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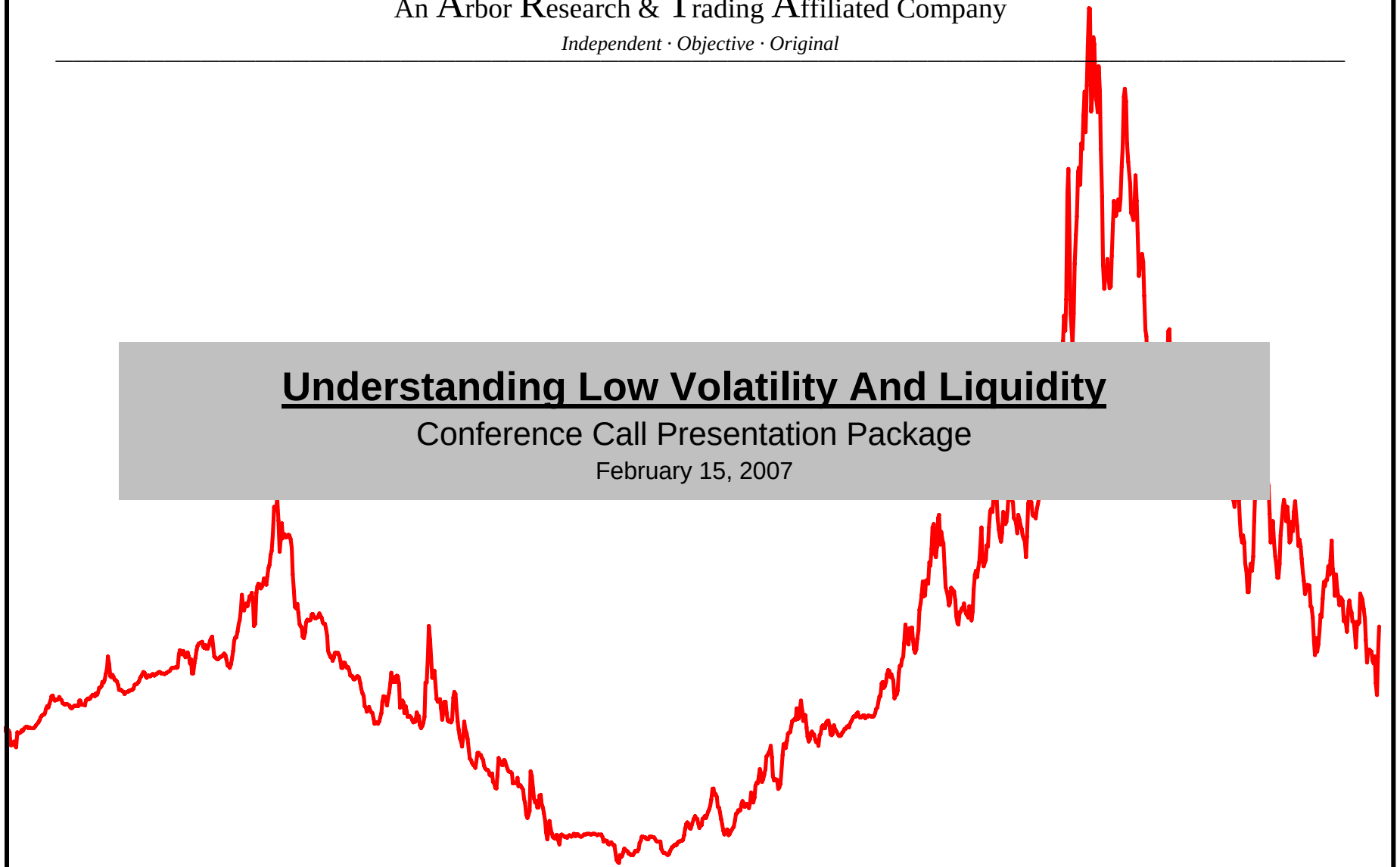
Understanding Low Volatility And Liquidity

Conference Call Presentation Package

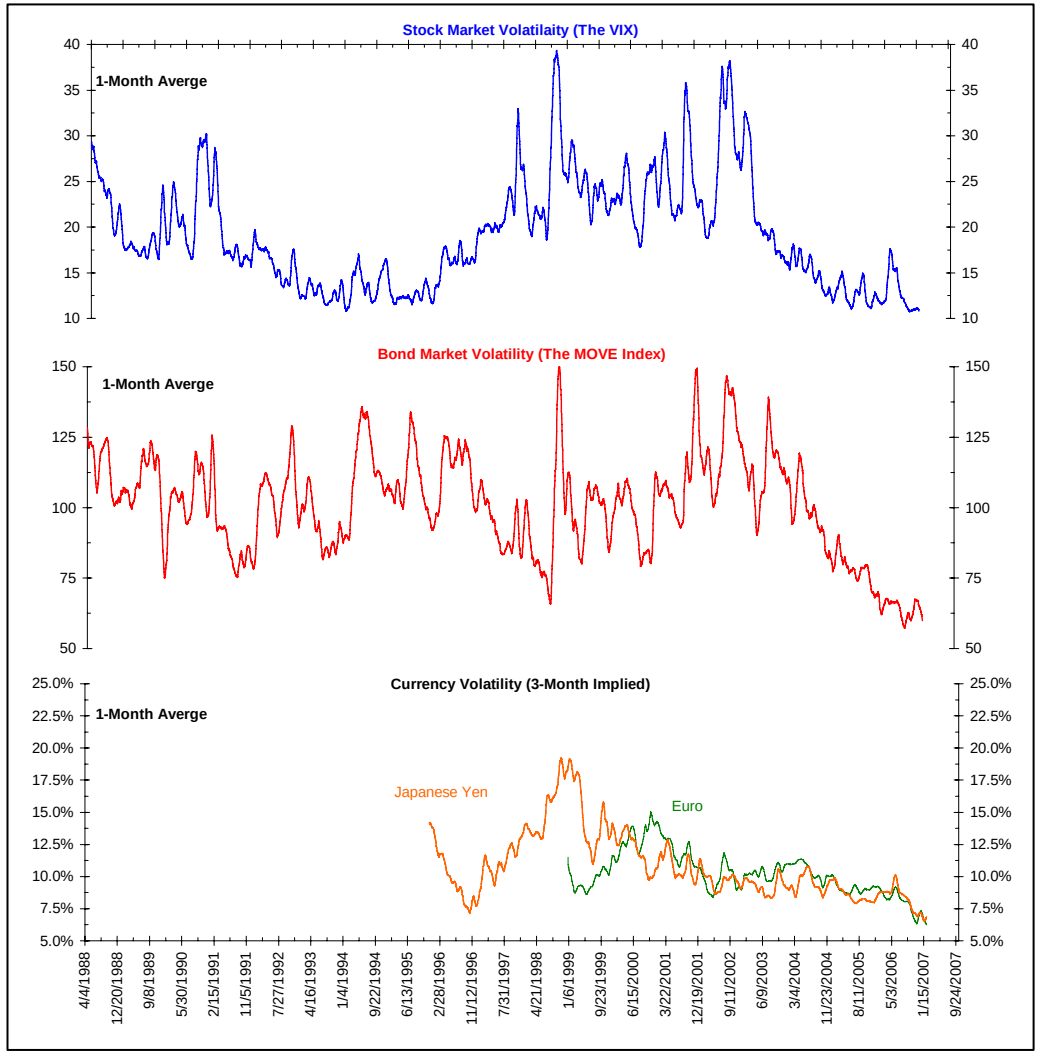
February 15, 2007



Long-Term Interest Rates - 1900 to 2005

Low Volatility Everywhere

The three panel chart to the right shows the implied volatility for the U.S stock market (the VIX, in blue in the top panel), the U.S. bond market (the MOVE, or **M**errill **O**ption **V**olatility **E**stimate, index in red in the middle panel) and currencies (the Yen in orange and the Euro in green in the bottom panel).



