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"THE ANALYSIS OF THE RELATIONSHIP BETWEEN THE STOCK AND GOLD MARKET IN INDIAN INVESTORS MARKET"

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1. Introduction:

The journal paper deals with the analysis of the relationship between the stock and gold market i.e., It makes a relationship analysis whether the changes in gold prices will have a bearing effect on the stock prices. This discuss in detail the paper analyses whether the changes in the gold market – drastic increase in the gold price will draw the investors to gold investment and makes the stock prices fall and in reverse the bullish market trends in the stock market with steep increase in the stock prices will draw the bullion investors to sell of their gold stocks or units and reinvest in the stock to make the bullion market prices fall is the research question of this paper. The research has pointed and used pigeons and pigeon holes mathematical research philosophy and divided the parameters as follows:

Conditions	The hypothetical happenings.
1) Steep increase in gold prices.	Steep decrease in stock prices
2) Steep fall in gold prices.	Steep increase in stock prices
3) Steep increase in stock prices (index).	Steep decrease in gold prices
4) Steep fall of stock prices.	Steep increase in gold prices

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As the pigeons problem principle the problem and solution appears obvious, but shall have to prove beyond doubt and all the statements have to be proved to conclude a single solution statement. The pre-conditions are pigeons in this problem and the happenings are the holes occupied by pigeons. There are four more holes in this problem they are – No decrease in stock prices, No increase in stock prices, No decrease in the gold prices and No increase in the gold prices.

For all these situations "the real – market trends" as well as "customers point of view" has been analysed the final inferences have been drawn.

Though the problem can be read from both the corners – the parameters are analysed with critical division of parameters and be very explicit for the sake of designing research questionnaire and making research analysis.

2**. Liturature survey:**

2.1 Introduction to bullion market :

Bullion market is the market usually formed by gold miners association, gold merchants and other investment companies who are interested to stock gold and treaded in gold. They divide the gold into gold units of small amounts which can be purchased by any bullion investors. These units are traded like any other stocks of companies or share units.

2.2 Introduction to stock market :

A stock market or equity market is the bringing together the buyers and sellers of stocks i.e., which are specific units related to the share in the equity of any company. It comes in individual or in bulk units. There are bought and sold like any other commodity in market for cash or to purchase other stocks of another company. These trades are done through the stock exchanges presently electronically and digitally using DMT accounts – where the pre invested funds of the investors are deposited in the stock broking company which could be used to invest and buy any share units and the DMT account shows the stocks, numbers, present price etc.. The stock broking companies take small amt as brokerage charges to maintain these accounts of share units in individual Dmat accounts and take additional charges or each sale and purchase of share units by DMT account holders s or investors.

3.Research Objectives:

The research objectives were designed after a sample study in the survey sample stock broking organizations. The broad objectives of the research could be listed as follows - **To study the relationship of the stock and bullion market (whether the rise in one will affect the market of other's rise or fall). In precise with independent and dependent parameters listed below explicitly:**

The research question is to find whether the following conditions definitely lead to the dependent situations or not:-

1) Steep increase in gold prices.	Steep decrease in stock prices
2) Steep fall in gold prices.	Steep increase in stock prices
3) Steep increase in stock prices (index).	Steep decrease in gold prices
4) Steep fall of stock prices.	Steep increase in gold prices

1.3 Hypothesis of the research :

The below hypothesis have been framed by the initial survey to be investigated by primary and secondary research survey on the

Ho$_1$ Any steep increase in gold prices in bullion market will not bring Steep decrease in stock prices

Ho$_2$ Any steep decrease in gold prices in bullion market will not bring Steep increase in stock prices

Ho$_3$ Any steep increase in stock prices in bullion market will not bring Steep decrease in bullion prices

Ho$_4$ Any steep decrease in stock prices in bullion market will not bring Steep increase in bullion prices

Ho$_5$ There is NO connection what so ever between investor's investment trends (the rise and fall of stock) in connection to the fall and rise of bullion market.

As per the mathematical application all the first four hypotheses have to prove (disprove) for the happening or non-happening of the first hypothesis. These above envisaged hypothesis which were framed to analyze the relationship between the trends of the stock market and bullion market trading – beyond doubt by a sample study at the broking companies in Mysore.

