

HAMMOND ASSOCIATES

INSTITUTIONAL FUND CONSULTANTS, INC.

RESEARCH REPORT

First Quarter 2003

In this report . . .

- ✓ Equity Markets Finish First Quarter Roller Coaster Down
- ✓ How Safe are Bonds?
- ✓ Deflation or Inflation?
- ✓ Effect of the Bear Market on Institutional Spending

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Q1 2003:

Saddameter Hits 100%



Market Summary

March 2003

Although we only watched war for the last 13 days of this quarter, we spent the previous 77 days watching *for* a war. William Saeton's *Saddameter* (his assessment of the probability of war with Iraq for Slate.com) started the year at 71%, fluctuated a bit in January, and then steadily climbed. On March 17, it became clear that President Bush planned to deliver an ultimatum to

Saddam Hussein as part of a televised address. U.S. equity markets seem to have initially welcomed this partial resolution of uncertainty, rising 3-4%. The invasion followed, and, over the next two weeks, markets experienced increased volatility. By the end of the quarter, only small caps (Russell 2000) were able to hold on to their initial gains. We cannot help but recall what Baron Rothschild said almost two hundred years ago: *Buy at the sound of cannons. Sell at the sound of trumpets.*

Now that the war appears over, what will be the economic effects of this war and the lasting effects of non-diversifiable geo-political risk? These are two entwined issues that we won't be able to investigate fully for some time. We will, however, briefly consider an interesting piece of research from earlier this quarter that was conducted without the luxury of hindsight. In their paper *What Do Financial Markets Think of Iraq*¹, Leigh, Wolfers, and Zitzewitz took a novel approach in their analysis of the role of political uncertainty in financial markets. They used the prices of *Saddam Securities* to generate probabilities of war with Iraq

¹Andrew Leigh, Justin Wolfers, Eric Zitzewitz, *What Do Financial Markets Think of War in Iraq?*, Working Paper 9587, National Bureau of Economic Research, March 2003.

before the fact. Saddam Securities were traded on www.tradesport.com, an Irish online betting exchange quite like the Iowa Electronic Markets where you can bet on political candidates. The possible bets, or futures contracts, were that Saddam would be ousted by a particular date (the expiration date of the contract) and paid off at expiration only if Saddam's regime was gone. By concluding that the future's price provides a plausible estimate of the probability of war, the authors were able to quantify the effect of war risk on returns and volatility in financial markets. They ended their data collection in mid-February so the study was not retrospective:

- They estimated that a 10% increase in war risk increases the spot price of oil (WTI) by \$1 — that is, a \$10 increase in price in the event of war. They projected a barrel price of \$37.50 with war and \$27.50 without, and the disappearance of any price effect in about a year. This resembles the intermediate case scenarios set forth by oil analysts and predicated on the belief that only the supply out of Iraq (3% of world oil) would be significantly affected. This is far less than the shocks of 1973-4 (up \$24 in 2003 prices in 1 month), 1979 (up \$31 in 12 months), and 1990 (up \$18 in 2 months). The price of oil actually rose to about \$40 and then fell to \$28.13 by 4/11/03. At the current time, there does not appear to be a widespread expectation that long run price declines will fuel global growth.
- They projected that a 10% increase in the probability of war would translate into a loss of value of 1.5% for the S&P 500 — that is, a loss of 15% if war broke out. To date this estimate looks extreme. Before the war, the authors viewed the estimated impact as significantly more severe than expected on the basis of macroeconomic analysis alone.

They tentatively suggested that the pessimism of U.S. financial markets is due to the factoring in of geo-political risks that are much broader than the Iraq situation. Their results also suggest that it is not so much the case that financial markets demand higher risk premia, but that they expect lower future earnings.

So we come back to earnings and the fact that the economy was already in recession, worried about the shortage of capital expenditures, and nervous about consumer spending. We note the earnings growth that accompanied earlier wars was the consequence of vastly higher levels of defense spending as a percent of GDP. Data from the Office of Management & Budget shows that peak defense spending in World War II was 37.9% of GDP and growth averaged 12%. In the Korean War peak defense spending was 14.1% and growth was over 7% in 1951. The Vietnam War defense spending of 9.4% propelled a boom, but the Gulf War spending of 4.8% hardly boosted growth. Projections for the Iraq war plus other 2003 defense spending are about 4% of GDP. We don't see this as a massive stimulus to broad growth. The good news is that there is no evidence of any of the inflationary effects of earlier wars.

The Fed is optimistic enough to be patient about additional monetary policy moves. On April 11, William Poole, President of the St. Louis Fed, said financial markets would respond to weak earnings or employment data by bringing down long-term interest rates, and solid fundamentals should win out over uncertainty. We are encouraged by the narrowing of corporate bond yield spreads which indicates a decrease in perceived risk and, in turn, and increased willingness to lend to U.S. firms. Productivity is still growing. If employment numbers would only start to improve....

The last quarter was another rough one for investment portfolios. As for U.S. equities, the Dow was down 3.5%, the S&P 500 declined 3.2%, and the Russell 2000 sagged 4.5%. On the other hand, the NASDAQ eked out a gain of 0.4%.

International equities (in \$US) reacted poorly: the EAFE (large-cap) dropped 8.2%, MSCI Emerging Markets Free slid 6%, and Salomon EMI-EPAC (small-cap) decreased 4.8%. The Pacific Rim XJapan, however, managed a 0.6% increase. In terms of country-specific results, Japan fell another 7.9%, the U.K. lost 8.6%, France sank 11.5%, and Germany plummeted 12.6%. International equity markets continue to reflect economies that are globally weak.

The quarterly returns in fixed-income markets continue to prove the importance of diversification. The Lehman Aggregate Bond Index rose 1.4%, the Lehman Government Bond Index rose 1.1%, and the Inflation Linked Bond Index gained 2.7%. The Salomon High Yield Bond Index proved better than its name, rising a hefty 9.4% in the quarter as investors decided the higher yields more than compensated for higher risk.

Other positive diversification benefits came from REITS, with the Wilshire REIT index up 1.3%, and commodities, with the Goldman Sachs Commodities index up 4.6%. Most of the hedge fund strategies measured by Hedge Fund Research (HFR) showed gains. The HFR Distressed Securities index gained 4%. The HFR Convertible Arbitrage and Event Driven indexes picked up 4.9% and 2.3%, respectively.

Interestingly, although gold rose to over \$380 in February, it dosed the quarter in the \$325 range, down 8% from where it closed at the end of the 4th Quarter 2002. Of course, cash was cash.

We'll no doubt be talking about the impacts of the Iraqi war and rebuilding efforts on global financial markets and society for many quarters to come. In the mean time, we'll be checking *tradesport.com* to see what's trading on the North Korean and Syrian fronts.

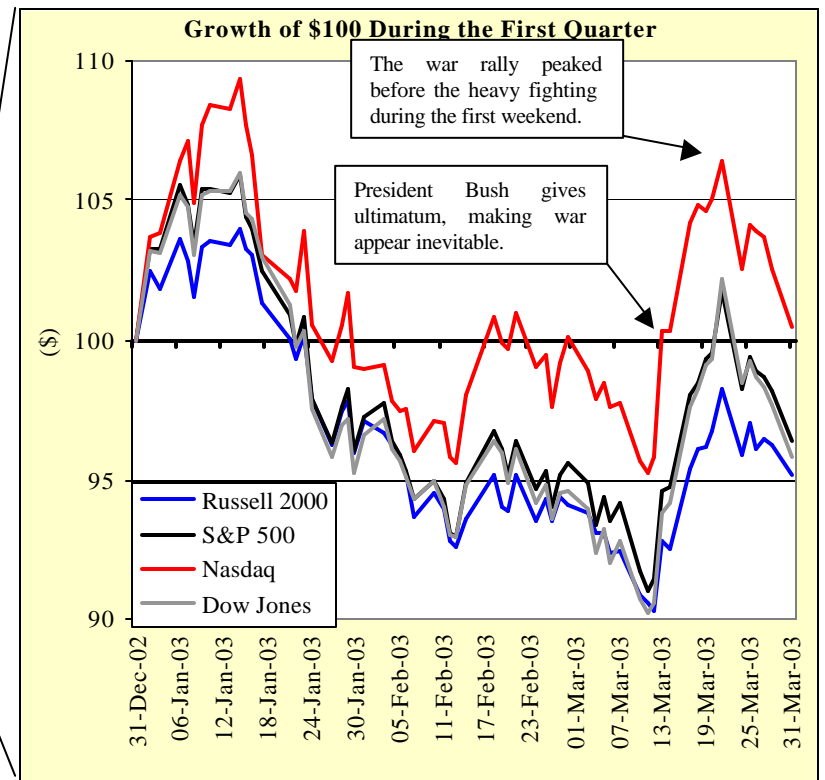
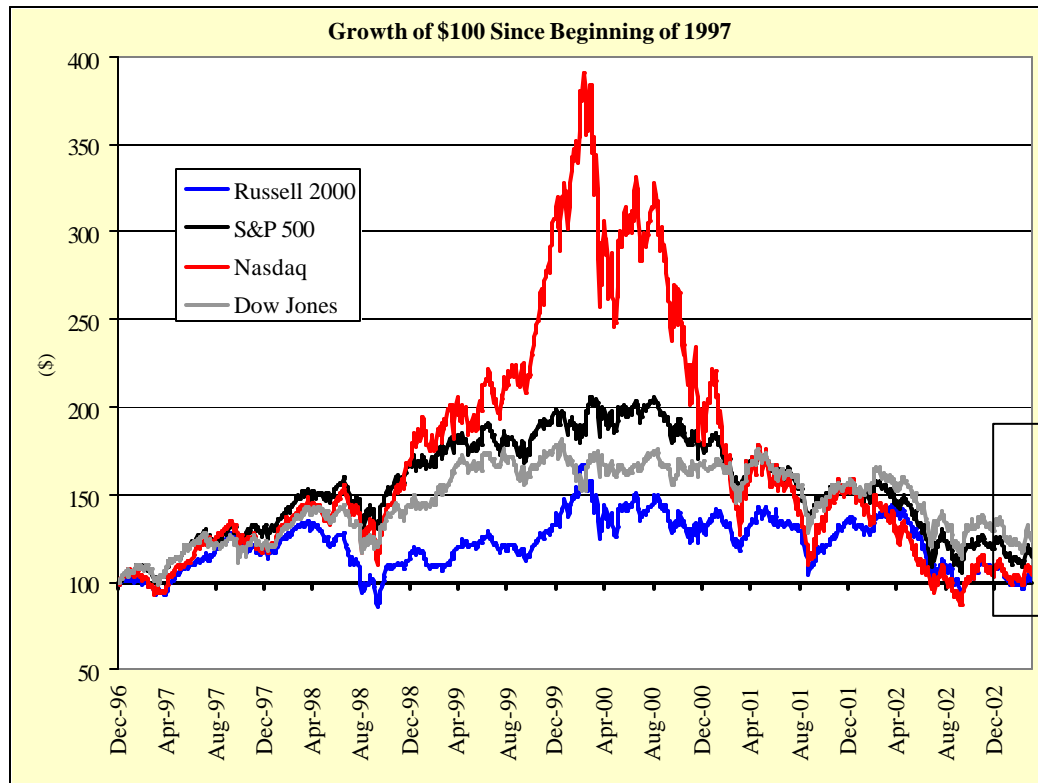
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First Quarter Executive Summary

- The S&P 500 got off to a rocky start in 2003, declining 3.2% during the first quarter. International stocks performed even worse, as the MSCI EAFE index plummeted 8.2% (in US\$). High-yield bonds were the top performers during the quarter, surging 9.4% as credit spreads tightened. Investment-grade fixed income posted a respectable return of 1.4% for the quarter.
- Over the last five years, the well for global investors has been dry. When compared to their historical range of five year rolling returns, every asset class has posted returns in the fourth quartile, with the exception of US investment-grade fixed income. Except for of US mid-cap stocks, every equity asset class has posted cumulative negative returns over the last five years.
- The apparent success of the war in Iraq reduces economic uncertainty, but does not improve economic prospects by much. The same structural issues remain—excess debt and capacity. With global excess capacity, high debt loads, and lackluster earnings, business investment is likely to remain depressed in the short-term. And consumer spending is likely to slow as US households increase savings to reduce debt loads. Government spending will likely be the fastest growing segment of the economy in 2003. It may take a few more years of sub-par economic growth to work out the excesses from the late 1990's.
- Bonds are coming off more than a twenty-year bull market. Over the short-term, bonds do not appear to be at particular risk. Since the economy remains sluggish, there is little reason to expect a sharp snap-back in interest rates.
- The dollar continued to weaken in the first quarter, reaching a four-year low against the euro. The US still requires more than \$500 billion per year from foreign investors to offset the current account deficit. The dollar may have to depreciate further to induce foreigners to purchase dollar-denominated assets.
- Stocks remains at stretched valuations, so there is no fundamental reason to expect a sharp rebound. Earnings show few signs of rebounding to pre-recession levels, and defined benefit plan contributions will reduce capital available for new projects and distributions to shareholders. One bright spot is the weakening dollar, which should lead to greater exports and more pricing power within the US.
- International stocks are still trading at compelling valuations relative to the US. The dividend yield on European stocks exceeds 3%, and emerging market stocks are also attractive due to their valuations and expected economic growth.
- Performance across most hedge fund strategies was positive during the first quarter and over the past year. Cash flows into hedge funds are slowing, as total 2002 flows were less than half the 2001 level. Private equity markets remain in the doldrums. The most attractive area of private equity continues to be distressed debt, although the window is slowly closing as more money flows into the asset class.

