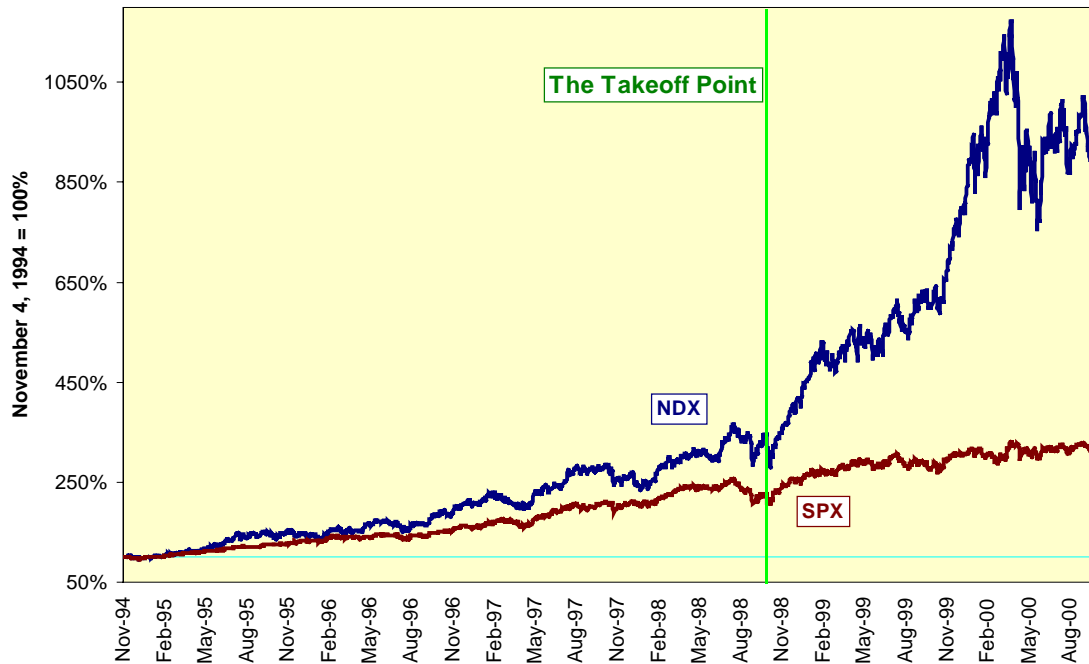


Every Spread Tells A Tale

Archaeologists and pathologists have nothing on market analysts: All three professions are filled with people skilled at forming conclusions too late for anything useful to come therefrom. Still, societies tolerate these sorts in the vain hope we can learn from the mistakes of the past. At least market analysts get to work indoors and keep their hands clean.

The spread between the NASDAQ 100 (NDX) and the S&P 500 (SPX) provides all sorts of interesting circumstantial clues to the underlying economy and the markets' appetites for risk. While it may have seemed during the NDX's astounding run from October 1999 to March 2000 that it had been outperforming the SPX forever, this is not the case. If we measure performance from the November 1994 upside breakout, we find the NDX outperformed modestly in conformance with accepted financial theory; since the NDX is 65% more volatile than the SPX, we should both expect and demand greater returns on our investments. By the October 8, 1998 general market low, the NDX's gains from November 1994 averaged only 8.04% per year more than those of the SPX.

NDX/SPX Relative Performance Since November 1994



The subsequent divergence was a different matter altogether. From October 8, 1998 to the NDX's peak on March 10, 2000, annualized outperformance was an outsized 100.3%. In fairness, divergences converge, and from March 10, 2000 to October 6, 2000, the decline in the NDX proceeded 44.2% more rapidly. The extent of these divergences is even more significant when we consider that the SPX as presently constituted has a 35% or so technology and telecommunications exposure. No less than 18.56% of the SPX is in the NDX as well, as shown in the table below arranged in descending order of weight in the SPX.

