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ARTICLE

Gold and bubbles: an impossible binomial? A review of historical and current evidence

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ABSTRACT

Gold has a far-reaching history of 'safe haven' or 'anchor of stability'. However, the epitome of precious metals has recently deviated from its historical price trend. Fluctuations and volatility have increased too. We argue that gold is not subject to bubbles (due to its scarcity in nature), although its price is. By means of a logical-analytical macroeconomic approach combined with statistical and empirical evidence, we prove that there is excess liquidity in the world economy as a whole, which has been increasingly invested in this precious metal. The paper also shows why the gold price could further rise and/or suddenly decrease. Both scenarios would be possible as soon as speculation kicks in.

KEYWORDS

Asset-price inflation; consumer prices; financial bubble; gold

JEL CLASSIFICATION

E31; L61; P44

I. Introduction

Precious metals have been historically safe haven investments during shocks in stock markets (Baur and McDermott 2010). According to Mundell (2002), gold's stability is strongly related to the smallness of annual supply increments and demand changes. However, in the light of the gold price recently skyrocketing, it has been argued that '"the ultimate bubble," has burst' (Amadeo 2020) or that gold might cause a bigger bubble than that of tech stocks (Ashraf 2020). Although this trend might not imply a shift in the perception of gold as 'anchor of stability' (Tuccille 1987) too, it has to be explored whether gold (and its price) might be:

(1) subject to bubbles like other commodities and assets;
(2) and/or affected by inflationary pressures.

The recent gold price increase has been substantial (i.e. by 21.99%, January – September 2020), has deviated from its typical values and ranges well above its linear trend line (Figure 1). Even if one curve in Figure 1 is not inflation-adjusted, it is the nominal-terms one to be significant. The focus should not be on the inflation-adjusted gold price, but on the historical evolution of its nominal value. In fact, inflation (if high) distorts the perception of the actual price increase.

Our hypotheses are:

(1) gold is *per se* not exposed to bubbles because of 'its limited quantities' (Dana 1866) and intrinsic value;
(2) however, if there is a bubble *alias* excess liquidity in the banking and financial system and economic times are uncertain while invested funds need to be collateralized against risks, the price of precious metals might be affected. Otherwise stated, 'if there is no excess liquidity, there would be no bubble phenomena' (Morita 2017).

We demonstrate that there is excess liquidity void of purchasing power because of not being backed by real values (i.e. GDP). The increase of the gold price from 2001 onwards – not coincidentally, in the 'preparation phase' of the global financial crisis – reflects the search for stability and is an effect of the bubble increasingly invested in gold.

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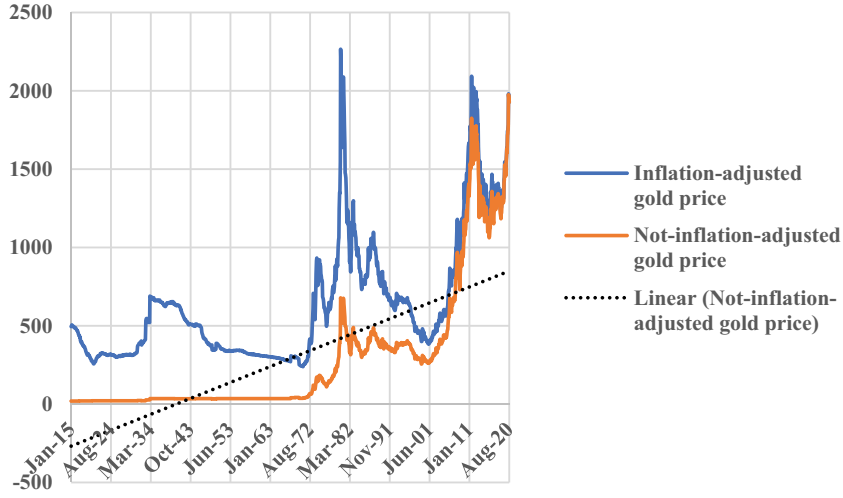

Figure 1. Nominal and real gold prices (1915–2020).
Source: own elaboration of Macrotrends (2020)

II. Theoretical framework, materials, methods and discussion

A logical–analytical, macrofounded approach allows to strip down the problem to its essence and to contribute to the analysis of bubbles in asset prices and, specifically, gold which is less studied because of its stability assumption. As described in Beretta (2020), there is excess liquidity fluctuating from one part to another of the world and causing an increase of (nominal) values at the point of arrival and a sudden decrease if withdrawn. An indicator providing a fragmentary idea of the over-lending by the financial sector (although other forms of money creation at the inter-bank level, xeno-currencies, etc., are not considered), is represented by domestic credit provided by the financial sector compared to GDP (Figure 2). The macroeconomic difference between lending in excess to someone's disposable resources and GDP in general is that, in the first case, (s)he might not have the resources lent, but the economy as a whole has. In the second one, the amount lent (because of exceeding GDP) cannot be retrieved in the economy.

