Gold Market Dynamics Shifting Gears

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Dr. Bluford Putnam, Chief Economist at the CME Group, presenting at the inaugural meeting of the J.P. Morgan Center for Commodities' (JPMCC's) Research Council on April 18, 2015.

Gold price dynamics look set to shift gears. The drivers of the new volatility patterns are likely to include (1) rising U.S. inflation leading to an increased pace of removal of monetary accommodation by the U.S. Federal Reserve (Fed), (2) expanded risk management activities by mining companies coupled with the impact of efficiencies in mining leading to more production, (3) central bank buying of gold, which some see as a contrarian indicator, and (4) continued deceleration in the debt-ridden economy of China, which is a large buyer of gold along with India. We will tackle these fundamental forces one at a time before summarizing the implications of our research into the shifting price dynamics of the gold market. First, though, let's take a quick review of the historical price action.

Over the last few years, the gold price has been stuck in a relatively wide trading range pivoting above and below $1200/ounce. (See Figure 1 on the next page.) Despite the trading range pattern, gold has had some exceptionally volatile days, and not always related to any specific news or surprises. For example, on Tuesday, October 4, 2016, the gold price precipitously dropped by $44/ounce, yet the catalyst was not so clear. There were some relatively minor Fed-related speeches suggesting a rate hike was coming in December, and higher rates are not good for gold which bears no interest. There was the U.S. Vice-Presidential debate, which was not likely to have mattered for the price of gold. And, interestingly, technical indicators had been signaling the potential for a breakdown in the gold price. Whatever the reason, trading in gold futures and options was intense in the Asian time zone even before U.S. traders woke up. October 4, 2016 was the highest volume day for gold options in 2016 on CME Group exchanges with 147,514 contracts traded, although it was well below the all-time record for gold options set on April 15, 2013. Still, options trading in the CME gold contracts on October 4 was 3.7 times the 2016 average daily volume, and the trading displayed deep liquidity in the Asian time zone.