Equity Markets Finish First Quarter Roller Coaster Down



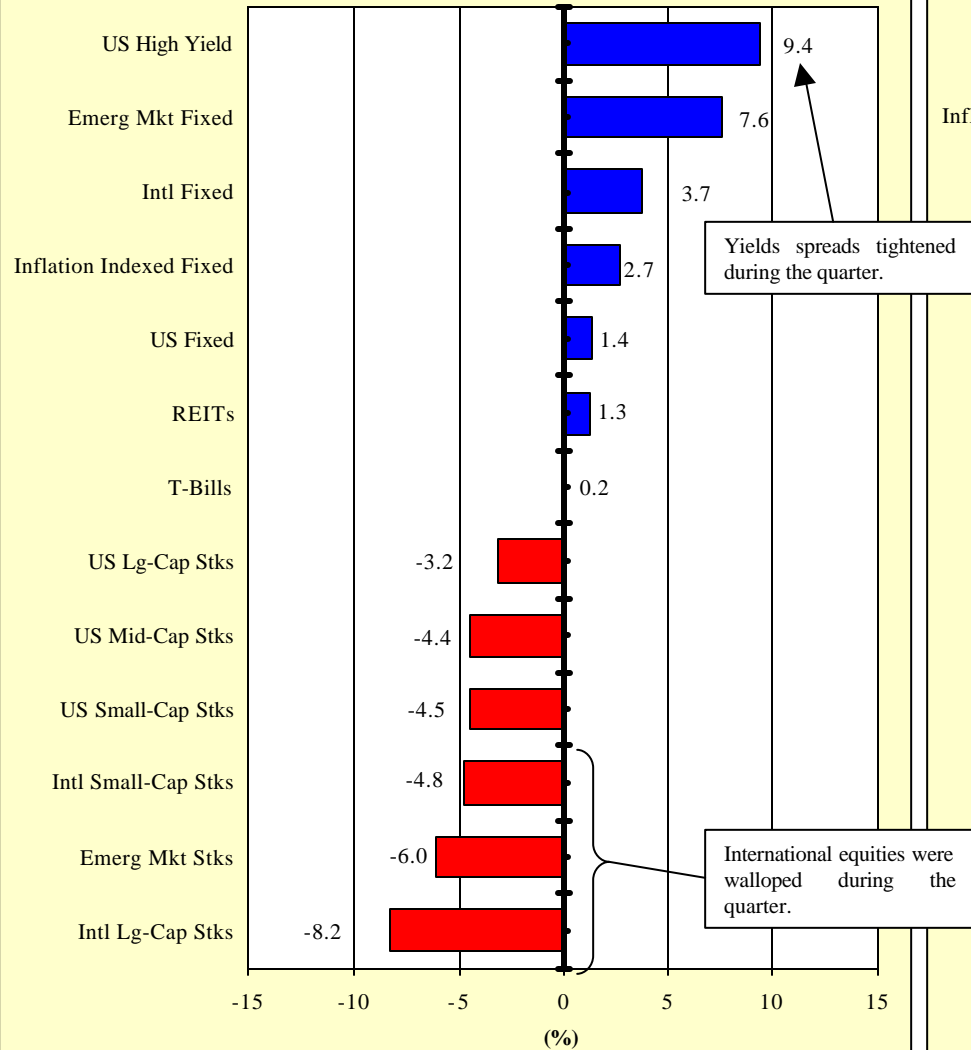
	Mar. 31 2003 Close	Date Level First Reached	Date Peak Reached	Date Trough Reached	Peak-to- Trough	% Below Peak	% Above Trough	1Q 2003		
Dow	7992	7/16/97	11723	1/14/2000	7286	10/9/2002	(37.8)	(31.8)	9.7	(4.2)
Nasdaq	1341	1/14/97	5049	3/10/2000	1114	10/9/2002	(77.9)	(73.4)	20.4	0.4
S&P 500	848	5/27/97	1527	3/24/2000	777	10/9/2002	(49.1)	(44.5)	9.2	(3.6)
Russell 2000	365	1/9/97	606	3/9/2000	327	10/9/2002	(46.0)	(39.8)	11.5	(4.8)
MSCI EAFE	869	3/88	1774	1/3/2000	824	3/12/2003	(53.6)	(51.0)	5.5	(8.8)

All returns exclude dividends.

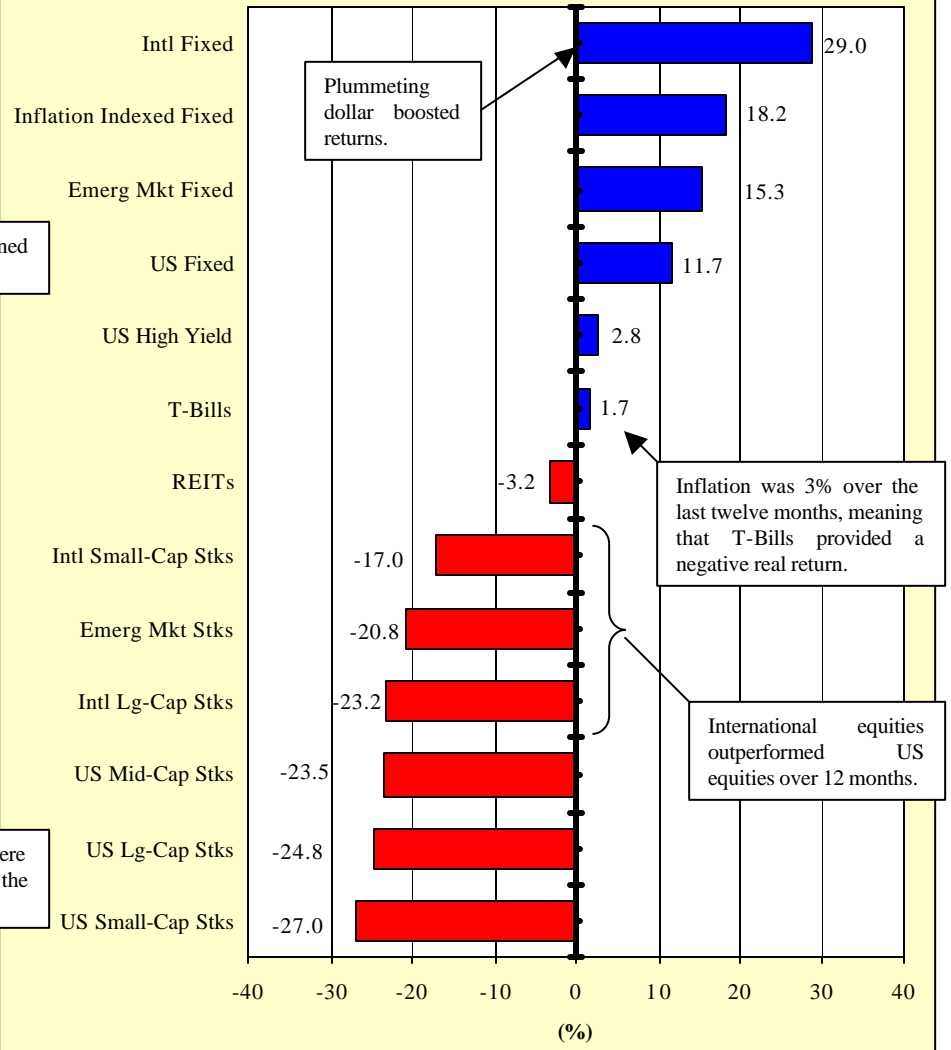
EAFE set a new bear market low during the first quarter.

Fixed Income Outperformed Once Again

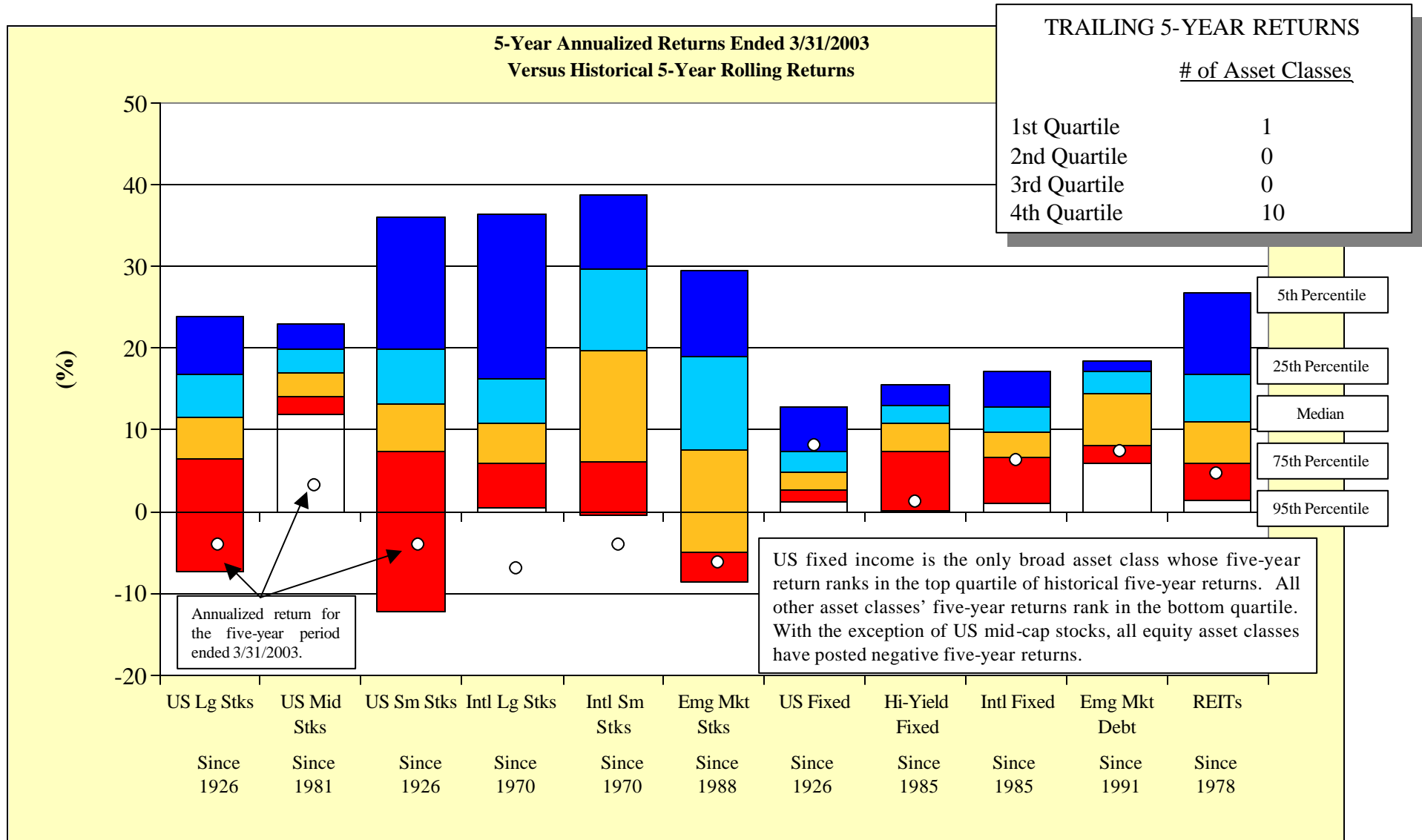
First Quarter 2003 Performance (%)



Last 12 Months (%)



