



Research Note

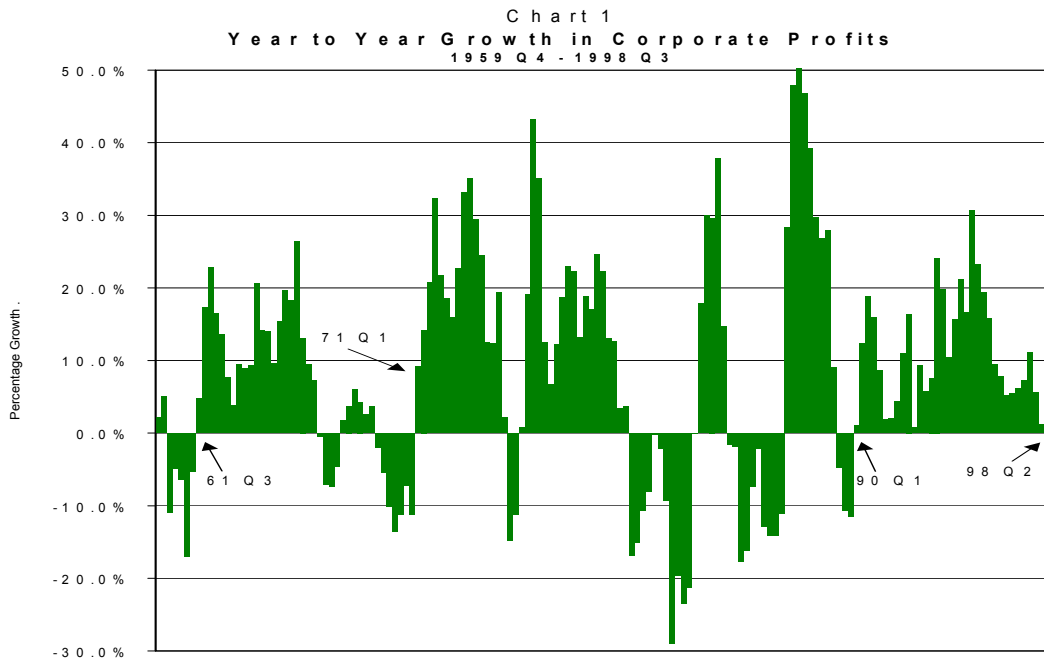
December 2, 1998

Overview

During the second quarter of 1998, corporate after tax earnings declined 1.2% relative to the second quarter of 1997. This decline ended a run of 33 consecutive quarters of earnings increases. During the third quarter earnings registered their second consecutive decline, raising questions as to how long the current downturn in earnings would last. Many analysts point toward a recovery beginning in mid-1999. Our analysis of the earnings declines that followed two prior periods of earnings growth similar to the 1990-1998 period suggests that earnings may be sluggish for at least two more years. However, this should not necessarily discourage individuals from investing in equities. During both periods of declining earnings, the average annual return of the S&P 500 exceeded the yield on 10 year treasury notes. While the current price to earnings (P/E) ratio of the market is extremely high, it is consistent with the incredibly low rates of inflation we currently enjoy. Finally, an environment of sluggish corporate earnings is likely to be particularly favorable to OakBrook's Large Cap Growth Strategy.

