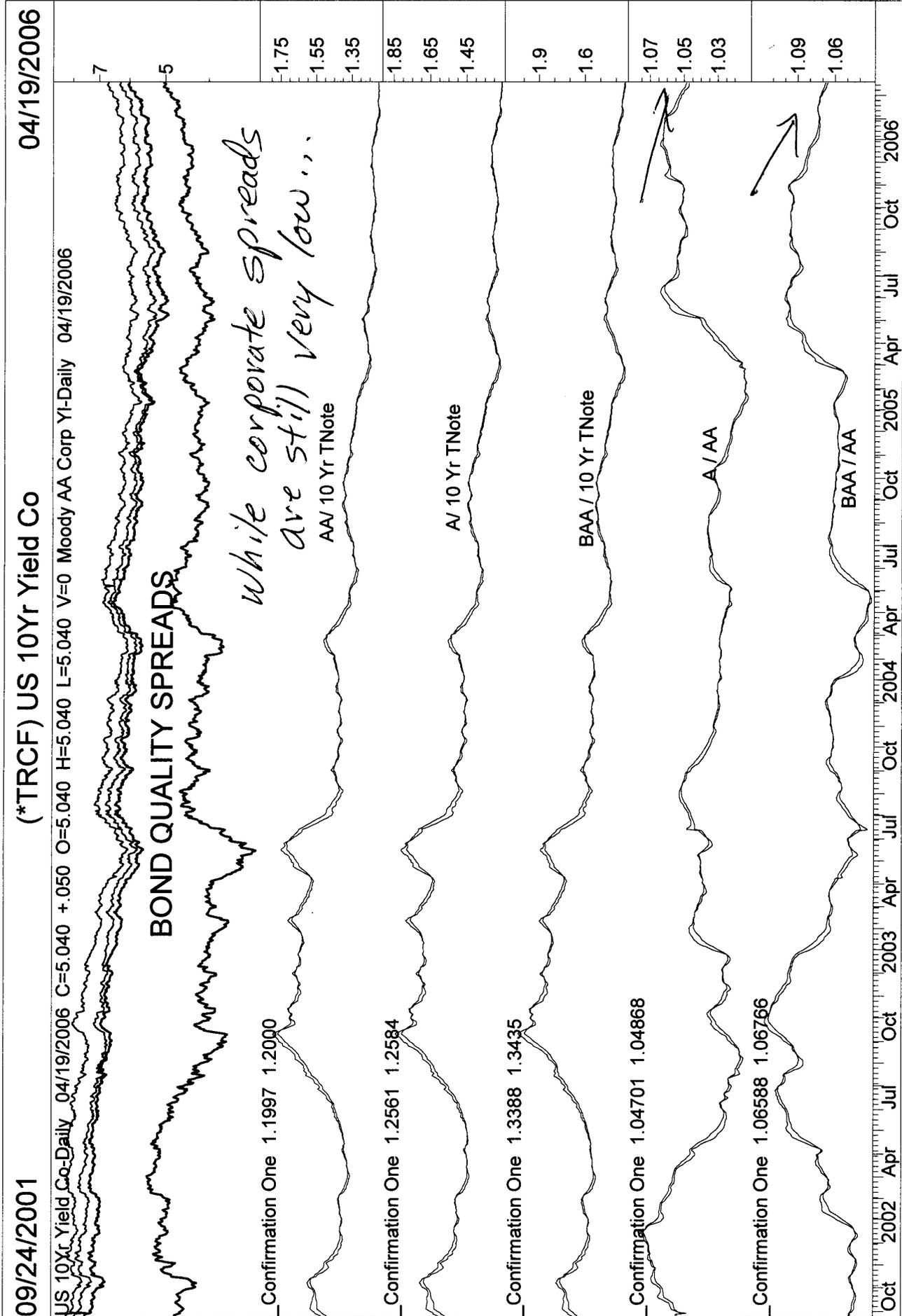
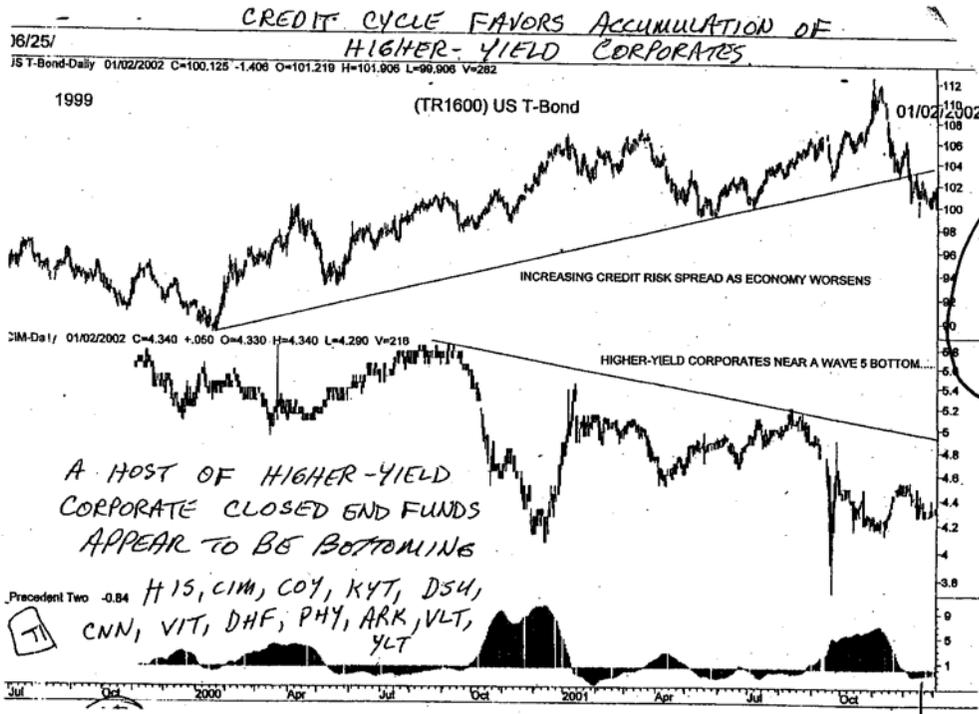


