

Three Cheers For Volatility

*“Cause what the world needs now / is a new kind of tension
Cause the old one just bores me to death / cause what the world needs now
Is another folk singer / like I need a hole in my head.”—Cracker*

How on earth did we ever get to this point of serving tapioca and calling it Tabasco? The entire range on the S&P 500 since the end of 2003 has been 170 index points, or about 15.3% in a little over eighteen months of trading. The high-low range for the Nasdaq Composite in 2005 has been 301.77 points; there were eight separate *days* between 1997 and 2004 with greater absolute ranges.

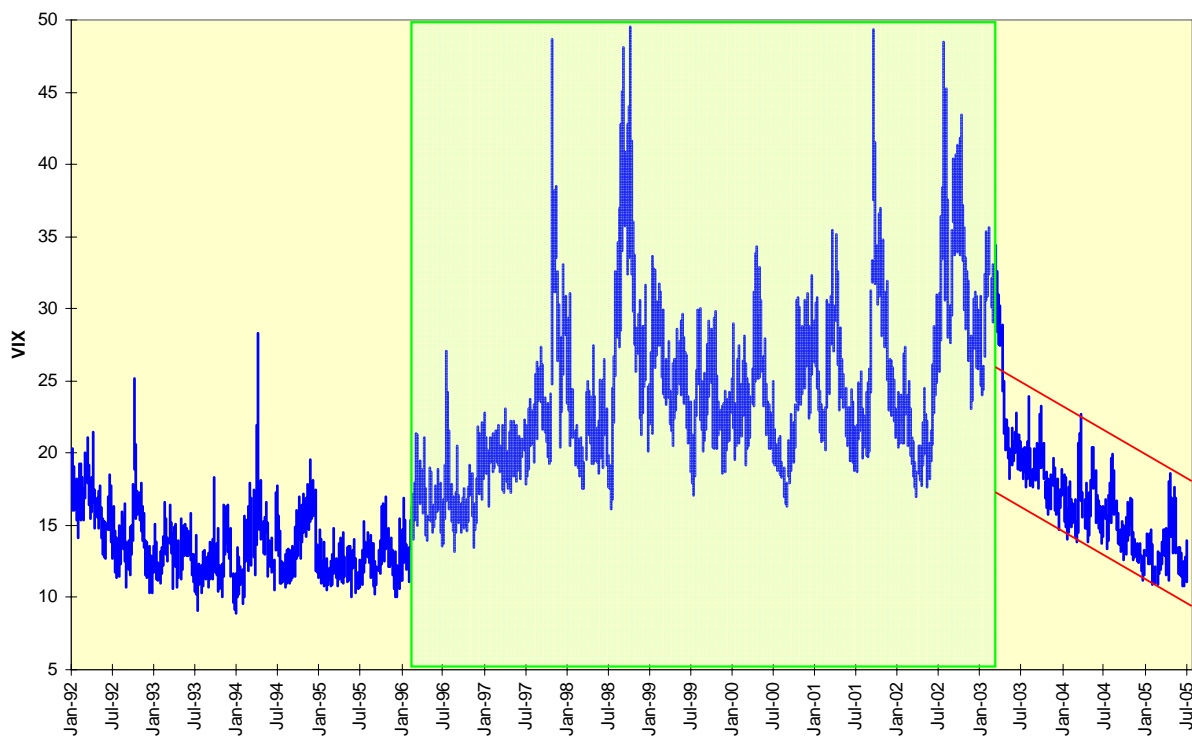
Now our biggest excitement is trying to explain why bond yields are stuck in a trading range at low levels.

So, what is so bad about all this you ask? Isn't volatility the enemy, doesn't it force everyone into running around and crashing into walls trying to explain things, and hasn't it been observed making various traders take losses? Yes, yes and yes.

But one of the very roles of a market is to force investors into rethinking their risk tolerances and asset allocations. Volatility by its nature forces weak hands out of the market and replaces them with more committed long-term investors. The market washouts of 1987, 1998 and 2002 all accomplished this and set the stage for subsequent advances.

The present low and declining level of volatility in the stock market as represented by the VIX – bond market volatility and returns are a separate issue – represents a return to levels last seen before the bull market of the late 1990s. The VIX began a persistent and gradual rise in early 1996, a year after the stock market's grand jaunt began, and remained at levels of 20 or higher until May 2003. The persistent downtrend in the VIX since that time is a unique feature in its history.

Low Volatility: A Trend In A Normal Range?



Volatility As A Market Dimension

Fewer dimensions of the stock market have defied simplification more than the VIX; witness the very [predictable](#) lukewarm reception received by VIX futures or the perennial frustrations of those who want the VIX to perform as a trading indicator. As is often the case when you cannot find something, you were looking in the wrong place.