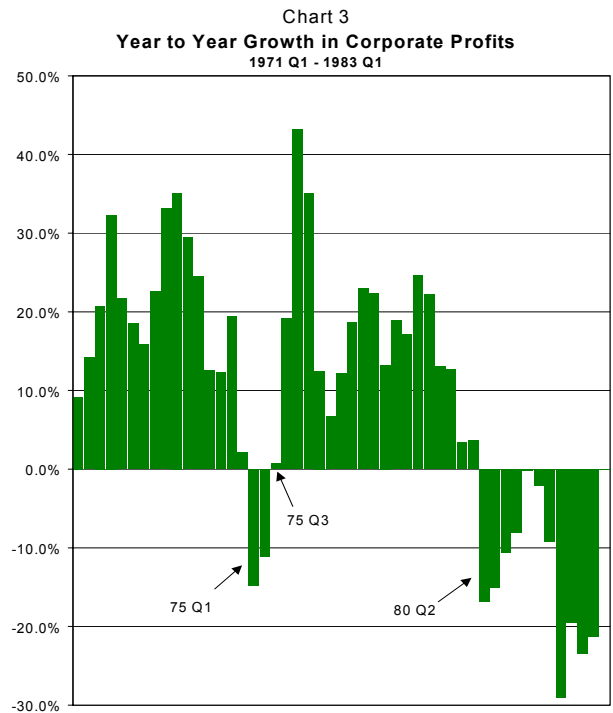
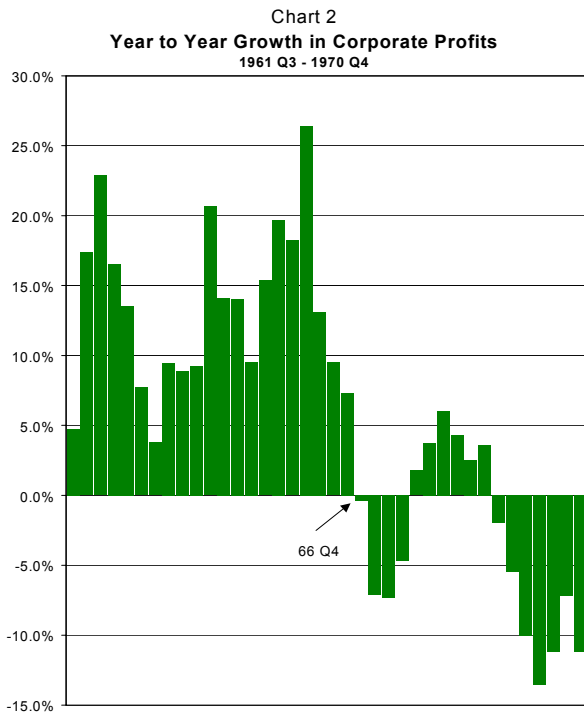
Analysis

We began the analysis by searching for periods of earnings growth that were comparable in length to the 1990-1998 period. Working from after-tax earnings figures published by the US Commerce Department, we identified two such periods between 1959 and 1990. The first period began in the first quarter of 1961, the second period began in the first quarter of 1971. (See Chart 1.)



The period of earnings growth that began in 1961 was somewhat shorter than the 1990-1998 period, covering 21 quarters rather than 33. However, on closer inspection one can see two sub-periods of growth within the 1990-1998 span, with the second sub-period being very similar to the 1961-1966 period. The 1990-1998 string of consecutive earnings increases was nearly broken during the third quarter of 1992, when nominal earnings registered a gain of only 0.8% and inflation-adjusted earnings actually declined. Earnings grew at an average annual rate of 11.1% per year over the 22 consecutive quarters following the third quarter of 1992, a growth rate comparable to the 10.5% observed over the 21 quarters of growth from 1961 to 1966. Following the end of the 1961-1966 growth period, earnings were sluggish for three and a quarter years (see chart 2). During this period of sluggishness, earnings declined an average of 4.5% per year. The total return of the S&P 500 Index averaged 9.3% per year, exceeding the yield on 10 year treasury notes which rose from 4.5% to 7.9% during the period.

Turning to the period from 1971 through 1980, we identified two periods of sustained corporate earnings growth separated by two quarters of earnings decline (see chart 3). This mirrored the structure of the 1990-1998 period which consisted of two sub-periods of growth separated by a decline to near-zero earnings growth during the third quarter of 1992. Focusing on the second growth spurt within the 1971-1980 and 1990-1998 periods, nominal earnings grew at an average annual rate of 11.1% from the fourth quarter of 1992 through the first quarter of 1998. This was comparable to the 10.7% average rate of increase observed from the third quarter of 1974 through the first quarter of 1980. Following the first quarter of 1980, earnings declined for three consecutive years at an average rate of 13% per year. During this period of earnings decline, the total return of the S&P 500 Index averaged 20.7% and the yield on 10 year treasury notes ranged from 10% to 16%.