Corporate bond spreads over treasuries remain very narrow... ...but are widening spreads on the horizon ?



(18)

CORPORATE BONDS WERE ATTRACTIVE IN 2002

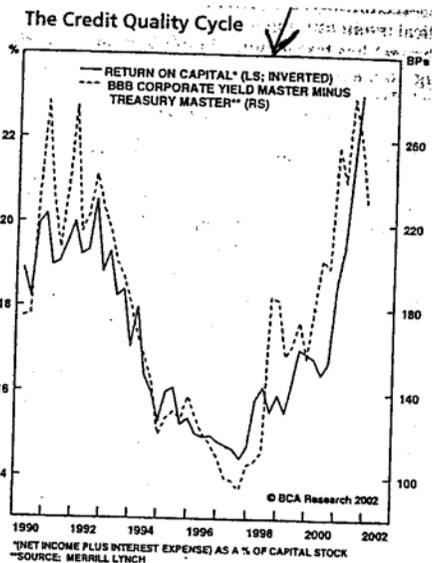


FROM CORNERSTONE JAN '02 ANNUAL MARKET OUTLOOK

“Higher yield corporate bonds have been out of favor since '98...as the outlook For the economy and corporate cash flow improves, the risk perception should Improve, favoring a reduction in the spread of corporates over T-Bonds...”

