Still Crazy After All Three Years

We are about to turn the page from December to January, an event once again marked only by excessive consumption of champagne and the wearing of silly conical hats (someone please find out who makes those things and sell the daylights out of them). Only a scant three years ago, however, we were involved in the most overwrought calendar-flip of all time, Y2K. In retrospect, the acceleration of technology spending going into this pseudo-event was one of the most important contributors both to the tech bubble and its subsequent bursting, but all we could focus on then was whether elevators would, for reasons still not clear to me, get stuck.

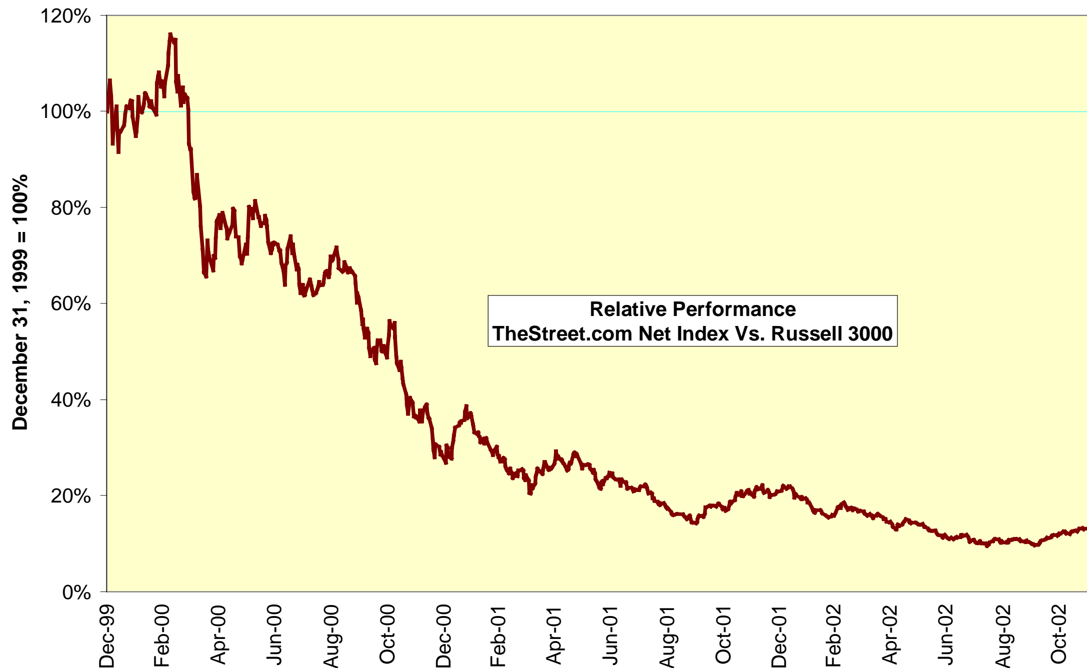
Nothing happened then, and while I didn't think anything would, December 31, 1999 fell on a Friday and I had a TSC column to write for the following week. Better get it done before the universe inverts on itself and we all plunge into a space-time warp, I thought. Besides, the market closed early that day and I had nothing better to do.

The topic I sat down to write was whether we had lost our collective minds regarding the Internet; while my initial thesis was that the market was in need of a cold shower, I switched arguments as I started to write. The resulting column likened the Internet sector's valuations to a long-term call option on an industry and concluded that while any one individual stock - Yahoo!, for example - was overvalued hopelessly, betting against the sector in its entirety was dangerous.

The logic of buying the sector had been demonstrated in software. In 1986, spreadsheets were dominated by Lotus Development, word processing by Word Perfect, databases by Ashton-Tate, networking by Novell, etc. Microsoft dominated only the PC-DOS operating system. Yet if you bought Microsoft then and held it, you could have prospered considerably throughout the 1990s as your various other software holdings dropped off the radar screen. You did not know which stock would win the software game, but the bet of the software industry growing was pretty safe.

After The Train Wreck

So far, that logic has not held. Even though the Internet is a much bigger part of my life, and I suspect yours, today than at the height of the farce, Internet stocks have benefited only the most aggressive shorts since then. Let's compare the sector to the broad market. This site's eponymous TheStreet.com Net Index (DOT) measures the Internet sector. This group contains giants such as Microsoft, IBM, Cisco and Oracle as well as troopers such as eBay and Amazon.com along with high-profile flotsam such as AOL Time Warner. The Russell 3000 represents the broad market; the relative performance should surprise no one.