Excess Liquidity Does Not Drive Volatility

The problem with liquidity as an answer is it is a concept not a measurement. Traders define liquidity as the ability of a market to absorb flows **without** a change in price. So, by this definition, an increase in liquidity should lead to stable-to-lower volatility. This is why most associate liquidity with lower volatility.

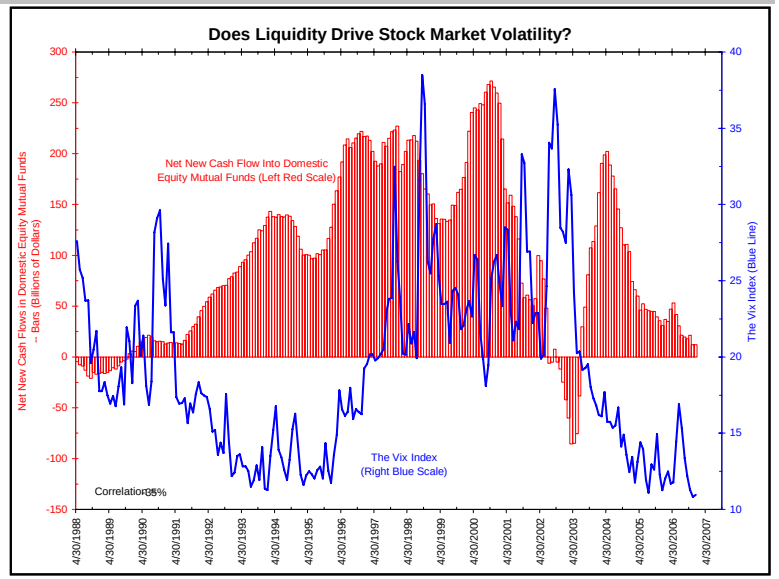
However, this is decidedly **not** what market pundits and many investors currently mean by liquidity. We believe they mean a variation of the monetarist definition of inflation – too much money chasing too few investments. To separate this from the traditional definition of liquidity, we will refer to this as *excess* liquidity. The genesis of much of this excess liquidity is Japan and the yen carry trade (see the cover of this week's BusinessWeek).

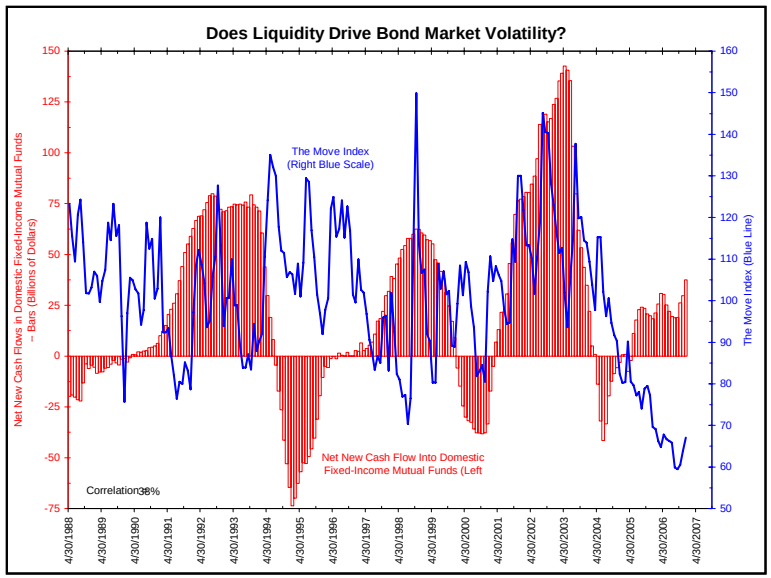
Unlike liquidity, excess liquidity can contribute to expectations of **rising** volatility (implied volatility) by distorting valuations.

One of the least controversial measures of excess liquidity is the net new cash flow into domestic U.S. equity and taxable fixed-Income mutual funds. Many believe these flows dominated the landscape in the 1980s (fixed-income) and especially the 1990s (equities). So an inspection of these flows against implied volatility can prove enlightening.

The two charts to the right show these mutual funds flows on a 12-month basis (red bars) overlaid with measures of implied volatility (blue line).

On each chart is a correlation. Neither the charts nor the correlations suggest excess liquidity directly influences implied volatility. The relationships are too unstable.





Investor Skew In Volatility

Implied volatility is the market's opinion of what to expect. What influences these expectations?

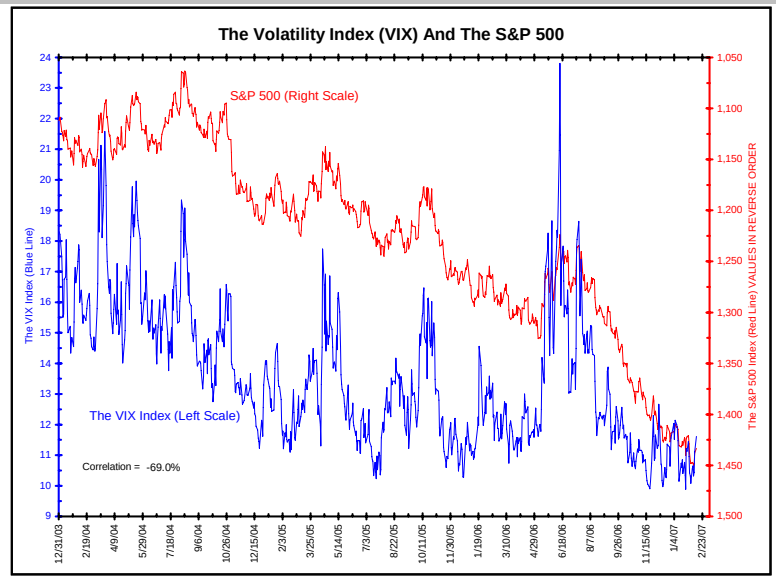
The market is made up of participants who are **not** indifferent to changing market levels. Rising markets have different meanings than falling markets. Implied volatility reacts differently when a market rises than it does when a market falls. Stocks have a bias, or an investor skew.
We detailed this concept in a Special Report last May and highlight in Market Fact about crude oil last month.

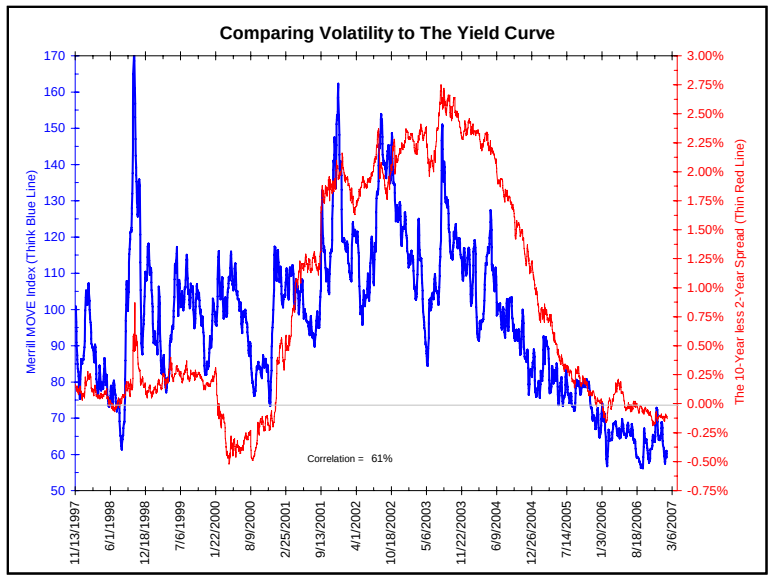
To illustrate this skew, the two charts below highlight the VIX (first chart blue line) against the S&P 500 (first chart, red line) and the and MOVE (second chart, blue line) index against the yield curve (second chart, red line). The market's opinion about volatility is influenced by the direction of the market.