	ND	SP
Cisco	7.35%	3.22%
Microsoft	5.19%	2.36%

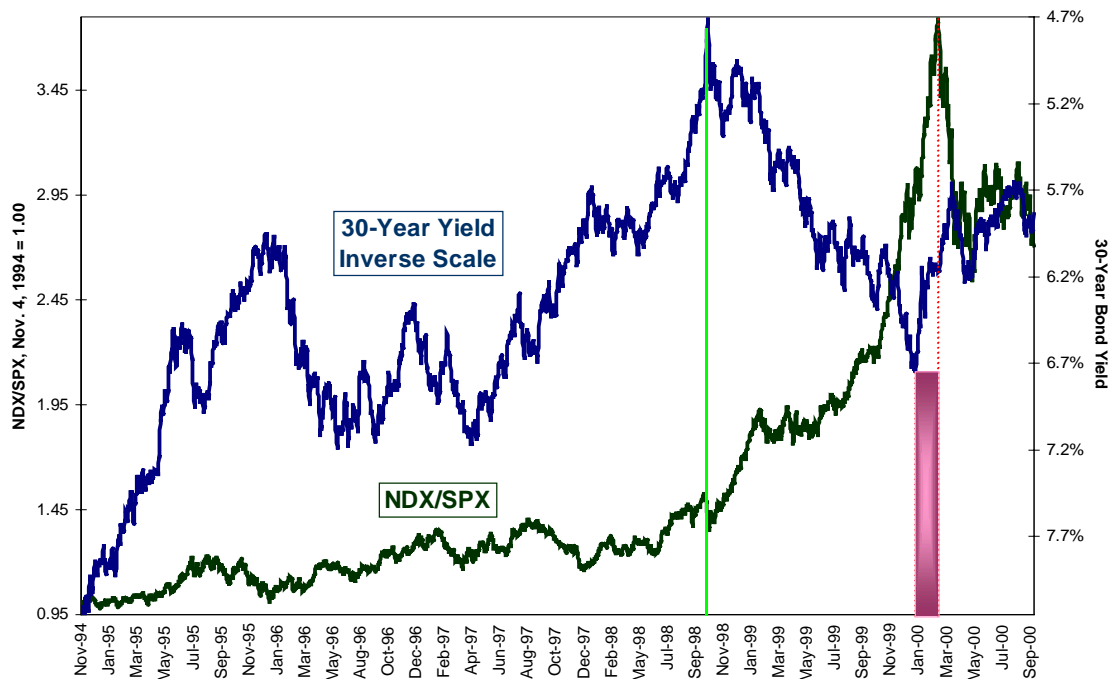
Intel	4.84%	2.17%
Oracle	4.09%	1.54%
Sun	3.83%	1.38%
JDS Uniphase	4.18%	0.69%
MCI Worldcom	1.34%	0.58%
Dell	1.24%	0.53%
Amgen	1.56%	0.52%
Qualcomm	3.60%	0.47%
Veritas	2.77%	0.43%
Yahoo!	1.11%	0.36%
Applied Materials	1.17%	0.35%
Comcast	0.95%	0.31%
Siebel Systems	2.33%	0.31%
Network Appliance	2.01%	0.30%
Nextel	1.88%	0.24%
Xilinx	1.84%	0.22%
Global Crossing	1.33%	0.19%
Maxim Integrated	1.58%	0.18%
ADC Telecommunications	1.14%	0.16%
Tellabs	0.57%	0.16%
Paychex	0.93%	0.15%
Linear Technology	1.30%	0.15%
Altera	1.28%	0.14%
Adobe	0.90%	0.14%
Converse Technology	0.87%	0.13%
Costco Wholesale	0.41%	0.12%
Sanmina	0.75%	0.11%
Medimmune	0.72%	0.10%
Molex	0.27%	0.09%
Peoplesoft	0.69%	0.08%
Conexant Systems	0.48%	0.07%
Biogen	0.53%	0.07%
Starbucks	0.54%	0.06%
Apple	0.52%	0.06%
KLA-Tencor	0.41%	0.05%
Bed, Bath & Beyond	0.45%	0.05%
Biomet	0.42%	0.05%
Staples	0.20%	0.05%
BMC Software	0.17%	0.04%
Citrix Systems	0.23%	0.03%
American Power Conversion	0.23%	0.03%
Paccar	0.17%	0.02%
Novell	0.18%	0.02%