The tentative conclusions that can be drawn from this analysis are that the period of earnings sluggishness we are currently entering may last at least three years and it is possible that equities will deliver returns exceeding the yield on government notes over this period. However, it should be noted that the 1990-1998 period differs from the 1961 and 1971 growth periods in at least two important respects. First, the rate of inflation actually declined during the 1990-1998 period, from approximately 4.6% at the start of the period to 1.5% at the end. In contrast, inflation accelerated from 0.7% to 3.1% during the 1961-1966 period and continued to accelerate from 5.6% to 13.2% during the 1971-1980 period. During the 1990's, a flood of commodities offered by cash hungry former Soviet republics, coupled with diminishing demand from Asia, resulted in a decade long decline in commodity prices. Kept in check by falling commodity prices, the price pressures that normally accompany economic growth failed to develop. The dawn of the information age and massive productivity gains associated with the spread of computer technology also made huge increases in productivity possible. The combination of these two factors led to the strong earnings growth of the period being discounted at a much lower rate than in the past.

This leads naturally to a discussion of the second major difference between the current period and the 1961-1966 and 1971-1980 periods: a substantially higher P/E ratio. At the end of the first quarter of 1998, the P/E of the S&P 500 stood at 27.78, twice its value at the end of the third quarter of 1966 and nearly four times its value at the end of the first quarter of 1980. The discrepancy in P/Es may be the result of differences in the discount rates (r) or expected growth rates (g) used by equity investors, as P/E can be expressed as $1.0/(r-g)$.^{*} This says that P/Es should rise whenever the discount rate applied to earnings declines or the expected growth rate of earnings increases.

Given the similarity of the nominal earnings growth rates observed in the 60's, 70's and 90's, it appears unlikely that a change in projected growth rates would account for the large discrepancy in the P/Es observed. However, it is possible that the discount rates used were substantially higher in 1966 and 1980 than they are today. It appears that in September of 1966 investors may have priced a substantial increase in inflation into the P/E of the S&P 500. This is one interpretation of the fact that the P/E of the S&P 500 rose only moderately from 13.46 in September of 1966 to 15.08 in December of 1969 while the rate of inflation rose dramatically from 3.1% to 5.9%. The modest increase in P/E is consistent with the observed 15% decline in earnings over the period combined with an assumption that investors' expectations of borrowing costs and earnings growth remained unchanged. This would indicate that expected borrowing costs and discount rates were consistent with the 7.9% yield on 10 year treasury notes observed in 1969, nearly double the 10 year yields observed today. Looking at the 1980 to 1983 period, 10 year treasury yields ranged from 10% to 15.8% but spent much of the period around 12.5%. The 12.5% figure is nearly triple the 4.6% yield on 10 year treasury notes observed today. These estimates indicate that today's P/E earnings multiples are somewhat high but not inconsistent with past rates of earnings growth if one believes that current low rates of inflation will be maintained over the long run.

^{*}Central to our analysis is a simplified model of how stock prices are determined. In this model, stock prices are assumed to be determined by a stock's current earnings (E), the projected growth rate of earnings (g), and a discount rate (r) used to convert the string of future earnings to a single value in current dollars. An increase in current earnings or the projected growth of future earnings should increase a stock's price. A decline in the discount rate should also increase a stock's price. A formula that captures this behavior is $P = E / (r-g)$. Assuming that prices are determined by this formula, current earnings should have no impact on a stock's P/E ratio, as after a little algebra we have $P/E = 1.0/(r-g)$.