Abysmal Equity Returns Over Five Years

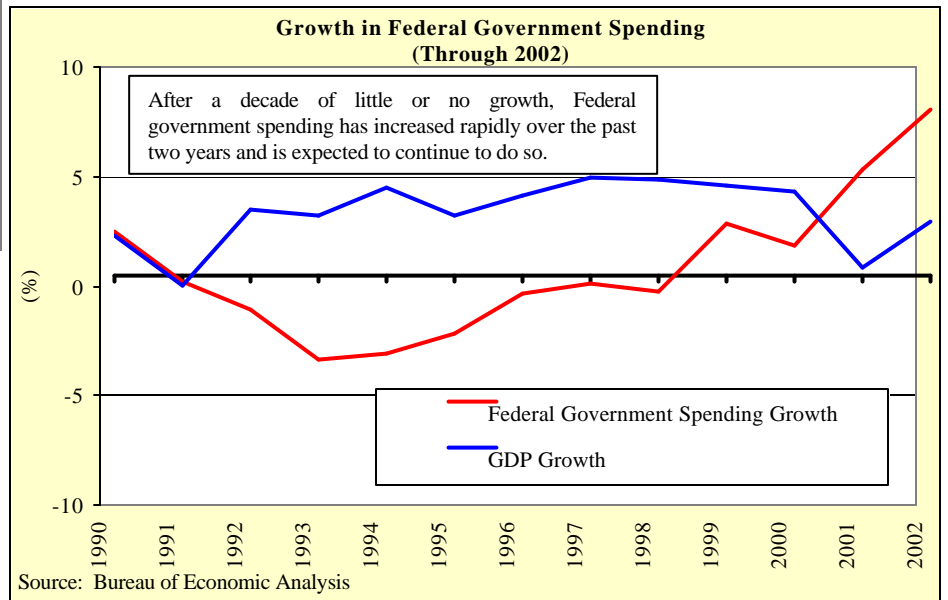
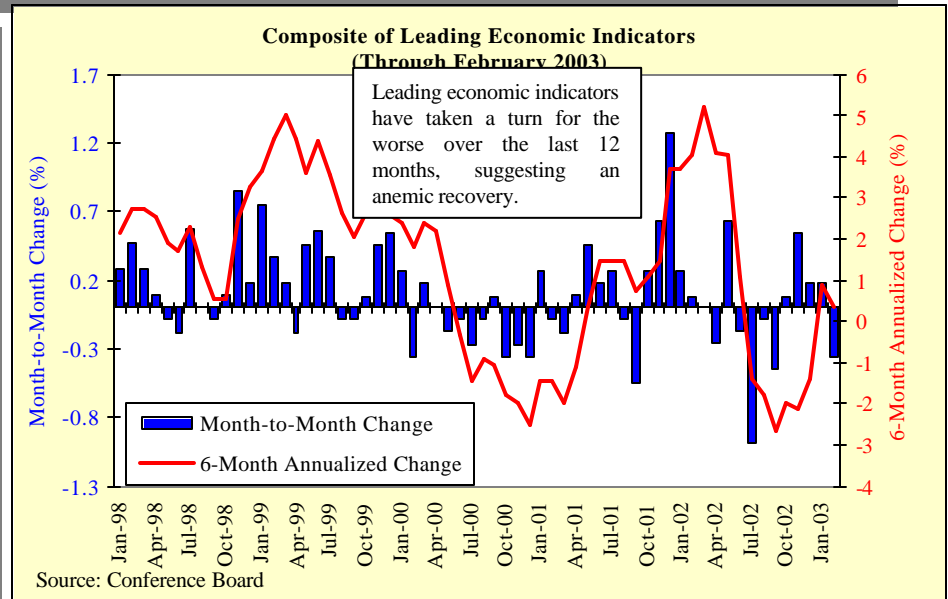


What's Next for the Economy?

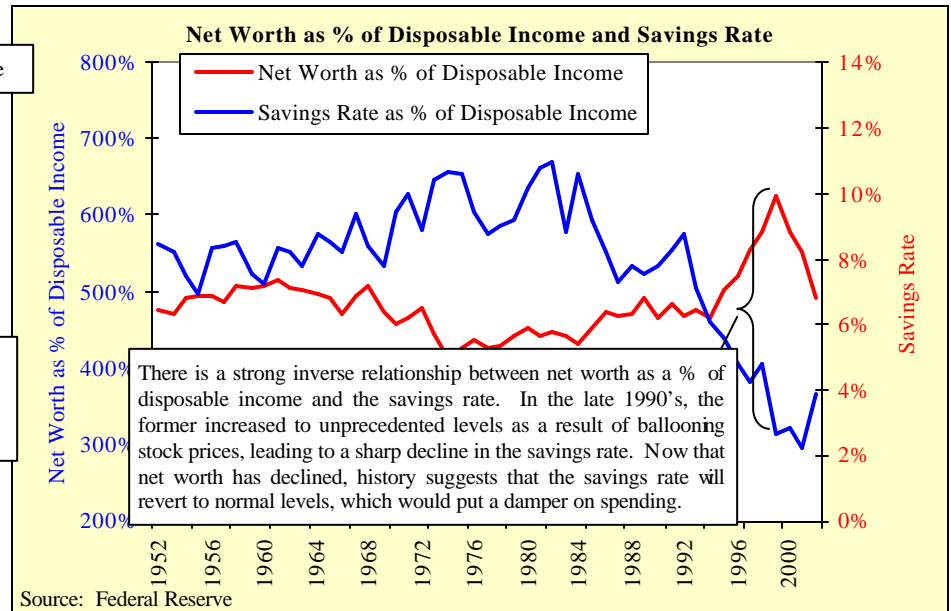
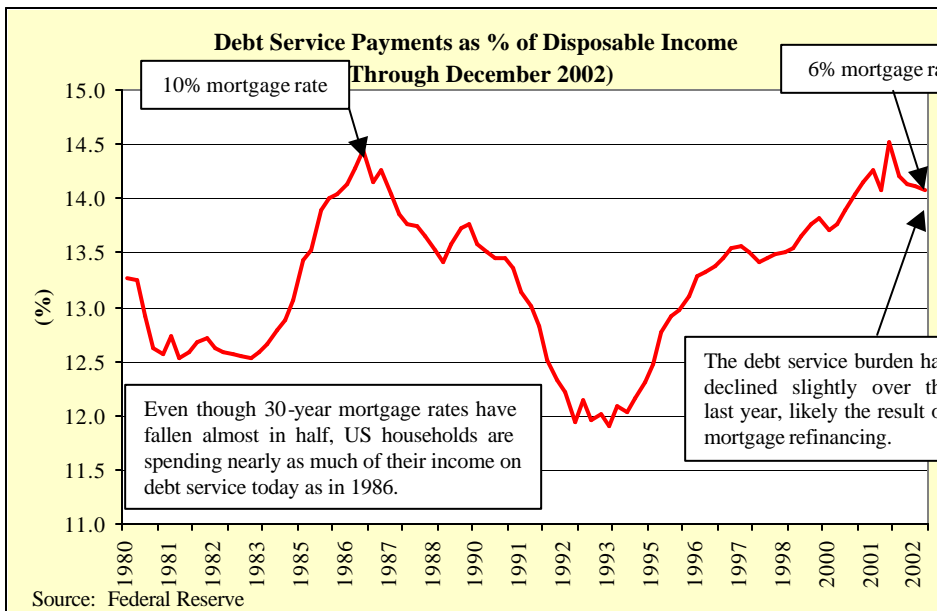
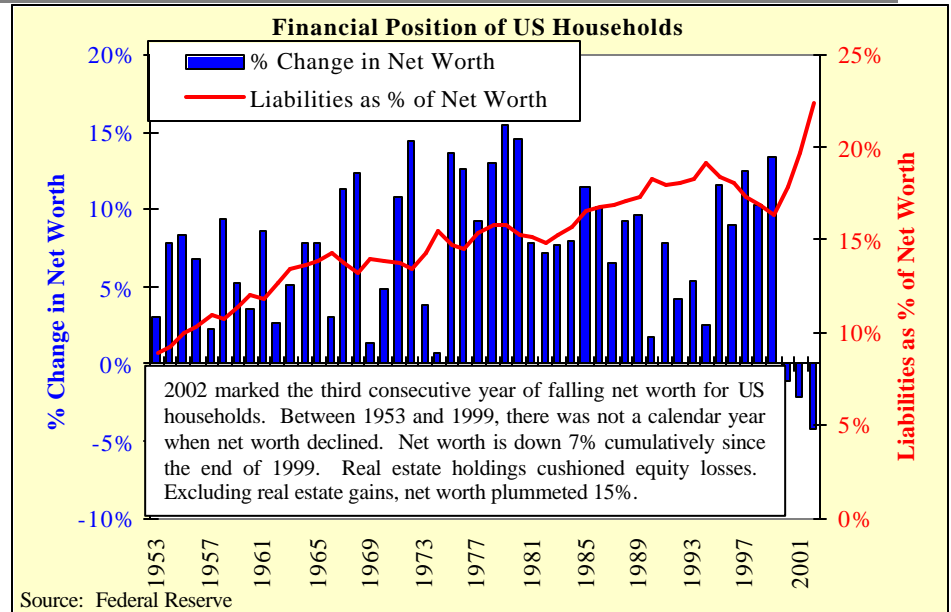
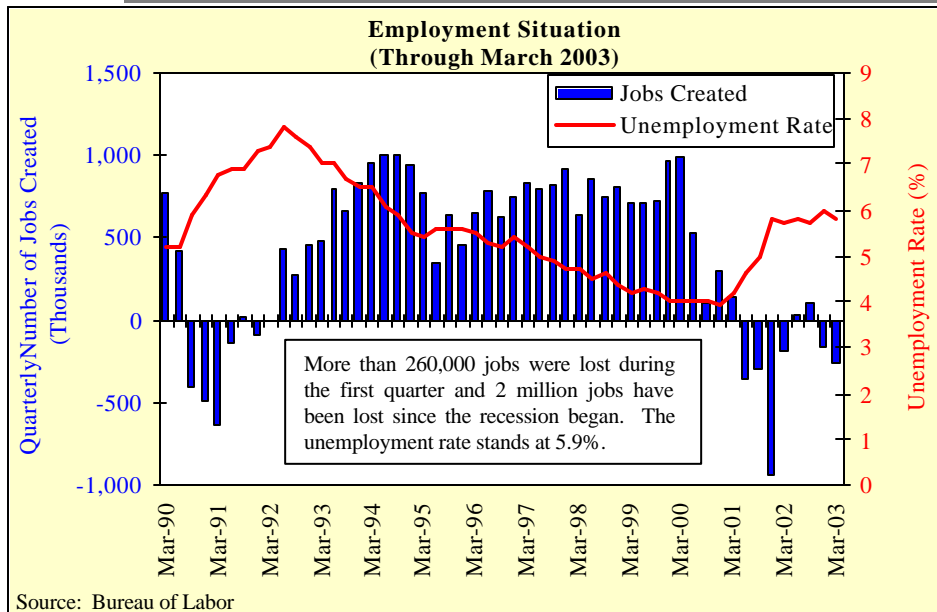
- The apparent success of the war in Iraq reduces economic uncertainty, but does not improve economic prospects by much (aside from lower energy prices). The same structural issues remain—excess debt and capacity. Forecasters surveyed by *The Economist* predict 2003 growth of only 2.2%, versus 2.5% in the January survey.
- Consumers delivered another year of spending growth in 2002. Spending growth in 2003, however, will likely fall below the 2002 level as consumers pay off debt.
- Business investment remains weak. With global excess capacity, high debt loads, and lackluster earnings, business investment is likely to remain depressed in the short-term.
- The best hope for 2003 may be Federal government spending. Government spending was the fastest growing segment of the economy in 2002 and is likely to be so again in 2003. Federal spending is expected to increase by 6.6% in 2003, excluding war and reconstruction costs.
- It may take a few more years of sub-par economic growth to work out the excesses from the late 1990's.

	2002 Growth (%)	Contribution to 2002 GDP Growth (%)
Personal Consumption Expenditures	3.1	2.1
Non-Residential Fixed Investment	(5.7)	(0.7)
Residential Fixed Investment	3.9	0.2
Change in Inventories	N/A	0.7
Government Consumption	4.4	0.8
Trade Balance	N/A	(0.7)
GDP Growth	2.4	2.4

