Available online at http://www.journalijdr.com

IJDR

International Journal of
DEVELOPMENT RESEARCH

ISSN: 2230-9926

International Journal of Development Research
Vol. 06, Issue, 09, pp.9497-9501, September, 2016

Full Length Research Article

DYNAMIC MACRO-ECONOMIC VARIABLES AND ITS IMPACT ON GOLD PRICE INNOVATION IN INDIA

[1]Dr. Srithar, P., [2]Mariselvam, G. and *,[3]Bairavi, N.

[1]Associate Professor and Head, PG & Research Department of Commerce, NMSSVN College, Madurai, India
[2]Ph. D Scholar, NMSSVN College, Madurai, India
[3]Ph. D Scholar, Project Assistant, NMSSVN College, Madurai, India

ARTICLE INFO

Article History:
Received 19th June, 2016
Received in revised form
26th July, 2016
Accepted 29th August, 2016
Published online 30th September, 2016

Key Words:

Gold price,
Forex, Inflation,
Gross Domestic Product,
Nifty,
Crude oil.

ABSTRACT

According to the World Gold Council, in the last decade, 75% of gold demand in India has taken the form of jewellery. The demand of gold moving towards uphill when the purchasing power of the consumer increases, which forces gold price up. The price of the god increases not only because of its demand. There are various factors that influence the fluctuations in gold price. The present study considers certain macro-economic variables and identifies the relationship of those variables with the gold price and its impact. The study took gold demand, nifty, foreign exchange rate, inflation, gross domestic product, crude oil price as independent variables whereas gold prices as dependent variable. Correlation and multiple regression model have been used as research tools by the researchers. The result reveals that there exists significant positive relationship between gold price and inflation, gross domestic product, nifty, crude oil price and foreign exchange rate. The moderate relationship exists between gold price and demand of the gold which is not significant one. Multiple regression analysis reveals that inflation and nifty have negative impact on gold price fluctuations whereas gross domestic product and crude oil price have positive impact on gold price. Since gold demand and foreign exchange rate result does not reach the significant level in this study, the result concludes that those variables do not have impact on gold price.

INTRODUCTION

From the extraction of gold, it had become an integral part of our lives in India. India's passion for gold is a tradition one.Gold is considered to be a symbol of richness, good fortune and has an inborn value in terms of purity and wealth. Indians are hungry for gold. Whether it's for investments, gifts, weddings or any festive occasion, gold plays vital role. Without keeping in mind about the macro-economic effects and economic damages of the country, people buying gold as an investment medium. According to the WGC, in the last decade, 75% of gold demand in India has taken the form of jewellery. Gold is the second largest import item for India after petroleum. Over 90% of the gold consumed in India is imported. The growth rate of "real" GDP anticipates the trend of the following gold prices.

Corresponding author: Bairavi, N.,
Ph. D Scholar, Project Assistant, NMSSVN College, Madurai, India.

The demand of gold moving towards uphill when the purchasing power of the consumer increases, which forces gold price up. When one buys gold, it either stored in lockers or converted into jewellery or it has been used for devotional purpose. Therefore the first major problem the Indian economy faces with this high gold consumption rate is the increasing current account deficit. India has to pay for its gold imports using its foreign exchange reserve. The gold locked in temples ought to be rescued and it should be productively used for economic welfare of the nation especially we can increase the gold reserve. Since gold is a liquid currency, India can use it for alternate mode of payment for import. On the other side inflation is defined as the rate at which the general level of prices for goods and services raise and subsequently purchasing power falls. Inflation has both positive and negative effect on the economy. Positive effect probably the most significant effect of inflation is its effect on the revenues of government. Over the last few years, the Indian markets are contributed majorly by the foreign investments.

For any country's economic upgrade domestic investment is essential. In order to have transition of India from developing market to developed market, domestic investor's participation is vital therefore they should stay invested in capital market.

Literature Review

Ahamed Raza Bilal *et al*. (2013) made a comparative analysis of gold price with Karachi stock exchange and Bombay stock exchange. The results of the study reveal that there is no long-run relationship between KSE stock indices and gold price whereas long-run relationship exists between gold price and BSE stock indices. Granger Causality of the study demonstrated that there is no causal relationship exists among gold price, BSE stock indices and KSE stock indices.