Rising stock prices, all other things held equal, typically produce lower implied volatility. Investors do not fear rising stock prices; this is what stocks are supposed to do.

All things being equal, flatter yield curve produces a lower MOVE index. When the long-term interest rates converge with short-term interest rates, investors are not demanding a premium for holding longer-term maturities so measures of implied volatility tend to fall.
So, to have a situation where stock and bond volatilities are low together, a backdrop of high stock prices and an inverted curve is helpful.

So how many times has the stock market performed well with an inverted yield curve? The answer is not many. An inverted yield curve is viewed as a leading indicator of a recession, as are poorly performing stocks. Consequently, stocks historically perform poorly when the yield curve is inverted.





Central Banks Offer Perfect Clarity

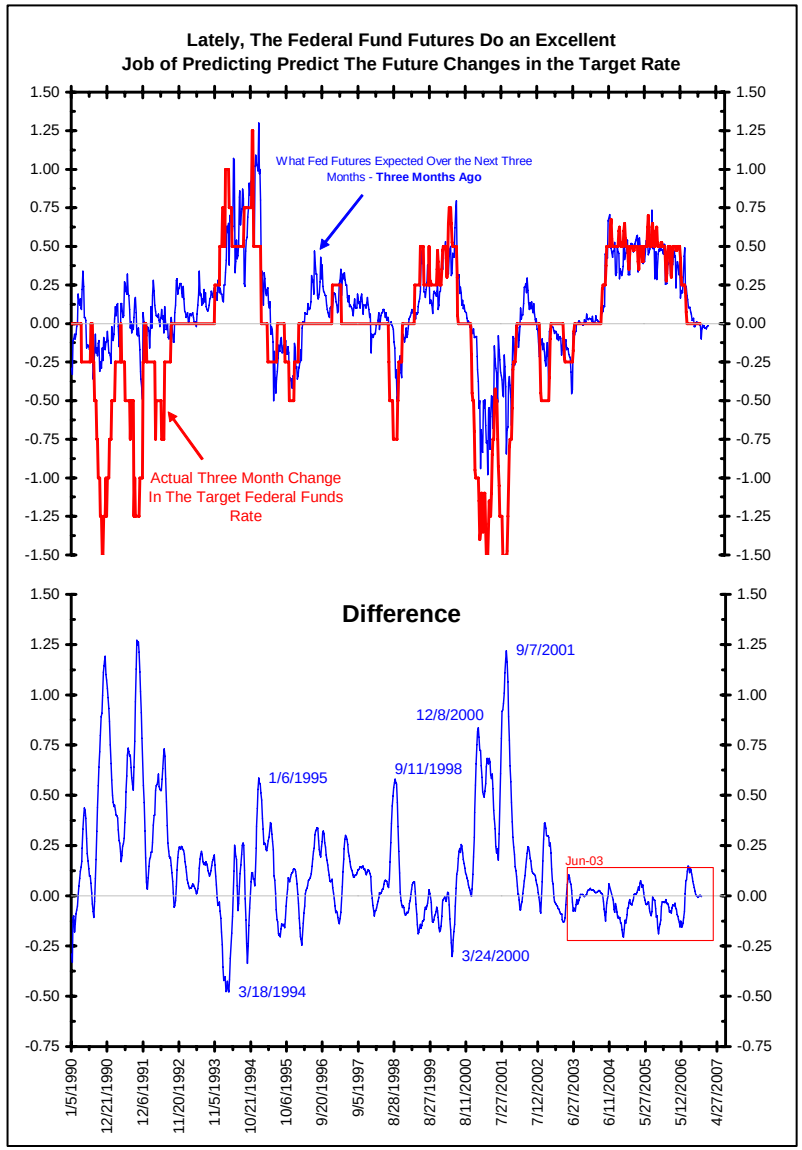
The chart to the right is our measurement of Federal Reserve transparency. The top panel shows the actual three-month change in the target federal funds (red line) and what the fed funds expected over the next three months – **three months ago**. The bottom panel plots the difference between the two.

Since June 2003, the differences between expectations for the Fed and actual funds rate movements have converged to the smallest range ever. Making this all the remarkable is this occurred while the Fed raised rates at 17 consecutive meetings.

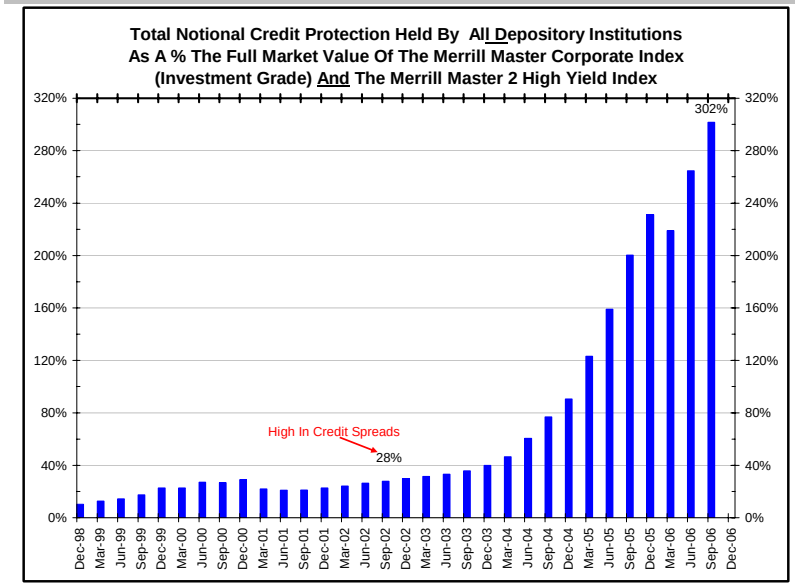
So what happened in mid-2003? Simple answer - "forward looking statements."

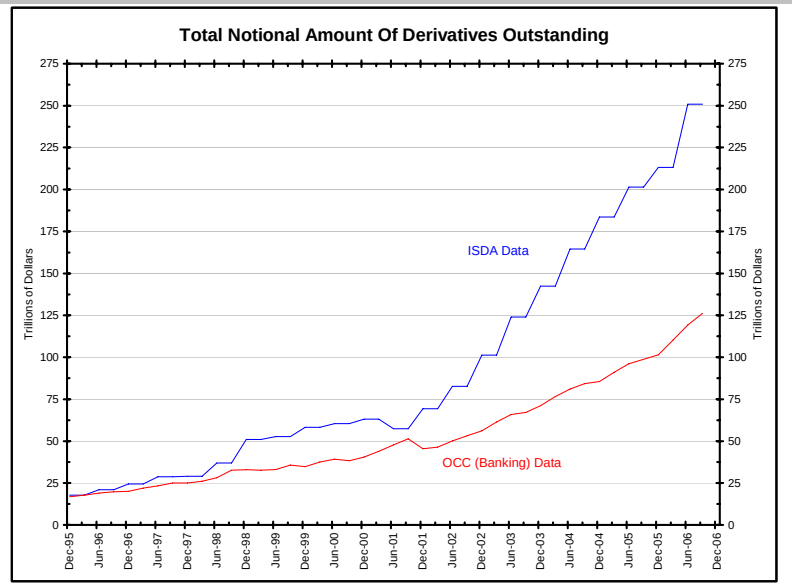
Recall that in mid-2003 the target federal funds rate was 1.00%. The Fed had recently declared war on deflation. The market was worried the Fed was running out of room to cut and was openly discussing the Fed buying Treasury bonds to affect monetary policy (dubbed "unconventional means"). Greenspan, looking to defeat deflation want to make sure everyone understood his intentions. Therefore, in mid-2003, he started offering "forward looking statements" about future of monetary policy.

