

How ETF Volatility Has Affected Gold Futures

When the financial crisis of 2007-2008 started to gain steam in August 2007, one of the first markets to go was asset-backed commercial paper, short-term loans backed by packages of mortgages, credit card receivables, student loans and other things about to enter a world of pain. One economist was asked by a reporter when this would end, and she received a surprising answer: “When you stop asking me about commercial paper.” The logic was simple; in a world functioning normally, commercial paper prompts no questions.

Initial margins in the world of futures have a similar characteristic. When markets are orderly, margins are simply a cost of doing business. It is only when they are raised sharply do they prompt some howling. If you raise them in a market populated by people who think the world is out to get them, then the howling really starts: Surely those margins were raised as part of a vast conspiracy. Yes, gold went from \$250 in 1999 to more than \$1,900 in 2011 because of a secret-society plot to suppress its price. Stock market investors should have been so fortunate.

The Key Driver

The most important factor in setting initial margins is the dollar value of a one standard deviation (σ) move in the market. As prices and realized volatilities, not implied volatilities, in the futures markets rise, margins are raised and lowered accordingly. As realized volatilities are calculated from historic price changes they are by definition lagging indicators.

Yet a common perception amongst longtime traders is an increase in margins often signals the top or bottom of a significant price trend; they force the losing parties either to post additional variation margin or to capitulate and either buy the top or sell the bottom, after which the price move is exhausted. As is the case with all trading anecdotes, this is true at some times and not true at others. Have you ever seen a trading system based on changes in initial margin, and if so, how did it work?

What happens when you have two different margining systems for two different products representing the same underlying asset? Margins in the equity world are strategy-based and are set by the Federal Reserve as they are considered a form of credit, a down-payment on the purchase of a security. The most common level for an individual trader is a 50% down-payment under the Federal Reserve’s Regulation T. Professional traders can and do see other margin levels such as the 15% level for a joint back-office or consolidated portfolio levels as established by their prime broker. Regardless, while equity margins represent ownership in a long position and are affected by price levels, they are not affected by realized volatility nor are they subject to the futures industry’s rigorous daily variation margining system.

Commodity-Linked Exchange-Traded Funds

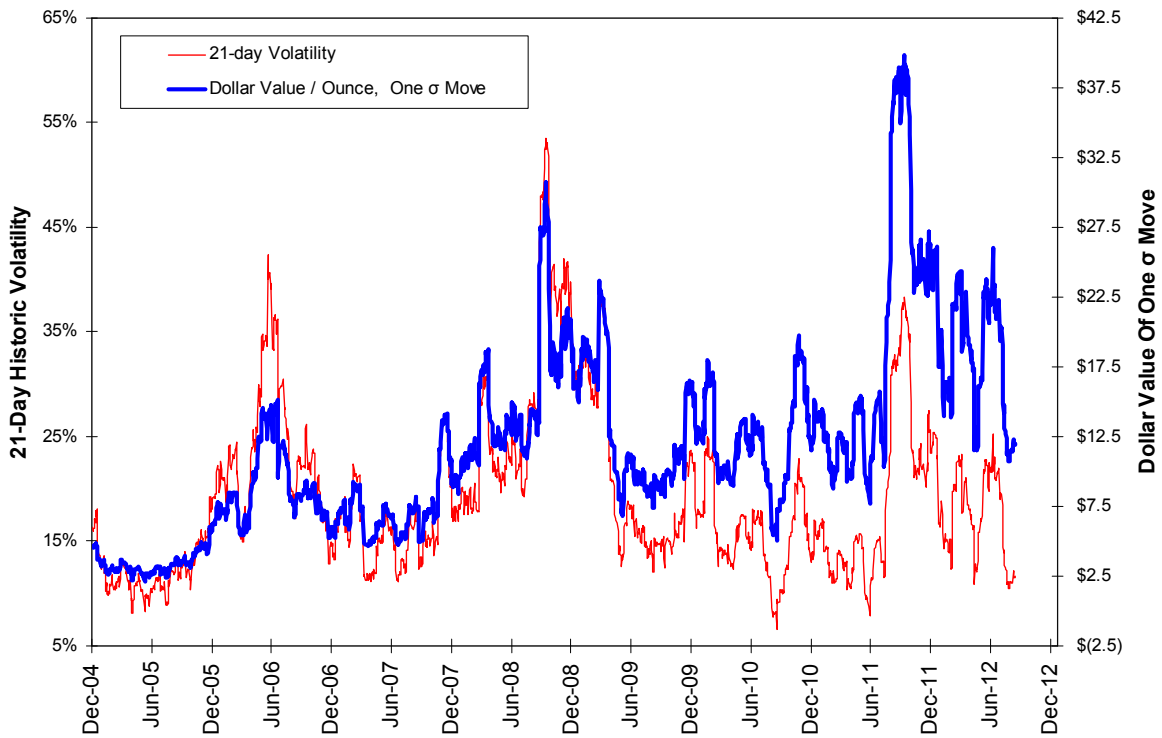
This millennium has seen a major revival in investor interest in physical commodities and in the number of vehicles used to get exposure to these markets. Investors can choose from actively or passively managed futures funds, individual futures trading accounts, hedge funds specializing in both commodities and commodity-linked equities and in exchange-traded funds (ETFs) backed by the commodity itself. The largest of these ETFs in gold is the SPDR Gold Trust, commonly referred to by its ticker, GLD.