Money – if not backed by current (or future) wealth – has no intrinsic purchasing power ('without production the concept of money would be empty' (Cencini 2013)). Any excess liquidity is by

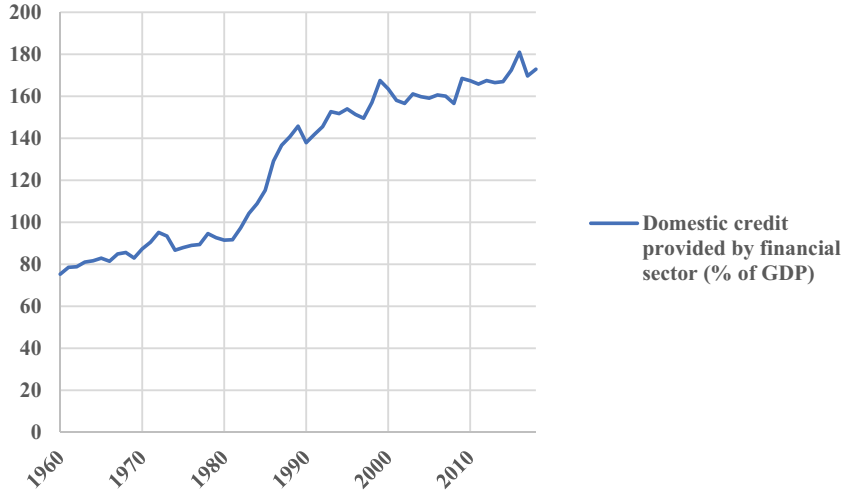

Figure 2. Worldwide over-lending by the financial sector (1960–2018).
Source: own elaboration of World Bank (2020)

definition inflationary – the inverse relation is that 'inflation is always and everywhere a monetary phenomenon' (Friedman 1992) –although it does not anymore display its price-increasing impact on consumer goods for which just a little portion of income is spent in advanced economies. In fact, 'successful control of Consumer Price Index-inflation [...] does not guarantee low asset price inflation' (Arestis and Karakitsos 2004). Instead, in times of low-interest rates, excess liquidity is invested in remunerative markets like the housing and stock one (Figure 3), as it has happened in the United States, Greece and Iceland. There is no doubt that, '[w]hile CPI inflation has been subdued, low interest rates and excess liquidity in the banking system have fueled credit growth and house prices' (IMF 2016).

In the light of the sudden deviation from gold's historical price trend (Table 1), we claim that a part of this bubble might have been increasingly invested in gold too. Gold has not changed over time, meaning that the *ceteris-paribus* condition is applicable, nor has its perception of 'anchor of stability' or 'safe haven' (Lipscomb and Libey 1982). In eras of digital payments gold even suffers from the competition of paper money (e.g. a more spendable 'anchor of stability'). Bank runs in the United Kingdom (2007), Cyprus (2013) and Greece (2015) prove that in emergencies savers want savings turned back into an immediately spendable form. Quite surely, if they should decide (while waiting to withdraw their deposits) between cash and gold, almost anyone would prefer paper money because of being spendable with no delay (e.g.

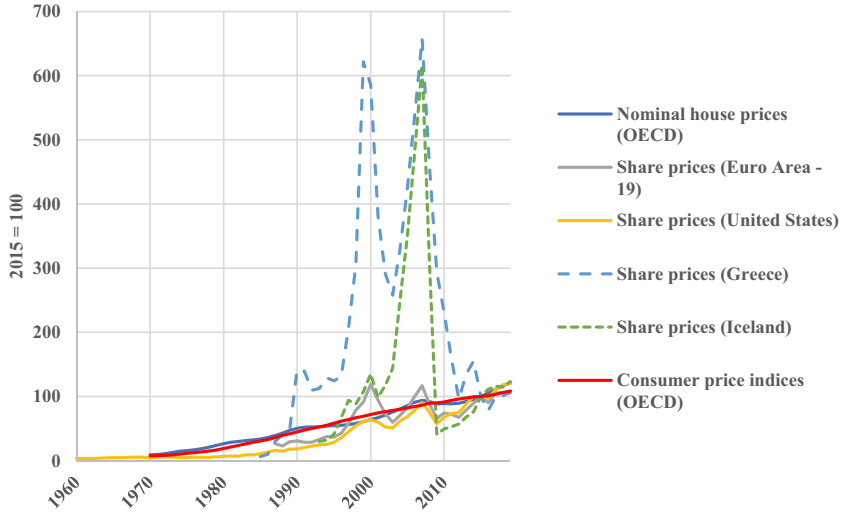

Figure 3. Price trends in the housing, stock and consumer-goods markets (1960–2019).
Source: own elaboration of OECD (2020a, 2020b, 2020c)

Table 1. World gold supply/demand and price expectations (2007–2019).