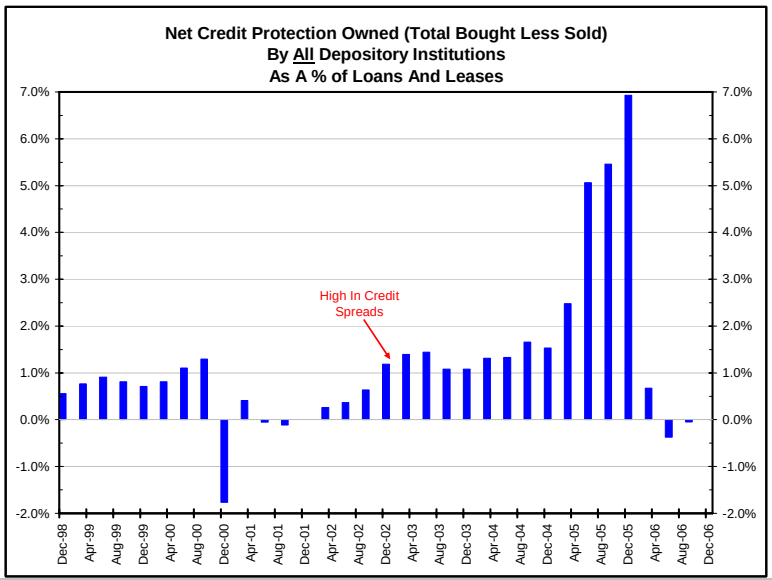
First was "considerable period," then "patience" and finally "measured." These statements left no doubt what the Fed was going to do months before they did it.