All call options are characterized by a limited loss feature; as the joke runs, that's all you can lose and I'll guarantee that you'll lose it. The relative performance of the DOT to the Russell over the past year suggests we have realized the maximum loss. What will it in earnings growth take to justify Yahoo!'s price, and should anyone be willing to, once again, buy the entire sector in hopes of extracting a glistening pearl from a humble oyster?

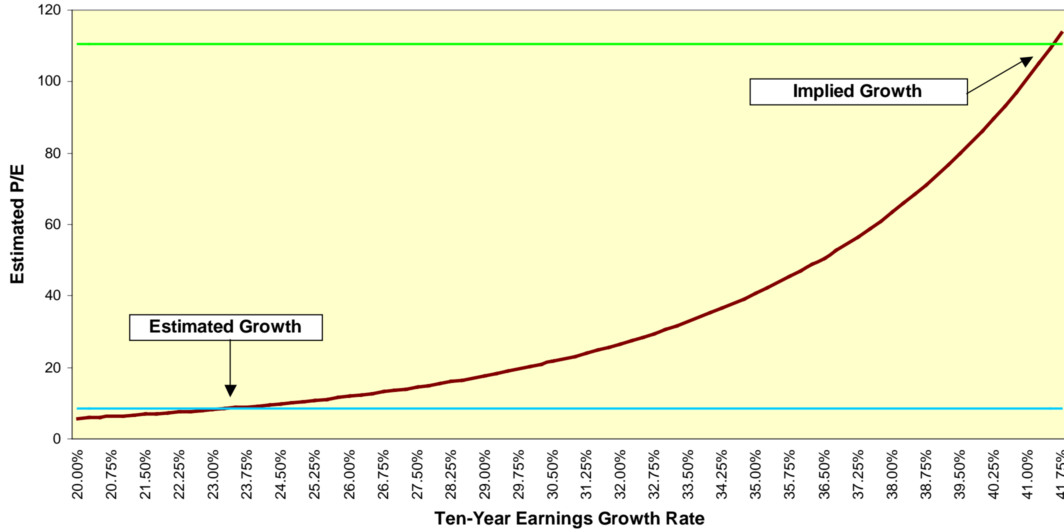
Trees Grow To The Sky, Don't They?

At the close of business on December 18, 2002, Yahoo! was selling at 110.53 times expected 2003 earnings, which translates to a earnings-to-price ratio of .905%. This number can be compared to the 4.034% yield on the ten-year note, which also is E/P. The analyst consensus for Yahoo!'s long-term growth rate was 23.34% per year. At year-end in 1999, the comparable numbers were an expected P/E of 983.38 and earnings growth of 56.06%, so some measure of reality has descended upon the land. One-year call warrant volatility was at 70.1%, comparable to the 1999 number.

The dividend discount model of a stock over a ten-year period is

$$Stock = \sum_{i=1}^{10} \frac{Dividend_i}{(1+r-g)^{10}}$$

Where r is the discount rate of 4.034% and g is the growth rate of 23.34%. At the ten-year horizon, $(1 + .04034 - .2334)^{10}$ is .117061, whose reciprocal converts to a P/E of 8.54. The estimated P/E of 110.53 implies average annual growth of 41.567% for ten years.



Can Yahoo! grow so rapidly? Probably not, and I have not seen anything over the past three years that would indicate that the Internet industry can grow at such a pace, either. So, should we load the cannon and point it at Yahoo!'s head?

The Bet

If Yahoo!'s earnings did in fact grow at 41.567%, the company's earnings would be 31.33 times as great at the end of 2012 as they are today. If we plug these numbers into the range bound formula below to see how many standard deviations, Z, we would have to move from the current price to get 33.1 times current earnings, we can solve for Z= .66.

$$Z = \ln\left(\frac{31.33}{1}\right) \Big/ (\sqrt{10} * .71)$$

The .66 number for Z corresponds to a probability of 74.7% that Yahoo!'s earnings won't grow that much. Convert this number to odds, .747 / (1 - .747), and we find that we only have odds of 2.96 : 1 of winning our bet against Yahoo!. The key to this surprising conclusion is Yahoo!'s high volatility, which increases the probability that we will move outside of this bound. If we lower the volatility to the 41.9% seen on the Nasdaq 100, the odds of Yahoo! staying inside this bound increase to 6.72 : 1.

A successful bet against Yahoo! or any other Internet stock so situated requires a belief that the market is overestimating both earnings growth and volatility. If we extend this premise from Yahoo! to the sector as a whole, we see that the portfolio argument – buying the group as a call option on an industry – still holds. Even better, the members of the DOT or any other Internet index are battle-tested survivors at this point, not the cold-pizza-and-foosball crowd of 1999.

Three years ago, betting against the Internet won. That bet is not likely to be as good today.