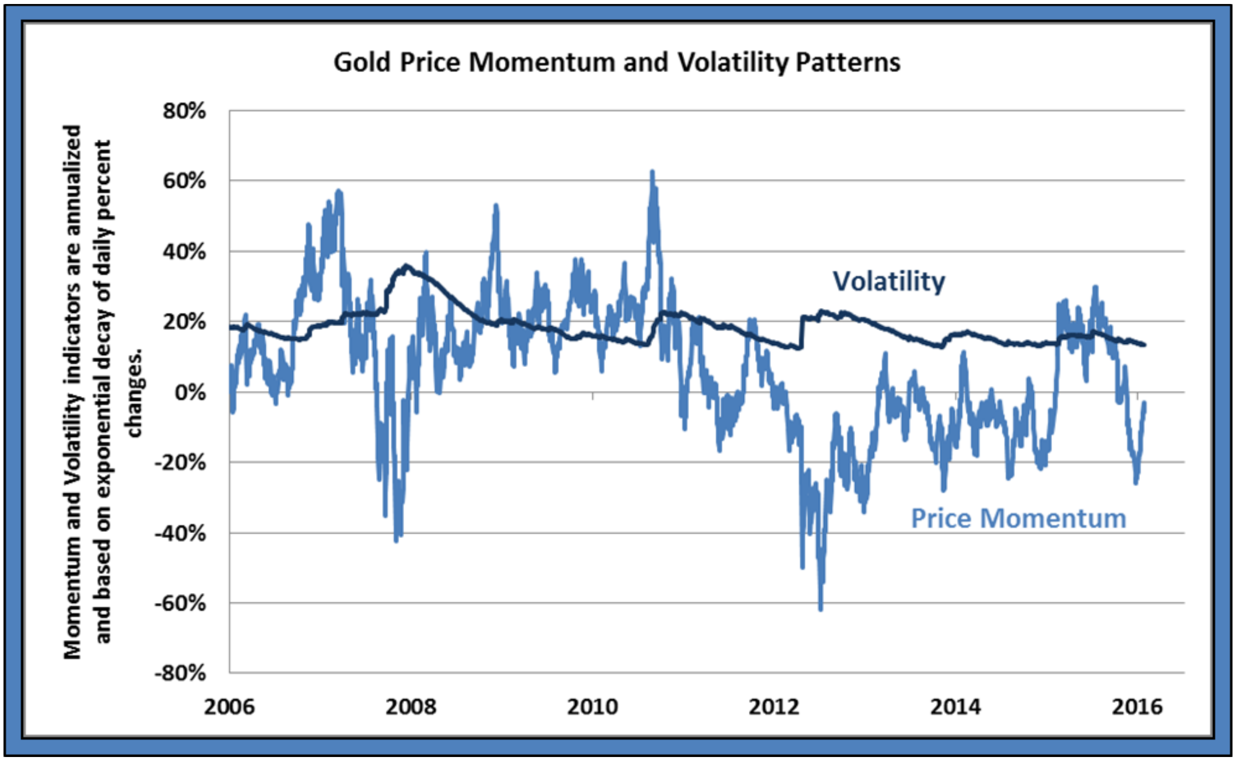
Figure 1

Source: Bloomberg Professional (GOLDS).

The main takeaway for studying the volatility patterns of the last few years is that the intraday futures and options trading dynamics suggest that market participants are much more nervous and uncertain about the how the price of gold may evolve than the observed standard deviation of daily price percent changes would suggest. At the close of 2016, gold market volatility as measured by an exponentially decaying time series process was sitting between 13% and 15% (annualized standard deviation), which is relatively calm by historical comparisons. In addition, and reflecting the trading range characterization of the market, the price momentum indicators were reading just slightly negative and very close to neutral. (See Figure 2 on the next page.)

The lack of a persistent trend and the relatively benign historically measured volatility, however, may be hiding the potential for surprise and change, if a few of the scenarios discussed below come to fruition. So, let's examine the four drivers that could change the gold price dynamics.

Figure 2



Source: Gold price data from Bloomberg Professional (GOLDS) and Momentum and Volatility indicators calculated by CME Group Economics.

1. Removal of Monetary Accommodation

Short-term U.S. interest rates matter to the price of gold in no small part because gold bears no interest and is often held in investment portfolios as a diversifying element, given the perceived lack of correlation between gold and equity indexes. So, if U.S. interest rates are rising, then the cost of holding gold rises for diversification purposes in a broad portfolio.

The Fed made its first rate increase since the financial panic of 2008 in December 2015, and provided forward guidance that four more rate increases might follow in 2016. As it happened, the Fed reached November 2016 without having made another move. And when it decided to raise its target range for the federal funds rate at its December 2016 Federal Open Market Committee (FOMC) meeting, it only provided forward guidance for two or three rate rises in 2017. Not unsurprisingly, the Fed had lost some credibility concerning its forward guidance in 2016, despite always carefully noting that its future decisions would be data dependent.

For 2017, the Fed will, no doubt, remain data dependent, but under one scenario that may gain ground, the inflation data could be a trigger for a more rapid pace of raising rates. U.S. inflation has been held back in recent years by the weakness in commodity prices, and that weakness was reversed in commodities as diverse as oil, copper, and iron ore during 2016. Working through the economy with a lag, a case can be made that inflation may well rise faster than the Fed expects and move clearly above the Fed's long-term inflation target of 2% as 2017 progresses. If so, this would suggest as many as four rate rises in 2017, and such a development could lead to an adverse impact on the price of gold.

2. Risk Management and Efficiencies in Mining

Economists often build statistical models that ignore changes in the underlying structure of markets. That is, say, for the gold market, one might run statistical studies involving inflation, interest rates, production output, growth of China, central bank purchases or sales, and other fundamentals. What are often missing from the list of explanatory factors, however, are two very important trends in the commodity world – not just in the gold market.

First, producers of oil, natural gas, gold, silver, copper, corn, soybeans, and many other energy, metals, and agricultural products are constantly improving the efficiency of production and lowering marginal costs. Sometimes the effects of technological improvements appear on the scene in a burst of activity such as happened a decade ago with the extraction of oil and natural gas by hydraulic fracking in the United States. What often goes unnoticed, however, is that lower marginal production costs and greater efficiencies are constantly evolving, even if at an uneven pace. The long-run implication is for more production at price levels that might have been seen as prohibitively high only a few years prior.