Source: Bureau of Economic Analysis

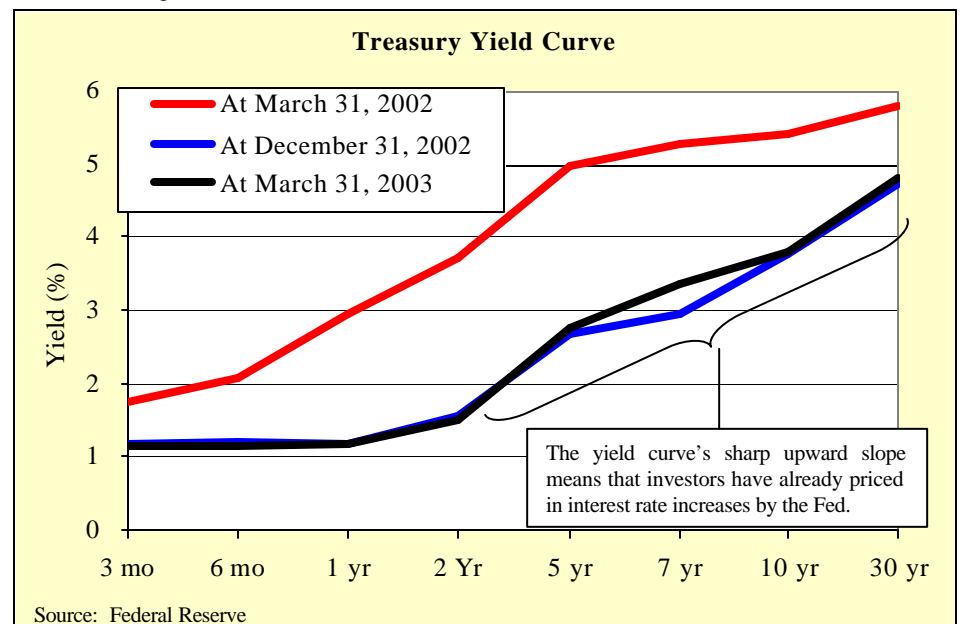
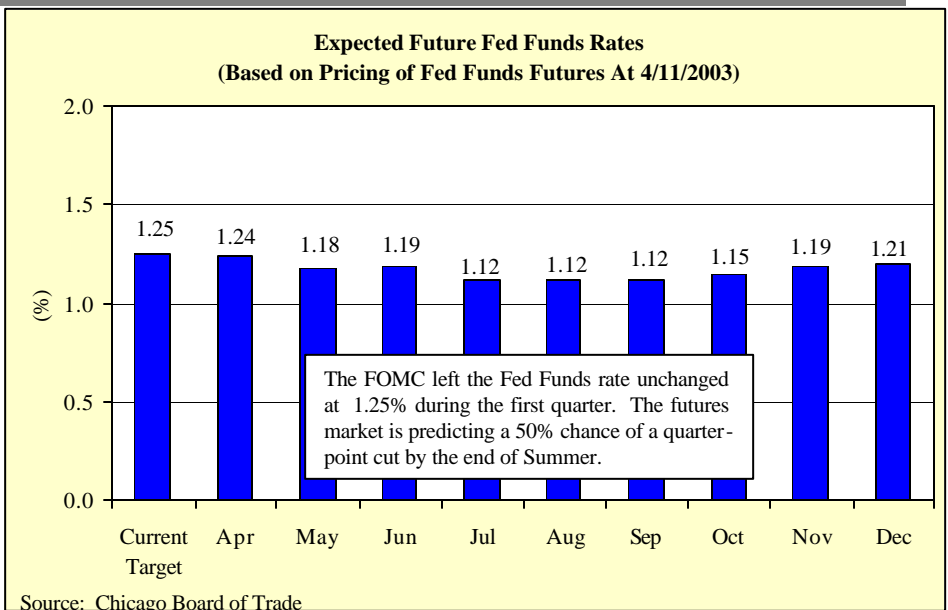


What's Next for the Economy? (cont.)

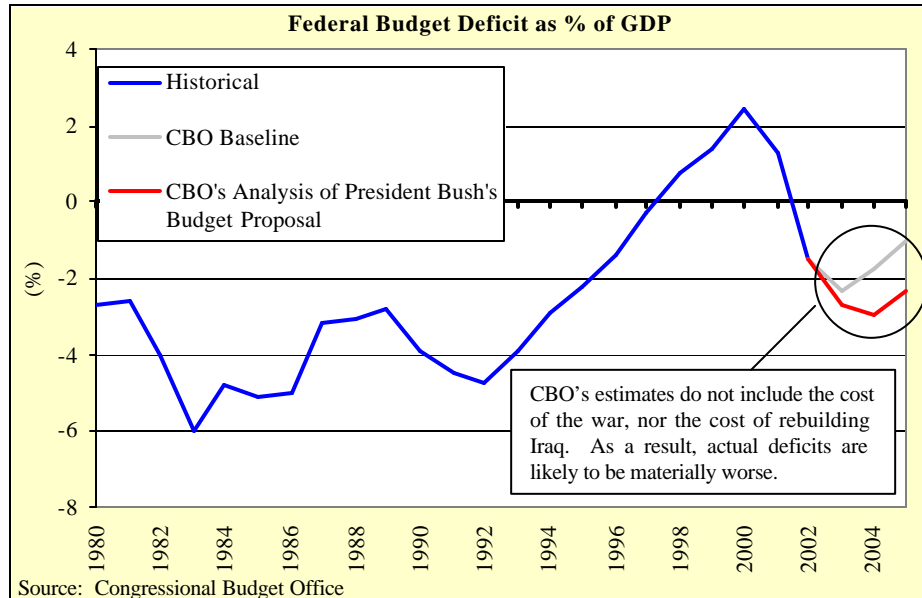
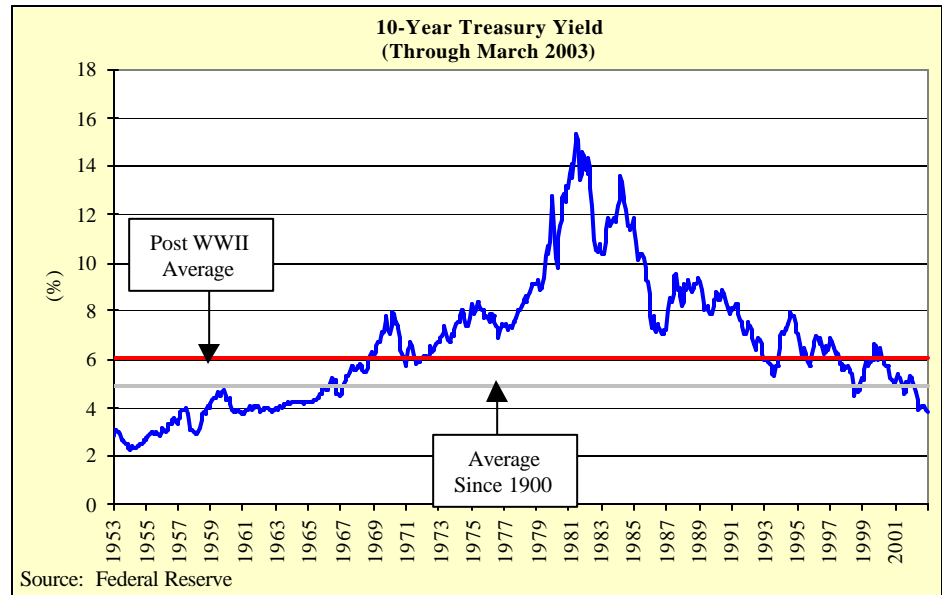
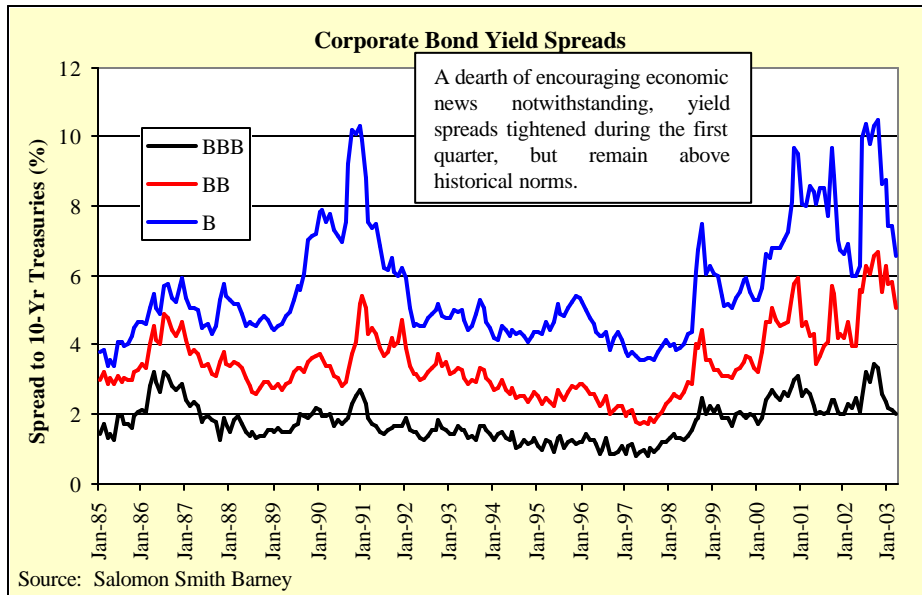


How Safe are Bonds?

- Bonds are coming off more than a twenty-year bull market. Long-bonds have cumulatively outperformed the S&P 500 over the past 10 years, and the Lehman Aggregate Bond index has cumulatively outperformed the S&P over the last 7 years. Are bonds the next bubble to burst?
- Over the short-term, bonds do not appear to be at particular risk. A 10-year bond has a current yield of 3.8%, which will provide a cushion against increasing interest rates. Since the economy remains sluggish, there is little reason to expect a sharp snap-back in interest rates.
- The steep yield-curve suggests that the market has already priced in some degree of Fed tightening, beginning perhaps in 2004. If the Fed tightens as expected, there will be a slow upward march in 10-year bond yields over the next few years, resulting in modest principal losses that will be more than offset by the income. If the Fed tightens much faster than currently expected (or the market's expectations change), bond investors risk loss of principal, net of income.
- At current yields, bonds clearly have downside risk. Nevertheless, a broadly diversified bond investment (e.g., Lehman Aggregate Bond index) still has much lower downside risk than stocks. Indeed, it is unlikely that the Lehman Aggregate bond index would fall 5% in a year, while we estimate that stocks have about a one-in-five chance of falling 5% or more.
- Bonds should continue to be a good diversifier to stocks. If the economy enters a double-dip recession, investment-grade bonds would likely continue to perform well, while stocks would continue to struggle.



How Safe are Bonds? (cont.)



Effect of Interest Rate Changes on 10-Year Bond Total Return (3.875% Coupon, 2/2013 Maturity, Current YTM = 3.8%)

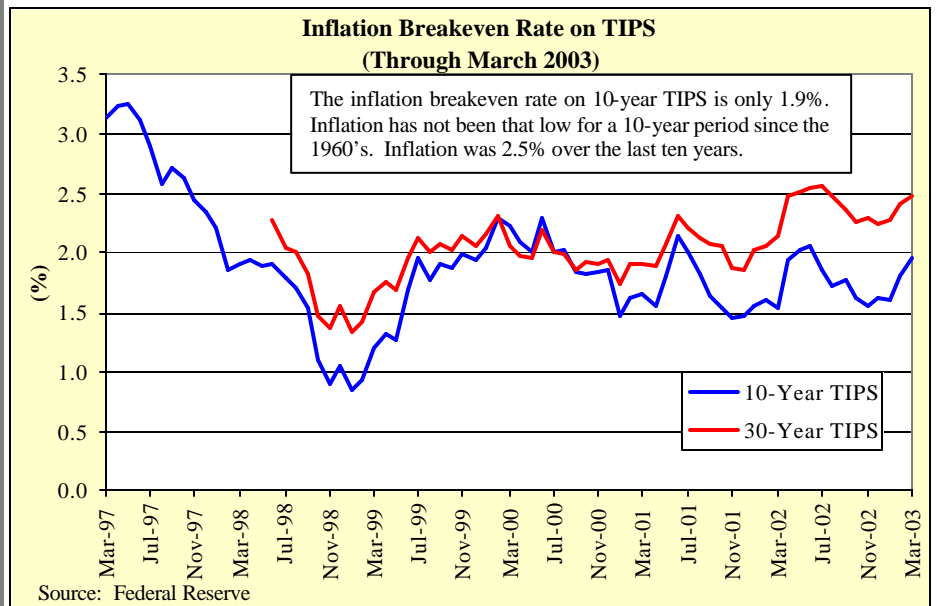
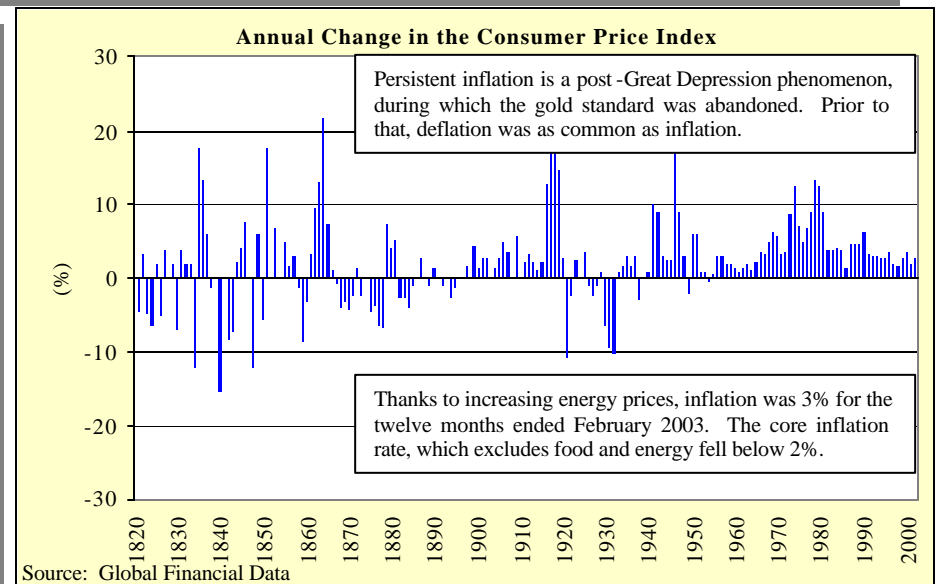
Ending Yield	Total Return Over Horizon		
	1 Yr (%)	3 Yr (%)	5 Yr (%)
3.0	10.4	5.5	4.6
3.5	6.3	4.5	4.1
3.8 (Current)	3.8	3.8	3.8
4.0	2.4	3.4	3.7
4.5	-1.3	2.4	3.2
5.0	-4.9	1.4	2.7
6.0	-11.6	-0.6	1.8
7.0	-17.8	-2.5	1.0

If the yield on the last issued 10-year Treasury Bond rises to 5% over the next year from the current yield of 3.8%, the total return for the bond would be -4.9%. If the yield rises to 5% over the next five years, the annualized total return for the five-year holding period would be +2.7%.