Implied volatility represents the market's price for insuring unknown events; these events can be arriving at a known time, such as an employment report, or at an unknown time, such as last week's bombings in London. In either case, the impact is – or should be – uncertain. The higher the volatility, the greater the perceived dispersion of possible outcomes, gains as well as losses. One of the consequences of this little truism is an upward bias: If returns are distributed lognormally, one of the tenets of the basic option pricing models, the dollar value of a gain will exceed the dollar loss of that same percentage loss. For example, a 2% gain on a \$1.00 asset puts you at \$1.02, but a 2% loss puts you at \$0.980392.

This subtle bias makes any asset with an embedded call option, such as a convertible bond, more valuable when volatility rises. The expected gains start to dominate expected losses, and as volatility can rise further on an absolute basis than it can fall, the upward bias can become significant.

How does this value of volatility play out when it comes to stock market industry groups? We can calculate the relative volatility, or beta, of industry groups within the S&P 500 large-cap, S&P 400 mid-cap and S&P 600 small-cap indices to the index as a function of the VIX. These results as of the close of business on July 8, 2005 are presented below. A negative beta means relative underperformance by the group if the VIX rises, all else held equal. A positive beta means the opposite, relative over-performance by the group if the VIX rises, all else held equal.

Relative Industry Group Betas To VIX

<u>S&P 500</u>		<u>S&P 400</u>		<u>S&P 600</u>	
<u>Group</u>	<u>Beta</u>	<u>Group</u>	<u>Beta</u>	<u>Group</u>	<u>Beta</u>
STEEL	(0.112)	SEMICONDUCTR EQP	(0.126)	SEMICNDTR EQUIP	(0.101)
ELEC MANU SRVC	(0.101)	SEMICONDUCTORS	(0.102)	SEMICONDUCTORS	(0.096)
EMPL SERVS	(0.089)	ELEC MANFCT SRV	(0.101)	COMP HDW	(0.086)
INET SFT&SER	(0.086)	AIRLINES	(0.080)	AIRLINES	(0.086)
TIRES&RUBBER	(0.084)	HYPERMKT/SPRCTR	(0.067)	COMMUNCTN EQUIP	(0.085)
DIV MTL&MIN	(0.078)	HOMEBLDNG	(0.064)	INTRNT SFW & SRVCS	(0.076)
SEMICNDCTR EQUIP	(0.077)	CNSMR FINANCE	(0.064)	ELEC MANU SRVC	(0.069)
HOMEBUILDING	(0.074)	ELE EQP MFG	(0.059)	ALUMIN	(0.064)
COMP STG&PER	(0.073)	CMDTY CHEM	(0.056)	PAPER	(0.063)
COMMUNCTN EQUIP	(0.069)	COMP&PERPH	(0.054)	STEEL	(0.062)
SEMICONDUCTORS	(0.067)	INTGR TELE	(0.054)	AUTOMTV	(0.047)
ELEC EQP MFG	(0.060)	COMM EQUIPMENT	(0.047)	CATLG RETL	(0.047)
APPLIC SFTW	(0.058)	SYS SFTWR	(0.046)	CONSUMR FIN	(0.047)
ALUMINUM	(0.056)	BIOTECH	(0.044)	DIVSFD METL	(0.046)
COMP&ELECT	(0.050)	TRUCKING	(0.043)	BIOTECH	(0.044)
CONST&FARM M	(0.042)	TECH DIST	(0.043)	FOOD RETL	(0.044)
INTERNET RET	(0.040)	INVST BNK/BROKR	(0.040)	PAPER PROD	(0.040)
AIRLINES	(0.040)	IT CNSLTNG	(0.039)	EMPL SRVCS	(0.037)
PAPER PRDCTS	(0.039)	PAPER PRDCT	(0.037)	ELEC EQ MFG	(0.033)
FOREST PROD	(0.036)	MARINE	(0.036)	AIRFRT&LOG	(0.033)
ELEC COM&EQU	(0.035)	CONST&FARM	(0.036)	SPEC CHEM	(0.029)
MCYCL MANF	(0.034)	DIV CHEM	(0.033)	CMPTN STRG	(0.027)
INVST BNK & BRKG	(0.032)	CONST&ENGR	(0.030)	IVST BNK & BRKG	(0.026)
ASST MNGMT & CST	(0.032)	CONS ELEC	(0.030)	HOME ENTMT SFW	(0.026)
AUTOMBL MANF	(0.031)	APPL SFTW	(0.028)	COMMDT CHEM	(0.026)
HOME ENTRTMT					
SFW	(0.031)	AS MNGMT/CST BK	(0.027)	SYS SFW	(0.026)