Sigma-Aldrich	0.15%	0.02%
Parametric Technology	0.19%	0.02%
Compuware	0.08%	0.02%
Quintiles Transnational	0.14%	0.02%
Adaptec	0.07%	0.01%
Total:	69.20%	18.56%

Technology, Growth, And Rates

Standard financial theory holds that value stocks should outperform growth stocks in a rising interest rate environment. The logic is simple and compelling. Stock prices are the discounted stream of expected future dividends. Growth stocks' dividend payouts lie further in the future and are at greater risk. The compounding effect of higher interest rates, therefore, will damage these stocks more than slower growing value stocks with more certain cash flow. Nice theory, but it does nothing to explain why the greatest relative surge of the NDX occurred during a pronounced bear market for bonds. After all, the NDX takeoff and the peak in the bond market occurred simultaneously.

Relative NDX/SPX Performance And 30-Year T-Bond Yield



The NDX boom, or mania if you prefer, occurred during a period of surging demand for technology. The Internet came into its own as a mainstream device, global telecommunications was undergoing a huge increase in efficiency, Jeff Bezos was named Time's Man Of The Year, and it was now possible, thankfully, to order dog food off a Web site. The manic behavior of investors and venture capitalists alike did not overturn the deleterious effects of higher interest rates on growth stocks any more than the flight of an airplane repudiates the law of gravity. In both cases, the underlying effect remains intact and is being overwhelmed by very expensive effort. If the effort ceases, both the growth stocks and the airplane will crash unceremoniously.

In addition, the very pace of the New Economy, a phrase heard with decreasing frequency, led to the rapid economic growth that prompted the Federal Reserve to raise interest rates six times between May 1999 and May 2000. In that sense, the tech boom sowed some of the seeds of its own demise.

The bond market anticipated the economic slowdown produced by the unraveling of the tech boom and the Fed's higher interest rates very well. As highlighted on the graph above, long bond yields peaked on January 20, 2000, seven weeks in advance of the NDX peak. This response was consistent: Slower economic growth should produce slower profit growth for all equities, and this should damage the high price-to-earnings (P/E) technology stocks disproportionately.

We can quantify this relationship and its effects. The dividend discount model for a stock is

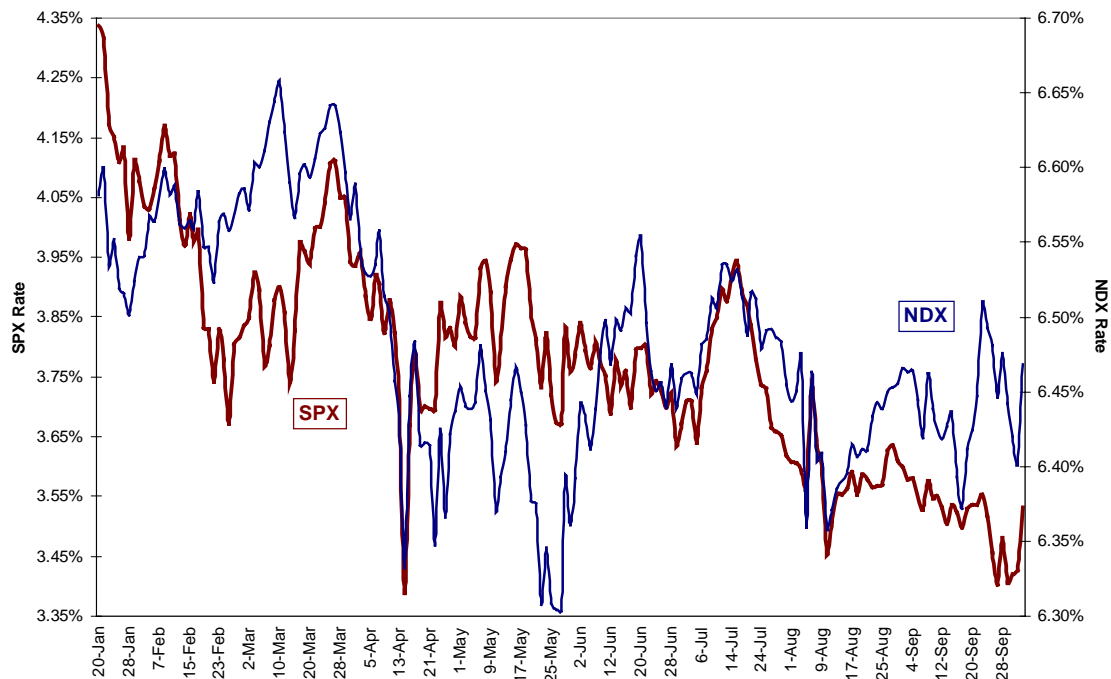
$$Stock = \sum_{i=1}^n \frac{Dividend_i}{(1+r-g)^i}$$

