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A STUDY ON IMPACT OF GOLD PRICES IN VARIOUS MARKETS – AN EMPIRICAL STUDY

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Abstract

Gold is the most familiar, precious commodity in the world. In some countries it is used as the mode of investment and countries like India it is used as the metal for jewels. Day by day the gold is valued more and the demand of the gold also increasing, because of this the gold rate also increasing. The gold rate did not get any much effect until 1970's, it started increasing afterwards because of various economic policies. The gold price was increasing in multiple values after 2006 when the huge global recession was happened. This paper revels about the various market factors affecting the gold price.

This study intended to prove the relationship and influence of various factors influencing the gold price. This study conducted with the empirical research method, purposive sampling was used to collect the secondary data which is essential to conduct this research. The study was done with the daily gold rate, Sensex & Nifty daily closing values, daily currency values of US dollar, UK pound, Euro, Japan Yen and the FII total investment follow also considered for this research. The statistical tools like correlation, regression, coefficient of variation and seasonal variance were used to analyse the collected information.

The study expects the influence of the collected factors in the gold price. This is anticipated that the FII will have lesser impact in the gold price and the gold will have the higher impact with the gold price.

Introduction

For studying the factors of market the researcher took the following factors and studied their impact in the equity market.

Gold

Gold is one of the precious metals; it is the most popular as an investment. The chemical symbol for gold is Au. Gold's atomic number is 79 and its atomic weight is 196.967.

Investors generally buy gold as a hedge or harbour against economic, political, or social fiat currency crises including investment market declines, burgeoning national debt, currency failure, inflation, war and social unrest.

The gold market is subject to speculation as are other markets, especially through the use of futures contracts and derivatives. The history of the gold standard, the role of gold reserves in central banking, gold's low correlation with other commodity prices, and its pricing in relation to fiat currencies during the Late-2000s financial crisis, suggest that gold behaves more like a currency than a commodity.

Us Dollar

The value of the US dollar is one of the major factors affecting gold price. The gold rate has always had this relationship with the Dollar ever since the dollar became the global trading currency. When the dollar is weak, the spot price of gold is on the rise and vice versa. A weaker U.S. dollar exchange rate is usually encouraging the increase in world gold prices.

Stock Market

Gold is often seen as an alternative to the stock market. Buying shares can give a higher return because investors receive dividends and possible growth in share capital. However, in times of economic turmoil or recession, the value of shares tends to fall. Therefore investors may sell shares and buy gold instead. So increase the gold price.

Crude Oil

Gold has been called a commodity to hedge inflation. At the present time, the main cause of inflation is deemed to be raising energy and oil prices. Oil as the most influential energy source contributes substantially to inflationary pressures. This entails that oil should influence other commodities prices. Oil prices are quite related to gold prices as oil prices affect energy prices and thereby the cost of most goods. Both are commodities, which mean that they are alternative investments to investments into stocks, bonds and mutual funds. In addition both are affected by political and economic tensions.

Problem Identification

1. The gold price is fluctuated (change continually) every day.
2. The prices of gold were increasing from1990 to1997 and then from 1997 till 2002 the prices of gold were decreasing and after 2002 the prices of gold are increasing.
3. More factors are influencing gold price such as supply and demand, Us dollar, stock market, crude oil, festivals and Rituals etc.
4. So the gold price is fluctuated continually.

Need of The Study

1. It is impartment to identify the gold rate changes.
2. It is impartment to find out the various factors affecting gold price and the contribution to the hike.
3. It helps to predict the gold rate changes based on the networking model.

Scope of The Study

1. Everyone is need of the gold due to various reasons like jewels, investment, technology and other factors.
2. It is difficult to people to predict the gold price out of the various factors affecting gold price.
3. This study research a neural network model which helps to predict the changes in the gold price.

Objectives

Primary Objective: To find the market factors influencing gold price.

Secondary Objectives

1. To evaluate the relationship between gold price, BSE-Sensex and NSE Nifty.
2. To evaluate the relationship between gold price and major currencies.
3. To analyze the relationship between gold price, FII's and crude price.
4. To identify the level of influence of BSE-Sensex and NSE Nifty in the movement of gold price.
5. To evaluate the level of influence of various currencies in gold price changes.
6. To evaluate the impact of FII's and crude in the volatility of gold price.
7. To create time series prediction equations.

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Research Methodology

Type of Research

Empirical Research

This study follows the empirical research. This research intended to prove the relationship and influence of various factors influencing the gold price.

Empirical research is a research based on observed and measured phenomena. It reports research based on actual observations or experiments using quantitative research methods and it may generate numerical data between two or more variables.

Research Design

Type of Sampling Method

Purposive Sampling

Purposive sampling, subjects are chosen to be part of the sample with a specific purpose in mind. With purposive sampling, the researcher believes that some subjects are fit for the research compared to other individuals. Purposive sampling is more commonly known as Judgmental sampling.