6

CORPORATE BOND YIELDS HAD RISEN SIGNIFICANTLY ABOVE THEIR NORMAL SPREAD OVER TREASURIES



FROM 1-6-02 CORNERSTONE ANNUAL MARKET OUTLOOK

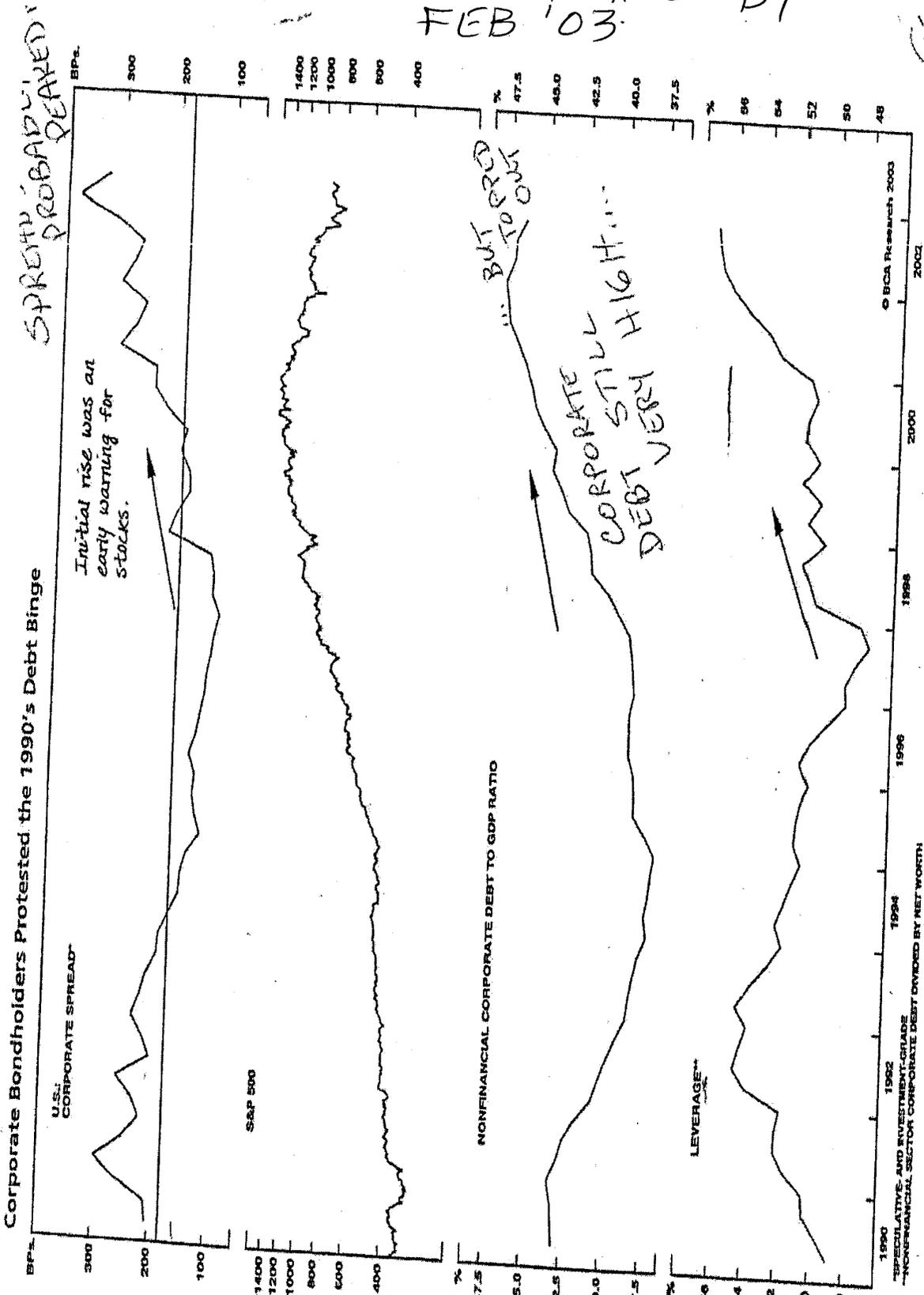
B1

The market was fearful of lending to companies because they had taken on so much CAPEX debt in the booming '90's...for similar reasons they are also fearful of STOCKS! Fear is reflected in the spread.