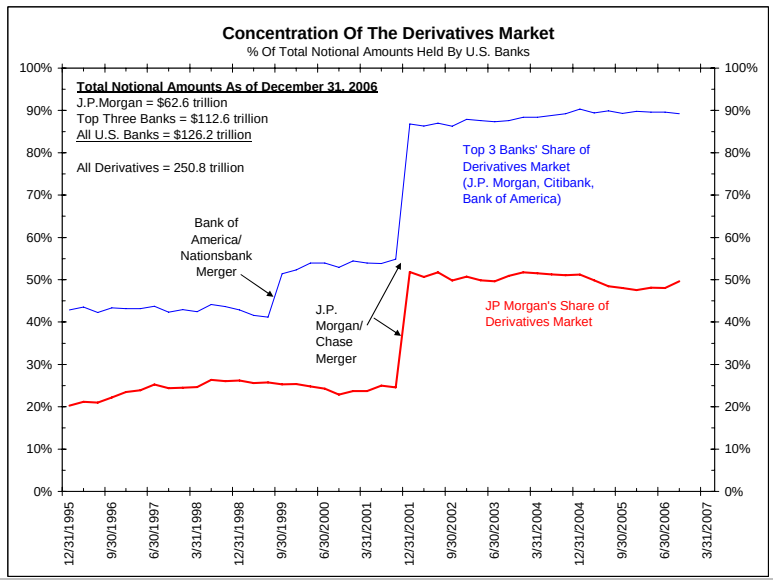


Derivatives And Risk Transfer

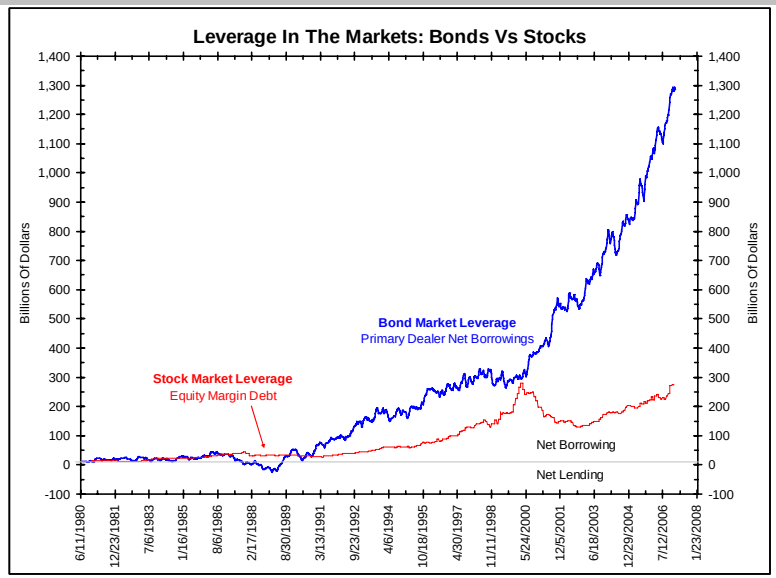


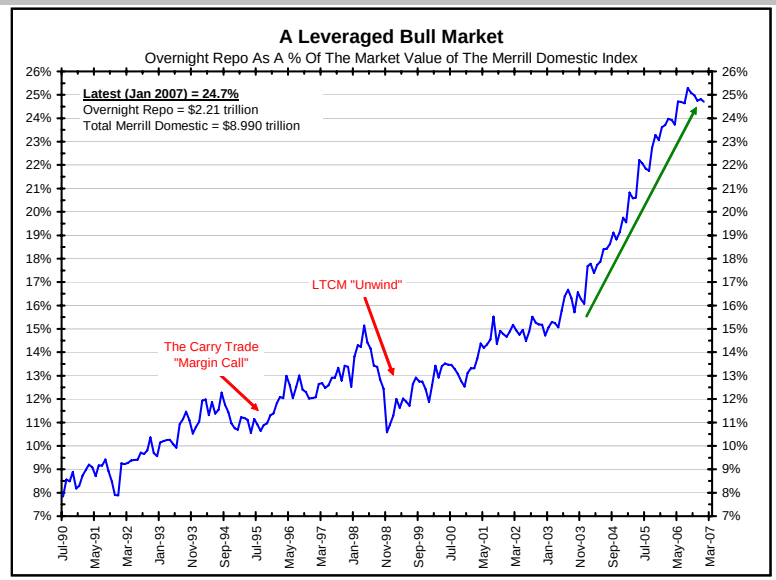


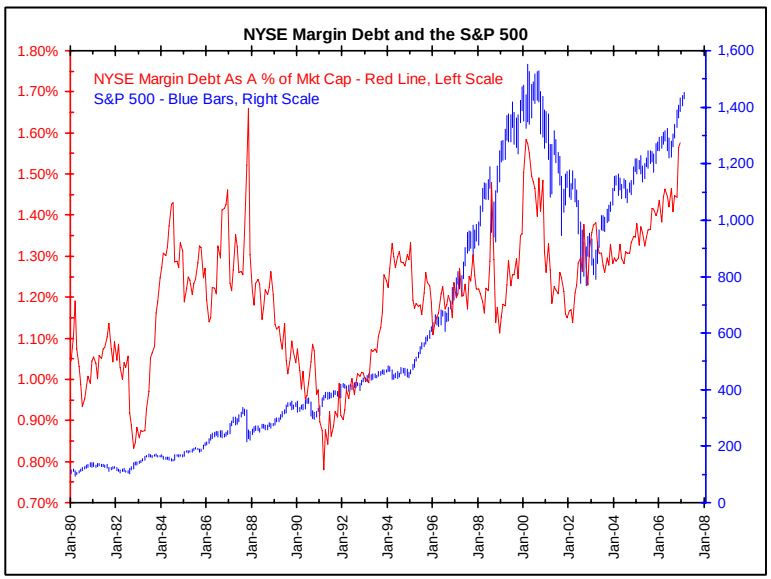


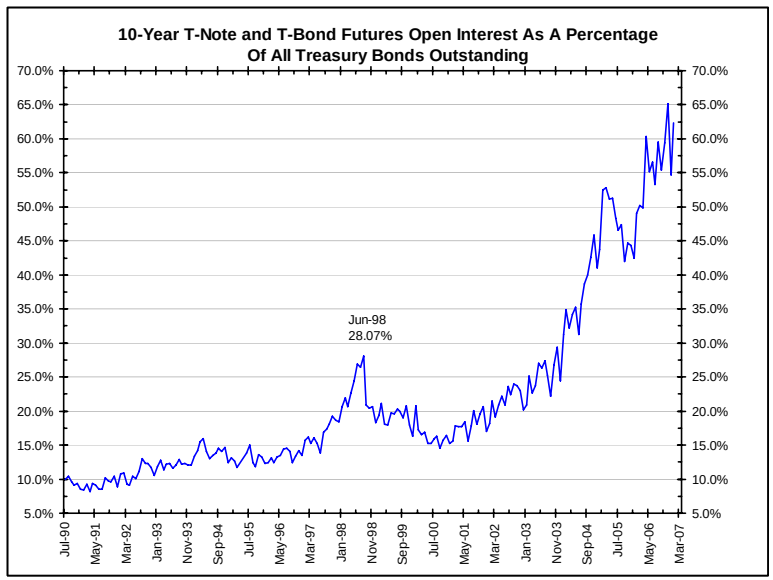


Leverage In The Markets Increases









Asset Classes And The Narrow Range Of Possibilities

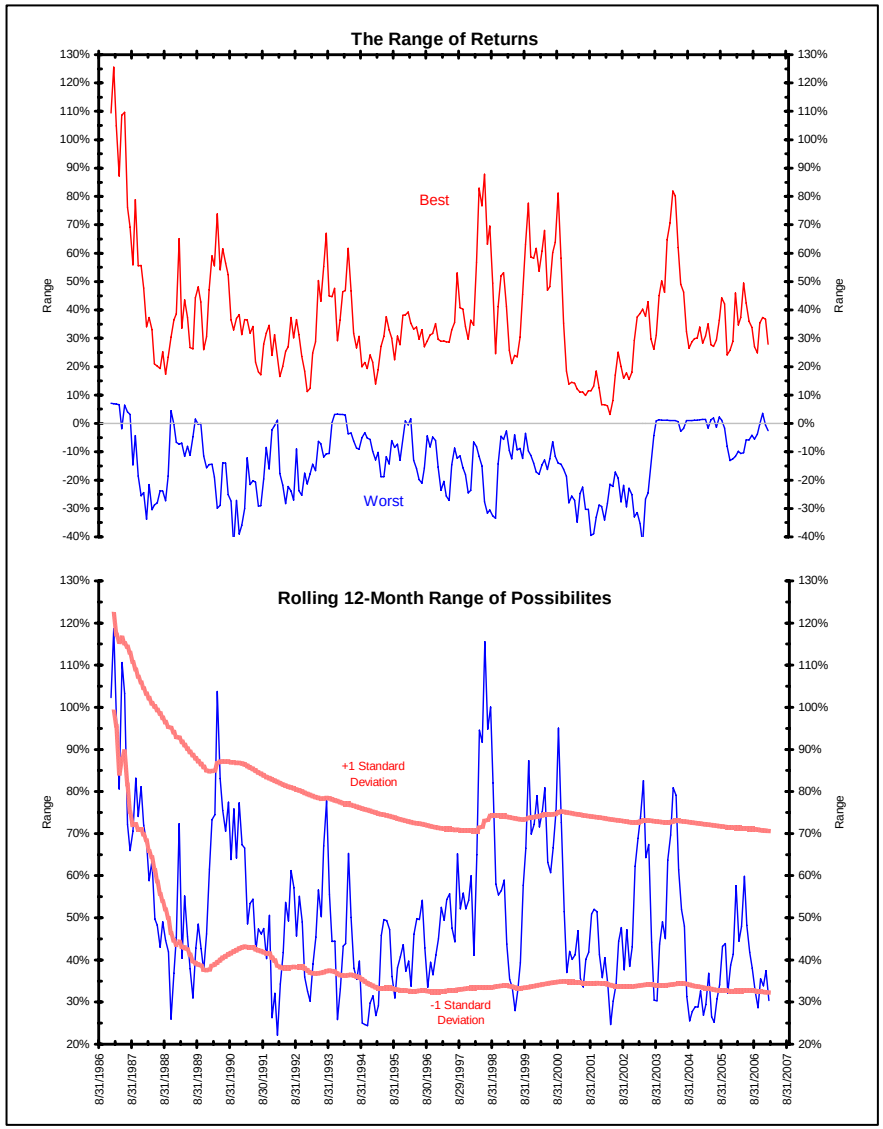
From a Recent Market Facts

The year just ended was a difficult one for asset allocators. If one got the bounding "underweight Japan" (bonds -2.49%, stocks 2.08%) and "overweight UK" (bonds 8.12%, stocks 23.12%) decisions correct, the remainder mattered little. The narrow range of returns made significant differences in return difficult to achieve.

If the mean reversion pattern plays out and return ranges widen in 2007, the current year should provide more opportunities for asset allocators to earn their keep.

Range of Possibilities

Market	1/31/2007
Cash	
3-Mo Bills	5.09%
World Stocks (Developed Mkts)	
MSCI Japan	2.08%
MSCI Canada	8.50%
S&P 500	14.29%
MSCI U.K.	23.12%
MSCI France	24.88%
MSCI Italy	27.35%
MSCI Germany	27.91%
World Bonds (Developed Mkts)	
J.P. Morgan Japan	-2.49%
J.P. Morgan Canada	0.98%
J.P. Morgan U.S.	3.25%
J.P. Morgan France	6.79%
J.P. Morgan Italy	6.84%
J.P. Morgan Germany	6.97%
J.P. Morgan U.K.	8.12%
Best	27.91%
Worst	-2.49%
Range	30.40%