Source of Data

Data Collection

The search for answers to research question is called collection of data. Data are facts, and other relevant materials, post and present, serving as bases for study analyses.
In this study one type of data has been used for data collection, they are

- Secondary data

Secondary Data

Data are collected from secondary sources such as International monetary fund website (www.IMF.com), Stock market websites such as (www.NSE.com, www.BSE.com) and Commodities websites (www.MCXCOM, www.NCDEX.com, www.NMCEIL.com), (www.SEBI.in.org), (www.RBI.org.in).

Limitations

1. Data collected from secondary sources of data.
2. Many factors are influencing gold price but only consider most common factors.
3. Unable to conduct the in depth study due to time limitation for compelling project.
4. Gold markets have a 6 working days in a week whether stock market work in 5 days.
5. Tools for data analysis.

Correlation

It used to identify levels of influencing gold price.
Correlation may be defined as a tendency towards interrelation variation and the coefficient of correlation is a measure a tendency, i.e., the degree to which the two variables are interrelated is measured by a coefficient which is called the coefficient which is called the coefficient of correlation. It gives the degree of correlation.

It is a measure of the closeness of a relative sense. Correlation coefficient lies between -1 and +1.To calculate correlation the formula is,

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$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where,
r = Sample correlation coefficient
n = Sample size
x = Value of the independent variable
y = Value of the dependent variable

Regression

Regression means going back and it is mathematical measure showing the average relationship between two variables. A simple linear regression model is a mathematical way of setting the statistical relationship that exists between two variables.

In this study the regression analysis used to predict the level of influence of gold price in the factors affecting the gold price.

Coefficient of Variation

Coefficient of variation is a measure of variation, which is an improved measure over standred deviation. It is the ratio between the standred deviation and mean and it is usually represented by percedntage.

Seasonal Variance

For this analysis a financial year divided into four quarters and every quarter data added for the ten year period and the average of each quarter were found. Then the average of average where calculated to the result were found through the percentage.

Data Analysis And Interpretation

Changes In Gold Price

The above graph shows that the gold rate is more volatile and the gold rate reach peak in August 2013. This happen due to huge demand for gold in the market, less market returns and various economic crises.

Correlation Analysis
Correlation of Gold Price With Various Factors

BSE	NSE	Crude	US Doller	UK Pound	Euro	Japan Yen	FIIs
0.845	0.844	0.757	0.596	0.277	0.760	0.839	0.435

All factors are tested at 0.01 significant level

Inferences

1. BSE correlated with the gold price at 0.845, it denotes that there is a strong positive correlation between the gold price and BSE sensex.
2. The correlation result with NSE is 0.844; it explains the positive strong correlation between the gold price and NSE Nifty.
3. The crude is correlated with gold price with the strength of 0.757, it is the positive and strong correlation.
4. Us dollar is negatively correlated with the gold price with the influence of -0.596, it shows the reverse relation between the factors.
5. UK pound have very less correlation with the gold price at -0.277, it means that there is a negative and poor relationship between the factors.
6. Euro have the positive correlation with gold price at 0.76, this also ensure the positive relationship between gold price and Euro vale.
7. Japan yen have the positive relationship with the gold price at the level of 0.839.
8. Foreign Institutional investment have the positive correlation with the gold rate at 0.435, this denotes that, there is a less positive correlation between the gold rate and FII.

Regression of Gold Price With Various Factors

BSE	NSE	Crude	US Doller	UK Pound	Euro	Japan Yen	FIIs
0.715	0.712	0.573	0.356	0.077	0.577	0.704	0.190

1. The R^2 value 0.715 indicates that the BSE sensex influencing the gold prices by 71.5%. The Anova value of 0.0005 indicates the significance of factors is good.
2. NSE nifty makes the change in the gold price at 0.712. The significance of the result is also tested with 1% level of significance, this explains the accuracy of the result.
3. The crude oil price changes will change the gold rate at 0.573. The lesser significant vales denotes the maximum confidence of the result.
4. The gold rate receives the influence of US dollar about 0.356. The significant value 0.000 denotes that the research allows very less amount of errors.
5. US pound influencing the gold rate by 0.077, but this influence might not occur in the reality. The significant value is 0.002 this denotes that the variables have less significant compare then the other variables.
6. EURO registers an influence of 0.577 in the gold rate. This result is significant at 1%. Which is good for the researcher to find the accurate results.
7. Japan yen also register an influence of 0.704 in the gold prices. The significant value 0.0005 is lesser then 0.05. Which explains that the data were tested at 1% level of significance.

8. FII have very less influence in the gold price about 0.183. It is very less in nature. The significance vale ensures that the influence is true.