BIOTECH	(0.029)	APPR RETL	(0.021)	INDST CONGLM	(0.025)
PAPER PACKNG	(0.027)	AIR FR&LOG	(0.019)	COMP & EQUIP	(0.020)
INDUST MACHN	(0.026)	AUTOP&EQP	(0.016)	APPRL RETL	(0.018)
HOME IMP RTL	(0.026)	PAPER PCKNG	(0.015)	LEISURE PROD	(0.016)
INDUST GASES	(0.026)			APPL SFW	(0.014)
DIV CHEM	(0.025)	IND CONGLM	0.013	BUILD PRD	(0.013)
WIRELESS SER	(0.021)	BDCST&CBL	0.020		
COMPUTER HW	(0.019)	MLTILNE IN	0.020	INDST MACH	0.009
SPECIALT STR	(0.018)	HLTHCR EQU	0.022	HLTH CARE EQUIP	0.015
SYSTEMS SFTW	(0.017)	TRFT/MRTG FINCE	0.023	CASINOS & GM	0.016
				CONSTR & FRM	
HOUSHLD APPL	(0.015)	INTGR O&G	0.023	MACH	0.019
SPECIALT CHM	(0.013)	OFFCE SERV	0.025	HLTH CARE SUPP	0.019
		LEISURE FC	0.026	COMM PRTG	0.019
REGIONAL BANKS	0.011	RESTRNTS	0.027	OIL&GAS PROD	0.021
DISTRIBUTORS	0.015	DEPT STORE	0.027	DATA PRCS & OTS	0.021
DRUG RETAIL	0.016	REGIONAL BANKS	0.027	DVSFD COMM SRC	0.022
DIV BANKS	0.016	HLTH SPPLY	0.028	RESTAURANTS	0.022
ENV SERV	0.017	HWARES&SP	0.029	REGNL BANKS	0.022
HLTH CR EQIP	0.021	HLTH CARE SRVC	0.031	THFT & MRTG FIN	0.023
THFTS & MRTGE	0.022	ADVER	0.032	HLTH CARE SRVCS	0.024
PROP&CASULT	0.022	LIFE&HL IN	0.035	OIL&GAS REF	0.025
FOOD RETAIL INDX	0.025	PRP&CAS INS	0.036	TOBACCO	0.028
HYPR & SUPRCNTRS	0.026	WIRELESS TL	0.041	PHARM	0.029
SPECIALIZED FIN	0.027	ENVR SERV	0.041	HOTELS	0.029
INTGR TELCM	0.028	MLTIUTIL	0.044	PROP & CASU	0.030
PHARM	0.028	HHOLD PROD	0.044	INTRN TELPH	0.031
GOLD	0.029	HLTHCR FAC	0.045	HLTH CARE FACIL	0.033
PERSONAL PRD	0.031	WATER UTIL	0.045	ENVR SRVCS	0.036
HLTH CR FACL	0.033	PUBL&PRINT	0.046	PCKGD GDS	0.039
FOOD DISTR	0.036	REINSURNCE	0.047	AGR PRD	0.040
GAS UTIL	0.038	MLTISECTOR	0.047	FOOD DIST	0.050
ELEC UTIL	0.040	ELEC UTIL	0.047	HSWR & SPEC PRDS	0.052
REAL EST INV	0.040	COMM PRNT	0.048	ADVERTISING	0.053
TOBACCO	0.041	DIST&VINT	0.048	GAS UTIL	0.053
HOUSEHLD PRD	0.044	PCKGD FOOD	0.049	DRUG RETL	0.053
PUBL&PRNTNG	0.044	GAS UTIL	0.051	MLTI UTIL	0.055
SOFT DRINKS	0.047	SOFTDRNKS	0.052	ELEC UTIL	0.056
AGRCUL PDCTS	0.050	INS BROKRS	0.056	SPECLZD FINC	0.057
PACKG FOODS	0.052	STEEL	0.056	PUBL & PRTG	0.060
BREWERS	0.059	REITS	0.057	INSUR BRKG	0.060
DIST & VINT	0.060	COAL & CONS FUEL	0.110	REIT	0.064
		DIST&VINT	0.118	LEISURE FACL	0.070
		HOME FURNISH	0.120	DVSFD CHEM	0.087
		INTGR O&G	0.121		
		RESTRNTS	0.122		
		OIL&G STR&TRD	0.122		
		AUTO RETAIL	0.123		

Where Are The Calls?

A look down the list at the high-beta groups indicates that some of the best-performing recent groups regardless of size, such as REITs, Utilities, and housing finance-related issues all benefit from increased volatility. Many of these groups are yield plays whose extra kick in price derives from the volatility phenomenon discussed above.

The opposite observation can be made for the negative beta groups. Many of these are low-yield earnings-dependent issues whose total return is tied to price appreciation. Note the presence of the Semiconductor and Semiconductor Equipment groups in each column, or the presence of Basic Materials groups such as Steel, Paper and Aluminum.

We can conclude certain groups, such as the tech stocks, can bring their own call option, one derived from earnings. This combination did quite well during the late 1990s. Other groups, such as Utilities, need the call option handed to them by market volatility; failing that, they have to get by on the attractiveness of their yields. This has done well recently.

Until and unless the earning-driven issues take off under their own power, the yield-dependent issues will make the market vulnerable to a rise in interest rates. At that point, spice up the tapioca and start cheering for volatility, your new friend.