Z. Ismail *et al*. (2009) forecasted the gold price using multiple regression models. The study used the commodity research bureau future index, foreign exchange rate, inflation rate, money supply, Newyork stock index, S&P 500, US dollar index, treasury bill were influencing factor. The analysis predicts that CRB, inflation rate, Exchange rate and money supply are the significant variables which determine the gold price.

Dr. Amalendu Bhuniya and Amit Das (2012) have empirically examined the association between gold price and NSE stock indices. The empirical results support the causality between the selected variables and proven that stock market returns Granger- causes gold price and gold price also Granger- causes stock market returns.

Dr. NandKishorSoni and Ajay Parashar (2015) examined the impact of gold demand on inflation. The results stated that there is no significant long-run relationship between gold demand and stock market return. Granger Causality test infers that gold demand does not granger causes gold price and vice-versa. Overall, the study concludes that gold is a significant predictor of inflation in developed inflation-targeting countries.

CengizToraman et.al (2011) studied the determination of gold price in US. Oil price, US exchange rate, US real interest rate, US inflation rate were taken as predictors variable. According to empirical findings, highest correlation is found between gold price and US exchange rate negatively and positive between gold prices and oil prices.

Dr.Sindhu(2013) investigated the study on impact of oil price, inflation rate, Forex, Repo rate. There exists inverse relationship between exchange rate and gold price. Gold prices and Repo rates are interdependent. Gold prices and inflation rates are dependent and positively correlated.

Angi Rosch and Harald Schmidbauer (2012) find the impact of festivals on gold price expectations and volatility. The fluctuation tends to increase significantly after AkshayaTritiya, without a discernible increase in expectation. Around Ramadan Eid, on the other hand, increased expectation can be ascertained, together with increased volatility. Christmas features a peculiarity: impact on expectation is positive right before the festival, and turns negative afterward, while volatility is significantly high in both periods.

S. P. Narang and Raman Preet Singh(2013) attempted to find the causal relationship between gold price and Sensex. There is downhill relation between gold price and Forex. In this paper an attempt had been made to find the directional or unidirectional relationship between gold price and stock market. As per the results there is no casual relation between gold price and stock market indices in India.

Dr. Ira Bapna (2012) analysed the dynamics of macro-economic variables affecting gold price innovation. The study aimed to examine causal relationship between GDP, exchange rate, stock returns, inflation, and interest rate and gold price. The result of the empirical analysis is exchange rate, fiscal deficit, forex reserve, inflation rate are independently affecting gold prices at large but, growth rate, GDP, BSE Sensex and NSE Index are having a very low impact on gold prices independently and collectively all these variables determines gold prices.Gold does not cause and effect exchange rate, BSE Sensex, NSE Index, forex reserves and fiscal deficit but gold does affect interest rate and inflation and vice versa. There exists a bidirectional relationship with growth rate and GDP in terms of gold pricing.

AmalenduBhuniya and SomnathMukuthi (2013) studied the impact of domestic gold price on stock market indices. Granger causality test illustrate that no causality exists between nifty and gold price, gold price and Sensex and nifty and Sensex and bidirectional causality exists between gold price and nifty, Sensex and gold price and Sensex and nifty.

P. Srinivasan (2014) investigates the causal nexus between gold price, stock price and exchange rate in India. The analysis reveals that gold price and stock price tend to have long-run relation with exchange rate. The empirical findings indicate that no causality runs from gold price to stock price in short run and vice-versa. The study concluded that domestic gold price does not contain any significant information to forecast stock indices in India and vice versa.

Dr. L.K. Tripathi *et al* (2014) attempts to investigate the causal relation between global economic factors and gold price. The study short listed foreign institutional investment, S&P 500, Forex reserve, exchange rate and crude oil price as predictor variables. The results suggest long run integration between these variables further it was found that all abovementioned global factors do not Granger Cause Gold price in India however it was found that Gold price Granger Cause Exchange Rate (USD) and Crude oil price during the period under study. An empirical analysis of macroeconomic variables affecting gold price drawn the result from the analysis showed that the gold prices are not changing not only because of exchange rates but also other variables like NIFTY Index, SENSEX Index, Reverse Repo, RBI Policy Rate, Forex Reserves, India's Gold reserves, Gold Reserves in USD, Revenue Deficit, Fiscal Deficit, India's Gold Imports, Balance of Payment (BOP) Current Account, FDI inflows, Wholesale Price Index (WPI), Gross Domestic Product (GDP) and spot rate of INR/USD.