Feb, '03: CORPORATE VS. TREASURY SPREADS HAVE PEAKED OUT

CREDIT SPREADS PEAKED BY FEB '03

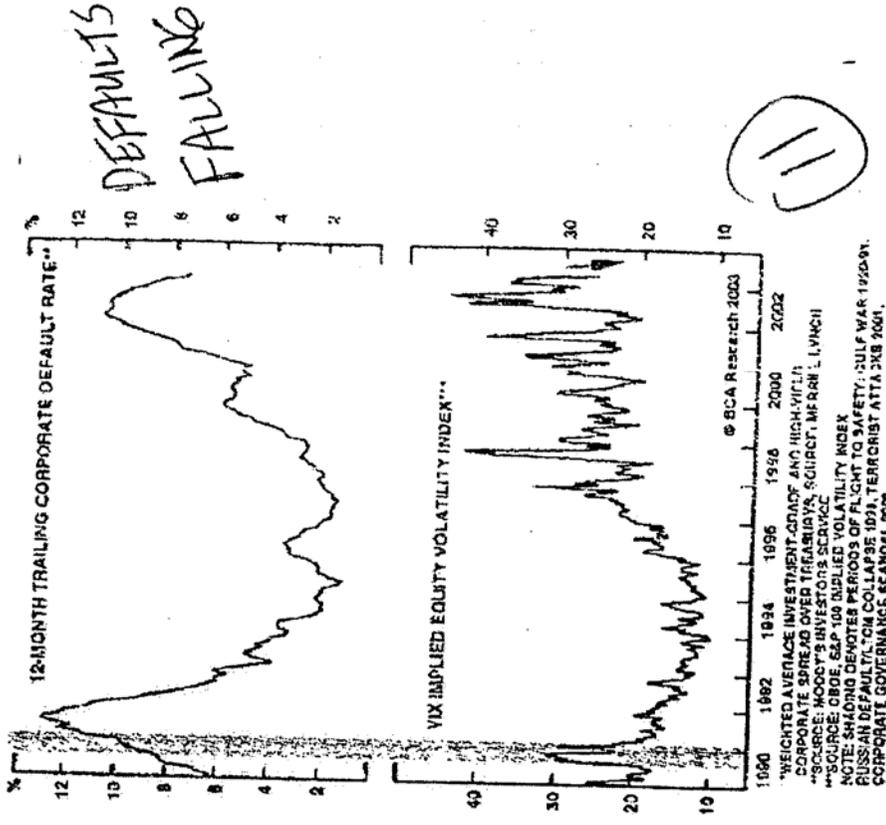
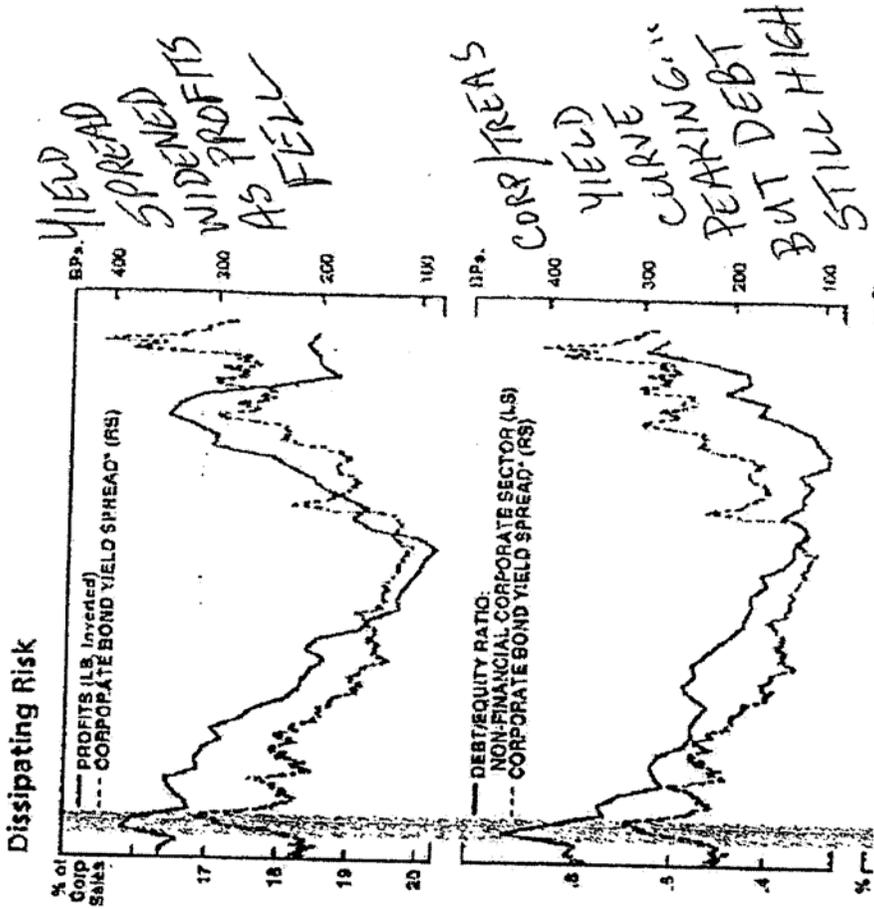
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B2

