

MODULE EMEC025S6 – BSc PROJECT

Project proposal

Provisional title

“Empirical analysis of commodity price behaviour in capital markets: The case for gold”

Project summary

For my project, I would initially like to extend my ASE project, “**Relationship between gold and US stock market returns during financial crises**”, and explore the price behaviour of gold and determine its usefulness as an indicator of economic health.

Concept

Almost 40% of the total global stock of gold (total mined to date, 197,576 tonnes) is held by public and private investors in the form of gold reserves. Both governments (17.2%, 33,919 tons) and private investors (21.6%, 42,619 tons) buy gold for the purpose of investment, as a store of value, and to hedge against inflation.

I am interested in evaluating changes in the price of gold over time and the role these play in the economy, looking specifically at the US. Because gold is valued in USD, its price behaviour could provide insights into the state of U.S. economic health, and thus the health of the global economy.

The economic theory of supply and demand suggests that the price of gold will rise when the US dollar is weak – a weak USD effectively makes gold cheaper, increasing its demand. Simultaneously, a strong dollar should make gold more expensive, and in theory, lower its demand and as a result its price.

Within this theoretical context, low gold prices are a sign of a healthy economy, making other assets (e.g. stocks, bonds, or real estate) more profitable investments than gold. To explore if this relationship holds in reality, I would like to use correlation analysis using gold price data and economic indicators (e.g. GDP growth, stock market performance, consumption).

Data

For gold price data, I plan to look at the London Bullion Market Association pricing data, although there is also online data available for several gold sub-indices in the stock market.

For economic data, I plan to look at both long-term and short-term data to first identify any trends. I hope to narrow down my choice of economic indicators based on this initial analysis, but will likely explore a large range of data, including GDP/GDP growth, stock market performance, consumption, crude oil price, etc.

Hypothesis

I expect there to be a negative correlation between indicators of positive economic growth (GDP growth) and the price of gold. This analysis could be extended to other commodities, such as oil, which could be interesting since this commodity specifically is dominated by quite different price mechanisms compared to gold. These include differences in the mechanisms of supply and demand. For example, the price elasticity of oil is known to be fairly inelastic, compared to gold, which I expect will exhibit much more elastic price behaviour.

As of November 2021¹, the total gold reserves held by central banks stand at 35,553 tonnes:

Country	Tonnes
United States	8,133
Germany	3,359
IMF	2,814
Italy	2,415
France	2,436
Russia	2,298
China	1,948
Switzerland	1,040
Japan	846
India	744

* end of month LBMA Gold price

¹ <https://www.gold.org/goldhub/data/monthly-central-bank-statistics>