The Lehman Aggregate Bond index would change less in reaction to changing interest rates than the 10-year Treasury Bond. The 10-year bond has a duration of 8 years, while the Lehman index has a duration of 4 years. Furthermore, the Lehman index has substantial allocations to mortgage-backed and corporate bonds, which would likely further dampen the sensitivity to changes in interest rates.

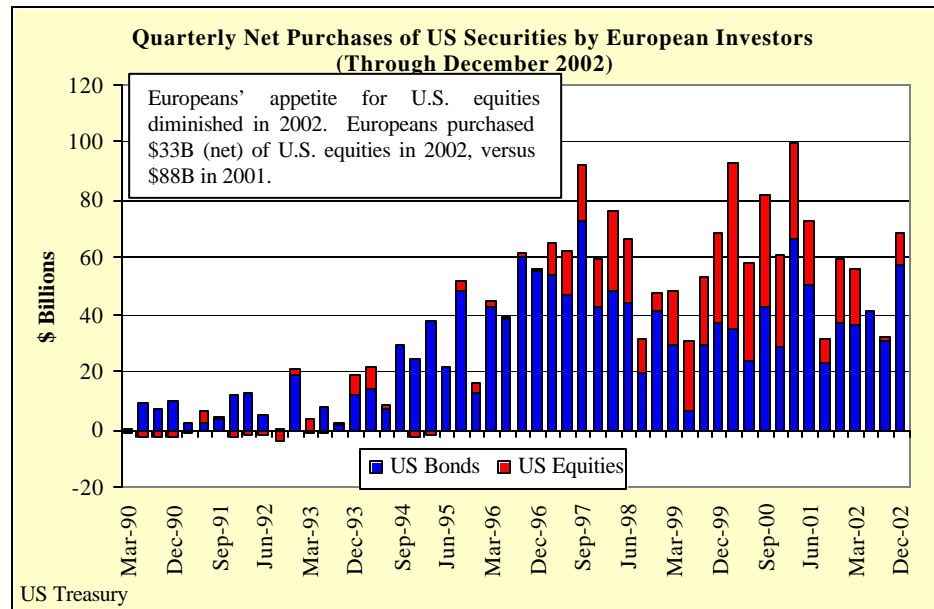
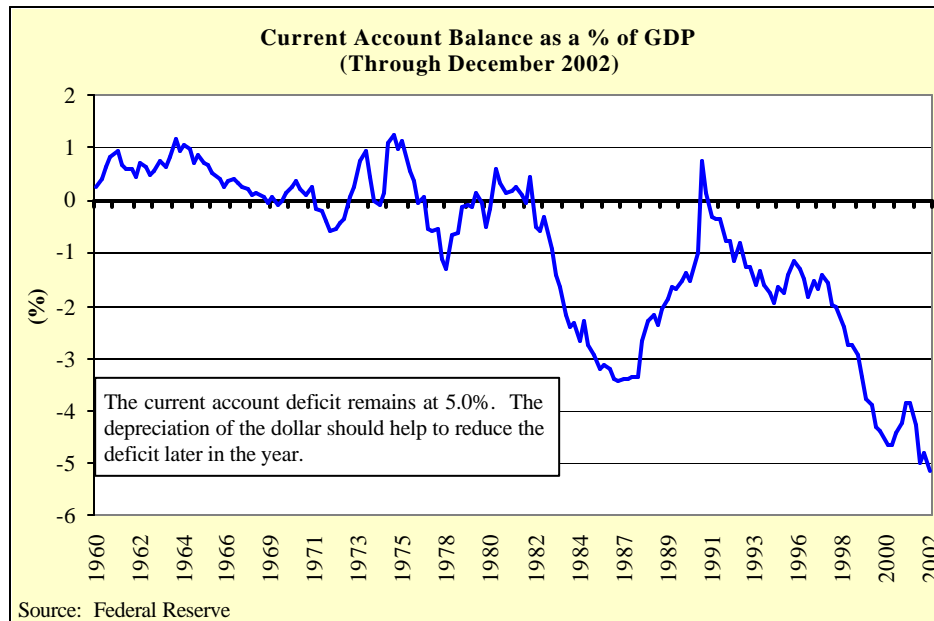
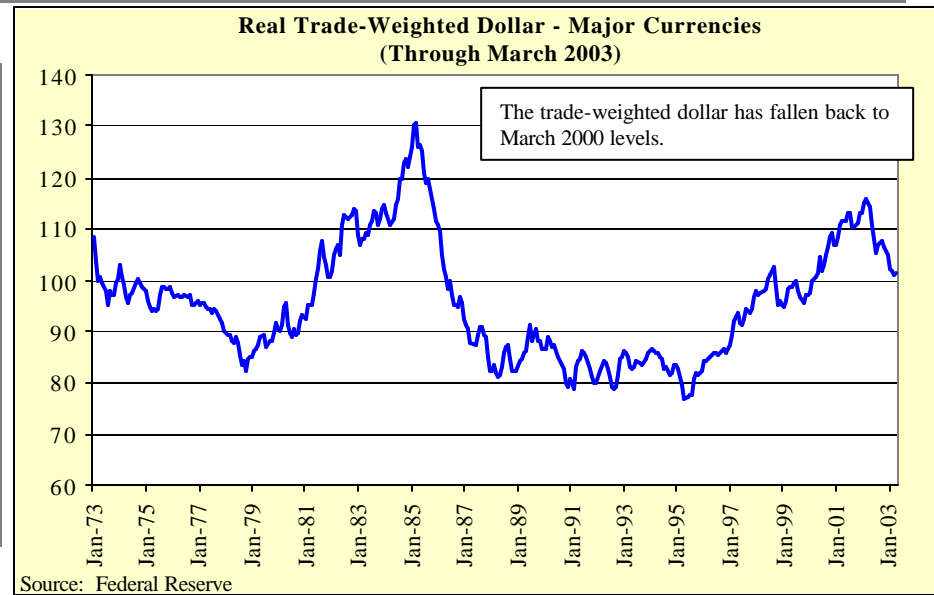
Deflation or Inflation?

- There has been speculation that the US today bears uncanny resemblance to Japan in the early 1990's. Japan, coming off a decade of amazing economic growth, had entered a recession that resulted from the popping of a financial bubble.
- Subsequently, Japan entered what economists refer to as a "liquidity trap," and as a result, has experienced sustained deflation. Despite near zero interest rates, nervous consumers have an incentive to hold cash because cash can be used to purchase more goods a year from now than today.
- Some deflationary forces exist in the US. Corporations still have little pricing power because of worldwide excess capacity and imports from emerging market countries. Furthermore, US households are likely to increase savings rates to strengthen their balance sheets.
- Is the US in danger of entering a liquidity trap? Recognizing what happened to Japan, Federal Reserve officials have made it clear that they will do everything in their power to fight deflation. One such tool at their disposal is to run the "printing press" to spark inflation.
- While there is a possibility of deflation over the near-term, especially if energy prices fall significantly, over the intermediate-to long-term, higher inflation appears much more likely.
 - The Federal Reserve will likely prefer to err on the side of higher inflation rather than deflation.
 - The falling dollar will make imports more costly.
 - Higher budget deficits tend to be inflationary (although it should be noted that Japan has very high budget deficits).
- As a result, inflation-protected bonds may offer greater safety than traditional bonds.



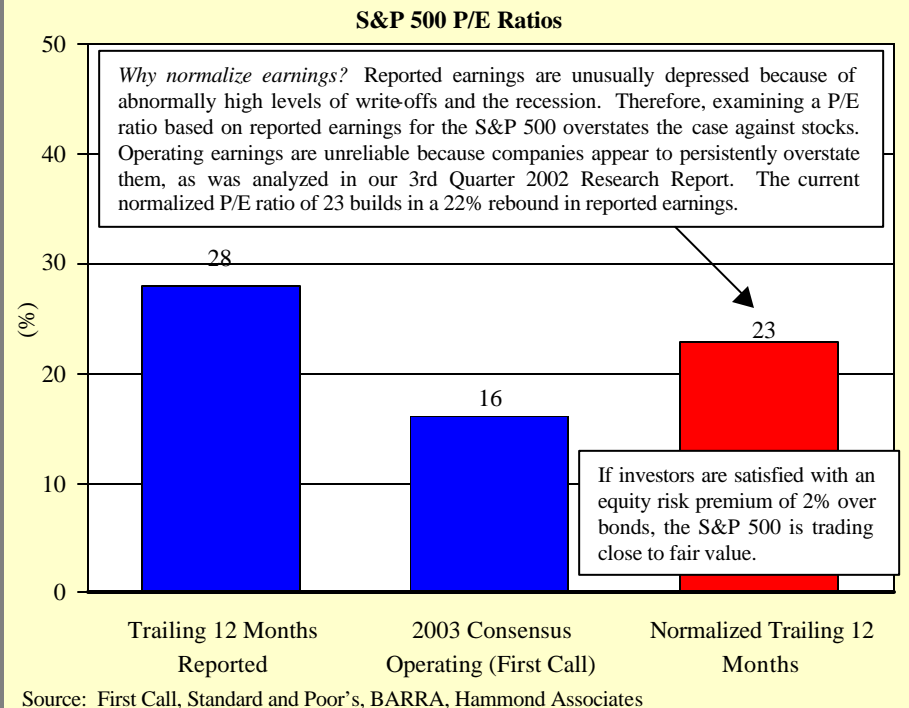
The Dollar Reached Four-Year Low Against the Euro

- The dollar continued to weaken in the first quarter, reaching a four-year low against the euro. During the quarter, the dollar shed 4% against the euro and is down more than 20% against the currency over the past two years. The dollar was essentially flat versus the yen for the quarter.
- The trade-weighted dollar (major currencies) is down 12% over the past two years.
- The US still requires more than \$500 billion per year from foreign investors to offset the current account deficit. Will the currency have to depreciate further to induce foreigners to purchase dollar-denominated assets?



Stocks Still Aren't Cheap

- The resolution of the war with Iraq should help to reduce stock market volatility and remove some of the uncertainty. Nevertheless, there is no fundamental reason to expect a sharp rebound in stocks, as they are still trading at stretched valuations.
- Earnings show few signs of rebounding to pre-recession levels. Economic growth does not look promising over the next few years, and contributions to defined benefit plans will reduce the capital available for new projects and distributions to shareholders. One bright spot is the weakening dollar, which should lead to greater exports and more pricing power within the US.
- Some argue that the high valuations are justified by abnormally low interest rates. The “Fed Model”, which compares the market’s level to the 10-year Treasury bond yield, suggests stocks are undervalued. Do low interest rates justify higher than normal P/E ratios?
 - Using a nominal interest rate to value stocks is an apples-to-oranges comparison because of inflation. In particular, a falling yield on a 10-year bond due to declining inflation expectations should not benefit stocks to the extent that the Fed Model suggests.
 - Over the long-term, real stock returns should behave independently of inflation because nominal earnings tend to move with inflation, leaving real earnings to grow along with real GDP. When inflation is high, earnings growth in nominal terms is higher than average (1970's). When inflation is low, nominal earnings growth is below average (1950's).
 - A more robust interest rate valuation metric is to compare the earnings yield (inverse of the P/E ratio) on stocks to the yield on 30-year TIPS plus an equity risk premium. Since TIPS' yields are stated in real terms, this model negates the effects of inflation expectations. Based on normalized earnings, the earnings yield for the S&P 500 is at 4.4% versus the yield on 30-year TIPS of 2.6%, which means that stocks are priced to provide a 1.8% equity risk premium relative to TIPS. If a 2% equity risk premium is desired, stocks are less than 5% overvalued. If investors require a 3% risk premium, stocks are 22% overvalued.