CORPORATE BOND SPREADS CONTINUE TO FALL AS CONFIDENCE RETURNS TO THE MARKETS...

April 20, '03



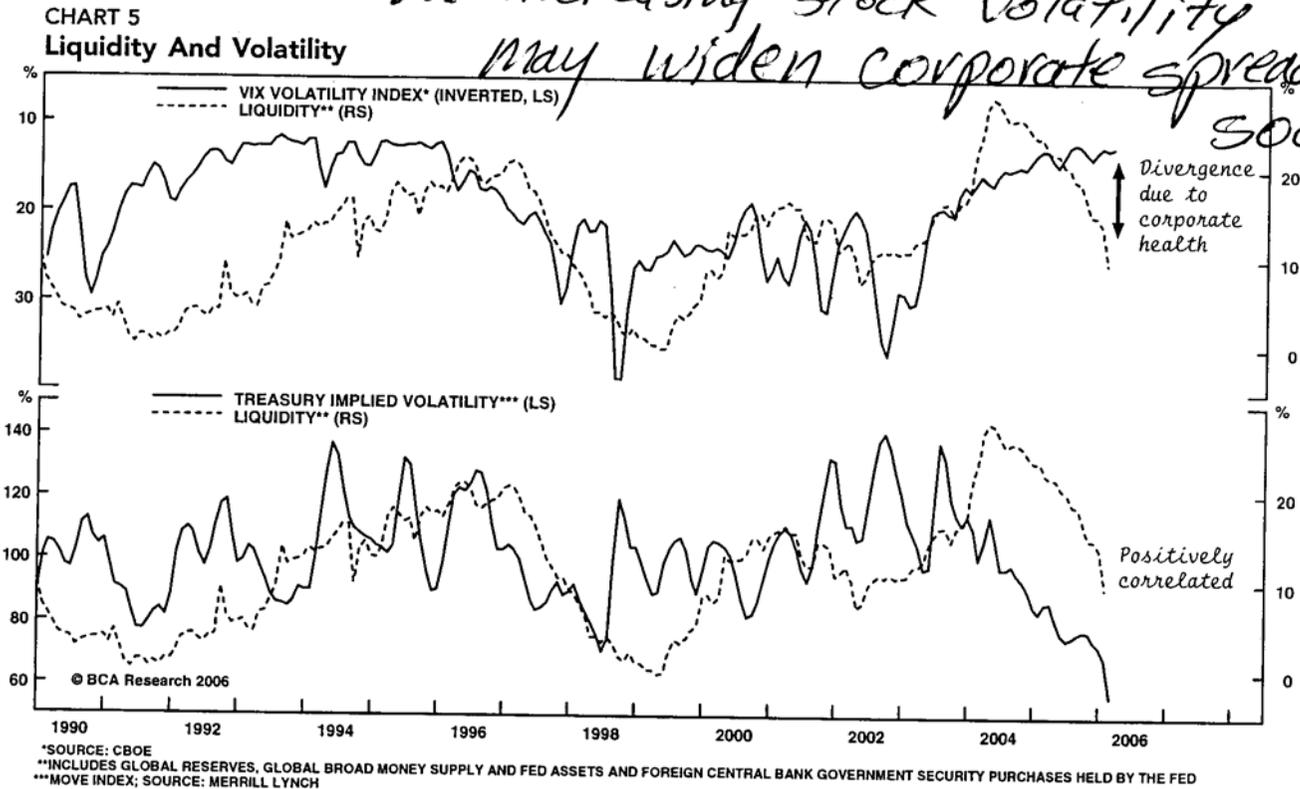
CONFIDENCE IN BONDS INCREASES CONFIDENCE IN EQUITIES!