1. Research methodology :

The research was carried out with

a) analysis of the (graphically) the gold prices and stock prices for a decade and

b) the questionnaire study of the select number of investors at the stock broking companies

2. The review of literature : The review of the previous researches conducted in this regard:

Hamed Movahedizadeh, Annuar Md Nassir, Meysam Azizi Kouchaksaraei, Mehdi Karimimalayer, Navid Samimi And Sedeh Ehsan Bagherpour Says in this paper that The aim of this paper is to evaluate Tehran's stock exchange' (TSE) performance regarding with impact of four macroeconomic factors including world crude oil price (OP), world gold price (GP), consumer price index (CPI) and total supplied oil by Iran (SO) from January2006 to December 2012. This study found that gold price and oil price are positively correlated with stock returns while total oil supplied and consumer price index have negative relationship with stock index, however, consumer price index tends to become insignificant in stock index.. Moreover, this study found that all macroeconomic factors have long-run relationship with Tehran Stock Exchange Index. This paper conclude that "Before going deeper into the research, this paper has gone through diagnostic checking by using Ordinary Least Square in order to identify the best model that is free from econometric problems. This paper has found that it is a good model for using 84 observations and including the natural logarithm. There is a positive relation between gold price with Tehran stock market index; however, based on Granger Causality Test, among these four macroeconomic factors only oil price has short-run significant relation with TSEI. It can be due to the fact that Iran's revenue heavily relies on the oil price and as a result, changes in world oil price can affect Tehran stocks in the short run. (1)

Xi Shen, Kanchana Chokethaworn and Chukiat Chaiboonsri state in their paper that they have used different copula-based GARCH models (Copula-GARCH model and Copula-GJR-GARCH model) to analyze the dependence structure among gold price, stock price index of gold mining companies and Shanghai Composite Index in China. The empirical results found that the suitable margins were skew-t distribution, and the GJR-GARCH marginal distribution had better explanatory ability than the GARCH model. Moreover, we found the Clayton copula had the highest explanatory ability of the dependence structure for all series. There existed positive dependence in the rates of return for all series, and the dependence between these markets will be closer with the gradual integration of international financial market.

The paper conclude with two classes of copula-GARCH models (copula-GARCH model and copula-GJR-GARCH model) to analyze the dependence among the returns of gold Au9999, Shandong gold stock index and Shanghai composite index in China. The empirical results show that the model with the GJR-GARCH-skew-t distribution has better explanatory ability than the GARCH distribution. different copula functions, including the Gaussian, Student-t, Clayton and Gumbel copula to analyze the joint distribution of gold price (gold Au9999), Shandong gold stock index and Shanghai composite index returns were used.. Moreover, Shandong gold stock's return is widely considered to be more related to the changes in the return of gold price (gold Au9999) than the return of general stock market (Shanghai composite index), which is same with the general idea.. This paper has a contrary conclusion is that the return of gold price has positive correlation with the return of the general stock market, which is different with many literatures (gold price has negative correlation with general stock market returns). Gold market is staying in the initial development stage, the function of gold for a hedge or safe haven is not very obvious in China. Therefore, China's government should continually develop the gold market. (2)

Mohd. Musavvir Ali says in their paper that the stock markets of a country become more sensitive to both domestic and external factors, and one such factor is the price of gold. There is an inverse relationship between gold price and dollar, the co-movement of gold prices and stock prices even during the period of global financial crisis and thereafter. Indians have started considering gold not only as jewellery but also an important mode of investment like investment in bonds and equities. During the period of global financial crisis, stock markets crashed but gold price continues to increase in India. Unlike stock, the extent of holding of gold in India is widespread, though retail participation in the Stock Markets has gone up in the last few years. However, Indians have started considering gold not only as jewellery but also an important mode of investment like investment in bonds and equities. Perhaps, this explains the co-movement of gold prices and stock prices even during the period global financial crisis and thereafter.