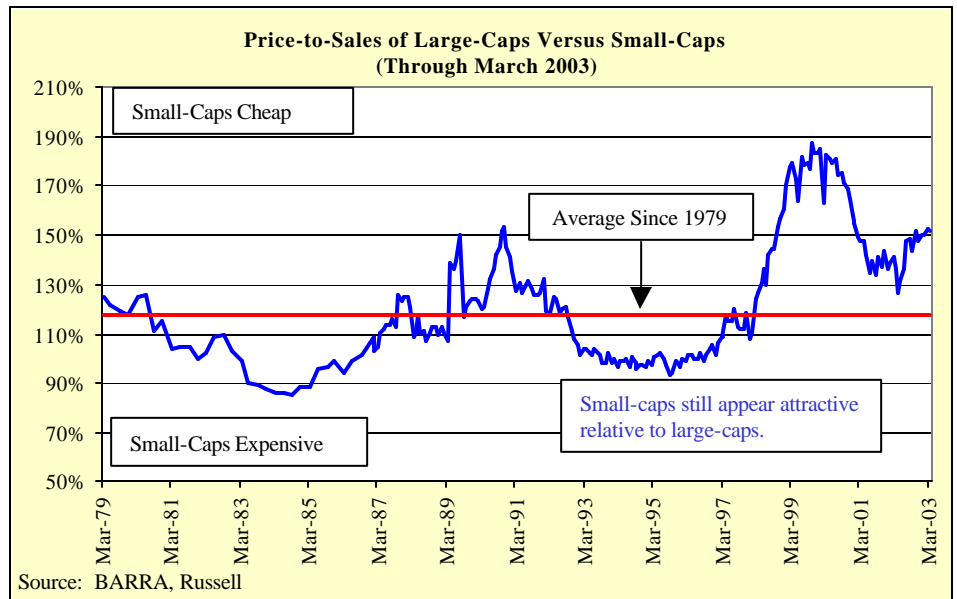
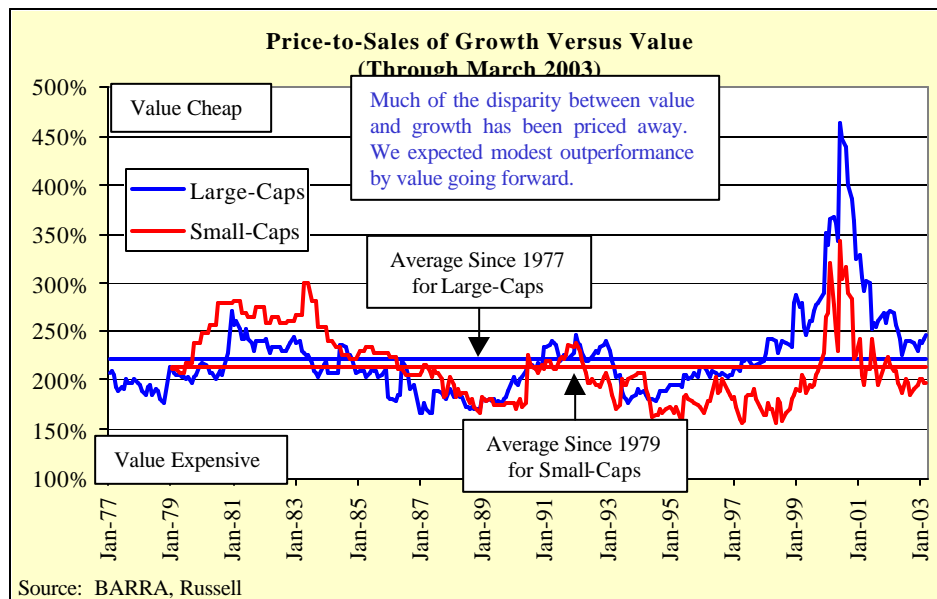
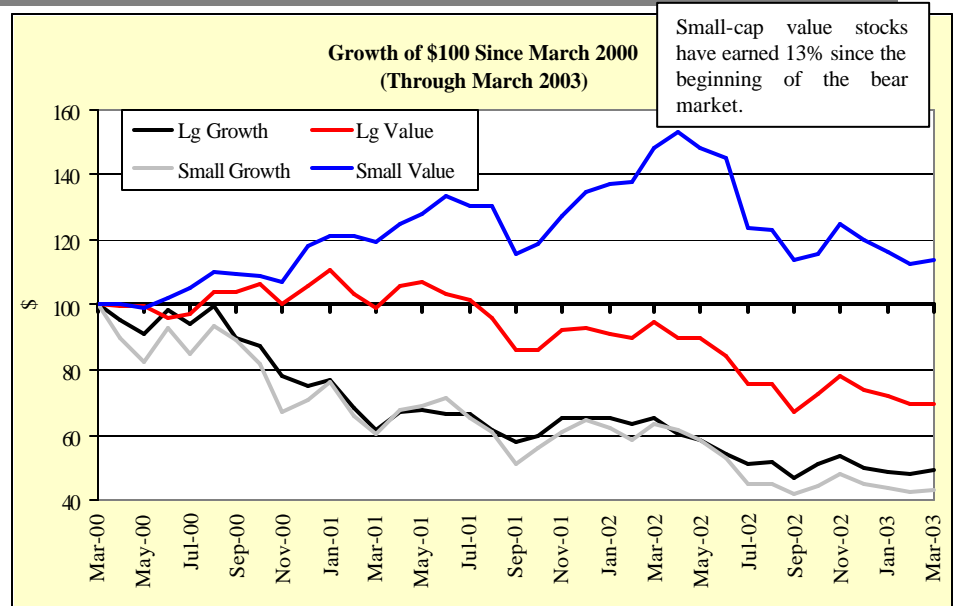
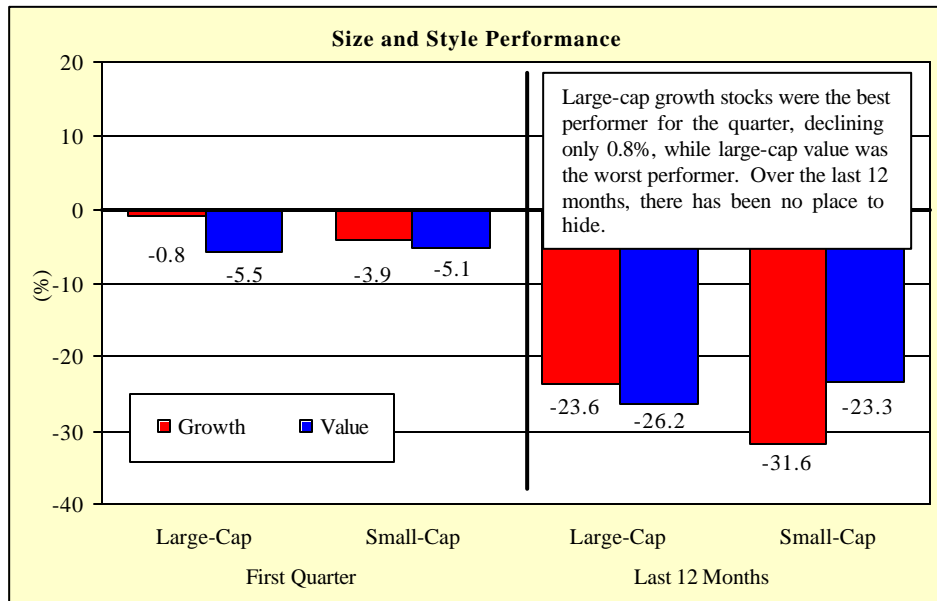


Our best estimate

Expected Annualized Total Return on S&P 500 Over Next 10 Years ¹						
Annualized GDP Growth	Normalized P/E Ratio at Year 10					
	10x	15x	20x	25x	30x	40x
2.0%	-0.7%	2.9%	5.6%	7.7%	9.5%	12.4%
2.5%	-0.2%	3.4%	6.1%	8.3%	10.1%	13.0%
3.0%	0.3%	3.9%	6.6%	8.8%	10.6%	13.5%
3.5%	0.8%	4.4%	7.2%	9.3%	11.1%	14.1%
4.0%	1.3%	5.0%	7.7%	9.8%	11.7%	14.6%

¹ GDP growth stated in real terms, while the S&P 500 expected return stated in nominal terms (2.5% assumed inflation).

Large-Caps, Growth Outperformed During Quarter

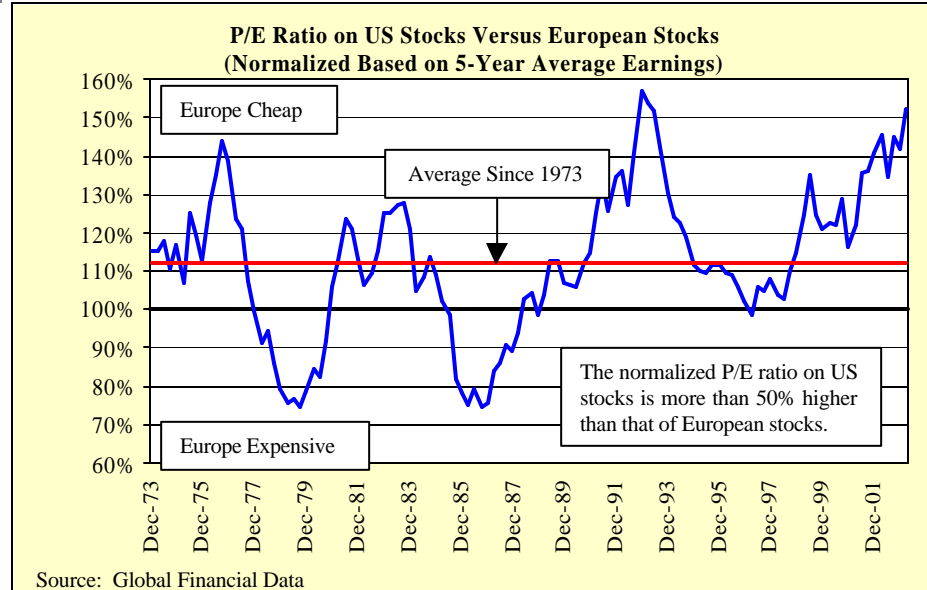
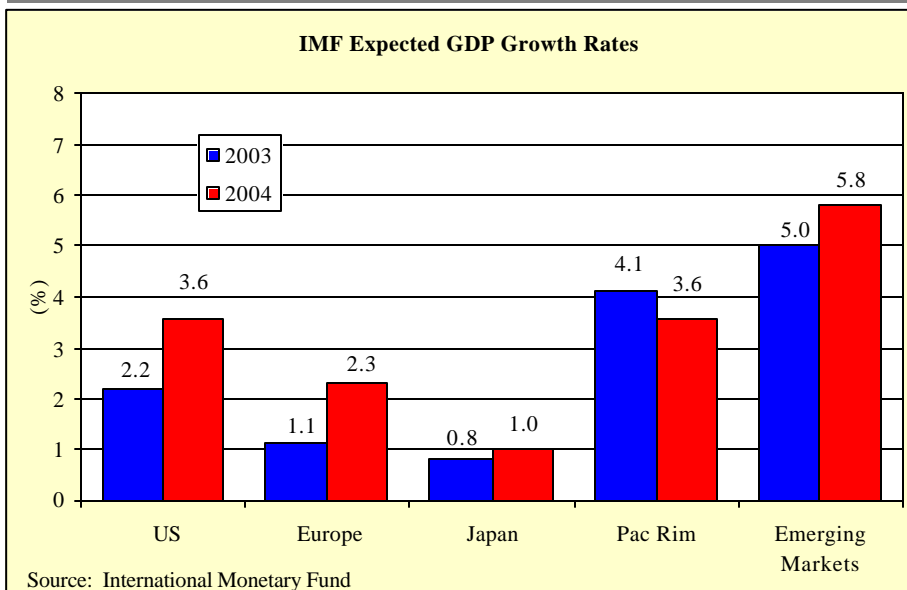
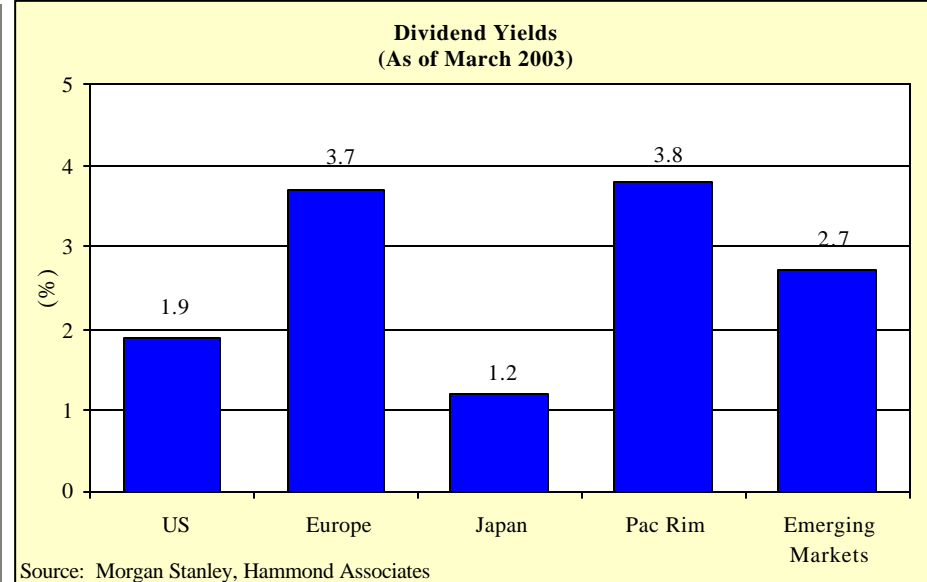