	Supply (tons)	Demand (tons)	Surplus/deficit (tons)	Gold price (USD/oz)	Price expectation towards previous year (given demand and supply)	Price change towards previous year
2007	3,134	2,930	+204	695.39	–	–
2008	3,497	3,536	−38	871.96	Increase	Increase
2009	4,182	3,125	+1,057	972.35	Decrease	
2010	4,411	3,903	+508	1,224.52		
2011	4,590	4,635	−45	1,571.69	Increase	
2012	4,544	4,441	+102	1,668.98	Decrease	
2013	4,341	5,314	−973	1,411.23	Increase	Decrease
2014	4,438	4,501	−62	1,266.40		
2015	4,401	4,357	+44	1,160.06	Decrease	
2016	4,511	3,559	+952	1,250.80		Increase
2017	4,395	3,977	+418	1,257.35		
2018	4,530	4,203	+327	1,268.70		
2019	4,713	3,910	+803	1,391.40		

Source: own elaboration of Refinitiv (2018; 2019; 2020)

'payment finality' (Committee on Payment and Settlement Systems 1992)).

This is a crucial point. Hence, on the one hand, gold displays the same stability features as before (Almarzoqi, Mansour, and Krichene 2018). On the other, it can be supposed that demand is rising, which confirms that '[t]he future value of gold is naturally governed by [...] the side of demand rather than [...] the side of supply' (Nature 1929). But which kind of demand should be referred to? Since savers are not suddenly buying physical gold *en masse*, the demanders must be others, namely investors. Typically, subjects investing in precious metals are not 'physically' buying bullions, but rather gold futures, options and ETFs, meaning that mainly claims on gold are demanded/offered (Investopedia 2020).

If the reader accepts this conclusion, (s)he admits that the gold price is influenced by speculative forces typical of financial markets (where such financial instruments are traded). Table 1 shows that its price (2007–2019) has deviated from reasonable logic based on demand and supply of physical gold. Even if gold supply is not subject to bubbles because of its scarcity in nature, its price might be. While demand–supply interactions affected by excess liquidity result in volatile movements, without it they are smoother. That gold has plummeted by almost 150 USD/oz from mid of August to September 2020 (Gold Price 2020) with no 'true' reason should not astonish.

To empirically verify the presence of (inflation-adjusted) gold price bubbles in correspondence of liquidity surpluses, we conduct two statistical tests, following Phillips, Shi, and Yu (2015). We first implement a Generalized Supremum Augmented Dicky-Fuller (GSADF) test to provide evidence on the existence of a price bubble during the period of observation. Then, we run a modified sequential PWY test (Phillips, Wu, and Yu 2011) to identify (possibly, multiple) periods of gold price exuberance. The realized value of the GSADF test statistic is 7.70, well beyond any critical value associated with a first-type error probability of 1%, suggesting the clear existence of at least one price bubble in the period. The dating procedure of the sequential PWY test identifies, again at a first-type error probability of 1%, three periods of price bubbles:

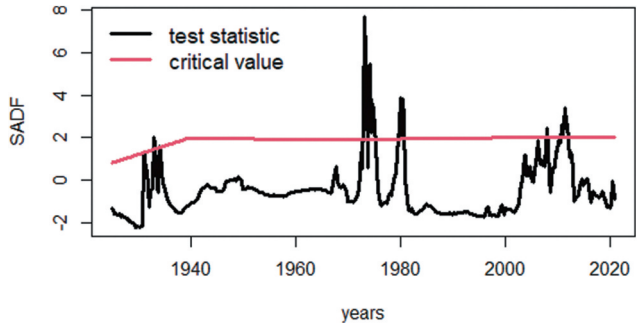

Figure 4. (Inflation-adjusted) gold price bubbles in correspondence of liquidity surpluses (1915–2020).
Source: own elaboration of Phillips, Wu, and Yu (2011); (2015)

(1) 1st quarter 1973 – 2nd quarter 1975;
(2) 4th quarter 1979 – 4th quarter 1980;
(3) 2nd quarter 2010 – 1st quarter 2012.

These periods correspond to times at which Supremum Augmented Dicky-Fuller test statistics are persistently higher than the corresponding critical values (Figure 4). Emblematically enough, (1) and (2) correspond to the first and second oil crisis while (3) to the spreading of the global economic crisis and kicking in of monetary stimuli. With specific regards to 2020, we cannot exclude a bubble still-to-be-identified at the end of the sample. The pattern of the gold price (Figure 1), which resembles the peaks identified as bubbles, inductively supports this assumption.

III. Conclusion

The recent rise in gold price might be of inflationary nature. Although its historical role of 'safe haven' is not at risk, gold might temporarily loose its characteristic of stability if it should significantly drop in price. When (and if) it might happen relies on speculative decisions and their erraticness. A precipitous drop in price (i.e. the bubble bursts) as well as a consolidation at high price levels given gold's historical status (i.e. a 'special treatment' compared to other commodities) are both possible.

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No potential conflict of interest was reported by the authors.

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