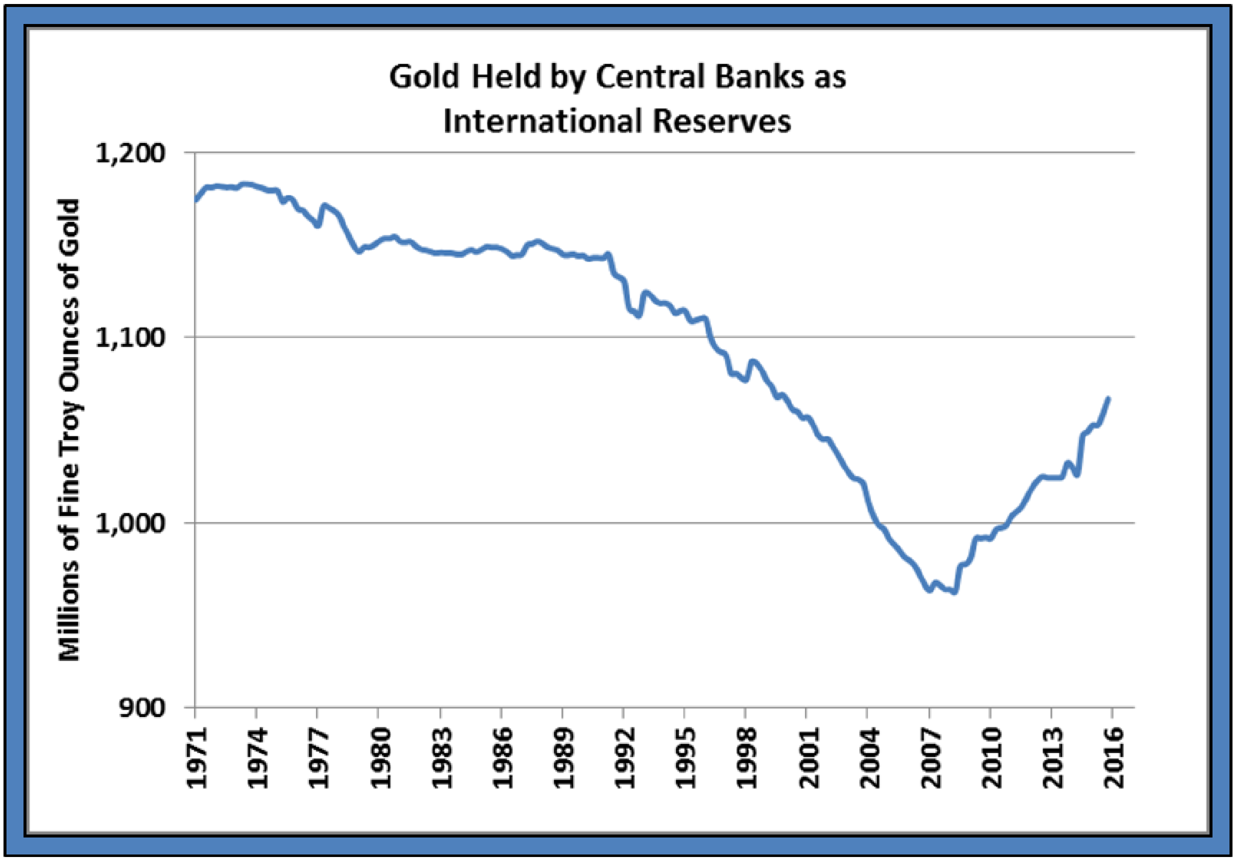
Second, producers of energy, metals, and agriculture are increasingly active in the futures and options markets to manage their risks. Trading in options, in particularly, has seen strong gains in recent years.

When we couple these two trends together, one realizes that the production response to a given price change may be very different than 5, 10, or 20 years ago. Marginal production costs are lower and the sophistication and ability of companies to manage and hedge their price risks has increased. The longer-term trend is for greater production than might have been previously expected in weaker price environments.

