

**“AN ANALYTICAL STUDY ON RELATIONSHIP
BETWEEN GOLD PRICE, CRUDE OIL PRICE
& SENSEX MOVEMENT FROM FISCAL YEAR
2011 TO 2016”**

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INTRODUCTION

MANUFACTURING SECTOR IN INDIA

The situation of the manufacturing sector in India is a cause of concern especially when seen in comparison to the massive transformation registered in this sector by other Asian countries in similar stages of development. At 16% value added to GDP, the sector does not seem representative of its potential which should have been 25%. In most rapidly developing economies, manufacturing sector contributes 25-40% to the GDP such as Thailand's manufacturing sector value added to GDP is around 34%, China 32%, South Korea 31%, Indonesia 24% and Germany 22%. The gap in the share of the manufacturing sector, between India and these economies indicate that the manufacturing sector has not been able to fully leverage the opportunities provided by the dynamics of globalization.

Gold prices are very volatile in nature. As per world gold council gold demand in India is about to rise 33% by 2020. Historically it has been seen that when risky investment like shares & commodity start to move in negative trend, investors switched to safe investment avenues like gold. Analysis of the historical data reveals that when the stock market crashes or dollar weakens, gold continues to be a safe haven investment because of rising gold prices in such circumstances. It can be safely concluded that investors increasingly hedge their investments through gold at the time of crises. Gold price vary with respect to different factors. In this study author has considered gold price as dependent variable & following independent variable were considered for the study:

1. Crude oil price
2. Sensex movement

Time period selected for the study is from fiscal year 2011 to fiscal year 2016. In this study multiple regression models will be used to find out whether there exists any relationship between gold price & crude oil price, Sensex movements.

FOLLOWING ARE THE OBJECTIVES OF MY STUDY

1. To find out the correlation between gold price & crude oil price
2. To find out the correlation between gold price & Sensex movement.
3. To find out whether there exists any relationship between gold price, crude oil price & Sensex movement using multiple regression model.

HYPOTHESIS

1. H0: There is no strong relationship between gold price, crude oil price & Sensex movement.
2. H1: There is strong relationship between gold price, crude oil price & Sensex movement.

DATA ANALYSIS & INTERPRETATION

1. CORRELATION BETWEEN GOLD PRICE & CRUDE OIL PRICE

Correlation between gold price & crude oil price was found on the basis of historical data from fiscal year 2011 to 2016. Total 1214 observation was taken. Following are the results of Pearson's correlation :

Gold Price	Crude Oil Price	0.432
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It shows that there exists a moderate positive correlation between gold price & crude oil price. Hence generally if crude oil price increases gold price also increases moderately & vice-versa.

1. CORRELATION BETWEEN GOLD PRICE & SENSEX MOVEMENT

Correlation between gold price & sensex movement was found on the basis of historical data from fiscal year 2011 to 2016. Total 1214 observation was taken. Following are the results of Pearson's correlation :

Gold Price	Sensex movement	-0.482
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It shows that there exists a moderate negative correlation between gold price & crude oil price. Hence generally if sensex increases gold price also increases moderately & vice-versa.

1. RELATIONSHIP BETWEEN GOLD PRICE, CRUDE OIL PRICE & SENSEX MOVEMENT USING MULTIPLE REGRESSION MODEL

In these author has checked whether there exist strong relationship between gold price, crude oil price & sensex movement using multiple regression model. Following are the results of multiple regression model.

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.50434							
R Square	0.25436							
Adjusted R Square	0.25312							
Standard Error	195.265							
Observations	1214							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	2	15750923	7875461	206.5501995	0.000000000			
Residual	1211	46173684	38128.56					
Total	1213	61924607						
	<i>Coefficient</i>	<i>Standard Err</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	2925.1	60.24668	48.55211	0.000000000000	2806.90393	3043.303	2806.904	3043.3028
SENSEX	-0.01895	0.001802	-10.5145	0.000000000000	-0.022483226	-0.01541	-0.02248	-0.015412
CRUDE OIL PRICE	1.93732	0.322577	6.005781	0.000000002514	1.304453393	2.570196	1.304453	2.5701956

Since p value is less than 0.05 we can reject null hypothesis & hence it can be concluded that there exists a strong relationship between gold price, crude oil price & sensex movement. It can be concluded that both sensex & crude oil price are significant predictor of gold price. Following is the Multiple regression model for the above variable :

$$Y(\text{Gold price}) = 2925.1 + \text{Sensex movement} * -0.01895 + \text{Crudeoilprice} * 1.93732$$

Using the above equation we can predict gold price if we know sensex movement & crude oil price.

CONCLUSION

It can be concluded that both crude oil price & sensex movement are significant predictors of the gold price & there exists a significant relationship between old price, crude oil price & Sensex movement.

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