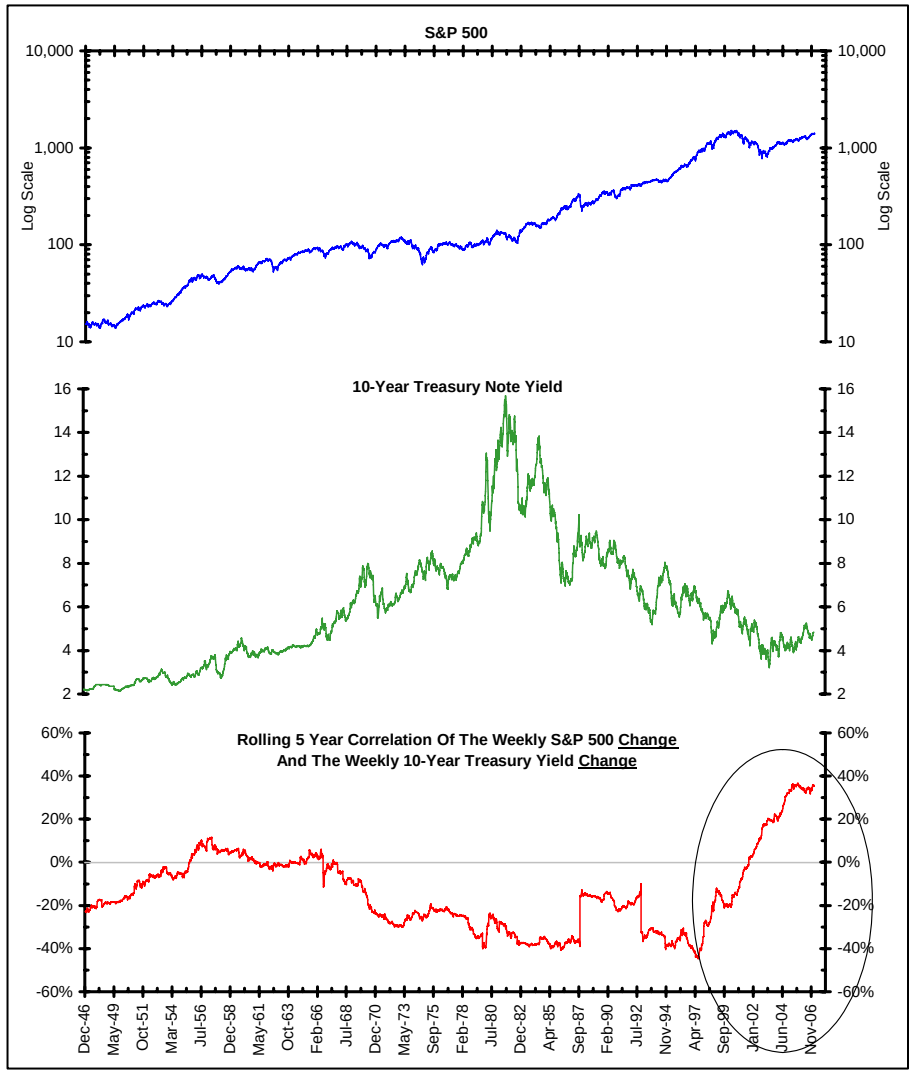


The Interest Rate-to-Stock Relationship Conundrum

From A Recent Commentary

The chart to the right shows the relationship between stocks (top panel in blue, the S&P 500), and 10-year yields (middle panel in green) and a rolling 5 year correlation of these two measures (bottom panel in red). We use rolling correlations as a way to measure the relationship between two series.

Business school teaches us that lower interest rates are bullish for stocks and vice-versa. Yet, as the highlighted below (black oval), something happened to the interest rate/stock relationship in the latest 1990s that persists through today.



Why Is This Happening?

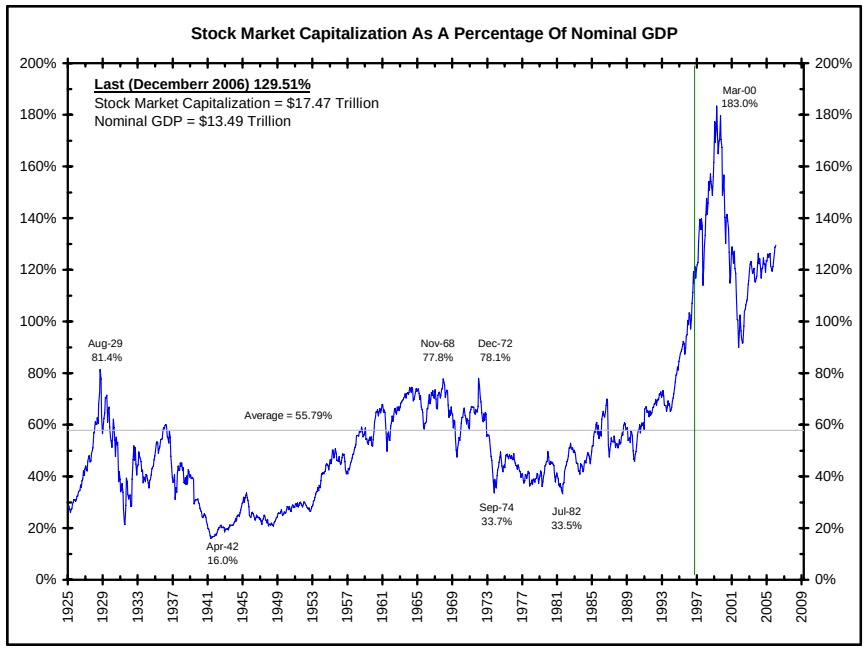
From A Recent Commentary

So, what happened in the late 1990s that caused the caused the change in the interest rate-to-stock relationship?

The chart to the right shows the ratio of the stock market's capitalization to nominal GDP ratio. This is a statistic that we believe is so important enough to warrant a that we update it quarterly update upon the release of when GDP data. M is released (more variations on this chart can be found here).

In 1995 this ratio first exceeded its 1929 high of (82% in 1995). By 1997, it exceeded 100%. It was at this time that the stock market became a **driver,** of the economy and not merely a **reflection,** of the economy. In other words, while rising stocks always produce a wealth effect, when the stock market's size wealth got this large relative to the economy, the wealth effect became large enough to matter to overall GDP statistics.

The fact that the stock market was becoming a dominant driver of the economy. This development did not go unnoticed by the 20th century's most important central banker, Alan Greenspan. As early was December 1996, he delivered his famous "irrational exuberance" speech. In 1998, he instructed the 500- strong Federal Reserve research staff to look into the meaning and consequence of the stock market's wealth effect more than any other subject that year.



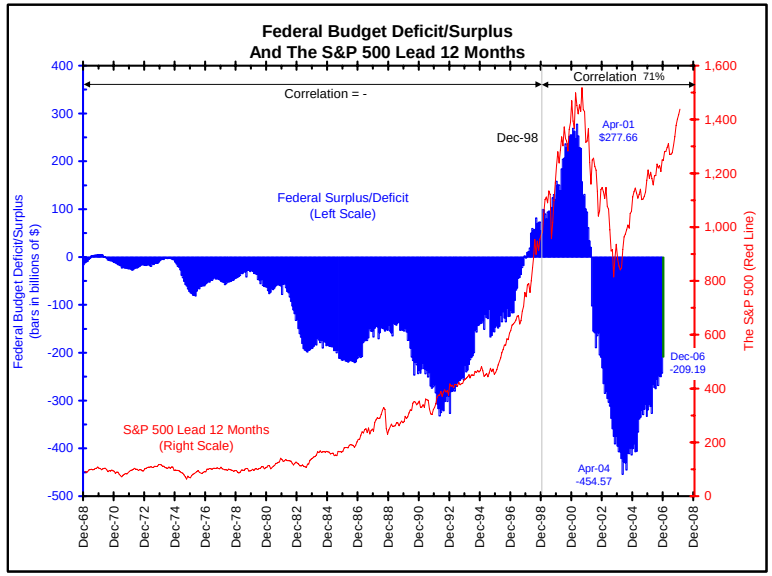
Stock Market Influence On The Economy

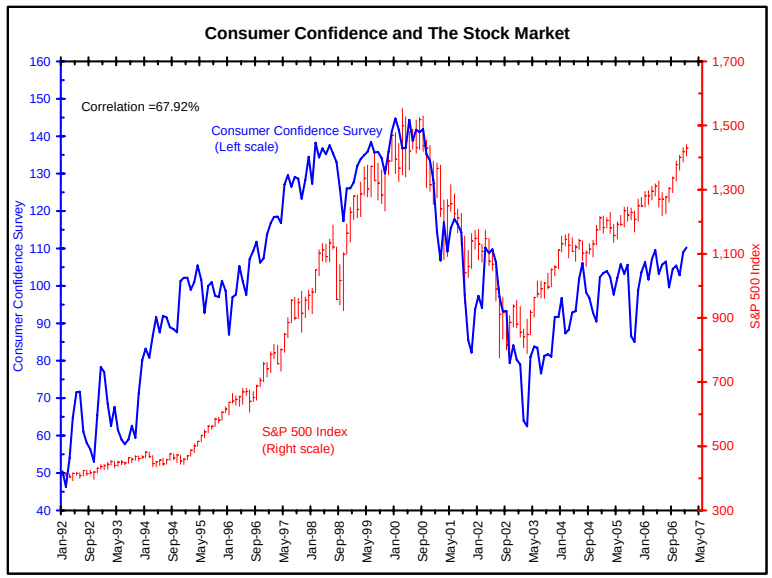
From A Recent Commentary

As the two charts to the right show, once the stock market's capitalization to nominal GDP ratio exceeded 100% in the late 1990s, a paradigm shift took place. From this point forward the stock market became a good predictor of both_the economy and federal deficit (first chart). The correlation between the S&P 500 lagged 12 months and the federal deficit shifted from -17% prior to 1998 to 71%_afterwards Since the end of 1998, leading the S&P 500 by 12 months had a 71% correlation to the federal deficit versus -17% prior to 1998. In other words, what the stock market does this year tells us what the deficit will look like next year.