3. Central Bank Buying

Central banks typically have significant holdings of gold in their foreign reserve portfolios. Central banks were net sellers of gold through the 1990s and all the way until the financial crisis of 2007-2008. Since 2009, central banks have been net buyers of gold. (See Figure 3 on the next page.) That said, central banks are not known for their market-timing adeptness. A price break to the downside for gold might well temper their buying enthusiasm, leading to a sharper down trend as this source of demand is removed.

Figure 3



Source: IMF Data on Central Bank Holdings of Gold, provided by the Bloomberg Professional (001.046).

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4. China Deceleration

China and India are big importers of gold. India's economy is doing well; however, China's is decelerating. Moreover, the deceleration of China's economy has been accompanied by a weakening of the Chinese yuan relative to the U.S. dollar. China has actively resisted the currency weakness by selling foreign reserves to keep the currency from depreciating at a faster rate than otherwise. (See Figure 4 on the next page.) China has also rapidly expanded debt as a way to stimulate the economy and cushion the pace of deceleration. There are growing fears among China-watchers that the debt level has gotten precipitously high and the efficacy of using ever more debt to provide economic stimulus is waning.

Figure 4

Source: Bloomberg Professional (WIRACHIN).

The China deceleration scenario cuts two ways for gold. China may buy less gold for jewelry. But China may also increase its purchases of gold for portfolio hedging purposes. What we do know is that the trading of gold futures and options in Asian hours has expanded rapidly in the past two years, and we take this as a potential precursor of volatility to come.

Concluding Remarks

When we put these four factors together – rising US interest rates, lower costs of extraction, central bank buying, and China deceleration – at first glance we may see a mixed picture. The natural tensions among these factors, however, suggest that any move in the gold price, up or down, may come in a burst of activity and may come with significant volatility. The first two drivers point to the possibility of lower gold prices if (a) the Fed surprises with a faster pace of rate hikes and (b) mining companies expand output more than expected at current prices, given their ability to produce at lower marginal costs and to hedge their anticipated output. The other two factors – central bank buying and China deceleration – have the ability to cause even more volatility. If the price of gold were to drop, central banks might abruptly stop their purchases, removing a source of demand. And if the Chinese economy hits a downdraft, the net fall in gold imports could be a big surprise and quite material for the market.

While these are only "what if" scenarios, collectively they suggest that the current volatility regime in the gold market may be the calm before the storm.

Endnotes

All examples in this report are hypothetical interpretations of situations and are used for explanation purposes only. The views in this report reflect solely those of the author and not necessarily those of CME Group or its affiliated institutions. This report and the information herein should not be considered investment advice or the results of actual market experience.

Author Biography

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Dr. Bluford (Blu) Putnam is Managing Director and Chief Economist of CME Group. He manages the Strategic Intelligence & Analytics team, which includes both data science and management analytics. As Chief Economist, Dr. Putnam is responsible for leading the economic analysis on global financial markets by identifying emerging trends, evaluating economic factors and forecasting their impact on CME Group and the company's business strategy. He also serves as CME Group's spokesperson on global economic conditions and manages external research initiatives.

Prior to joining CME Group, Dr. Putnam gained experience in the financial services industry with concentrations in central banking, investment research and portfolio management. He most recently served as Managing Partner for Bayesian Edge Technology & Solutions, Ltd., a financial risk management and portfolio advisory service he founded in 2000. He also has served as President of CDC Investment Management Corporation and was Managing Director and Chief Investment Officer for Equities and Asset Allocation at the Bankers Trust Company in New York. His background also includes economist positions with Kleinwort Benson, Ltd., Morgan Stanley & Company, Chase Manhattan Bank and the Federal Reserve Bank of New York. Dr. Putnam holds a bachelor's degree in liberal arts from Florida Presbyterian College (later renamed Eckerd College) and a Ph.D. in economics from Tulane University.

Dr. Putnam has authored five books on international finance, as well as many articles that have been published in academic journals, including the *American Economic Review*, *Journal of Finance*, and *Review of Financial Economics* among others.

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