Source: BARRA, Russell

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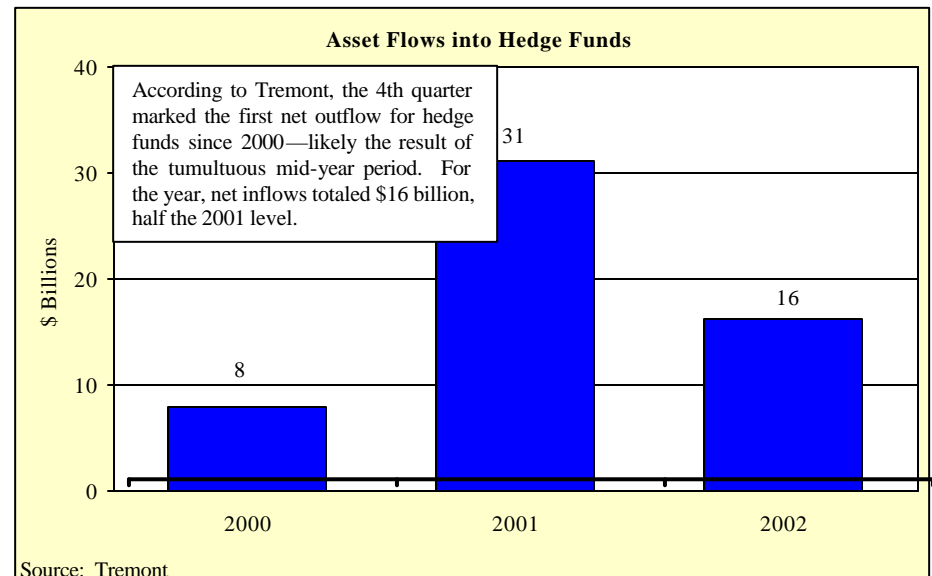
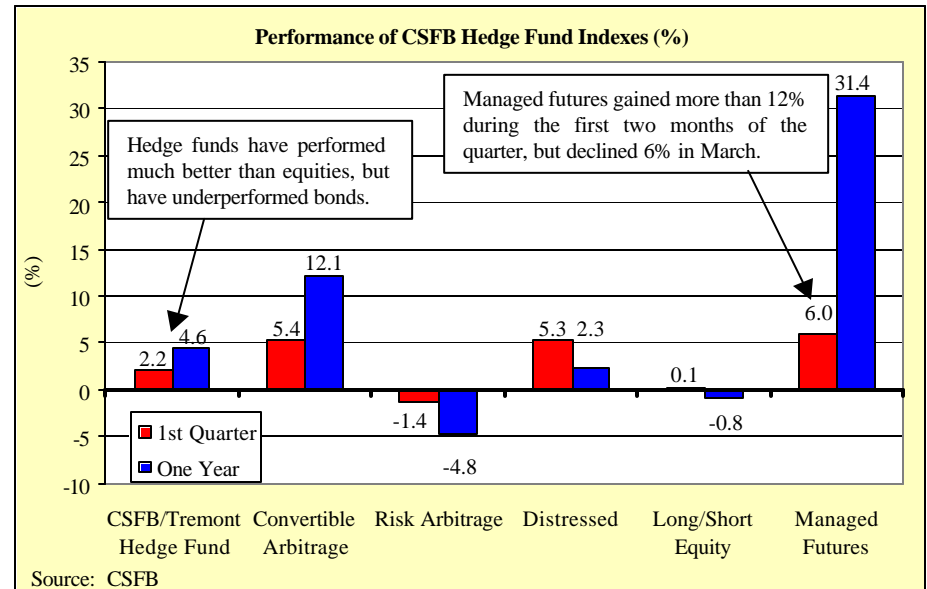
Internationals Attractive on a Valuation Basis

- International stocks had a hideous first quarter, as the MSCI EAFE index declined 8.2% (down 10.0% in local currency). Nevertheless, international stocks appear very attractive versus US stocks.
- Whereas the US is trading at valuations in excess of historical norms, European stocks are trading near long-term average valuations. Europe provides a dividend yield of 3.7%, versus just 1.9% for the US. Even emerging market stocks are providing a substantially higher dividend yield than US stocks.
- A concern with Europe is that their economies are in even worse shape than the US economy, although the cheaper valuations should more than offset the effect. Emerging market economies, on the other hand, are expected to grow twice as fast as the US in 2003.



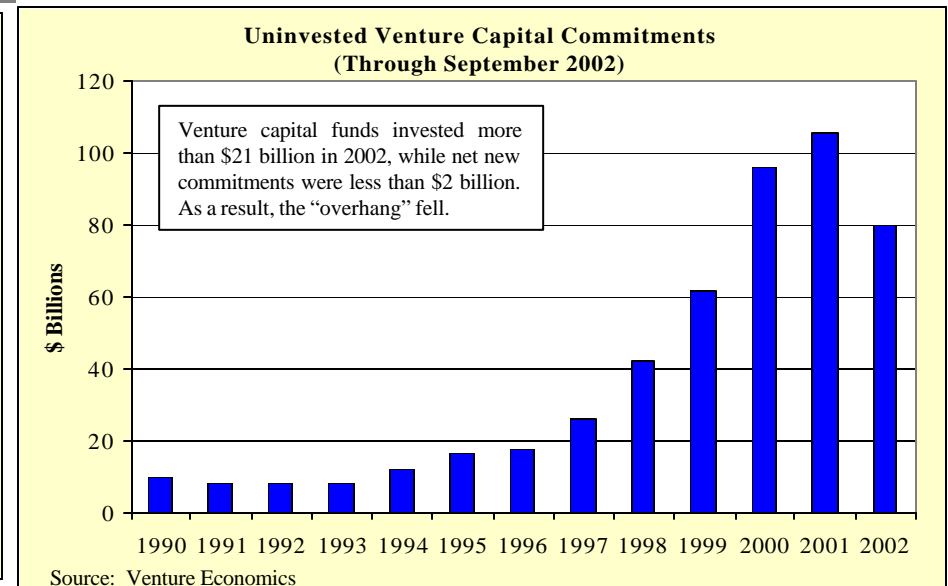
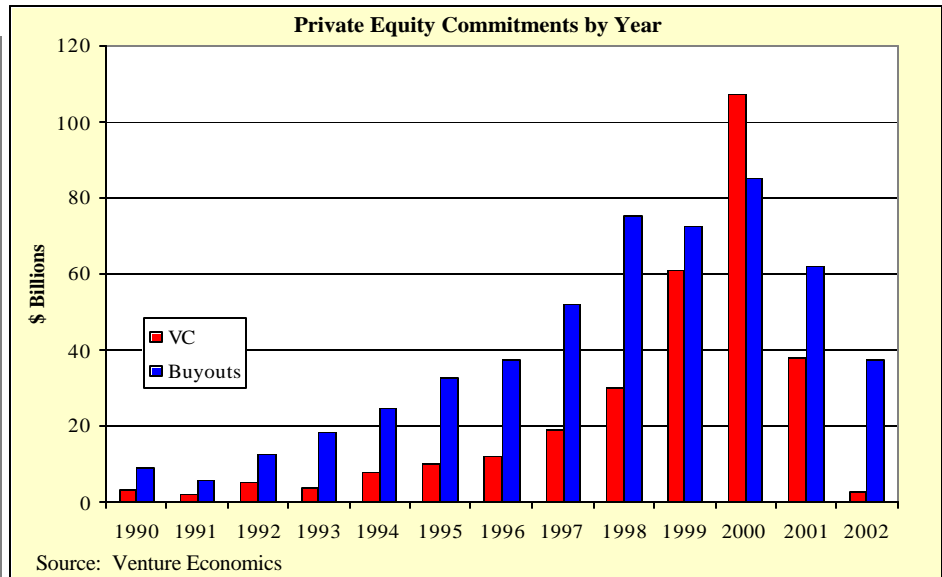
Hedge Funds – *Caveat Emptor*

- Performance across most hedge fund strategies was positive for the quarter and the past year. During the quarter, distressed securities and convertible arbitrage benefited from their credit exposure, while risk arbitrage and long/short equity were hurt by depressed merger & acquisition activity and equity market exposure, respectively.
- Hedge funds may be in store for greater oversight by the Securities and Exchange Commission. In late March, the SEC announced it will hold public, roundtable discussions on hedge funds in May, as part of their ongoing investigation of hedge funds begun last June.
 - To date, the SEC has focused primarily on investor protection issues due to the explosive growth of hedge funds as investors seek relief from the bear market.
 - A central issue in the SEC’s investigation is the “retailization” of hedge funds. Investor eligibility qualifications, which are based on thresholds of net assets or annual income, have remained essentially unchanged for more than 20 years. As such, far more investors qualify as “sophisticated” under these standards than originally intended. In addition, the new phenomenon of registered funds of hedge funds opens the doors to investors for minimum investments of as little as \$25,000.
- Some degree of increased regulation of hedge funds would be a positive development for investors and the industry, particularly if the focus is on investor suitability, conflicts of interest, and security pricing policies. Nevertheless, oversight will not reduce the need for exhaustive due diligence by investors.



Private Equity – The Song Remains the Same

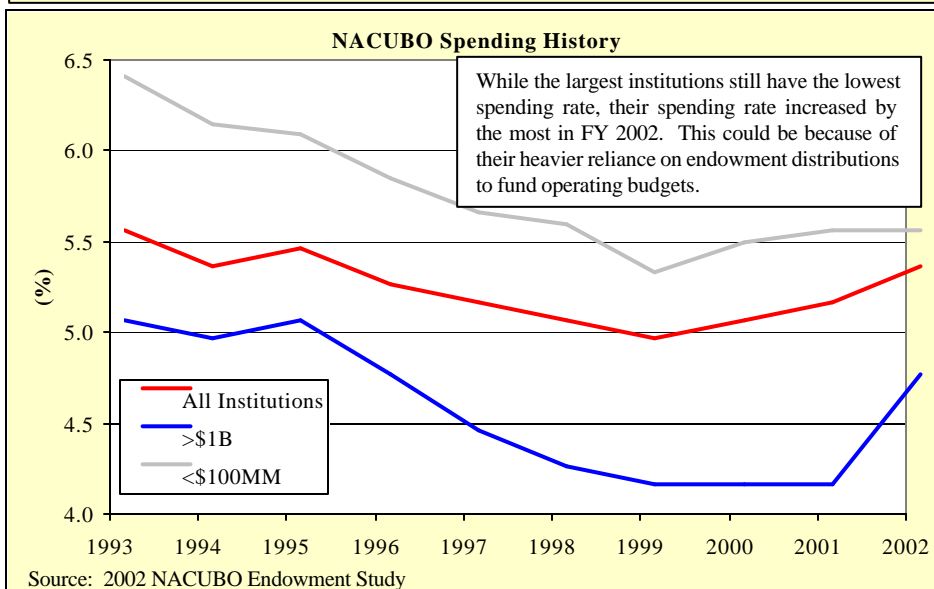
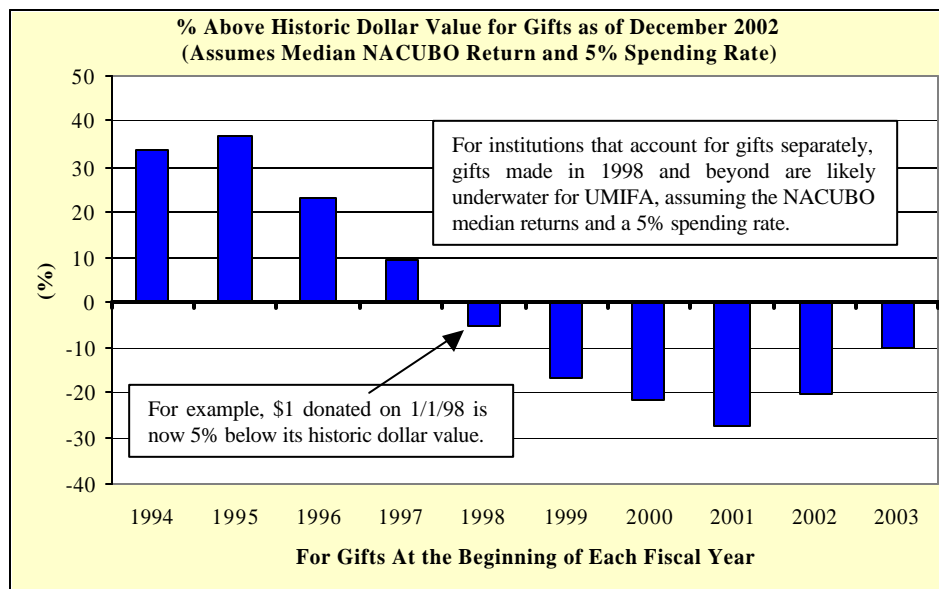
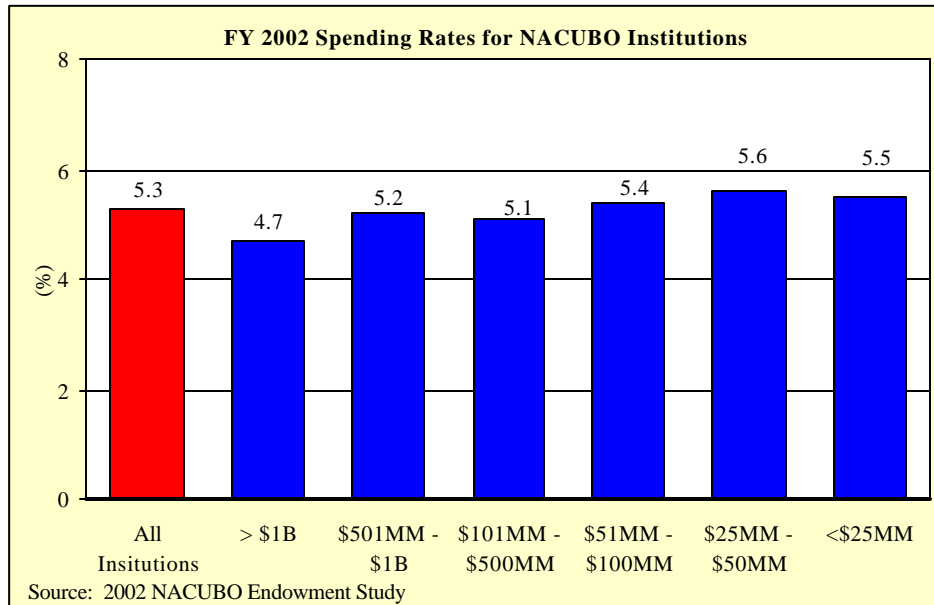
- Most private equity markets remain in the doldrums. New commitments to venture capital funds totaled only \$7 billion in 2002, but \$5 billion of commitments were released by partnerships. Buyout commitments, at \$37 billion for 2002, were much healthier, but were the lowest level since 1996.
- On a positive note, the venture capital overhang was reduced by about one-fifth during 2002. Nevertheless, the remaining overhang is roughly equivalent to total commitments from 1994 through 1998.
- The most attractive area of private equity continues to be distressed debt, although the window is slowly closing as more money flows into the asset class. Mezzanine debt also offers opportunities.



