International Journal on Recent and Innovation Trends in Computing and Communication ISSN: 2321-8169
Volume: 2 Issue: 8 2224 – 2233

An Empirical Analysis on the Relationship between Gold and Silver with Special Reference to the National Level Commodity Exchanges, India

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***Abstract*--**This empirical study mainly examines the relationship between gold and silver over the 2001-2013 periods. This period covers a very extensive range of economic conditions, political change in major producers and increased sophistication in asset markets generally. It includes, at the start of the period, the attempted cornering of the silver market only. Thus, prime fact is that one would not expect to necessarily see a stable relationship between gold and silver. Gold and silver have historically been seen as close substitutes for one another, both being precious metals that can be used to back currency and both having been used as currency. There is significant evidence that these metals can play a useful role in diversifying risk, as well as being an attractive investment in their own right, thus, one might expect that the prices share similar dynamics. However, there are also economic fundamentals that may act to drive the prices of gold and silver apart. The main objective is to study about the relationship between gold and silver in commodity market. The secondary objectives are to study different factors affecting the gold & silver price & to find out how price of gold & silver fluctuate in the Indian commodity market. After effective research it's found that there is significant relationship between gold & silver. The tools used are correlation, regression & ANOVA. The study will help investors to know the relationship and influence of factor over the price of the gold and silver. This study also may be taken as a guide to investors who will invest in gold or silver.

Keywords: *Gold, Silver, Commodity Markets, National Stock Exchange, Investment, Economic fundamentals etc.*

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1. INTRODUCTION

1.1. GOLD

Gold is a chemical element with the symbol Au (Latin aurum, shining dawn) and an atomic number of 79. It has been a highly sought "after precious metal for coinage, jeweler, in rocks, in veins and in alluvial deposits. Gold is dense, soft, shiny and the most malleable and ductile pure metal known. Pure gold has a bright yellow color and luster traditionally considered attractive, which it maintains without oxidizing in air or water. Gold is one of the coinage metals and has served as a symbol of wealth and a store of value throughout history. Gold standards have provided a basis for monetary policies. It also has been linked to a variety of symbolisms and ideologies for centuries, gold has meant wealth, prestige, and power, and its rarity and natural beauty have made it precious to men and women alike. Owning gold has long been a safeguard against disaster. Many times when paper money has failed, men have turned to gold as the one true source of monetary wealth. Today is no different. While there have been fluctuations in every market and decided downturns in some, the expectation are that gold will hold its own. There is a limited amount of gold in the world, so investing in gold is still a good way to plan for the future. Gold is homogeneous, indestructible and fungible. These attributes set gold apart from other commodities and financial assets and tend to make its returns insensitive to business cycle fluctuations. Gold is still bought(and sold) by different people for a wide variety of reasons - as a use in jeweler, for industrial applications, as an investment and so on

USES OF GOLD

- **Gold is an Investment**
- **Gold's Usefulness as safe haven**
- **Gold's Usefulness as an Asset Diversifier**
- **Gold is money**
- **Gold is insurance**

GOLD INVESTMENT

Gold is the most popular as an investment. Investors generally buy gold as a hedge or harbor 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 suggest that gold behaves more like a currency than a commodity.

INVESTMENT VEHICLES

Bars

The most traditional way of investing in gold is by buying bullion gold bars. Bars are available in various sizes. Bars generally carry lower price premiums than gold bullion coins. However larger bars carry an increased risk of forgery due to their less stringent parameters for appearance. While bullion coins can be easily weighed and measured against known values, most bars cannot, and gold buyers often have bars re-assayed.

Coins

Gold coins are a common way of owning gold. Bullion coins are priced according to their fine weight, plus a small premium based on supply and demand.

Exchange-traded products (ETPs)

Gold exchange-traded products may include ETFs, ETNs, and CEFs which are traded like shares on the major stock exchanges. The first gold ETF, Gold Bullion Securities (ticker symbol "GOLD"), was launched in March 2003 on the Australian Stock Exchange, and originally represented exactly 0.1 troy ounces (3.1 g) of gold. As of November 2010, SPDR Gold Shares is the second-largest exchange-traded fund (ETF) in the world by market capitalization. ETF shares can be sold in basically two ways. The investors can sell the individual shares to other investors, or they can sell the Creation Units back to the ETF.