Regardless of the vehicle employed new fund inflows into the commodity markets tend to find their way into the futures markets as ETF creators, bullion dealers, miners and both actively and passively managed funds use the futures markets to price and hedge their risks. Let’s stipulate a principle: While money can flow into commodity markets through many channels, the risks ultimately are managed in exchange-traded futures and options markets.

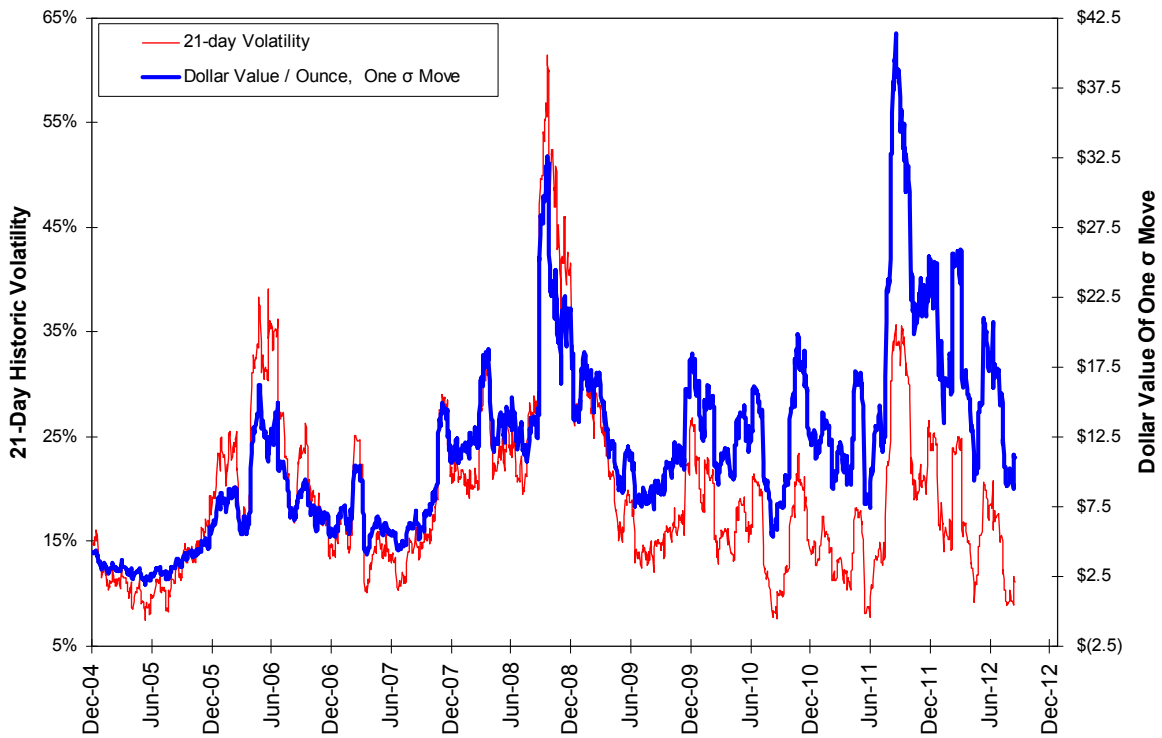
Volatility And Its Dollar Impact

Let’s begin the illustration by displaying both the realized 21-day close-to-close realized volatility and dollar value of a one σ move for both front-month gold futures traded on the Comex and for the GLD between December 2004 and September 2012.

Volatility In Comex Front-Month Gold Futures: Per Ounce



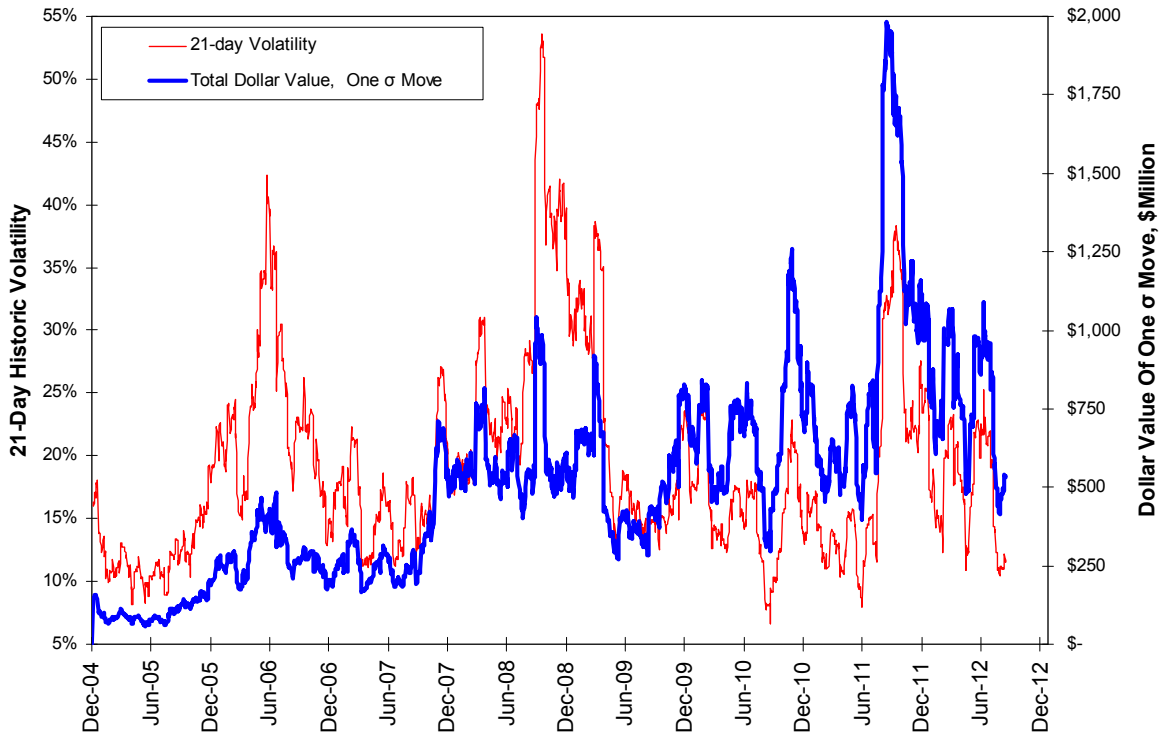
Volatility In SPDR Gold Trust: Per Ounce



