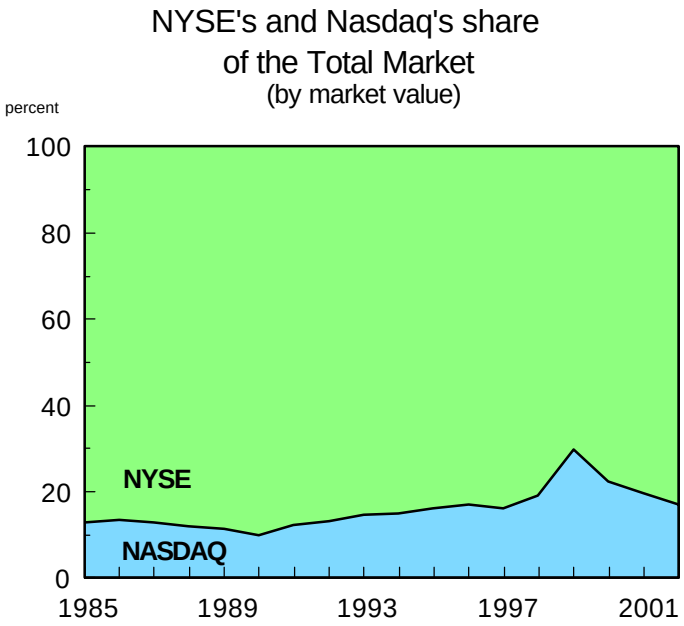


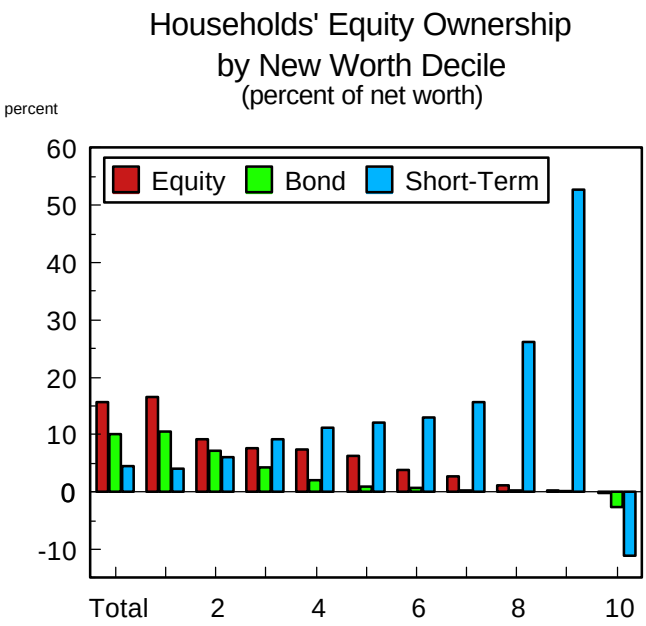
Source: Haver Analytics, FAME, Flow of Funds Accounts of the United States

