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Real interest rates have a real influence on gold

BY ARKADIUSZ SIERON
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Does gold respond to the inflation or rather to the real interest rate? Paul Krugman said once that the reason behind the high real price of gold between 2001 and 2011 was low real interest rates, not the expected inflation. Is he right and are real interest rates really the main driver of the yellow metal price? How do they affect the gold market?

During the last boom, the gold price was stubbornly rising, but inflation was low. Not surprisingly the relationship between real interest rates (nominal interest rates less inflation) and gold increasingly attracted more and more interest. If gold responds mainly to the real interest rate, it makes its inflation hedge character questionable. This was the opinion of, for example, Paul Krugman, a Nobel Laureate in economics. Krugman claimed that the reason behind the high real price of gold until 2011 was low real interest rates, not the expected inflation.

Was he right? Are real interest rates really the main driver of the yellow metal price? How do they affect the gold market?

Generally, the real interest rates are negatively correlated with the gold price, i.e. the rising interest rates adversely impact the yellow metal. The intuition behind this is that higher interest rates mean higher opportunity costs of holding non-interest bearing assets, like precious metals, making them relatively less attractive. Basically, gold pays neither dividend nor interest. Thus, it is relatively expensive to hold in the portfolio when real interest rates are high, and relatively cheap when real interest rates are low. In other words, the higher the interest rates are, the higher the carrying costs.

Moreover, we should not forget about two other factors. First, higher storage costs due to higher interest rates also raise the carrying costs. Second, for many years central banks were leasing part of their gold reserves. Then as interest rates fall, gold leasing becomes less attractive for central banks, so less gold is leased, which positively affects its price.

This negative relationship has quite strong support in the academic literature, as well in the statistics. In the article from 1985 Gibson's Paradox and the Gold Standard Robert B. Barsky and Lawrence H. Summers showed that variation in the real interest rate appeared to be responsible for the year-to-year movement in the relative price of gold from 1973 to 1984. According to their explanation, gold is a durable real asset, therefore willingness to hold it depends on the rate of return available on alternative assets.

In the more recent article from 2013, The Golden Dilemma, Claude Erb and Campbell Harvey also found a very strong negative correlation between real interest rates and gold prices (from 1997 to 2012), such as -0.82 (while -1 means a perfect negative correlation).

The World Gold Council in the third edition of its Gold Investor from 2013 also found that real rate regimes are negatively correlated to returns. The best returns (1.5% monthly) in the period from January 1975 to May 2013 have been achieved in the times of low real rates (lower than 0%). During moderate real rate periods (between 0 and 4%) the average monthly rate of return was 0.7%, generally in line with the long-term average, while high real rate environments (more than 4%) were associated with monthly average returns of -1%. Additionally, WGC found that gold's volatility is significantly lower in a moderate than in a low or high real rate environment.

This relationships is not linear, however. Gold prices tend to increase significantly only during the periods of negative real interest rates. This is because the negative interest rates, i.e. the situation when the inflation rate is higher than nominal interest rate (the rate which is actually paid), means that creditors are losing money, therefore they are more prone to buy gold, even it does not bear interest nor dividends.

In other words, gold reclaims then its traditional role as money and a store of wealth, which will at least keep pace with inflation to preserve the purchasing power of their capital, while bonds guarantee a real loss at negative real interest rates. Therefore, in asense the adverse relationship between gold prices and real interest rates confirms that gold is an inflationary hedge. Investors shift their capital into gold market – they do not want to suffer losses because of nominal interest rates lower than the inflation rate.

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