Certificates

Gold certificates allow gold investors to avoid the risks and costs associated with the transfer and storage of physical bullion (such as theft, large bid-offer spread, and metallurgical assay costs) by taking on a different set of risks and costs associated with the certificate itself (such as commissions, storage fees, and various types of credit risk).

Banks may issue gold certificates for gold which is allocated (non-fungible) or unallocated (fungible or pooled). Unallocated gold certificates are a form of fractional reserve banking and do not guarantee an equal exchange for metal in the event of a run on the issuing bank's gold on deposit.

Accounts

Many types of gold "accounts" are available. Different accounts impose varying types of intermediation between the client and their gold. One of the most important differences between accounts is whether the gold is held on an allocated (non-fungible) or unallocated (fungible) basis. Another major difference is the strength of the account holder's claim on the gold, in the event that the account administrator faces gold-denominated liabilities (due to a short or naked short position in gold for example), asset forfeiture or bankruptcy.

Mining companies

These do not represent gold at all, but rather are shares in gold mining companies. If the gold price rises, the profits of the gold mining company could be expected to rise and as a result the share price may rise. However, there are many factors to take into account and it is not always the case that a share price will rise when the gold price increases. Mines are commercial enterprises and subject to problems such as flooding, subsidence and structural failure, as well as mismanagement, theft and corruption. Such factors can lower the share prices of mining companies.

FACTORS AFFECTING GOLD PRICE

The major factors impacting the gold price can be summarized as under:

- Demand for Consumer Goods
- Inflation Prospects
- Value of Dollar
- Gold Reserves
- Lack of Safe Havens
- US Government Borrowing
- Monetary Policy / Quantitative Easing
- Speculation
- Supply
- Growth in Demand for Jewels
- Increase in demand for exchange traded paper backed products

TABLE 1.1
WORLD'S LARGEST GOLD PRODUCING COUNTRIES IN 2013

Countries	Production (In Metric tonnes)
China	420
Australia	255
United States	227
Russia	220
Peru	150
South Africa	145
Canada	120
Mexico	100

Uzbekistan	93
Ghana	85
Brazil	75
Chile	55
Rest of the world	700

GOLD CONTRACT SPECIFICATIONS

Gold

Trading Unit	1 Kg
Quotation / Base value	10gms
Maximum order size	10 kg
Tick Size (minimum price movement)	Re.1 per 10 grams
Initial margin	5%

Gold Mini

Trading Unit	100 gms
Quotation / Base value	10 gms
Tick Size (minimum price movement)	Re.1 per 10 grams
Initial margin	5%

Gold HNI (High net worth individual)

Trading Unit	3000 gms
Quotation / Base value	10 gms
Tick Size (minimum price movement)	Re.1 per 10 grams
Initial margin	5%

(HNI) → High net worth individual

1.2 SILVER

Silver is a metallic chemical element with the chemical symbol Ag (Latin: argentums, from the Indo European root-for white or shining) and atomic number 47. A soft, white, lustrous transition metal, it has the highest electrical conductivity of any element and the highest thermal conductivity of any metal. The metal occurs naturally in its pure, free from native silver, as an alloy with gold and other metals, and in minerals such as argentite and chlorargyrite. Most silver is produced as a by-product of copper, gold, lead, and zinc Silver has attracted mans fascination for many thousands of years. Ancient civilizations found silver deposits plentiful on or near the earth's surface. Relics of these civilizations include jewelry, religious artifacts, and food vessels formed from the durable, malleable metal. This metal took on near mystical qualities in marking important historical milestones throughout the ages, and served as a medium of exchange. The Mesopotamian merchants were doing just that as early as 700 BC. In 1792, silver assumed a key role in the United States monetary system when Congress based the currency on the silver dollar, and its fixed relationship to gold. Silver was used for the nation's coinage until its use was discontinued in 1965. The dawn of the 20th century marked an important economic function for silver, that of an industrial raw material. Today, silver is sought as a valuable and practical industrial commodity, as well as an appealing investment precious metal. Many countries now issue silver bullion coins, among them the Unites States, Canada and Mexico. Private issue silver bullion is also available from select private mints

USES OF SILVER

Demand for silver is built on three main pillars: industrial and decorative uses, photography, and jewelry & silverware. Together, these three categories represent more than 95 percent of annual silver consumption. In 2013, 455.5 million ounces of silver were used for industrial applications, while over 128 million ounces of silver were committed to the photographic sector, 163.4 million ounces were consumed in the jewelry market, and 58.8 million ounces were used in the silverware market. Why is this indispensable metal in such demand? The reasons are simple. Silver has a number of unique properties including its strength, malleability and ductility, its electrical and thermal conductivity, its sensitivity to and high reflectance light and the ability to endure extreme temperature range.