The paper concludes that domestic gold prices and international gold prices are closely interlinked. Variations in the international gold prices find almost similar echo in the domestic number of investors; this has raised apprehensions whether any correction in gold prices will have destabilizing implications on the financial markets and to analyze the implications of the correction in gold prices on financial stability in India. Domestic and international gold prices are closely interlinked. Implications of correction in gold prices on the Indian financial markets are likely to be muted. Indians consider gold the safe haven investment as a financial asset as well as jewellery (ornaments). However, Indians have started considering gold not only as jewellery but also an important mode of investment like investment in bonds and equities. Perhaps, this explains the co-movement of gold prices and stock prices even during the period global financial crisis and thereafter.(3)

Filiz YILDIZ CONTUK Hümeyra BURUCU Bener GÜNGÖR says in the paper that **the** effect of fluctuations in gold prices on ISE 100 index using daily prices and the index data from 01.01.2009 to 31.12.2012. The raw data has been converted into earnings yields and analyzed. The study first determines whether or not the use of a GARCH model would be appropriate using a heteroskedasticity test. The test results show that there was an ARCH effect in both variables, and that GARCH modeling could be used. The results obtained from MGARCH modeling show that gold and stock exchange yields have been affected both by their own shocks and by shocks of each other.

The results show that gold and equity investment are the most preferred types of investing tools. Researchers have shown that these investment tools, compared to other investment tools provide a greater return. There is more than one factor that affects stock and gold prices, which are alternatives to one another from the investor's point of view. Particularly because gold is not a local investment instrument and it is a worldwide de facto commodity, changes in its price are explained, not by the local factors, but by macro factors. Likewise, there are also many factors that affect stock returns including macroeconomic variables such as: government debts, interest and inflation rates, export and import figures, foreign exchange rates, money supply, gold prices, arrangements concerning capital markets, oil prices and growth rates. This study analyzes the relationship between changes in gold and ISE returns. It is an attempt to analyze the interactions of price fluctuations between these two investment instruments. To determine price volatility and the dynamic relations between the two variables the GARCH (Generalized Autoregressive Conditional Heteroskedasticity) model provides more effective results. So they concluded that using GARCH models in study is appropriate. According to the results of the MGARCH models, gold and stock exchange yields have been affected both by their own shocks and by shocks of each other. For this reason, investors when investing in these instruments it is important that knowing prices and therefore returns of them are affected by each other.(4)

Owain ap Gwilym, Andrew Clare, James Seaton & Stephen Thomas says in the paper that the relationship between gold prices and gold equity index levels and consider whether this offers any explanatory power for the future returns of gold stocks. It is observed that a simple, well-specified model can explain movements in the stock prices of gold producing firms. Using evidence from gold exchange-traded funds we also show that investors' market timing decisions have reduced their average returns from these instruments by over 1.5% annually from 2005 to 2009.

They have investigated the relationship between gold producing equities and physical gold prices and found, consistent with the evidence of Tufano (1998), that the sensitivity of gold equities to the gold price is not constant. We note that this sensitivity has declined quite considerably in recent years as the gold price has advanced. We also compared the various metrics based on the relative value of gold stock indexes to the price of gold as predictors of future returns to gold equities but found that the explanatory power was generally quite low. The introduction of real interest rates made a significant difference. This highlighted a negative relation with subsequent changes in the underlying gold price as well as being significantly negatively related to subsequent gold equity returns. It was observed that both the substantial increases in gold prices during the period of study from 1975-1980 and from 2001-2007 began during periods of negative real rates, whilst the decline in gold from its 1980 peak was accompanied by a period of tight monetary policy. However, for this sample period, a simple forecasting method using both gold-HUI variables and the real interest rate did not improve on the returns of a buy-and-hold approach However, tactical market beating strategies are not necessarily robust and investors should consider the passive (ETF) alternative.(5)

Abdul Basit in his paper has said that Investments in stocks, gold and oil contracts are always thought to be the best source of investment in developing markets. Investors keep on swapping their investment in different investments options to gain the maximum return. In Pakistan stock market, gold and oil investments are ranked among the most desirable area of investments. In this paper the researcher tired to study that how KSE-100 Index affects the oil and gold prices in Pakistani market.. The researcher applied the simple regression models separately for both dependent variables and concluded that there is no obvious relationship in these variables.