The cumulative effect of capital gains, stock options and asset valuations with a stock market capitalization in excess of 100% of nominal GDP explains why the stock market influences the federal deficit.

The second chart shows the stock market's influence on consumer confidence. We detailed this in a May 2006 Special Report. wherein In this report we suggested that the consumer confidence questions were too abstract for most people to understand. When faced with large abstract questions like this, people will boil it down to the lowest common denominator. So, they will describe what the stock market is doing as its size and scope is now are understood by all to influence the economy.



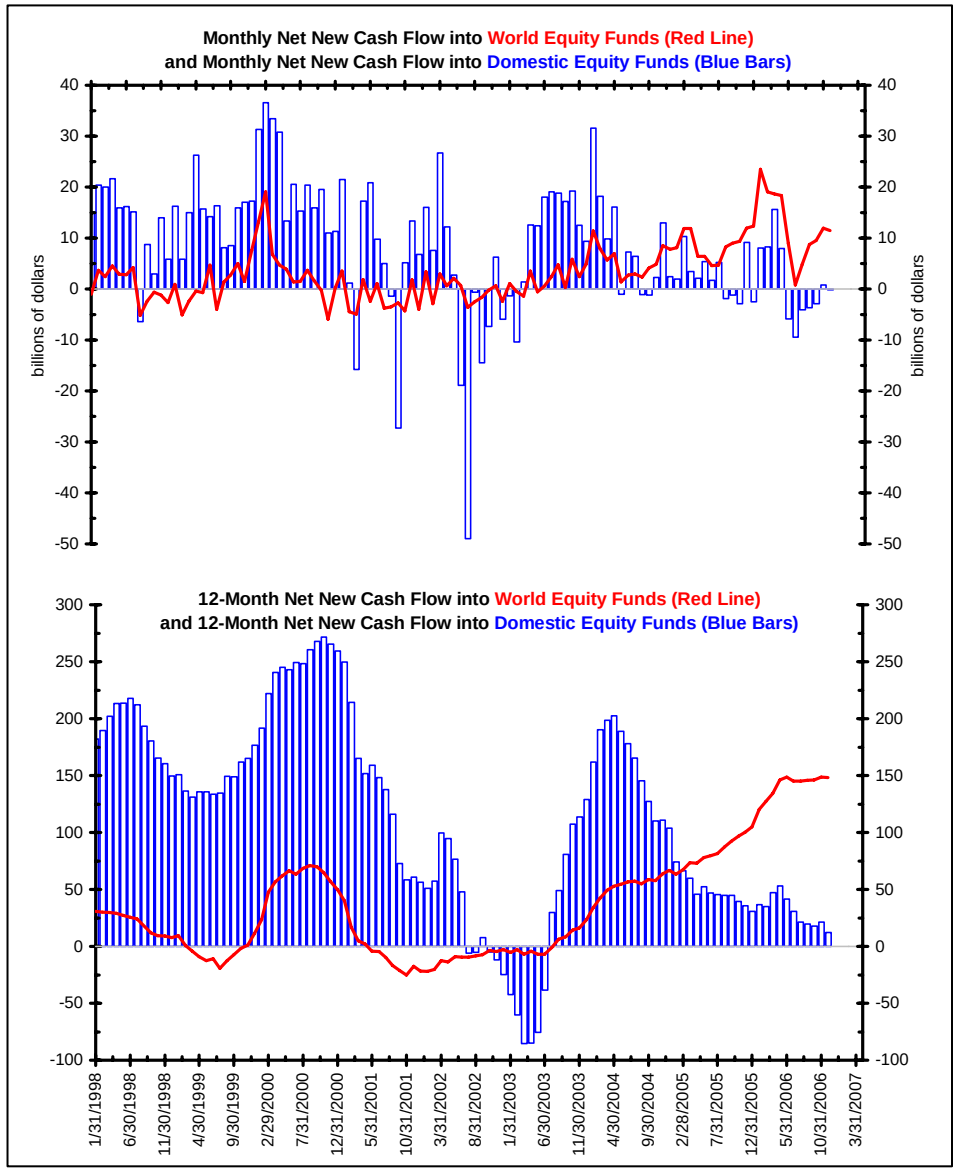


Equity Mutual Funds Flows – Domestic v. World

From Our Commentary

A funny thing happened on the way to the great liquidity surge in the stock market. The data show it does not exist.

We can track both the flow of funds into domestic (blue columns) and world (red line) equity-oriented mutual funds. The flows into the world funds clearly dominate on both a monthly and 12-month basis; in fact, since the 7% decline in the S&P 500 in May 2006, domestic mutual funds suffered **outflows of $27.88 billion (data through December).**



Mutual Fund Ownership of Stocks

The stock market is now 202 days into a rally without a 2% correction, an event which has occurred only once before in the last 53 years, in 1995.

Even more amazing is this rally is occurring while the domestically-oriented equity mutual funds were seeing outflows. We went to our database and looked up all the instances in which the stock market rallied at least 16% over a six-month period while domestically-oriented mutual funds had outflows. Over the last 30 years this has happened only **three times**:

•The six months ending June 1989. Here the S&P 500 gained 16.54% while domestically-oriented equity mutual funds had outflows of $600 million
•The six months ending November 1980. Here the S&P 500 gained 23.09% while domestically-oriented equity mutual funds had outflows of $4.4 billion
•The six months ending July 1978. Here the S&P 500 gained 21.77% while domestically-oriented equity mutual funds had outflows of $443 million

The big difference between now and 1989, 1980 and 1978 is the size and influence of equity mutual funds. As the chart below shows, domestically-oriented equity mutual funds now own nearly one-quarter of the stock market. Comparable numbers for 1989, late 1980 and mid-1978 were 6.9%, 2.8% and 3.4%, respectively. Currently, domestically-oriented equity mutual funds carry 7 to 8 times the weight they did in the late 1970s and early 1980s.

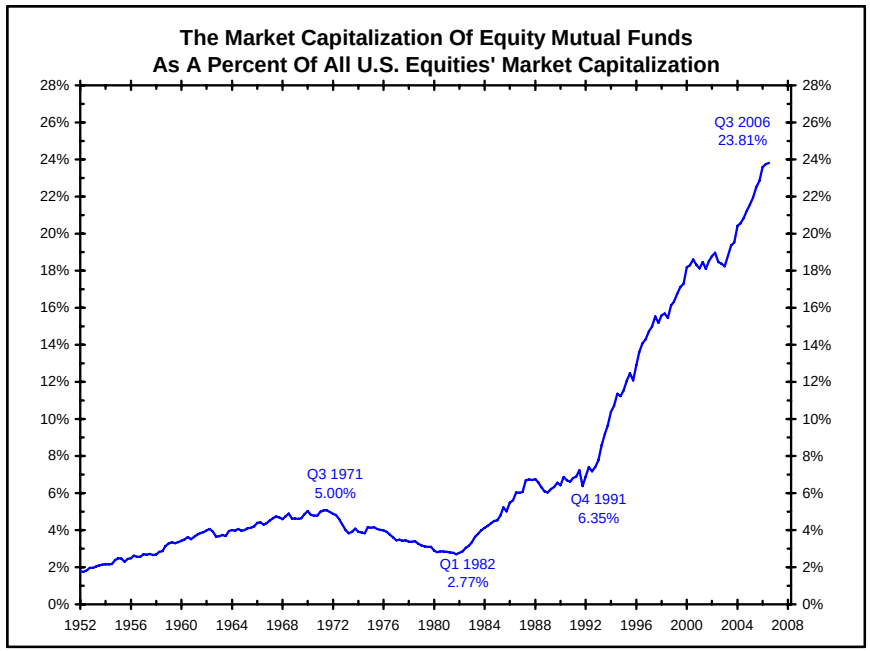
Most technical analysts that study mutual funds flows thought a rally of this magnitude while 25% of the stock market received no inflows was impossible

