Problem Statement Worksheet (Hypothesis Formation)

Does the S&P 500 index have a statistically significant, exogenous effect on the value of gold(GLD)? If so, can it be used to accurately predict the value of gold?

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1 Context

A client is developing an investment portfolio for their customers and wants to test the theory that the price of gold per ounce (GLD) can be predicted from the S&P 500 Index (SPX). Barrick Gold Mining, Corp (BARR) and the price of silver/ounce (SLV) has been included to compare the uniqueness of the relationship between SPX and GLD.

2 Criteria for success

Develop a time series model that predicts the value of Gold using SPX as an exogenous variable.

Time restriction: This must be ready before the fourth quarter of 2020.

3 Scope of solution space

The focus of this model is to test the theory that the stock market, specifically indexes like SPX, determine the value of GLD. A model that can use SPX to accurately predict the value of GLD will be our mark for success.

4 Constraints within solution space

The data collected only has the daily closing value for each stock from September 17, 2014 to August 21, 2020. .

5 Stakeholders to provide key insight

CEO
CFO
Financial Advisors
Investors

6 Key data sources

Collected CSV's:
Barrick Gold Corp 2010-2020.csv
gold-price-last-ten-years.csv
silver history.csv
SP500 2010-2020.csv

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