INVESTMENT VEHICLES

Bars

Various sizes of silver bars

- 1000 oz troy bars - These bars 999 fine, weigh about 68.6 pounds avoirdupois (31 kg) and vary about 10% as to weight, as bars range from 900 ozt to1100 ozt (28 to 34 kg). These are COMEX and LBMA good deliver bars.
- 100 oz troy bars - These bars weigh 6.86 pounds (3.11 kg)
- Odd weigh retail bars - These bars cost less and generally have a wider spread, due to the extra

work it takes to calculate their value and the extra risk due to the lack of good brand name.

- 1 kilo gram bars (32.15 oz troy)
- 10 oz troy bars and 1 oz troy bars (311 and 31.1 kg)

Coins and rounds

Silver coins include the one ounce 99.99% pure Canadian Silver Maple Leaf and the one ounce 99.93% pure American Silver Eagle. Coins may be minted as either fine silver or junk silver, the latter being older coins made of 90% silver. U.S. coins 1964 and older (half dollars, dimes, and quarters) are generally accepted to weigh 24.71 grams of silver per dollar of face value, which at their nominal silver content of 90%, translates to 22.239 g of silver per dollar. All U.S. dimes, quarters, halves and 1 dollar pieces contained 90% silver since their introduction up until 1964 when they were discontinued. The combined mintage of these coins by weight exceeds by far the mintages of all other silver investment coins.

Exchange-traded products

Silver exchange-traded products represent a quick and easy way for an investor to gain exposure to the silver price, without the inconvenience of storing physical bars. Silver ETPs include:

- IShares Silver Trust (NYSE: SLV) launched by iShares is the largest silver ETF on the market with over 340 million troy ounces of silver in storage.
- ETFS Physical Silver (LSE: PHAG) and ETFS Silver Trust (NYSE: SIVR) launched by ETF Securities.
- Sprott Physical Silver Trust (NYSE: PSLV, TSX: PHS.U) is a closed-end fund created by Sprott Asset Management. The initial public offering was completed on November 3, 2010.

Certificates

A silver certificate of ownership can be held by investors instead of storing the actual silver bullion. Silver certificates allow investors to buy and sell the security without the difficulties associated with the transfer of actual physical silver. The Perth Mint Certificate Program (PMCP) is the only government-guaranteed silver-certificate program in the world.

The U.S. dollar has been issued as silver certificates in the past, each one represented one silver dollar payable to the bearer on demand. The notes were issued in denominations of $10, $5, and $1; however, since 1968, they can no longer be redeemed for physical silver; nor for any other form of lawful money, except Federal Reserve Notes (or their coin-equivalents) - on a dollar for dollar basis.

Derivatives, CFDs and spread betting

Derivatives, such as silver futures and options, currently trade on various exchanges around the world. In the U.S., silver futures are primarily traded on COMEX (Commodity Exchange), which is a subsidiary of the New York Mercantile Exchange. In November 2006, the National Commodity and Derivatives Exchange (NCDEX) in India introduced 5 kg silver futures.Firms such as Cantor Index, CMC Markets, IG Index and City Index, all from the UK, provide contract for difference (CFD) or spread bets on the price of silver.

FACTORS AFFECTING SILVER PRICE

- Large Traders Or Investors
- Short Selling
- Industrial, Commercial And Consumer Demand
- Hedge Against Financial Stress

TABLE 1.2

WORLD'S LARGEST SILVER PRODUCING COUNTRIES

Countries	Production (In Millions)
Mexico	162.2
China	117
Peru	111.3
Australia	56.9
Russia	45

Poland	41.2
Bolivia	39.7
Chile	37
United States	32.6
Argentina	24.1

1.3 ABOUT THE INDUSTRY COMMODITY

A commodity may be defined as an article, a product or material that is bought and sold. It can be classified as every kind of movable property, except Actionable Claims, Money & Securities. The size of the commodities markets in India is quite significant. Of the country's GDP of Rs 13, 20,730 crores (Rs 13,207.3 billion), commodities related (and dependent) industries constitute about 58 per cent.

COMMODITY MARKET

A physical or virtual market place for buying, selling and trading raw or primary products, for investors' purposes there are currently about 50 major commodity markets worldwide that facilitate investment trade in nearly 100 primary commodities.