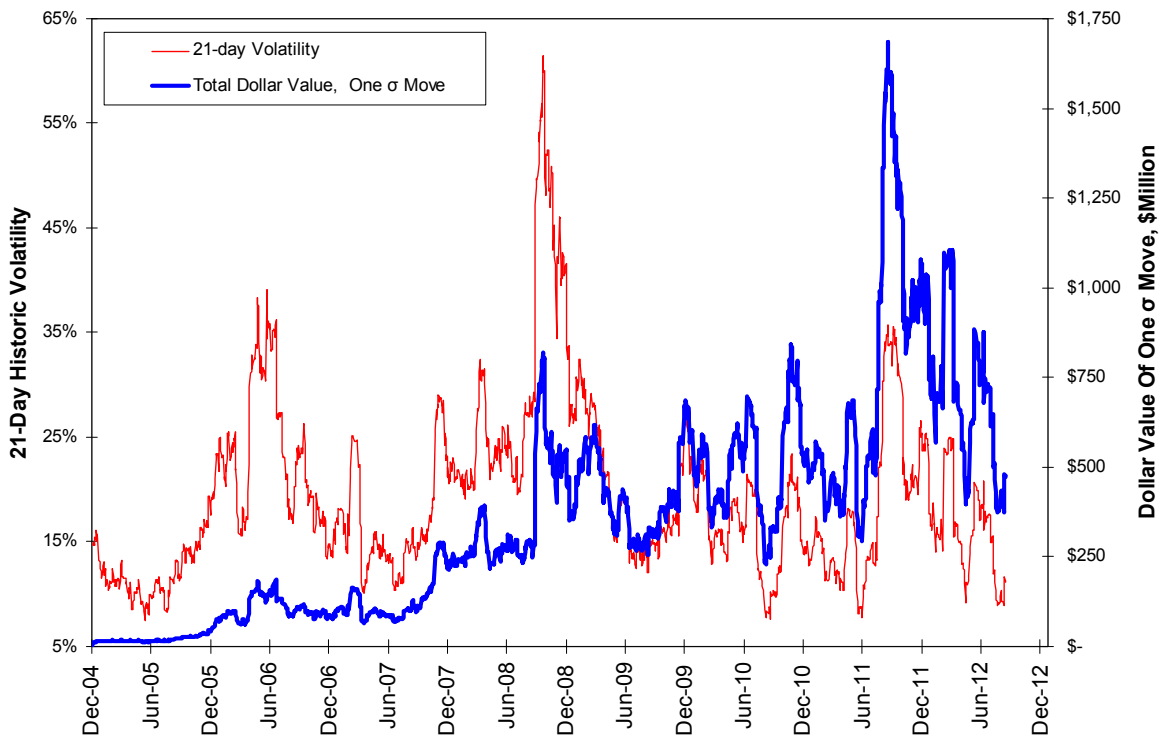
The two charts look very similar, and they should as they are closely related manifestations of the same underlying commodity. However, the GLD began trading in mid-November 2004; this was thirty years after gold futures began trading on the Comex. The total quantities of gold represented by the two markets were quite different, with the

futures market dwarfing the ETF market. Let's convert the per-ounce dollar value of a one σ move to the total dollar value of a one σ move. The comparison now starts to look quite different.