From Our Commentary

Longest Periods Without A 2% Correction

S&P 500 Back To 1928

Starting Date	Ending Date	Actual Days	Trading Days	Gain
7/11/1928	12/6/1928	148	102	20.90%
5/14/1958	10/15/1958	154	107	21.59%
10/21/1960	4/24/1961	185	125	30.10%
11/22/1963	6/3/1964	194	131	14.19%
7/13/2006	***2/14/2007***	**216**	***147***	***18.53%***
12/8/1994	7/19/1995	223	153	25.72%
8/19/1953	6/8/1954	293	183	16.58%

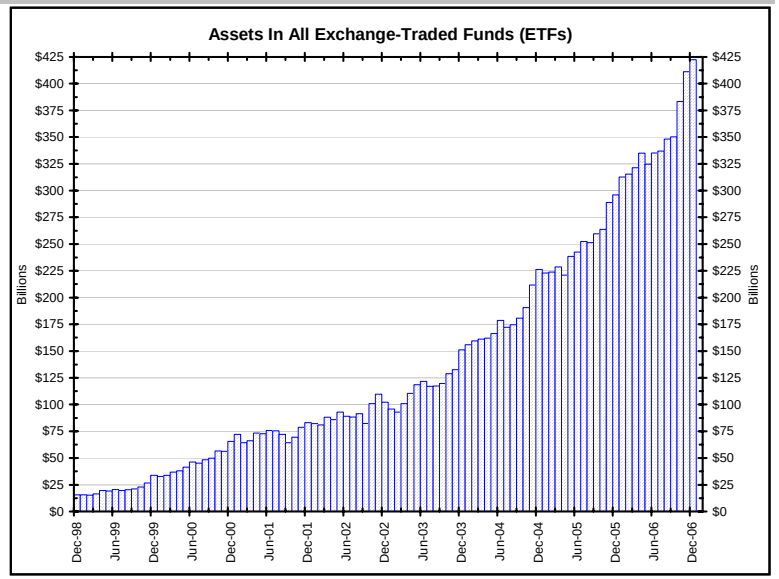


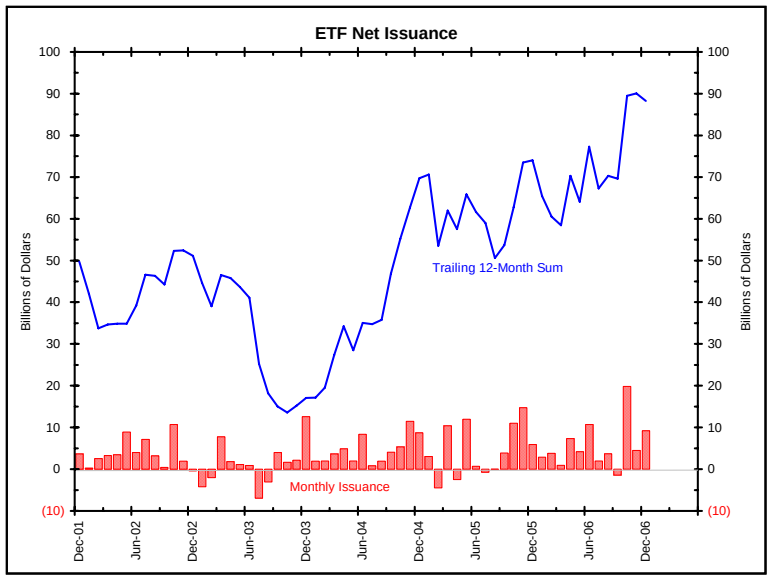
A Look At ETFs

From Our Commentary

The top chart shows the total assets in all ETFs, including the relatively small global and non-equity ETFs. The lower chart below shows the net issuance of all ETFs, the equivalent of net new cash flow for open-ended mutual funds.

Since May, all ETFs had a net issuance of $53 billion. Of this total, $19.8 billion of new shares were created in October alone (red bars, bottom chart).





Net Issuance of Equities

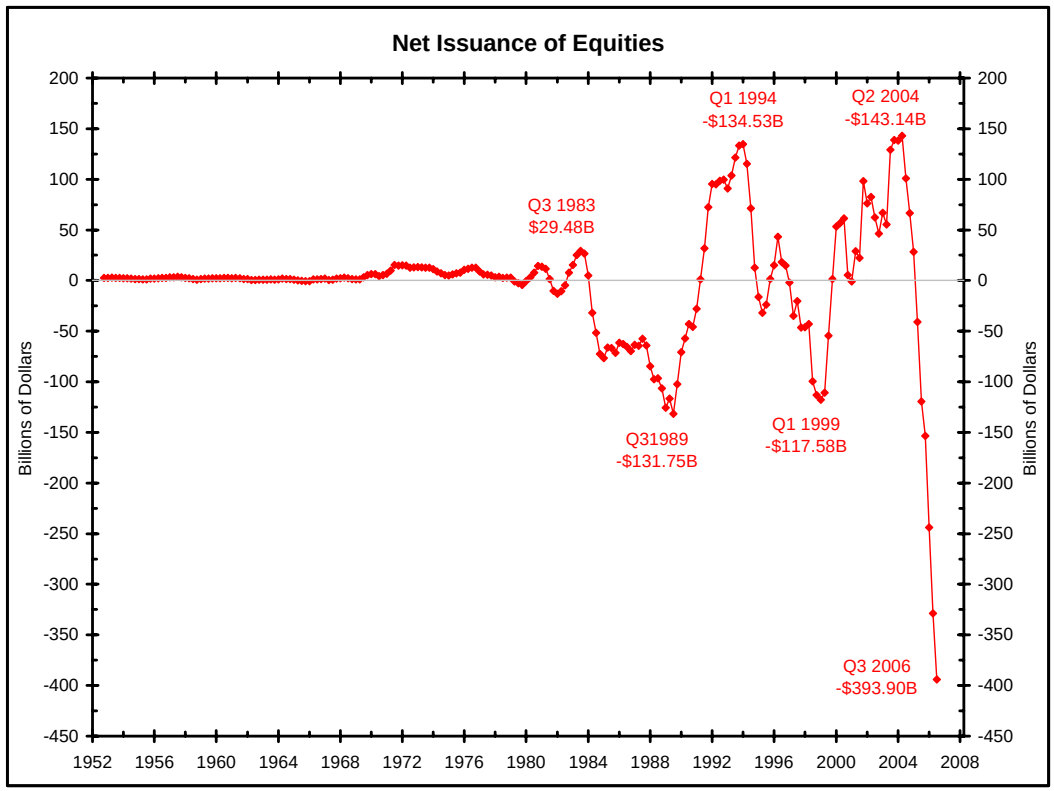
From Our Commentary

This chart shows the total of initial public offerings (IPOs) and secondary offerings netted against stock buybacks and companies taken private.

In recent quarters the outstanding float of the stock market has been reduced by an unprecedented amount.

A reduction in float to this extent has the look of a liquidity surge. As companies are taken private, investors are paid and presumably reinvest some portion of their funds into an ever smaller pool of available stocks.

What is driving this trend? We believe it can be attributed to the popularity of private equity funds and the burdensome legal and regulatory environment that discourages offerings in the U.S. (Sarbanes-Oxley).



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