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STA302 Fall 2023

I am still struggling about R， so it is more like a sample.

Gold Price Dynamics: An In-depth Analysis of Influencing Factors, Interventions, and Strategic Reserves

The price of gold saw a significant increase from October to November 2023. On the day of the outbreak of the conflict between Israel and Palestine, the gold price was at $1825 (World Gold Council, 2023). However, by November, it had surged to $1985, marking an 8% increase in just half a month (World Gold Council, 2023). Gold, due to its complex economic nature, is influenced by various factors. This paper primarily analyzes the gold price based on four factors: supply and demand dynamics, international situations, the US dollar index, and the pricing strategies of the Federal Reserve and European central banks.

First is the relationship between supply and demand, where the quantity and trends of both determine the price of a commodity (Mishkin & Serletis, 2019, pp. 619-623). Applying this framework to the gold market, we can contemplate whether the annual supply and demand for gold have an impact on its price.

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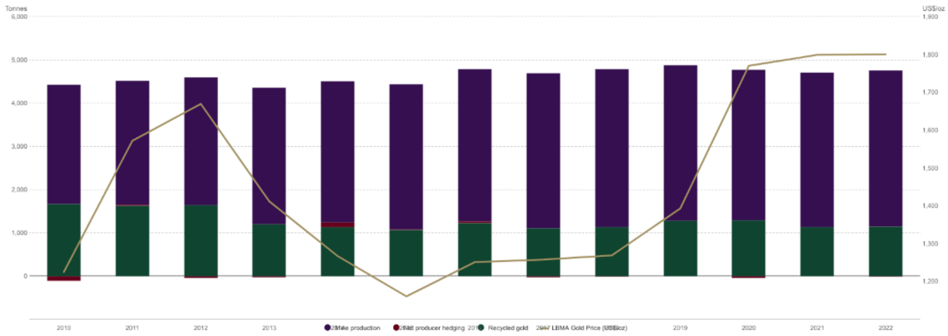
Supply and Demand Statistics



Data as of 30 June, 2023

Sources: ICE Benchmark Administration, Metals Focus, Refinitiv GFMS, World Gold Council; Disclaimer https://www.gold.org/terms-and-conditions#proprietary-rights

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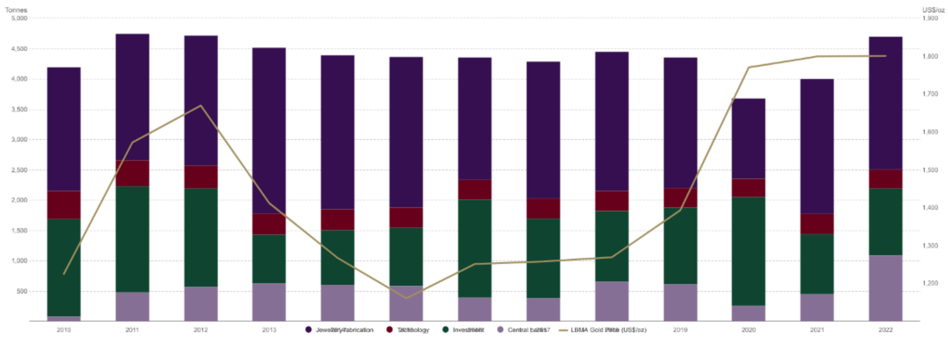

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Through the analysis of data, the impact of supply and demand on the gold price is relatively minimal. The annual demand for physical gold tends to stabilize at around 4000 tons (World Gold Council, 2023). Examining the supply data reveals a balance between supply and demand, with the actual annual gold production around 4000 tons (World Gold Council, 2023). Throughout the year, the supply and demand for gold remain in a balanced state, indicating a comparatively low influence of supply and demand on the gold price.