Co-Efficient of Variation

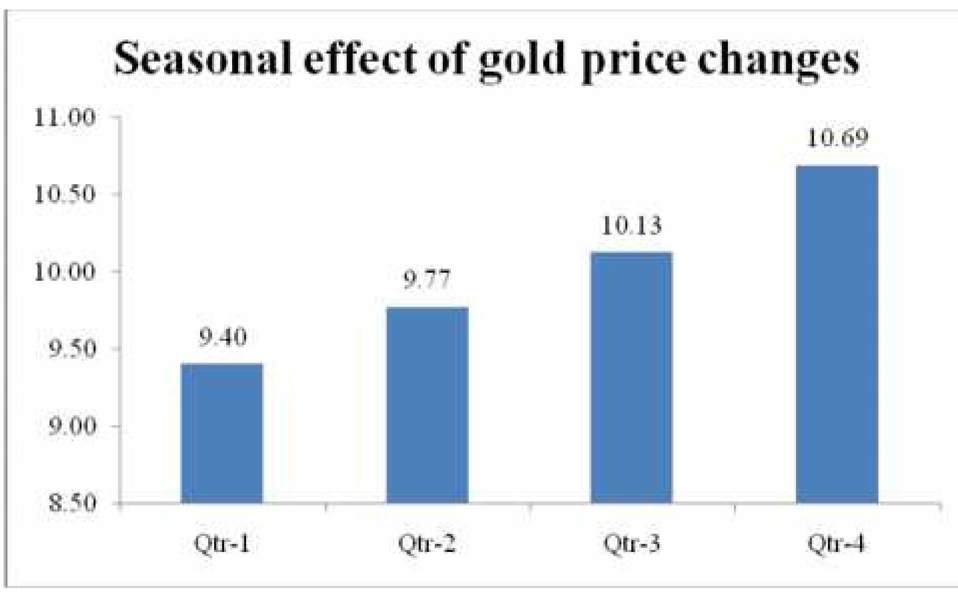
Co-efficient of variation between Gold with other variable								
	BSE	**NSE**	**Crude oil**	**US dollar**	**UK Pound**	**Euro**	**Japan Yen**	**FII**
Percentage (%)	50.49	49.63	49.92	13.79	6.58	11.23	18.43	188.43

The coefficient of variation results shows that the FII have the bigger volatility in its nature, and then the market factors Sensex, Nifty and the crude prices have higher volatility. The currencies have the constant growth, this registered less volatility.

Seasonal Variance

Seasonal Effect of Gold Price Changes

Year	**Qtr-1**	**Qtr-2**	**Qtr-3**	**Qtr-4**
Average	2120.50	2204.79	2285.43	2412.28
Average(Average)	2255.75			
Seasonal Variance	**9.40041**	**9.77408**	**10.1316**	**10.6939**



The seasonal variance chart shows that there is an upward trend in the movement of gold price form the I[st] quarter to the IV[th] quarter. This denotes that the fourth quarter have the highest price ranges of gold.

Findings

1. The positive correlation between BSE Sensex and the gold price denotes about the positive relationship between the factors, in other wards it can be consider like whenever market increases the gold price also increase.
2. The positive correlation between NSE nifty and gold rate changes also infers the above statement.

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3. Gold rate have the negative relationship between US dollar and UK Pound, this denotes that whenever the currency vale reduces the gold value will increase.
4. Crude oil, Euro and Japanese Yen have strong positive relationship with the gold prices, this explains that, the process will move together.
5. FII have moderate positive relationship with gold prices, because gold receives more domestic investment compare then the foreign investment.
6. The gold rate receives a high influence from BSE, NSE and Japanese Yen; it means that the changes in those factors will influence the gold rate immediately.
7. Crude price and Euro have moderate influence, it will contribute to the gold price changes but the influence will be less compare then the market factors.
8. US dollar and UK pound influencing the gold prices less compare then other factors. This because of the usual relationship between the currency and gold.
9. FII have very less influence on gold price, it might not be consider as the proper influenced by other factors.
10. The coefficient of variation shows the higher volatility in the market factors and the less volatility in the currencies.
11. According to seasonal analysis the gold rate is high in 3rd and 4th quarters, it because of the following reasons.
    - **a.** In India most of the festivals and functions lays between Julys to December.
    - **b.** There is a huge investment in gold in the countries those who are following GAAP method for accounting.

Suggestion

1. The investors are advised to examine the factors influencing the gold price before going for investment.
2. According to the results of this research the duration between January-March is the advisable duration to buy or invest in gold.
3. It is advised to the investors that, they should not only depend on the factors given in the research, they should search for other factors also.

Conclusion

This research empirically proved that there is a relationship between stock market, currency and other factors with gold. The level of influence of factors also different in this study, it denotes factors contributing at different level in gold price changes. The gold price affected seasonally, and the price reaches the peak at every end of year. So the investor is advised to examine the factors clearly before going for investment.

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