Dr. Shefali Tiwari and Dr. Barkha Gupta (2015) examined the causal relationship between gold prices and stock market returns in India.BSE index is used to represent stock market returns. Granger Causality test indicates that no causal relationship exist between gold price and BSE Sensex.

Somnath Mukuthi and Amalendu Bhuniya (2013) investigates the reaction of Indian stock market on gold price and the relationship between the Indian gold price and Indian stock market. The result reveals that gold price in India was increased during the study period because of stock market reaction in India along with other macro-economic factors.

Dr. RohitManjule (2013) studied the relation among bullion market, stock market and exchange market.This paper illustrated correlation between the three markets and it is found that Bullion market and Capital market are directly proportional to each other while, Forex is inversely proportional to Capital and Bullion markets.

Objectives

- To study the relationship between gold prices and macroeconomics variables.
- To study the impact of macroeconomics variables on gold prices.

MATERIALS AND METHODS

Research Questions

- Does there exist any relationship between macroeconomic variables and gold prices?
- Do macroeconomic variables impact on gold prices?

Hypotheses

H01 = there is no relationship exists between gold price and macroeconomic variables in India
H02 = there is no impact of macroeconomic variables on gold prices in India

Period of The Study

The present study carried out for 20 years range from the period January 1996 to December 2015.

Scope of the study

The scope of the study was confined to the macroeconomic variables namely Gross Domestic Product, Consumer Price Index, National Stock Market Indices, Gold Demand, Foreign Exchange Rates and crude oil prices.

Time of the study

The study is empirical in nature.

Type of data and data source

The study used secondary data for analysis. The data were taken from various reliable sources like world gold council, trading economics and Official website of National Stock Exchange.

Sample Design

Gross Domestic Product, Consumer Price Index, National Stock Indices, Gold Demand, Foreign Exchange Rates and crude oil prices were considered as various variables explaining macroeconomics variables.

Tools for analysis

The study applied correlation analysis to study the relationship between predictor variables and dependent variable. In order to identify the impact of independent variables on gold price regression analysis have been used. The gathered data were applied in SPSS.

Variables Description

Table 1.

S.No	Variables	Description
1.	Gold Prices	Gp
2.	Gold Demand	Gd
3.	Consumer Price Index	CPI
4.	Gross Domestic Product	GDP
5.	Nifty	Nifty
6.	Foreign Exchange Rate	Fx
7.	Crude Oil Prices	COP

Theoretical Framework

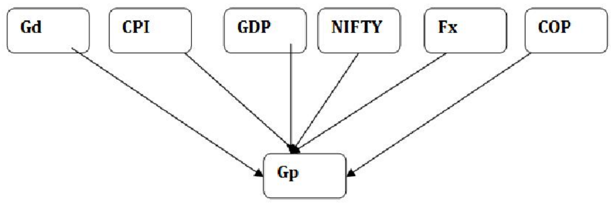

Fig. 1. Selected macroeconomic variables influencing Gold prices in India

Model

The core intention of the paper is to study the effect of Gd, CPI, Nifty, GDP, COP, Fx on Gp of India. To examine the relation of India's Gp with Gd, CPI, Nifty, GDP, COP, Fx the following multiple regression model is used,

Gp= a+X1Gd+X2CPI+X3GDP+X4NIFTY+X5COP+X6Fx.

Table 2.

Independent variables	r value with respect to Gp	Sig(2-Tailed)
Gd	0.555	0.110
CPI	0.925	0.000
GDP	0.959	0.000
NIFTY	0.913	0.000
COP	0.929	0.000
Fx	0.710	0.000

Table2 directs the relationship between selected macro-economic variables and Gp. It infers that there exists a strong

uphill relationship between CPI and Gp, GDP and Gp, NIFTY and Gp, COP and Gp and Fx and Gp. The p value of the analyzed data is less than 0.000 hence, the correlation between the variables are statistically significant.
A moderate uphill relationship lies between Gd and Gp whichis not significant one.