NACUBO Spending Rates Increased in FY 2002

- The recently released 2002 National Association of College and University Business Officers (NACUBO) Endowment Study showed, as expected, higher average spending rates. The average spending rate (based on beginning of FY 2002 market values) now stands at 5.3% versus 4.9% in 1999. Spending rates are likely to continue to increase.
- Some institutions are spending into UMIFA* problems. The act states that institutions can only spend endowment funds to the extent that the market value exceeds the "historic dollar value," or cumulative contributed funds. A survey by the Commonfund reported that 12% of the surveyed institutions spent into their historic dollar value during FY 2002. This is likely to worsen in FY 2003.

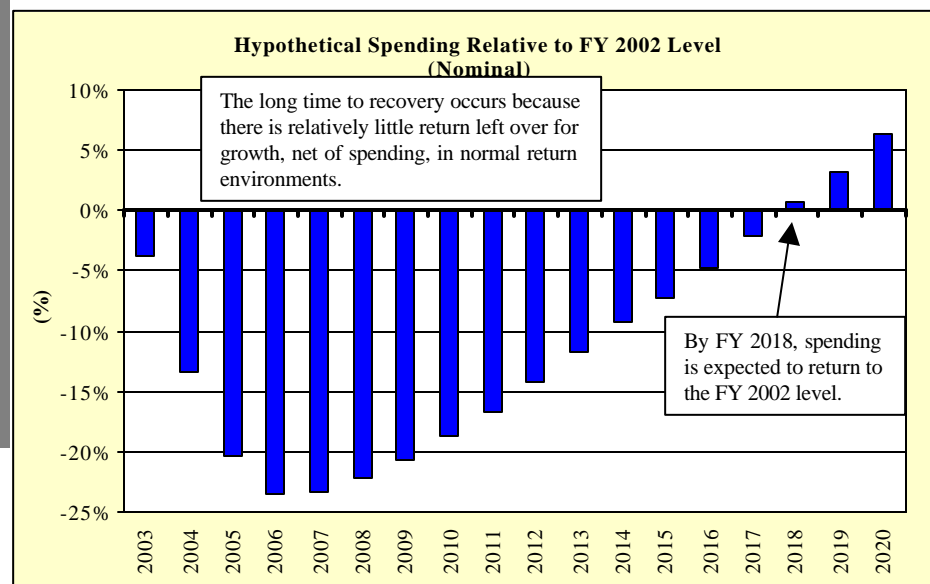
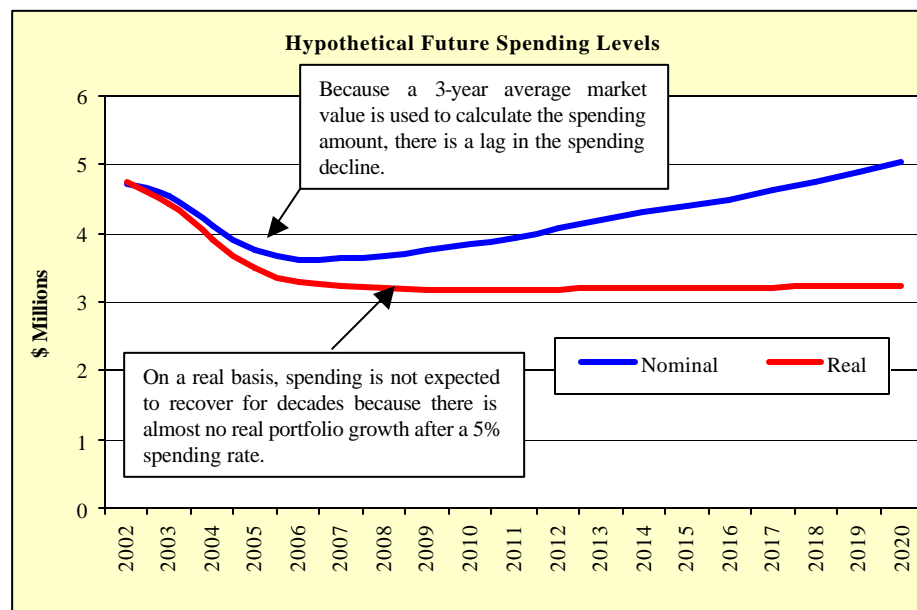
*Uniform Management of Institutional Funds Act



Effect of the Bear Market on Institutional Spending

- The equity market's decline will put pressure on institutional spending. During fiscal year 2001 (through June 2001), the average National Association of College and University Business Officers ("NACUBO") member institution lost 3.7%, before spending, and 6% in FY 2002. We estimate that the average institution has lost 7% so far in FY 2003 (through March).
- To determine the effect of the bear market on institutional spending, we performed a simulation. We began with a \$100 million portfolio at the end of FY 2000 (June 2000) with a 5% spending rate (on the trailing three-year average market value). We then applied the loss of 3.7% for FY 2001, the FY 2002 loss of 6%, and the estimated FYTD 2003 loss of 7%. As of March 2003, the portfolio was worth \$73 million.
- Beginning in January 2003, we estimated future returns based on our expectations for the average NACUBO institution and applied those to the portfolio. *We assumed no portfolio contributions.*
- The results of this simulation are alarming. By FY 2006, nominal spending is expected to decline by 23% from the FY 2002 level (\$4.7 million to \$3.5 million). Spending is not expected to recover completely until 2018. There is a one-in-four chance that spending will not recover completely for more than thirty years.
- Of course, portfolio contributions will improve the results. However, fundraising may be more challenging in the future given the recent performance of the equity markets.

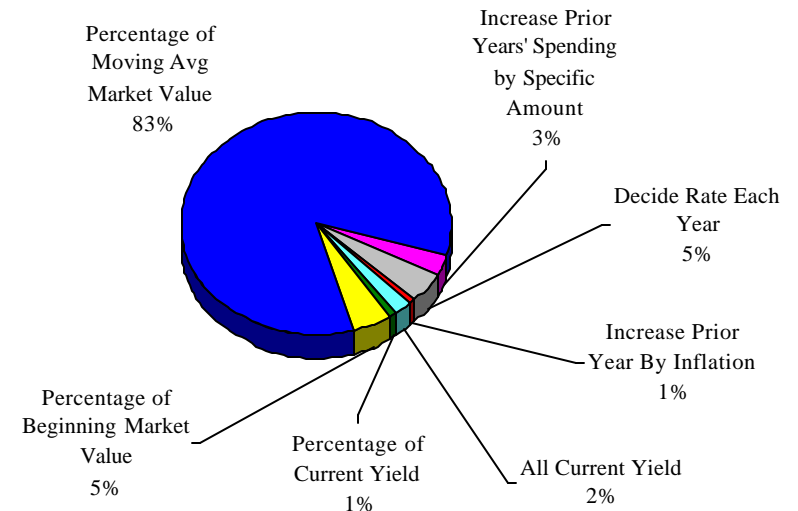
Hammond Associates has prepared a special report on the coming crisis in endowment and foundation spending. If you would like a copy, please check the box on the last page and return it to us.



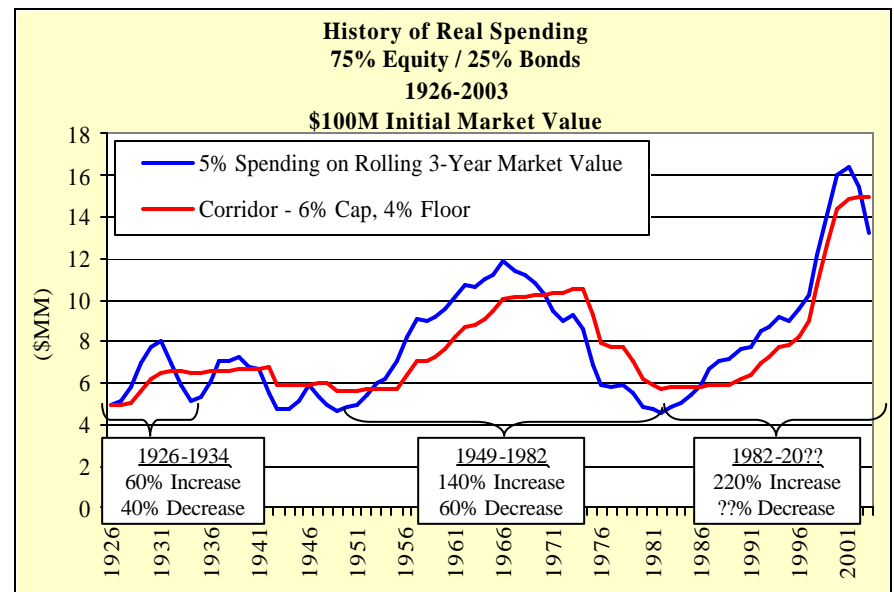
Analysis of Spending Formulas

Endowment Spending Rules

- Given the significant volatility in spending produced by a three-year average formula, it may be time to evaluate alternative long-term spending methodologies to reduce volatility of future spending.
- We have evaluated three spending formulas under varying market environments:
 - Rolling N-Period Average:** The spending amount is $x\%$ of the average of ending market values over the prior n periods (years or quarters).
 - Corridor:** The spending amount increases at an assumed rate of inflation, with a cap of $z\%$ of market value and a minimum $y\%$ of the trailing three-year market value.
 - “Yale” Method:** The spending amount is determined by taking the weighted average of the prior year’s spending amount adjusted for inflation (e.g., 70% weight) and $x\%$ of the market value (e.g., 30% weight).
- The following page summarizes the results of our analysis. However, institutions should be wary about implementing a new spending methodology that will artificially inflate short-term spending (such as a corridor method beginning with an inflated 2002 spending level). If a new spending methodology is adopted, institutions should make efforts to reset the initial spending amount to desired long-term levels.



Source: 2002 NACUBO Endowment Study



Analysis of Spending Formulas (cont.)

<i>Objective</i>	<i>Best</i> → <i>Worst</i>			<i>Comments</i>
Maximize Short-Term Spending Normal Environments	Yale	Rolling	Corridor	Yale has the highest effective spending rate in normal environments.
Minimize Spending Volatility in Normal Environments	Corridor	Yale	Rolling	Corridor spending increases 2.5% in most years.
Maintain/Increase Endowment Value in Normal Environments	Corridor	Rolling	Yale	Corridor has lowest effective spending rate in normal environments.
Minimize Spending Decline in Bad Environments	Yale	Corridor	Rolling	Yale has most effective smoothing method for extreme market returns.
Maintain Endowment Value in Bad Environments	Rolling	Corridor	Yale	Yale's effective spending rate is the highest after a significant market decline.

- To analyze the effects of various spending calculations on spending levels and portfolio values over 10 to 20 years, Monte Carlo simulations were performed using a 70% equity/30% fixed income portfolio, a 2.5% inflation rate, and our risk and return assumptions. The cap for the Corridor method was 6% and the minimum was 4%. The spending rate for the other methods was 5%. The rolling average was computed for 3 years.
- It is impossible to determine with certainty how various spending methodologies will react in different market environments, because they all depend on prior market conditions. However, some generalizations can be made.
- The corridor method provides the most predictable spending in most environments, since spending increases by inflation in most years. The corridor generally results in a lower effective spending rate during rising markets, because gains in excess of the spending rate plus inflation are “saved” to the extent that spending exceeds the floor.
- The rolling method results in more volatile spending, but does the best job of protecting principal during periods of poor returns. This method is best for institutions who have flexibility in their budget and are primarily concerned with protecting the endowment’s value.
- The Yale method essentially behaves as a blend of the two spending methodology. It has higher year-to-year spending volatility than the corridor method, but lower volatility than rolling. It will generally result in the highest effective spending rate, since the prior year’s spending is increased with inflation.

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