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RESEARCH ARTICLE

IMPACT OF MACRO ECONOMIC INDICATORS ON THE GOLD PRICE.

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Abstract

Gold, one of the precious metals in the world and it has been known as yellow metal. It has been valued as the most extensively used expensive metal for making ornaments. The main objective of this study is to find the relationship of gold prices with many variables. In this research, we have to look into the empirical studies and theoretical frame work to identify the explanatory variables that have significant effect on the gold prices. The study used Multiple Linear Regression Model to determine significant relationship between variables such as dependent and independent variables.The data used for the analysis was the 10 years period from the financial year 2005 – 2006 to 2015 -2016.In this research, we have used three independent variables that affect the prices of gold which are crude oil prices, exchange rates and nifty 50. The empirical results have found that Gold is significantly influenced by these independent variables to Nifty 50, Crude oil, USD-INR, INR-USD.The results of the study will be a valuable source of information for both academicians.

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Introduction:-

Gold is the most precious metal in the world and it is the purest form of metal. Gold is used for jewels, coins and for arts. It is mostly used as monetary policy. In 1930's gold was used as currency for transactions within and between nations. Gold is rare metal when compared to other metal. As of 2014, gold's existence is about 183,600 tonnes which is present above ground, approximately 9513 cubic metres. 50% of gold is being used for jewellery, 40% is for investment and 10% is for industry. Gold is resistance to corrosion and also it is used in infrared shielding, colored-glass production, gold leafing and tooth restoration (Ibrahim et al, 2014).

In ancient days gold and oil are used as exchangeable commodities. In 1933, Saudi Arabia oil was being traded in terms of gold. There is no level of payment have been determined. Now a days, gold and oil prices are calculated in terms of U.S.Dollars. Crude oil is of two types. They are heavy crude oil and light crude oil. Heavy crude oil is high in viscosity and it cannot easily flow to production. It is referred as heavy because it is high in density than the light crude oil. Light crude oil is low in viscosity and density, it also flows freely in room temperature. Light crude oil receives a higher price when compared to heavy crude oil because it produces a higher percentage of gasoline and diesel fuel.

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Nifty 50 is the popular fifty companies stock on New York Stock Exchange, they were regarded as solid buy and hold growth stocks. Nifty is owned and managed by India Index Services and Products which was owned subsidiary of the National Stock Exchange of India Strategic Investment Corporation Limited. Nifty Fifty covers 22 sectors of the Indian economy and offers investment managers exposure to the Indian market in one portfolio.

Exchange rates are the one in country's currencyis converted to another country's currency. The transaction is done based on the currency value of each country. Factors of exchange rates are interest rates, inflation, politics and economy of the country. The transaction is done but the payment will be done at the current currency value of the country.

Imports in India decreased by 15.98 percent year-on-year to 27789.56 USD Million in March of 2016. Oil purchases slumped 35.3 percent and non-oil imports shrank 17.98 percent.In the 2015-2016 fiscal year, imports fell 15.28 percent. Imports in India averaged 6654.55 USD Million from 1957 until 2016, reaching an all-time high of 45281.90 USD Million in May of 2011 and a record low of 117.40 USD Million in August of 1958. An import in India is reported by the Ministry of Commerce and Industry, India.

Review of Literature:-

Asif Kamran et al (2014) – Gold is the most valuable metal in the world not only in terms of ornaments, but alsoit has relationship with many other variables like inflation, interest rate, exchange rate, stock market performance, price of silver, per capita income and domestic savings. The aim of this research is to find out that whether the gold price influences all these variables. Gold is preferred by most of the people in Pakistan rather than investing in stock market because the gold price will increase frequently. In this study, Multiple Regression model is being used to determine the gold price with the variables. This model clearly explains that there is 94.8% change in gold price with respect to the variables. The study concluded that change in gold price largely affects the price of silver, because silver is the substitute of gold. Per capita income and Stock Market Performance will also be affected when there is change in gold price. But there is no impact on Domestic savings and Foreign Exchange when gold price varies.

SitiNurulhuda Ibrahim et al (2013) – This study is to know the factors that affecting gold price in Malaysia. Research was done for about 10 years. In this study three independent variables have been taken. The variables are inflation rate, exchange rate and crude oil prices. This research uses Multiple Linear regression model to identify the relationship between the gold price and all the independent variables. The study concluded that there is a positive relationship between crude oil price and gold price. There is negative relationship between inflation rate and gold price and negative relationship between exchange rate and gold price. This study uses only three variables but the several variables can also be added. Other variables like unemployment rate, political risk, gross domestic product and gold-demand supply will also affect the gold price.