Table 3.

Dependent variable	R^2	F Statistics	p value
Gp	0.987	169.685	0.000

98.7% of variation in Gp explained by variation in the independent variables. Significance value of F stat is less than 0.005, there is linear relationship among the variables and the variations are not by chance.

Table 4.

Model	B	t value	Sig.
Constant	22753.112	2.637	0.020
Gd	-1.023	-0.390	0.703
CPI	-162.140	-3.050	0.009
GDP	29.490	8.809	0.000
NIFTY	-4.000	-5.367	0.000
COP	2.145	4.847	0.000
Fx	-42.335	-0.672	0.513

Table 4 suggests the co-efficient value of independent variables and its level of significance. The B value explains the extent of contribution of independent variables towards the value of dependent variable. t value of 2 or higher indicates statistical significance of the variables. Sig. column in table3 decides the acceptance or rejection of the H0.The p value of CPI, GDP, NIFTY and COP is less than 0.05, the framed H0 is rejected therefore the mentioned variables have significant impact on Gp. Sign in the B value shows the nature of effect of independent variables on dependent variable. The statistical result concludes that CPI and NIFTY have negative impact on Gp which means every 1% increase in the units of CPI and NSE makes every 164.14 % and 4%decrease in the units of Gp respectively. On the next side GDP and COP have positive effect on Gp which says every 1% in the units of GDP and COP reflects every 29.49% and 2.145% increase in the value of Gp respectively. The p value of Gd and Fx is greater than 0.05 hence the framed H0 is accepted therefore Gd and Fx does not have impact on Gp Now the regression equation will be:

Gp=22753.112-1.023CPI+29.49 GDP-4NIFTY+2.145COP

RESULTS AND DISCUSSION

The present study concludes that there exists significant positive relationship between gold price and inflation, gross domestic product, nifty, crude oil price and foreign exchange rate. The result is supported and contradicted by various research manuscripts. The relationship between nifty and gold price is favoured by Ahamed Raza Bilal, Dr. Amalendu Bhuniya and Amit Das, Somnath Mukhuthi and RohitManjule. The empirical research by S. P. Narang and Raman Preet Singh, P. Srinivasan and Dr. Shefali Tiwari and Dr. Baskha Gupta were unfavoured the present analysis. The manuscripts of Z. Ismail, Dr. N and Kishor Soni and Ajay Parashar, Dr. Sindhu and Dr. Ira Bapna support the relationship between gold price and inflation. There is uphill relationship exists between gold price and foreign exchange rate. It kept up by Z. Ismail and P. Srinivasan.

It was against by Dr. L.K. Tripathi and Dr. Rohit Manujule, S.P. Narang and Raman Preet Singh, Dr. Sindhu and Cengiz Torman. There is uptrend relationship between gold demand and gold price but it is not significant. The relationship between gold price and crude oil price is favoured by Dr. L.K. Tripathi. Dr. Ira Bapna supported the relationship of gold price with gross domestic product. Multiple regression analysis reveals that inflation and nifty have negative impact on gold price fluctuations whereas gross domestic product and crude oil price have positive impact on gold price. Since gold demand and foreign exchange rate result does not reach the significant level in this study, the result concludes that those variables do not have impact on gold price.

REFERENCES

Ahmad Raza Bilal, Noraini Bt. Abu Talib, InamUlHaq, Mohd Noor Azli Ali Khan and Muhammad Naveed,"How Gold Prices Correspond to Stock Index: A Comparative Analysis of Karachi Stock Exchange and Bombay Stock Exchange", *World Applied Sciences Journal*, Vol 21 (4), April 2013.

Amalendu Bhunia and Somnath Mukhuti, 2013. "The impact of domestic gold price on stock price indices-An empirical study of Indian stock exchanges", *Universal Journal of Marketing and Business Research,* Vol. 2(2) pp. 035-043, May.

Amalendu Bhunia and Amit Das, 2012. "Association Between Gold Prices And Stock Market Returns: Empirical Evidence from NSE",*Journal of Exclusive Management Science,* Vol 1 Issue 2.

Amutha Rani, S. and Vijayalakshmi, K.2014. "Importance of Gold in Indian Economy", *Market Survey- Facts for you",* March.