They conclude that Investments in stocks, gold and oil contracts are always thought to be the best source of investment in developing markets. Investors keep on swapping their investment in different investments options to gain the maximum return.. The researcher then run the simple regression models on data and concluded that there is no obvious relationship in these variables. The results shows that only 16% variations in the gold prices is due to the change in the KSE-100 Index where as the 17% change is observed in the oil prices is due to change in the KSE-100 Index. The researcher conclude that as the 84% change in gold prices is due to other variables and 83% change is oil prices is due to other variables, KSE-100 Index cannot be declared as a major source of change. There could be the set of other macro variables that also affect the oil and gold prices in Pakistan.(6)

Subarna K. Samanta1, Ali H. M. Zadeh2 says in this paper examines the co-movements of several macro-variables in the world economy over a period of more than twenty years. Long-term co movements are examined by tracking the co integration; common trend factor and the spill-er index over these variables (gold price, stock price, real exchange rate for dollar and the oil price of crude oil). Preliminary examination suggests the possibility of co integration among these variables indicating co-movements, although the spillover indices are found to be very small. This paper conducts an investigation about the co-movements of several economic variables over a period of time. Using daily data for over twenty years (considering logarithmic trans- formation only), it examines the existence of co integration, common trend, Granger causality and volatility spillover for these macro variables. Initial statistical results indicate the possible existence of co-movements among them however, not all of them are moving simultaneously. It seems likely that stock price and gold price are more likely to move on their own while oil price and exchange rates likely to be influenced by other variables. (7)

5. Interpretations , Findings and Conclusions :

5.1 The findings:

I) The graphical trend analyzed using co-correlation graphs show vividly the trends of the gold and stock prices (of a decade's) show two types of behaviors:

a) They go parallel when there are marginal fluctuations in the stock and the gold prices or their respective market.

b) They show inverse proportion behavior between themselves i.e. when the stock or bullion - rise or fall steeply (not marginally rise or fall)

Ii) The questionnaire study shown that the investors would like to

A) withdraw their stock amts to a tune of 30% to 35%(in an average) of the stock amts when there is a steep increasing trend shown in bullion market and

B) Withdraw around 50 to 60% (in an average) of the gold units when there are bull trends in the stock market.

5.2 Findings:

a. The study found that The trend analysis conclude that the inverse relationship of the two parameters of research (gold and stock prices) are shown vividly only in steep rise period (extending between 15 days to 3 months period) and not in marginal rise and fall which is the daily and weekly phenomenon.

b. The study finds that the stock investors very well know that the gold price will increase in the deepavali, akshayathrithya and other major festival season , so they with draw customarily one week before the festival (around 10 to 15% of stock invests) and sell the gold stock just before the festival season ends and make profits . So generally it is seen in Indian situations that the gold prices starts steadily decrease and stabilize in the ending period of the festival season.

c. The study found that when there is a major crunch in bullion market for gold supply or international price of gold rises or whenever government changes gold import policy and becomes stringent--- then the investor tries to invest more money in the bullion market.

d. The study found that the investor has three types of funds with him – one portion for exclusive stock investment , one portion for gold investment (some stock investors are not at all interested in bullion investment – they only invest in stock market) and other section which is moved their investment between the stock and gold investment.

e. The research concludes that any point of moment the investors will have both stock and gold units. Around 60% of stock investors prefer to trade daily-weekly themselves or with the help (telephonic) of stock broker at home and most of them not interested to invest in gold market .The rest of 40% decides these fluctuations between gold v/s stock trades off situations and tilt the market trend.

5.3 : Conclusions:

The study brought , proved and showed vivid and significant inverse relationship between parameters of research – variable and all the first four hypothesis were disproved and the fifth hypothesis obviously disproved showing a positive and inverse relationship in monotonous continuous smooth (curve) trend basis.

6. Final Conclusions:

The paper conclude that there are exclusive stock investors and those who trade between stock and gold (trade-off theory) to make more money and they are architect of the relationship between the bullion and stock market is visible only in the steep rise and fall situations and not visibly significant in normal – marginal raise and fall situations of any market of this study.

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