CengizToraman et al (2011) – This research is to find out the factors which affecting the gold price. Variables used in this study are oil prices, exchange rate, inflation rate, interest rate. The study uses MGARCH model to determine the factors that affecting the gold price. The study concluded that there is high correlation between the gold price and exchange rate which is negative. There is a positive correlation between oil price and gold rate. This study concluded that there is a significant relationship between gold price and exchange rate but there is no significant relationship between the other variables.

Jana Šimáková et al (2011) – The aim of this study is to identify the relationship between oil and gold price and it also describes the factors that determine the variation in price levels of oil and gold. This study also describes the features and determinants of current price levels. It has been studied with the help of Granger causality test, Johansen cointegration test and Vector Error Correction model. This research was done for about 40 years to find out the relationship between the price levels of oil and gold, and it has come to a conclusion that there is strong relationship between the oil and gold price. In Granger causality test and co – integration test, it has been proved that there is a relationship between gold and oil price levels. Vector Error correction model proved that after market fluctuations it has returned to long-run equilibrium.

Data and Methodology:-

For this research, secondary data has been used by the researchers. The data was collected from www.investing.com. The data is collected for 10 years starting from financial year 2005 – 2006 to 2015 -2016 and also were standardized by applying standardization formula (Value-Mean)/ Mean. The model that has been used to achieve the objective of the study is to find the impact of macro-economic indicators on the gold price.The statistical tool used in the study of the impact on the Gold price was Multiple Linear Regression model. Multiple Linear Regression Model is used to determine the effect of Exchange rates, NIFTY 50 and crude oil prices towards Gold price. Multiple Linear Regression helps to find how the independent variables impact on the dependent variable and also it will help to find the correlation between the exchange rates, crude oil prices, NIFTY 50 and gold price.

Findings:-

Descriptive statistics:-

For the descriptive statistic, the researcher comes out with the range of data which includes mean, median,skewness, and kurtosis. Table Ibelow shows the descriptive statistics for the output whichcomprises of the various variables playing an important factor in affecting the gold price data for 10 years from the financial Year 2005 – 2006 to 2015 -2016.

Table i:-Descriptive statistics for factors affecting theprices of gold.

Statistics						
		Gold	Nifty_50	Crude_oil	USDINR	INRUSD
N	Valid	132	132	132	132	132
	Missing	0	0	0	0	0
Mean		1100.72727	5268.8996	78.7832	50.7669	.020195
Median		1156.30000	5253.8000	79.2800	47.4275	.021050
Mode		416.300[a]	1902.50[a]	92.19[a]	44.28[a]	.0215[a]
Skewness		-.025	.222	-.010	.591	-.240
Std. Error of Skewness		.211	.211	.211	.211	.211
Kurtosis		-.940	-.458	-.524	-.977	-1.121
Std. Error of Kurtosis		.419	.419	.419	.419	.419
a. Multiple modes exist. The smallest value is shown						

Multiple regressions:-

The objective of multiple regressions is to use the independent variables whose values are known to predict the single dependent variable

Table ii:- variables entered/removed.

Model	Variables Entered	Variables Removed	Method
1	INRUSD, Crude_oil, Nifty_50, USDINR[b]	.	Enter
a. Dependent Variable: Gold			
b. All requested variables entered.			

Table iii:-Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842[a]	.709	.700	205.440084
a. Predictors: (Constant), INRUSD, Crude_oil, Nifty_50, USDINR				

TABLE IV: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13069308.372	4	3267327.093	77.414	.000[b]
	Residual	5360114.790	127	42205.628		
	Total	18429423.162	131			
a. Dependent Variable: Gold						
b. Predictors: (Constant), INRUSD, Crude_oil, Nifty_50, USDINR						

Table v:-Coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	16729.431	1945.595		8.599	.000
	Nifty_50	.140	.018	.631	7.858	.000
	Crude_oil	6.195	.914	.358	6.779	.000
	USDINR	-158.688	19.551	-3.496	-8.117	.000
	INRUSD	-435566.448	48678.760	-3.577	-8.948	.000
a. Dependent Variable: Gold						

In the above outputs the first table shows that all four independent variables Nifty 50, Crude oil, USDINR, INRUSDare entered simultaneously for the analysis in enter method. It is also seen that the adjusted R square value is 0.709 which shows that the four independent variables in this model account for 70.9% variance in the dependent variable Gold. Clearly this is a good model. From the coefficients table the values under column B, the regression coefficients can be used to construct an Ordinary Least Squares equation with the constant to predict Gold. Also with the help of *t* values it can be predicted that the construct Nifty 50 has the highest influence on Gold among the four independent variables. The *p* value can be used to test the hypothesis. Here the Hypotheses that the Gold Score are positively related toNifty 50, Crude oil and negatively correlated with USDINR, INRUSD are tested.
The p-value for beta coefficient (.631) of Nifty 50 is .000
The p-value for beta coefficient (.358) of Crude oil is .000
The p-value for beta coefficient (-3.496) of USDINR is .000
The p-value for beta coefficient (-3.577) of INRUSD is .000
All these values are significant at 5% significance level (Less than .05). Thus the hypotheses are proved to be true. So it may be concluded that Gold is significantly influenced by these independent variables to Nifty 50, Crude oil, USDINR, INRUSD.