Volatility In Comex Front-Month Gold Futures: Total Market Impact



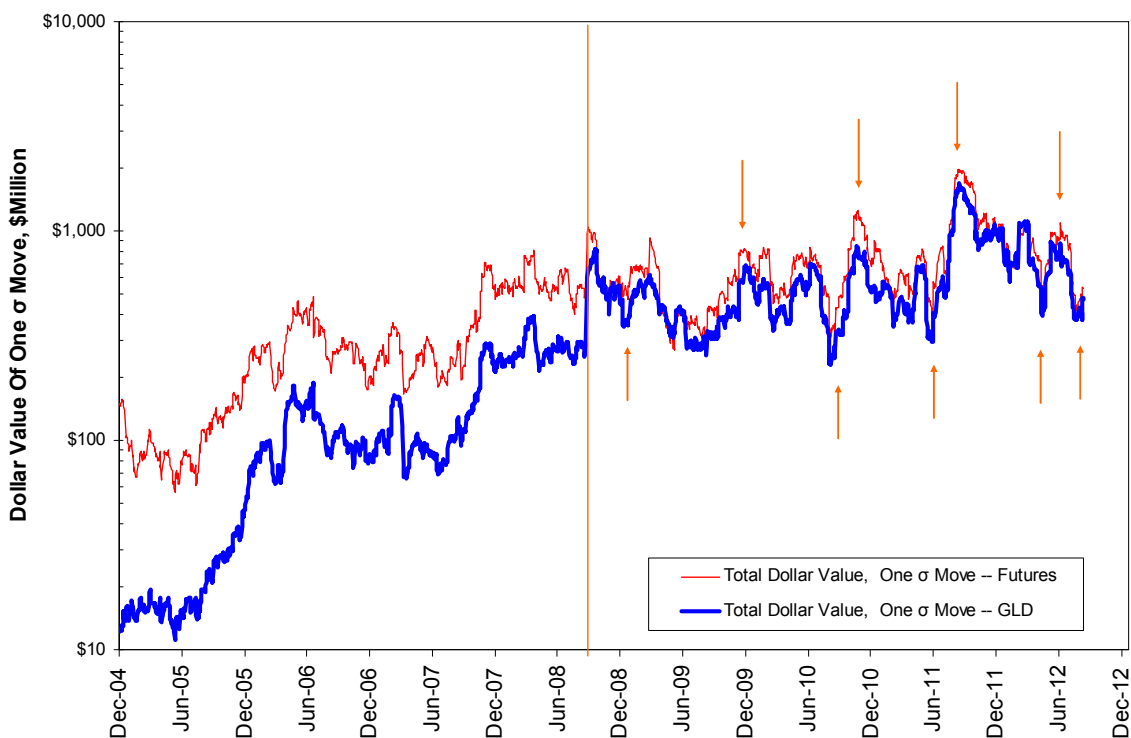
Volatility In SPDR Gold Trust: Total Market Impact



The Lehman Connection

The Lehman Brothers bankruptcy in September 2008 has been a gift that keeps on giving. Let's take the two total dollar value of a one σ move series plotted above, plot them on a logarithmic scale and add several annotations. The first annotation is a hard time-break in mid-September 2008 on the day after Lehman Brothers declared bankruptcy. Investors were fleeing financial system risk toward the perceived safety of gold. While the total dollar risk for a one σ move of both markets increased, it increased more on a percentage basis for the smaller GLD market; an equal vertical distance on a logarithmic scale represents an equal percentage change.

Comparative Total Market Impacts



Nine time periods are marked with arrows. The four downward-pointing arrows highlight periods when the total dollar risk for a one σ move in GLD rose, but the total dollar risk for a one σ move in Comex gold futures rose more on a percentage basis. The five upward-pointing arrows highlight periods when the total dollar risk for a one σ move in GLD fell, but the total dollar risk for a one σ move in Comex gold futures fell less on a percentage basis.

Restated, dollar risk flowing into GLD gets amplified in the futures market; dollar risk flowing out of the GLD is attenuated in the futures market. As gold prices move higher rapidly, a common occurrence over the past decade, the risk-based performance bonds for futures are put on an upward-pressure absent for the GLD's strategy-based margins. It is an asymmetric affair.

Finally, if we rearrange the data in the chart above to display the ratio of the dollar values for a one σ move for Comex futures against GLD pre- and post-Lehman Brothers, we see how the ratio has collapsed toward 1.00 after September 2008. The GLD ETF is putting in nearly as much risk into the overall gold market as exists in the futures market, but only the futures market adjusts the funds required by its participants to protect the integrity of the market's clearing mechanism. This ETF-injected total dollar volatility is what has forced futures margins up on occasion and down on others in a non-uniform manner. Regardless, the futures market's system of risk-based margins allows these volatility shocks to be absorbed without consequence to the overall risk of the clearing system. If only cash markets could adjust this well.

The 2008 Financial Crisis Changed The Source Of Gold Volatility