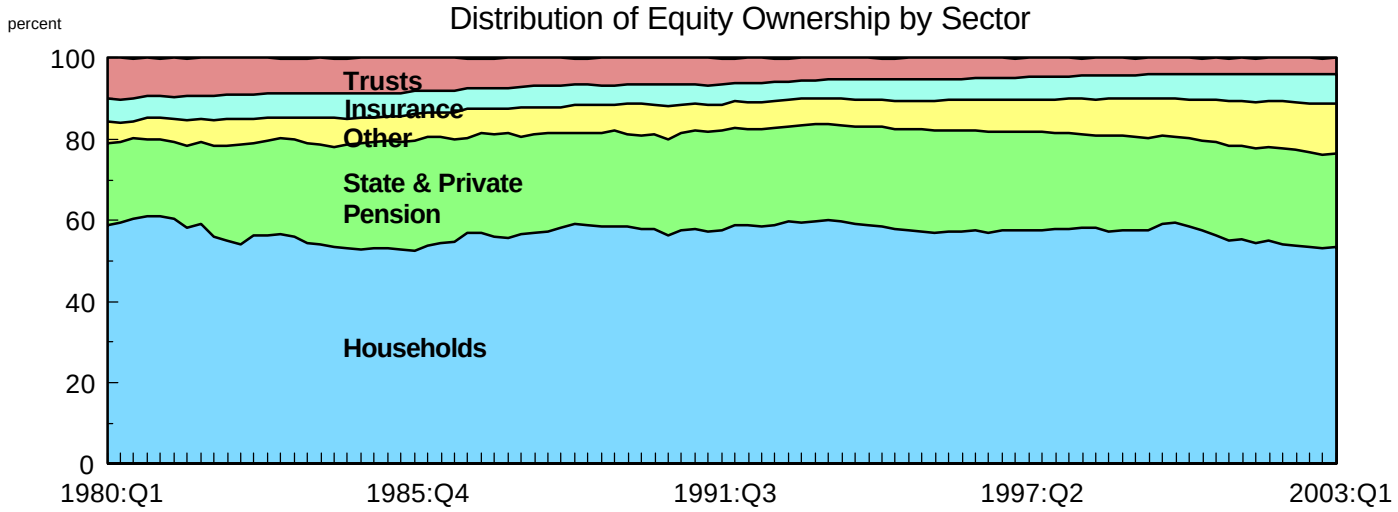
Figure 18

Demographics









Source: Haver Analytics, Survey of Consumer Finance, Flow of Funds Accounts

Endnotes

1. 50-Day, 200-Day Moving Average: Moving averages represent the average price investors paid for securities over a historical period, and present a smoothed picture of the price trends, eliminating the volatile daily movement. Because these lines offer a historical consensus entry point, chartists look to moving average trend lines of index prices to define levels of support or resistance in the market. When a chart trend is predominantly sideways (Figure 1, top chart), moving averages and the underlying series frequently cross, but during a time of prolonged increase or decrease (bottom chart) the daily prices of a security typically are above or below the trailing average. Moving above or below the 50-day moving average is sometimes associated with rallies or corrections. Similarly, prolonged movements, such as bull and bear markets can be represented by securities remaining above or below their 200-day moving average for prolonged periods of time.

2. 9-Day, 18-Day Moving Averages: The 9-day and 18-day moving averages are often used together to provide buy and sell signals. Buy signals are indicated by the 9-day average crossing above the 18-day when both are in an uptrend. The reverse, the 9-day crossing below the 18-day while both moving averages are declining is a sign to sell. However, this simple can often be misleading because of its dependence on trending markets and inability to capture quick market turns.

3. Relative Strength Index: This (RSI) momentum oscillator measures the velocity of directional price movements. When prices move rapidly upward they may indicate an overbought condition, generally assumed to occur above 70 percent. Oversold conditions arise when prices drop quickly producing RSI readings below 30 percent.

4. New Highs, New Lows: A straightforward breadth indicator, this is the 10-day moving average of the number of stocks on a given index or exchange making new 52-week highs or lows each day. This indicator also demonstrates divergence. If an index makes a new low, but the number of stocks in the index making new lows declines, there is positive divergence, and in this case a lack of downside conviction. Conversely, In rising markets if an index makes a new high but the number of individual stocks in that index making new highs does not increase this suggests a false rally.

5. Overbought / Oversold Oscillator: This momentum indicator is calculated by taking the 10-day moving average of the difference between the number of advancing and declining issues for a given index. The goal of the indicator is to show whether an index is gaining or losing momentum, so the size of the moves are more important than the level of the current reading. This is first affected by how the oscillator changes each day, by dropping a value ten days ago, and adding one today. If the advance decline line read minus 300 ten days ago, and minus 100 today, even though the market is down again, the oscillator will rise by 200 because of the net difference of the exchanged days' values. This suggests a

trough, however, if today's reading was minus 500 it would demonstrate a gain in downside momentum.

The magnitude in moves is useful when compared with divergence to the index price. If the Dow peaks at the same time the oscillator peaks in overbought territory, it suggests a top. If the index then makes a new high but the oscillator fails to make a higher high, divergence is negative and momentum is declining. If the index at this point declines and the oscillator moves into oversold territory it may again be time to buy. If the index rises but does not make new highs, but the oscillator continues to rise above a previous overbought level, upside momentum exists to continue the rally.

6. Cumulative Advance / Decline Line: Referred to as market breadth, the indicator is the cumulative total of advancing minus declining issues each day. When the line makes new highs a rally is considered widespread, but when lagging a rally is seen as narrow.

