Gold Price Prediction Project

1. Introduction:

Gold is a major economic indicator, as it is a reflection of some sort of economic peace and will or lack of will to invest in something. People are willing to invest in something running as long as they believe that the market will function normally. Gold is considered a safe-haven asset, which means that it usually goes up when the economy is doing poorly or when uncertainty in the market increases. In this project, we will investigate historical gold price data along with a selection of other financial indicators (S&P 500 index (SPX), Crude Oil price USO, Silver price SLV and EUR/USD exchange rate) to highlight the trends and find factors that have maximum influence on the fluctuations of the gold price.

2. Problem Statement:

The factors that cause gold price changes are very diverse and include economic indicators, market sentiment, and global economic conditions. Besides, there are only a few of them that are applicable over and over again. Historical studies have proven the existence of a solid one-to-one relationship between gold and the fundamental indicators of the U.S. dollar and stock market performance. Nevertheless, there is a necessity for an in-depth analysis that simultaneously looks at more variables and how they generally influence gold prices.
The main issue is to identify out of SPX, USO, SLV, and EUR/USD the factors that have the most influence on gold over a term of time. This data assists investors in the recognition of gold's position within a diversified portfolio and accordingly in reaching a decision on its prospective price changes that might come from shifts in other economic indicators.

3. Goals:

1. Investigate the entire set of data and use graphs to show the relationship between the variables (gold prices and the other indicators) in order to conclude.

2. Correlation Analysis: Find out how strong the gold price is connected with each of the indicators - SPX, USO, SLV, and EUR/USD to point out which variables are the main cause of the changes in the gold price.

3. Predictive Modeling: Develop predictive models to determine the possible effect of the changes in the indicators on the future movement of gold prices. This could be achieved by the application of techniques such as linear regression, time-series forecasting, or machine learning models.

4. Insights and Recommendations: Give insight information and options that can be acted upon by investors and analysts, based on the analysis of trends and patterns of the dataset.

4. Related Work:

1. Research suggests that the U.S. dollar has a negative correlation with the cost of gold. The golden bar becomes heavier when the dollar loses weight and gold becomes a more appealing asset for the international market.

2. There are other studies that are based on the different indices e.g. the S&P 500. Such studies also showed the correlation between stock markets and the price of gold, in that people would buy gold during times of market downturn or want to hedge against the market.

3. In the latest analysis, the refining of oil and fluctuations in gold price were also studied because the volatility of both is due to the blower of the macroeconomic gales.