In the context of supply and demand relationships, instability in assets of a similar nature tends to increase the demand for more stable assets (Mishkin & Serletis, 2019, pp. 619-623). Gold, as a safe-haven asset, should logically experience an increase in price during times of international turmoil. However, the performance of gold prices after the Russia-Ukraine war in 2022 presents a counterexample. Despite the ongoing war and an escalation of international disorder, gold prices only rose for two weeks after the conflict began and then continuously declined for seven months (World Gold Council, 2023).

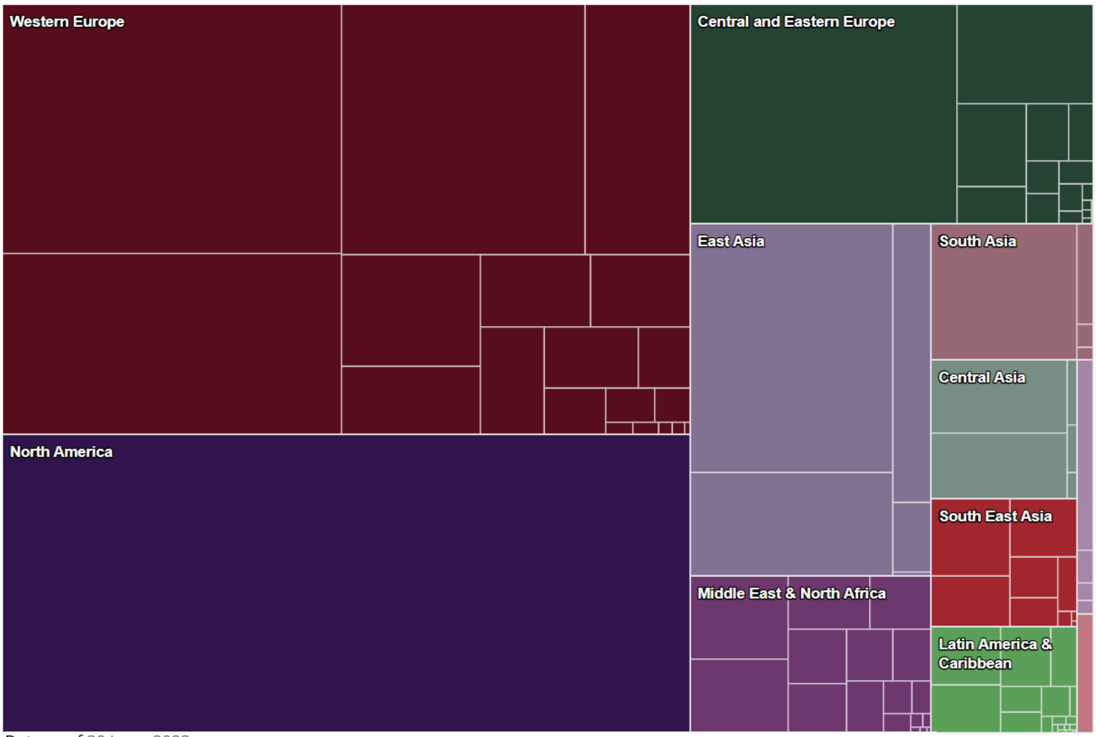
Taking a longer-term perspective, the correlation between international situations and gold prices is not consistently high. In the 1970s, the price of gold skyrocketed from $35 in 1971 to over $690 in 1980 (World Gold Council, 2023), a period that witnessed several wars and international turbulence. However, attributing this increase solely to international situations becomes challenging when considering the year 1991, which saw the dissolution of the Soviet Union and the Gulf War. Despite significant geopolitical events, gold prices remained stable, hovering around $400 (World Gold Council, 2023), showing a limited reaction to the prevailing circumstances.

Taken as a whole, it can be observed that while gold is considered a safe-haven asset, the actual correlation between gold prices and international situations is sometimes inconsistent. If it's not driven by international situations, then what is driving it?