7. Volatility: With regard to stock prices and stock index levels, volatility is a measure of changes in price expressed in percentage terms without regard to direction. This means that a rise from 200 to 202 in one index is equal in volatility terms to a rise from 100 to 101 in another index, because both changes are 1 percent. Also, a 1 percent price rise is equal in volatility terms to a 1 percent price decline. While volatility simply means movement, there are four ways to describe this movement:

    1. *Historic volatility* is a measure of actual price changes during a specific time period in the past. Mathematically, historic volatility is the annualized standard deviation of daily returns during a specific period. CBOE provides 30 day historical volatility data for obtainable stocks in the Trader's Tools section of this Web site.
    2. *Future volatility* means the annualized standard deviation of daily returns during some future period, typically between now and an option expiration. And it is future volatility that option pricing formulas need as an input in order to calculate the theoretical value of an option. Unfortunately, future volatility is only known when it has become historic volatility. Consequently, the volatility numbers used in option pricing formulas are only estimates of future volatility. This might be a shock to those who place their faith in theoretical values, because it raises a question about those values. Theoretical values are only estimates, and as with any estimate, they must be interpreted carefully.
    3. *Expected volatility* is a trader's forecast of volatility used in an option pricing formula to estimate the theoretical value of an option. Many option traders study market conditions and historical price action to forecast volatility. Since forecasts vary, there is no specific number that everyone can agree on for expected volatility.
    4. *Implied volatility* is the volatility percentage that explains the current market price of an option; it is the common denominator of option prices. Just as p/e ratios allow comparisons of stock prices over a range of variables such as total

earnings and number of shares outstanding, implied volatility enables comparison of options on different underlying instruments and comparison of the same option at different times. Theoretical value of an option is a statistical concept, and traders should focus on relative value, not absolute value. The terms "overvalued" and "undervalued" describe a relationship between implied volatility and expected volatility. Two traders could differ in their opinion of the relative value of the same option if they have different market forecasts and trading styles.

8. CBOE Volatility Index (VIX): The VIX, introduced by CBOE in 1993, measures the Volatility of the U.S. equity market. It provides investors with up-to-the-minute market estimates of expected volatility by using real-time OEX index option bid/ask quotes. This index is calculated by taking a weighted average of the implied volatilities of eight OEX calls and puts. The chosen options have an average time to maturity of 30 days. Consequently, the VIX is intended to indicate the implied volatility of 30-day index options. It is used by some traders as a general indication of index option implied volatility. (Source: CBOE)

9. CBOE NASDAQ Volatility Index (VXN): Like the VIX, the VXN measures implied volatility, but in this case for NASDAQ 100 (NDX) index options, thereby representing an intraday implied volatility of a hypothetical at-the-money NDX option with thirty calendar days to expiration. Both the VXN and the VIX are used as sentiment indicators for the NASDAQ 100 and for the broader market, respectively. Higher readings and spikes generally occur during times of investor panic and at times coincide with market bottoms. Low readings suggest complacency and often occur around tops in index prices.

10. Put / Call Ratio: These ratios are used as contrary sentiment indicators. Higher ratio values, indicating more put trading, is considered more bullish. The CBOE index ratio tracks trade volume of all exchange traded index options, reflecting sentiment of professional and institutional strategies. The CBOE equity ratio is composed of trade volume for individual equity options and a better indicator of retail investor sentiment. Equity ratio readings 60/100 and 30/100 denote levels of bullishness and bearishness. Similarly, bullish and bearish boundaries for the S&P 100 are 125/100 and 75/100.

11. 2-Year Growth of Earnings: Growth of earnings over subsequent 8 quarters. Current observations use forecast of earnings from macro projections.

12. Earnings and Dividend Price Ratios: These ratios represent an investor's yield from earnings and dividend payments. Historically, the EP ratio often has exceeded the real return on bonds, reflecting the greater risk to shareholders for choosing equity investments. Recently, the EP ratio has fallen below the return on bonds as investors demand uncharacteristically large capital gains to compensate for the low earnings yield. Historically, the EP ratio has fallen below the real bond rate only when earnings are expected to rise dramatically.

13. Real Bond Rate: Moody's composite yield of A-rated corporate bonds less the expected rate of inflation over the next 10 years as measured by the consumer price index from the Survey of Professional Forecasters, published by the Federal Reserve Bank of Philadelphia.

14. Moody's Ratings: Denotes the change in dollar amount of investment grade (above BA1) or speculative grade (BA1 or below) securities outstanding for a particular company if that company is up/downgraded during a given month. For example, if company XYZ was upgraded, and they had bonds rated AA2 for $10, AA1 for $2, and A3 for $15, this company's contribution to the chart value is $27.

15. Investor Expectations: Internally generated composite of the Conference Board's 12-month forward investor expectations for no change, increase, and decrease in the stock market. Composite values of 50 indicate neutral expectations. Values below 50 demonstrate bearish sentiment, though the chart demonstrates that the outlook of investors is typically bullish.

16. Tobin's q: The ratio of the market value of equity plus net interest bearing debt to current value of land, inventories, equipment, and structures.