B3

55

Corporate spreads are now vulnerable to a rise in stock volatility

... increasing stock volatility may widen corporate spreads soon...



■ The best for corporate balance sheet health is probably behind us. Profitability remains elevated, but rampant M&A and stock repurchase activity are a bad sign.

Our model simulations suggest that the risks for the VIX are clearly tilted to the upside (Chart 6). The base-case scenario sees a slow-but-steady upward trend in the VIX, reaching 20 sometime next year. This scenario assumes that the Fed has almost finished the tightening cycle and that there is only a small deterioration in corporate health in the coming quarters. The VIX would shift closer to 25 if the Fed fund rate peaks at 5.5% and corporate health begins to deteriorate. Of course, the model projects only the underlying trend. Equity implied volatility is highly volatile and could spike higher on any unforeseen economic or financial shocks.

during the past few years can be attributed to the decline in volatility.¹ Similarly, a jump in volatility, as outlined under our base case scenario above, would force spreads wider and damage corporate bond returns.

Our corporate spread model provides some insight into how much spreads may widen as volatility rises. Together with ratings migration, the level of yields and the slope of the yield curve, this model explains about 80% of the movement in corporate spreads (Chart 7). The model also allows us to predict the likely range of corporate spreads based on three scenarios:

- **An optimistic scenario**, which assumes no deterioration in corporate health, a slight improvement in ratings migration (back to its average level during the past six months) and a