where 'r' is the discount rate for the Ten-year Treasury note and 'g' is the implied earnings growth rate. The reciprocal of a stock's P/E, the earnings-to-price ratio (E/P) is equivalent to the coupon yield on a bond, which, after all, is the fixed income equivalent of earnings. For any stock or stock index, we can calculate the implied earnings growth rate and its premium to a risk-free bond yield at any horizon by looking at the premium of the appropriate bond coupon yield to the E/P ratio. For example, the implied 10-year earnings growth rate premium is

$$\left[1 + \frac{TenYear - E/P}{TenYear} \right]^1 - 1$$

Since bond yields peaked on January 20, 2000, how have the implied earnings growth rate premia for the NDX and SPX fared?

Implied Earnings Growth Rate Premia For SPX And NDX Since Jan. 20, 2000

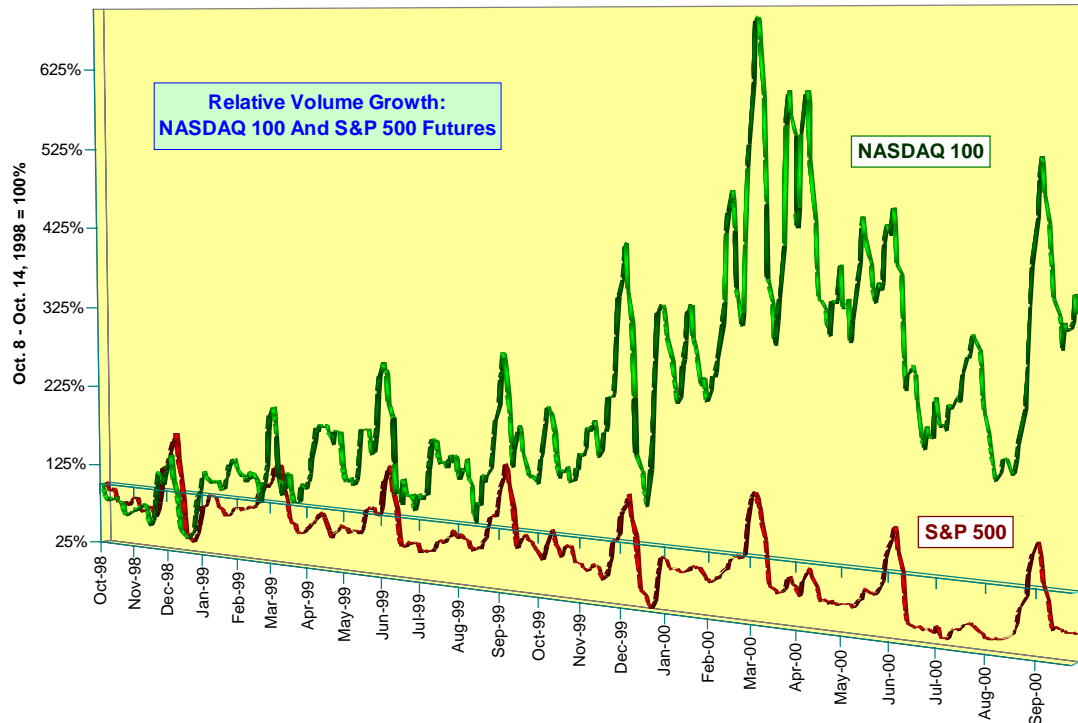


While the SPX has lost much of its premium and has done so in a reasonably steady fashion, the NDX still retains a premium not too far from its April 2000 levels. For a countertrend trader, this suggests the NDX

is overvalued relative to the SPX. A trend trader would suggest we should buy strength and sell weakness. This is why we have a market.