Commodities are split into two types: hard and soft commodities. Hard commodities are typically natural resources that must be mined or extracted (gold, rubber, oil, etc.), whereas soft commodities are agricultural products or livestock (corn, wheat, coffee, sugar, soybeans, pork, etc.)

HISTORY OF COMMODITY MARKET IN INDIA

The history of organized commodity derivatives in India goes back to the nineteenth century when Cotton Trade Association started futures trading in 1875, about a decade after they started in Chicago. Over the time datives market developed in several commodities in India. Following Cotton, derivatives trading started in oilseed in Bombay (1900), raw jute and jute goods in Calcutta (1912), Wheat in Hapur (1913) and Bullion in Bombay (1920).

Today, commodity exchanges are purely speculative in nature. Before discovering the price, they reach to the producers, end-users, and even the retail investors, at a grassroots level. It brings a price transparency and risk management in the vital market. A big difference between a typical auction, where a single auctioneer announces the bids and the Exchange is that people are not only competing to buy but also to sell. By Exchange rules and by law, no one can bid under a higher bid, and no one can offer to sell higher than someone else lower offer. That keeps the market as efficient as possible, and keeps the traders on their toes to make sure no one gets the purchase or sale before they do. Since 2002, the commodities future market in India has experienced an unexpected boom in terms of modern exchanges, number of commodities allowed for derivatives trading as well as the value of futures trading in commodities, which crossed $ 1 trillion mark in 2006. Since 1952 till 2002 commodity datives market was virtually non-existent, except some negligible activities on OTC basis.

The three exchanges:

(i) National Commodity & Derivatives Exchange Limited (NCDEX) Mumbai,
(ii) Multi Commodity Exchange of India Limited (MCX) Mumbai and
(iii) National Multi- Commodity Exchange of India Limited (NMCEIL) Ahmedabad

There are other regional commodity exchanges situated in different parts of India.

Players in the market:

(i) Hedgers
(ii) Speculators
(iii) Arbitragers

NATIONAL LEVEL COMMODITY EXCHANGES IN INDIA

The four exchanges are:

(i) National Commodity & Derivatives Exchange Limited (NCDEX) Mumbai,
(ii)Multi Commodity Exchange of India Limited (MCX) Mumbai and
(iii)National Multi- Commodity Exchange of India Limited (NMCEIL) Ahmedabad
(iv) Indian Commodity Exchange Limited (ICEX), Gurgaon

2. MAIN THEME OF THE RESEARCH

2.1 OBJECTIVES OF THIS RESEARCH

PRIMARY OBJECTIVE

- To study about the relationship between gold and silver in commodity market.

SECONDARY OBJECTIVES

- To study different factors affecting the gold & silver price
- To find out how price of gold & silver fluctuate in the Indian commodity market
- To interpret about movement of prices of gold & silver in the commodity market

- To find whether the gold or silver is a good investment?

2.2 SCOPE AND LIMITATIONS

2.2.1 SCOPE OF THE STUDY

- The study will help to know the relationship and influence of factor over the price of the gold and silver.
- The study may be taken as a guide to investors who invest in gold or silver
- The study also helps one to understand the causes for fluctuations in the gold and silver.

2.2.2 LIMITATION OF THE STUDY

The following are major limitations of the study:

- Research can be conducted considering only the yearly wise data. So we can't accurately identify the fluctuation in the market.
- The analysis of investment was mainly based on historical data.
- There is no guarantee that what happened in the past will continue in the future.
- The findings of the study may be useful for the investors. But the investment decisions of the investors may depend on their level of expectations and perspective of the future performance of the market.

2.3 RESEARCH METHODOLOGY

Research methodology is the way in which researchers specify how they are going to retrieve the all-important data and information that companies will need to make vital decisions.

The basic concept of research methodology refers to the way in which companies conduct their research and how they collect the data they need. Whenever a company or organization needs to investigate a particular area of their business dealings, they need to adapt the most suitable research methodology for the job.

RESEARCH DESIGN

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. This study uses quantitative research design because here the traditional mathematical and statistical means are used to measure the results.

SAMPLE DESIGN

Sampling is the process of selecting units (e.g., people, organizations) from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen. Let's begin by covering some of the key terms in sampling like "population" and "sampling frame." Then, because some types of sampling rely upon quantitative models, we'll talk about some of the statistical terms used in sampling. Finally, we'll discuss the major distinction between probability and Non probability sampling methods and work through the major types in each.