Corporate Spread Implications

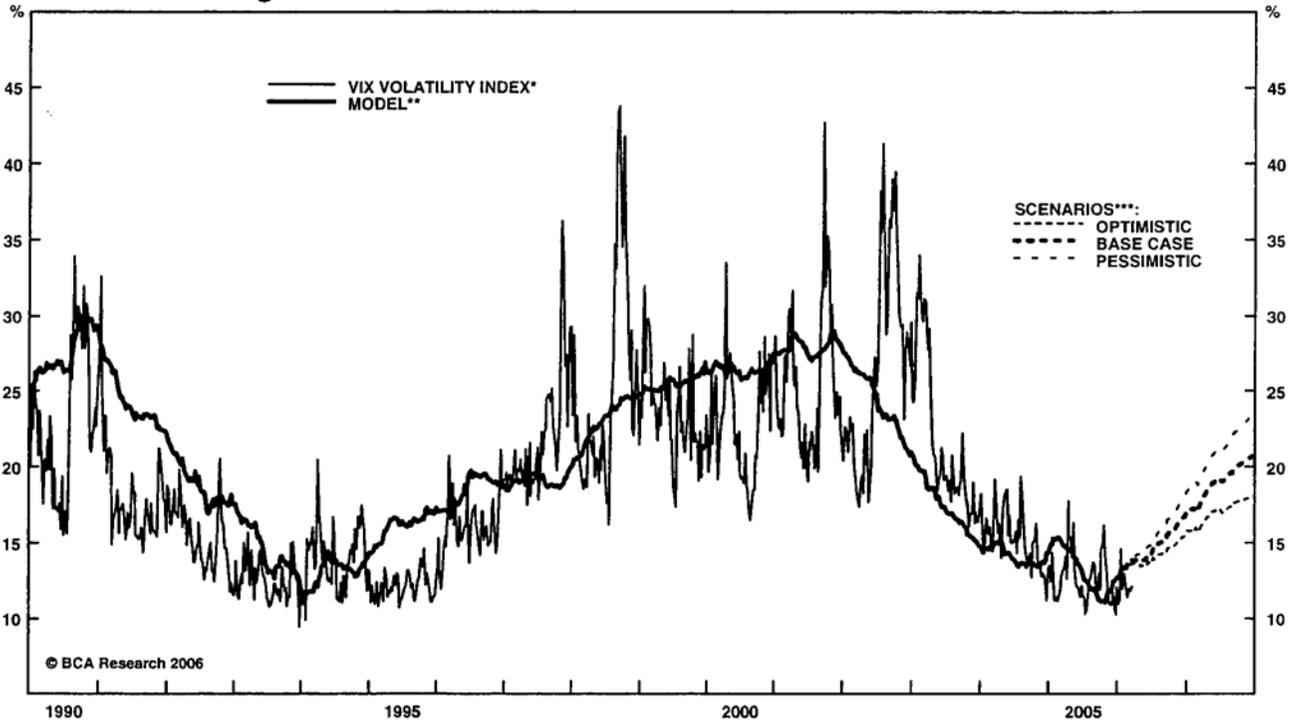
Implied volatility is a key driver of corporate bond spreads. Part of the decline in corporate spreads

¹ A drop in equity implied volatility reduces the value of the implicit short put option embedded in corporate debt.

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CHART 6
VIX Is Headed Higher

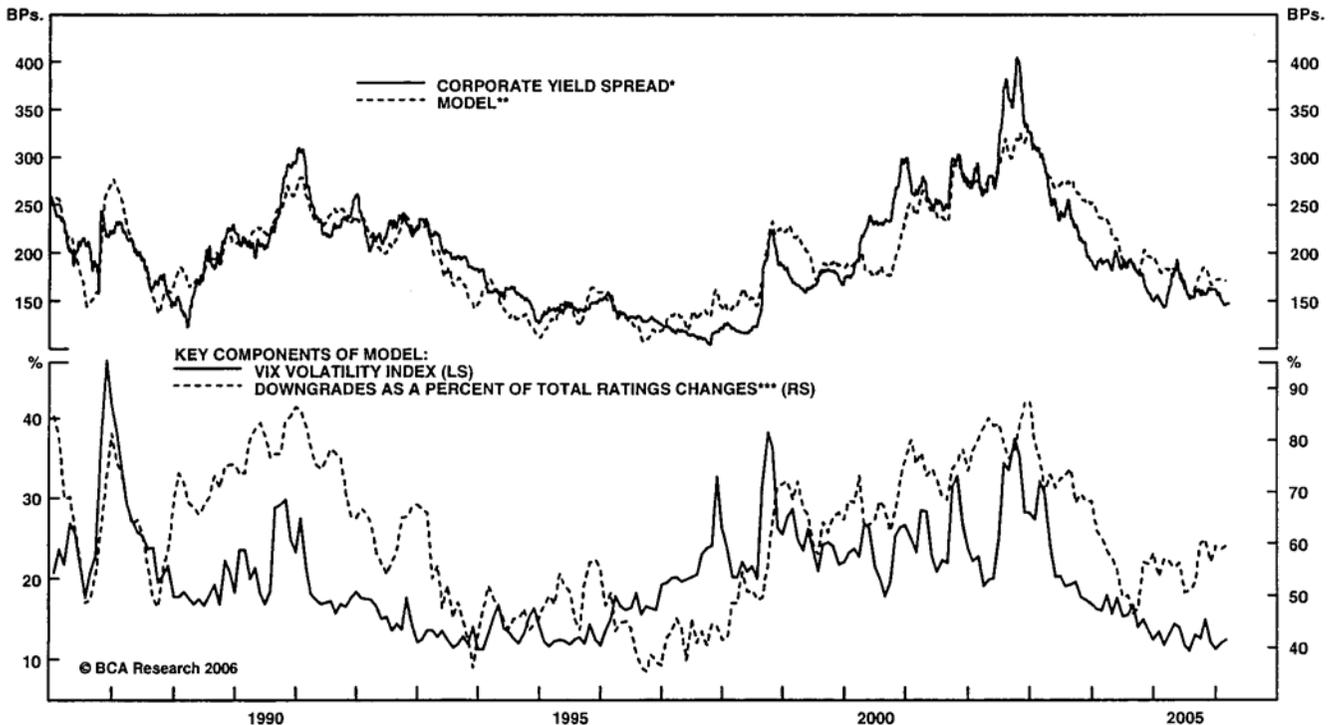
Projections for rising stock volatility...