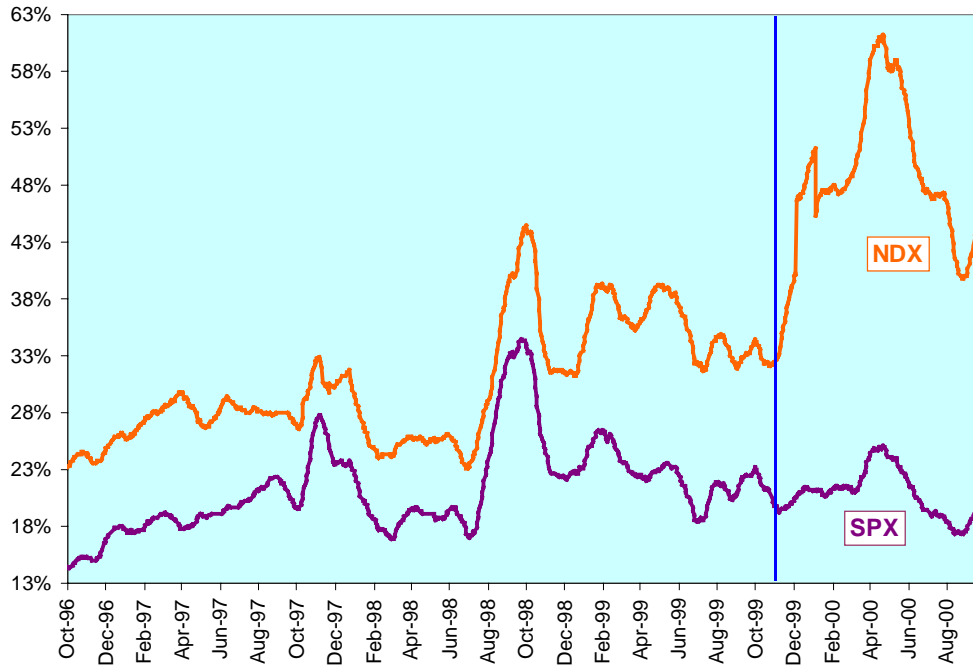
Spreading Opportunities

The NASDAQ 100 futures have been one of the few new product success stories at the Chicago Mercantile Exchange in recent years. Since the general market low in October 1998, a five-day rolling average of NDX volume has shown real growth, while volume in the SPX has oscillated without a growth trend around its quarterly expiration cycle. To be fair, average daily SPX volume during 2000 has been more than four times greater than NDX volume -- 88,965 to 19,829 -- and this figure does not include the highly popular E-mini contracts for either index.



Traders who blanch at the wide ranges and high volatility of the SPX might drop in a dead faint with the NDX. Not only is NDX volatility higher, as mentioned above, but it exhibited a contrary pattern during the October 1999 - March 2000 period. It is axiomatic that equity volatility rises when the market falls (see "Nothing To Fear," *Futures*, May 1999). However, NDX volatility rose sharply during the first half of the rally. This behavior, known as a demand skew, is far more typical of physical commodities like soybeans or natural gas, where commercial buyers seek protection from higher prices.

Rolling 21-Day Volatility: NDX And SPX



Which buyers were panicking for protection? The usual suspects might include hedge funds that shorted the rocketing index, mutual funds who needed to buy in order to maintain their competitive rank, and market makers who had to take the opposite sides of long option trades.

Since the economy will not become less technology-dependent over time, the NDX/SPX spread will remain a barometer both overall economic growth, corporate profitability, and general stock market direction. In other words, if you're thinking about stocks -- and you should be at all times -- you should be thinking about this spread. It can put the "fun" back in fundamentals.