

# Bianco Research L.L.C.

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## Market Facts

### The Upside Bias Of Quadruple Witching Remains In The Flash-Crash World

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June 30, 2010

Yesterday's circuit-breaker in Citigroup following the completely demoralizing intraday drop of almost \$0.50 per share in the stock (we wish there was a typo in this sentence; there is not) involved canceling a trade whose face value was less than \$30,000. In homage to Oscar Wilde's [description](#) of a fox hunt, too-fast-to-lose were trading the stock of too-big-to-fail. The following conversation was overheard later:

**Child:** Mommy, what's daddy do?

**Mother:** He is the chairman and chief executive officer of a stock exchange, sweetie.

**Child:** Oh, is that like an out-trade clerk?

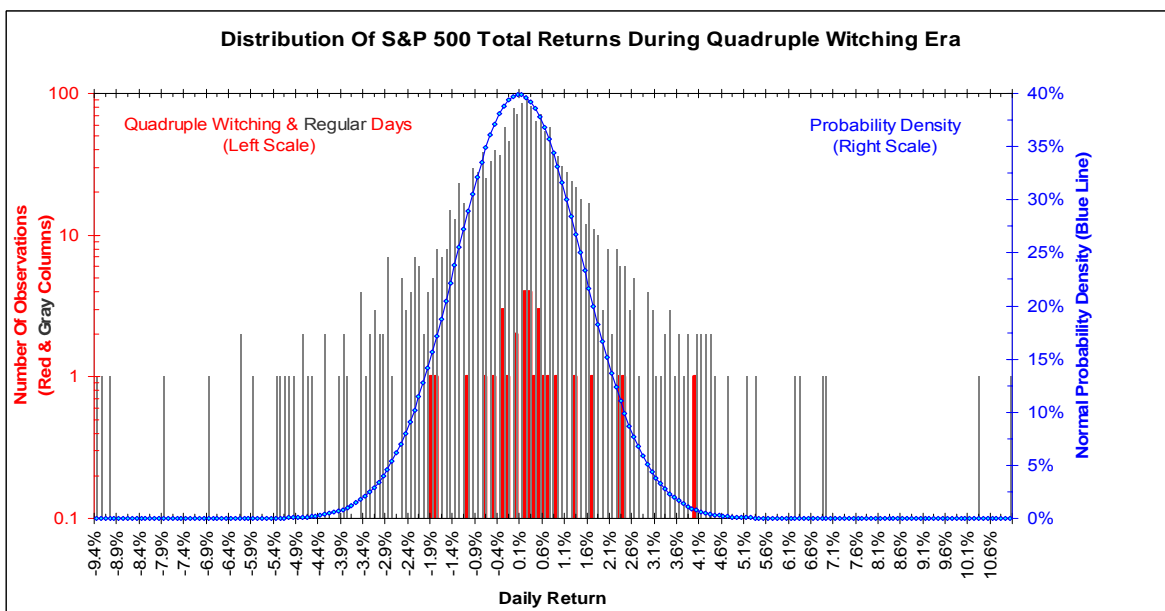
This is all so different from the bad old days of triple-witching, a topic last visited in a June 2009 [Market Facts](#) quantifying the upside bias involved in the quadruple-witching extant since December 2002.

As we noted then, a March 1986 episode of triple-witching involved a lower close and therefore invoked the wrath of the SEC. The result was the creation of a special settlement index for the index options; they would cease trading at the close of business on Thursday for settlement on the Friday opening of each member stock.

Traders looking for expiration-related entertainment had to wait for [those moments](#) when the Federal Reserve engaged in surprise rate-cuts (younger traders may need to be reminded these once were considered bullish) or when Congress decided to spend money it did not have to rescue the financial system from itself.

As before, we can calculate the daily returns on the S&P 500 total return series from December 20, 2002 onwards and create frequency histograms for the quadruple witching and regular days (red and gray columns, respectively). We see a positive skew in the quadruple witching days; the average return for the quadruple witching days of 0.297% has a positive skew of 0.927; the average return for all other days of 0.0287% has a negative skew, -0.304. We can be 78.5% confident the two distributions are different statistically.

The June 18, 2010 quadruple-witching expirations were the first in our new flash-crash era. It will be interesting to see how returns on the less-volatile (1.16% standard deviation of returns, as opposed to 1.42%  $\sigma$  on regular days) quadruple-witching days progress over time.



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