Opportunity cost plays a critical role in shaping asset prices. When the opportunity cost of holding a specific asset rises, driven by the potential for higher returns elsewhere, investors may redistribute their investments, potentially resulting in a decline in the price of the original asset (Mishkin & Serletis, 2019, pp. 261-271). Regarding the U.S. Dollar Index, it represents a comparison of one U.S. dollar against a basket of currencies, not an exchange rate. The baseline value for this index is 100, where values above 100 indicate U.S. dollar strength, and below 100 indicate U.S. dollar weakness. Incorporating economic models, a stronger U.S. dollar often elevates the opportunity costs for holding non-yielding assets like gold, leading to a negative correlation. When comparing the historical prices of gold and the U.S. dollar index over the past few decades, their trends exhibit periods of correlation and non-correlation. For instance, post-March 2022 witnessed a strengthening U.S. dollar and a weakening gold market, while after October 2022, a weaker U.S. dollar coincided with a stronger gold market (MarketWatch, 2023). These periods demonstrated a strong inverse correlation. However, during the early part of 2022 when the U.S. dollar was strengthening, gold prices remained relatively stable, revealing a lack of responsiveness to a strong U.S. dollar. Even when their trends are correlated, the strength of this correlation tends to fluctuate, as seen in the variability of their correlation during related periods. In the years 1985-1987, a 40% drop in the U.S. dollar index correlated with a 36% rise in gold prices, indicating a strong negative correlation. Conversely, from 2000 to 2008, despite a 50% decrease in the U.S. dollar index, gold prices surged from 260 to 800, showing a weak negative correlation with gold exhibiting a significantly higher increase (MarketWatch, 2023).

Stepping outside the economic framework and following the thread of intervention, numerous pieces of evidence emerge pointing to collaborative efforts between the Federal Reserve and various European central banks to control gold prices.

2022: Gold reserves (Tonnes)



Data as of 30 June, 2023

Sources: Central Banks, Federal Reserve Bank of St. Louis, International Monetary Fund, World Bank, World Gold Council;

Central banks globally buy substantial amounts of gold each year to build gold reserves, constituting approximately 25% of the annual global gold production. In terms of existing reserves from the estimated global gold stock of around 210,000 tons, central banks collectively hold about 35,000 tons. Among these, the United States, Western Europe, and Japan jointly possess nearly 20,000 tons, representing approximately 60% of the total global central bank gold reserves (World Gold Council, 2023).

Since 1999, every five years, 15 central banks in Western Europe sign a coordinated action agreement. The United States, Japan, Australia, the International Monetary Fund

(IMF), and the Bank for International Settlements (BIS) also informally join this gold agreement (World Gold Council, 2023). However, the history of such coordinated actions dates back further. In the 1980s, to stabilize the U.S. dollar, five central banks signed two crucial agreements: the Plaza Accord in 1985 (Frankel, 2016) and the Louvre Accord in 1987. The Louvre Accord stipulated joint action by these five countries to maintain the stability of the gold-to-dollar exchange rate ("Louvre Accord," 2012), fixing it at around $400 per ounce ("Louvre Accord," 2012). Understanding this information sheds light on the gold prices in the 1990s. During that decade, whenever gold prices were either too high or too low, these central banks, along with the IMF, intervened in the gold market ("Louvre Accord," 2012). As a result, gold prices remained relatively stable throughout the 1990s, even amid significant geopolitical changes such as the dissolution of the Soviet Union in 1991 and the Gulf War, with minimal impact on gold prices.

When the new agreement emerged in 1999, and the decision to collectively refrain from selling gold was made, gold entered a prolonged upward cycle after 2000. Gold prices surged from less than $300 in 2000 to over $1900, marking a continuous upward trend for more than a decade (World Gold Council, 2023). However, the specific reasons for the change in their manipulation strategy after the 1990s remain less explored with limited publicly available information.

Due to its highly complex economic attributes, the price of gold reflects the dynamic interplay of various intricate economic factors. However, considering only economic factors is akin to a blind man feeling an elephant; understanding the intentions of central banks and some clues from global power games is necessary to create a relatively complete logical chain. Although the world has nominally departed from the gold standard for almost 50 years, the strategic reserve status of gold has never disappeared. Gold continues to be one of the most crucial tools in strategic games.

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