*SOURCE: CBOE
**MODEL IS OUT OF SAMPLE BEGINNING IN JANUARY 2005
***BASED ON DIFFERENT PATHS FOR CORPORATE HEALTH

...while corporate bond spreads are discounting perfection...

CHART 7
Corporate Spread Model



*WEIGHTED AVERAGE OF INVESTMENT GRADE AND HIGH-YIELD SPREADS OVER TREASURYS; SOURCE: MERRILL LYNCH
**MODEL IS OUT OF SAMPLE BEGINNING IN JANUARY 2005
***SOURCE: MOODY'S INVESTORS SERVICE

*
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= projections for rising spreads over treasuries. Also note that increased business investment will likely increase spreads



TABLE 1
Corporate Bond Estimated Excess Returns

Scenario	Spread change (bps)	Excess Return*	
		6-month horizon (bps)	12-month horizon (bps)
Optimistic	+3	+48	+121
Base Case	+17	-31	+43
Pessimistic	+30	-111	-37

* Excess return over the duration equivalent Treasury index of a weighted average of the investment-grade and high-yield corporate bond markets.

Bottom Line: Maintain a benchmark exposure to corporate bonds. Valuation is mediocre and the expected excess return over Treasuries is negligible under our base case scenario for corporate health and volatility.

More Downside For Yield Volatility?

Treasury yield implied volatility has plunged to multi-year lows. A highly transparent and credible Fed is partly responsible. Inflation expectations are well contained and the volatility of core inflation has been in a slight downtrend for 20 years. More importantly, yield volatility is highly correlated with the level of short rates and the slope of the yield curve. The sharp drop in volatility during the past two years occurred as the Fed normalized rates and the yield curve flattened (Chart 9).

Despite the low level of implied volatility, a further drop is possible in the months ahead. An analysis of previous Fed cycles shows that implied volatility remained depressed even after the Fed went on hold (Chart 10). In each cycle, volatility did not begin to rise until after fed fund rate expectations had fallen well below zero, i.e. when the market had begun to discount sizeable rate cuts.

A similar result is apparent for swaption volatility. We have data for only one cycle around the 2000 rate peak, but in this case, swaption volatility

modest rise in the VIX index to 18 by the end of 2007;

- A base case scenario, which assumes a reversion in corporate health to its long term average, a corresponding rise in ratings changes to its long-term average and a larger increase in the VIX to 22; and
- A pessimistic scenario, which assumes a major deterioration in corporate health — companies lever up their balance sheets to 2001-02 levels and spending begins to significantly outpace cash flow. In this scenario, we assume that downgrades grow to about 67% of total ratings changes and the VIX jumps to 26.

The path of corporate spreads under each of these scenarios is shown in Chart 8. The relative returns on a 6- and 12-month investment horizon are shown in Table 1 for each scenario, based on the current level of corporate and Treasury yields, and estimated default and recovery rates for the period.

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