Figure 1:-Multiple regression model.

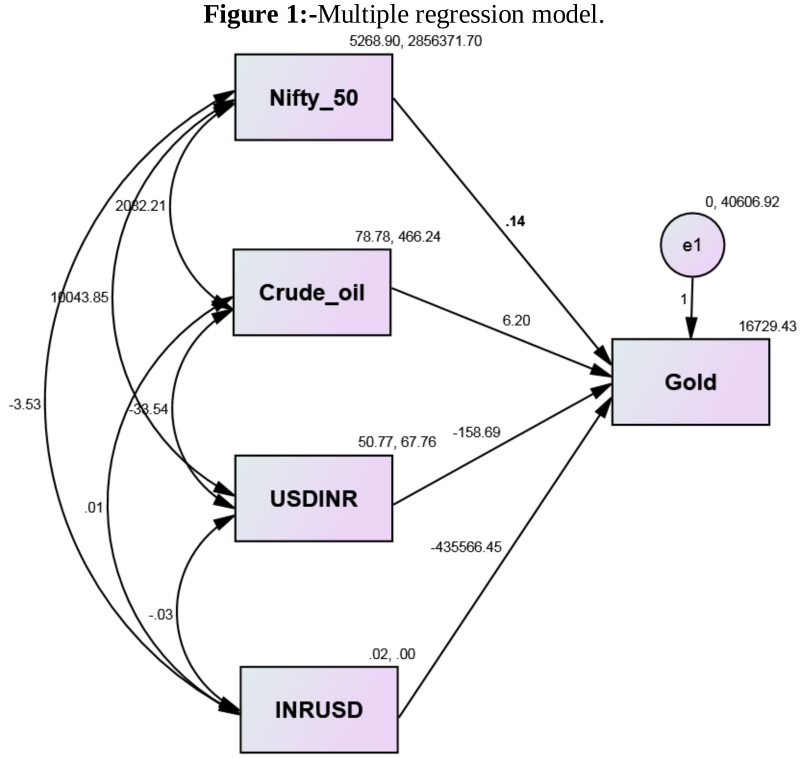

Table vi:-Regression weights: (group number 1 - default model).

			Estimate	S.E.	C.R.	P	Label
Gold	<---	Nifty_50	.140	.017	7.981	***	
Gold	<---	Crude_oil	6.195	.900	6.885	***	
Gold	<---	USDINR	-158.688	19.250	-8.244	***	
Gold	<---	INRUSD	-435566.445	47929.805	-9.088	***	

Conclusion:-

As an overall conclusion from the findings result, this study achieves the objective and research question as how andwhere to determine the effect of crude oil prices on the gold prices, to analyze the effect of inflation rates on the gold prices and to identify the effect of exchange rates on the gold prices. Even though all variables are significant with the Gold Prices, the result and the trend will become more reliable if researcher increases the sample such as for 20 years or 30 years (Martani et al, 2009). This suggestion shows the larger data taken will give more accuracy of the result. In addition, researcher also recommends research on gold prices can be conducted in large scale such as adding other Macroeconomic Factor. This study is focused on NIFTY 50, crude oil prices, and exchange rates. Therefore, the researcher suggests adding more factors such as unemployment rate, political risk, gross domestic product and inflation etc.

References:-

1. Šimáková, J. (2011). Analysis of the relationship between oil and gold prices. *Journal of Finance*, *51*(1), 651-662.
2. Ibrahim, S. N., Kamaruddin, N. I., & Hasan, R. (2014). The Determinants of Gold Prices in Malaysia. *Journal of Advanced Management Science Vol*, *2*(1).
3. Toraman, C., Basarir, Ç.,&Bayramoglu, M. F. (2011). Determination of factors affecting the price of gold: A study of MGARCH model. Business and Economics Research Journal, 2(4), 37.
4. Kamran, A., Israr, S., & Rizvi, S. A. (2014). Determinants of Gold Prices in Pakistan. In *Proceedings of the Seventh International Conference on Management Science and Engineering Management* (pp. 1219-1227). Springer Berlin Heidelberg.
5. Martani, D., &Khairurizka, R. (2009). The effect of financial ratios, firm size, and cash flow from operating activities in the interim report to the stock return. Chinese Business Review, 8(6), 44.
6. S. M. H. Fauzi (2012), "Gold price and it relationship with U.S. macroeconomic variable," Faculty of Business Management, pp. 1-33.
7. http://in.investing.com
8. http://www.nseindia.com/
9. Ministry of Commerce and Industry, India.