AngiR¨osch and HaraldSchmidbauer," *Impact of Festivals on Gold Price Expectation and Volatility*", 2012.

Cengiz Toramana Çağatay Başarırb Mehmet Fatih Bayramoğluc, "Determination of Factors Affecting the Price of Gold: A Study of MGARCH Model*", Business and Economics Research Journal*, Vol 2 No 4,2011.

Debjiban Mukherjee, "Comparative Analysis of Indian Stock Market with International Markets", *Great Lakes Institute of Management*, Volume 1, Issue 1, April 2007.

Dr. Sindhu,"A study on impact of select factors on the price of Gold", *IOSR Journal of Business and Management*, Vol 8, No 4, Apr. 2013.

Golaka C. Nath and G. P. Samanta,"Dynamic Relation Between Exchange Rate and Stock Prices – A Case for India".

Ira Bapna, Vishal Sood, Navindrakumar Totala and Harmendersinghsahuja," Dynamics of macroeconomic variables affecting price innovation in India: A Relationship analysis", *Pacific Business Review International*, Vol.5 No.1, July 2012.

Ismail, Yahya, Z. and Shabri, A. 2009. "Forecasting Gold Prices Using Multiple Linear Regression Method", *American Journal of Applied Sciences*, Vol. 6 Issue 8.

Nand Kishor Soni and Ajay parashar, 2015. "Gold Demand increase and Its impact on Inflation",*Journal of Research in Humanities and Social Science,*Vol 3. Issue 2

Narangand Raman Preet Singh, S.P. "Causal Relationship between Gold Price and Sensex: A Study in Indian Context", *Vivekananda Journal Of Research.*

Nemavathiand, K.S. Nedunchezhian, V.R. 2013."A Study on Impact of Price Behaviour of Commodity Gold and Gold ETF", *International Journal of Scientific Research,* Vol : 2 No 8, August 2013.

Parthap Singh, 2013. "Gold Prices in India: Study of Trends and Patterns", *International Journal of Innovations in Engineering and Technology*, Vol. 2 Issue 4 August 2013.

RohitManjule, 2013. "Study of Relation among the Bullion, Forex, and Stock market in India", *International Journal of Application or Innovation in Engineering & Management*, Volume 2, Issue 11, November 2013.

Samveg Patel, 2012. "The effect of Macroeconomic Determinants on the Performance of the Indian Stock Market", *NMIMS Management Review,* Volume XXII, August 2012.

Saurabh Singh, L.K Tripathi and KirtiLalwani, 2012. "An Empirical Study Of Impact Of Exchange Rate & Inflation Rate On Performance Of BSE Sensex", *Spectrum: A Journal of Multidisciplinary Research ,*Vol.1 I ssue 3, June 2012.

ShefaliTiwari and Barkha Gupta, 2015. "Granger Causality of Sensex with Gold Price: Evidence from India", *Global Journal of Multidisciplinary Studies,* Volume-4, issue-5 April.

ShefaliTiwari and Barkha Gupta,"Granger Causality of Sensex with Gold Price: Evidence from India",*Global Journal Of Multidisciplinary Studies,*Volume-4, issue-5 April 2015.

Somnath Mukhuti and Amalendu Bhunia,"Is it true that Indian gold price influenced by Indian stockmarketreaction?", *Journal of Business Management and Economics*, Vol. 4(8). pp. 181-186, August, 2013.

Srinivas, P. 2014. "Gold price, Stock Price and Exchange Rate Nexus: The case of India," *The Romanian Economic Journal,* Vol. XVII No.52, June 2014.

Srinivasan, P. and Ibrahim, P."Price Discovery and Asymmetric Volatility Spillovers in Indian Spot-Futures Gold Markets*", International Journal of Economic Sciences and Applied Research*,Vol5.No 3.

Tripathi Arpan Parashar and Rajendra Singh,2014. "Global Factors & Gold Price In India- A Causal Study", *International Journal of Advanced Research in Management and Social Sciences*, Vol. 3 No. 7 July.

Vishal Sood, Dr. Ira Bapna, N. K. Totala and H.S. Saluja," An Econometric Analysis of Gold Price: A Paradigm Change in Indian Capital Markets in Dynamic Business Environment", *AltiusShodh Journal of Management & Commerce.*

****