- **Population:** The population of the study is gold and silver in the commodity market.
- **Sampling frame:** Sampling frame would be Gold Price and Silver Price.

AREA OF STUDY

- Gold Price
- Silver Price

DATA COLLECTIONS OF THE STUDY

SECONDARY DATA

The secondary data are those which have already been collected by someone else and which already has been passed though the statistical process. Yearly closing prices are taken from investing and Kitco website

PERIOD OF STUDY

The study covers a period of 13 years spanning from January 2000 to December 2013.

TOOLS USED

- Correlation Analysis
- Regression Analysis
- ANOVA

2.4 REVIEW OF LITERATURE

1) Ma (1985), found a short-term parity between gold and silver cash prices based on rational expectation framework. The stability of this parity allowed investors to earn above-average returns on a frequent basis before transaction costs. Moreover, Ma and Soenen (1988), found arbitrage opportunities between gold and silver futures, where the transaction costs are less than in the cash market.
2) Chan and Mountain (1988) used an arbitrage model and time series models to explain the pricing relationship and test the causality between gold and silver prices.

 ISSN: 2321-8169
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The weekly data they used covered the period from the second week of March in 1980 to the first week of February in 1983. To determine the appropriate number of lags, to identify the appropriate interaction, and to examine the exogeneity between the gold and silver prices and the rate of interest, they used Schwarz's Bayesian information criterion and Akaike's final prediction error criterion, and the estimation results suggested a "simultaneous relationship between the price of gold, the price of silver, and the treasury bill rate".

3) Wahab et al. (1994), tested the co integration between gold and silver prices with daily spot and futures prices. They used daily cash price and daily futures price and establish that there is co- integration between gold and silver in both markets. They also examined whether the co-integration property and error-correction models can be exploited to generate positive trading profits. They found that after transaction costs, it was not possible to obtain positive trading profits for an ordinary market participant. However, silver and gold do not belong to one great pool because they have their own different characteristics and economic uses. Thus, they have different sensitivities to exogenous shocks. More and more current studies have shown the difference between the prices of silver and gold.
4) According to Escribano and Granger (1998), the relationship between silver and gold has weakened since 1990. The monthly price data they used covered from 1971 to mid-1990s and were split into two subsamples. They estimated the co-integration between 1971 and 1990 at first. Then they used observations from July, 1990 and June, 1994 in an out-of-sample to verify the stability of the estimated relationship. They found that the dependency between gold and silver became less and less after 1990, which indicated that the two markets were separate.
5) Ciner (2001) investigated the interactions between gold and silver future prices using co-integration techniques and daily data from the beginning of 1992 to the end of 1998. He found that the stable relationship between gold and silver prices on the Tokyo Commodity Exchange has disappeared in the 1990s. Hence, those two markets should be approached as separate markets and the change of gold-silver ratio should not be used to predict prices in the future. This implication is contrary to the arguments raised in Ma (1985), Ma and Soenen (1988) and Wahab et al. (1994).
6) Figuerola-Ferretti and Gonzalo (2010) use the period from 1990 to 2009 and find that gold and silver are co-integrated only under weak US dollar and high volatility conditions.
7) Robert Preacher historical report on Gold and silver has been studied Sites like mcxindia.in, gold research.org, etc has been studied. Annual report published by RBI & World Gold Council.

3. ANALYSIS & INTERPRETATION

3.1 CORRELATION

TABLE 3.1
CORRELATION ANALYSIS

	Gold (10 grams)	**Silver (10 grams)**
Gold (10 grams)	1	0.987
Silver (10 grams)	0.987	1

INTERPRETATION

Table 3.1 represents that the correlation of gold and silver price. It's clearly observed that gold price has a strong positive correlation with the gold price for past 13 years. This result is consistent with previous data analysis. There is a relationship between the gold and silver prices.

3.2 REGRESSION

TABLE 3.2 REGRESSION ANALYSIS

Regression Statistics				
Multiple R	**R Square**	**Adjusted R Square**	**Standard Error**	**Observations**
0.986189319	0.972569374	0.969826311	3.3802352	12

 ISSN: 2321-8169
2224 – 2233

ANOVA					
	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	4051.153672	4051.1537	354.556023	3.86637E-09
Residual	10	114.2599028	11.42599		
Total	11	4165.413575			

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	-1.668	1.792	-0.931	0.374	-5.661	2.325	-5.661	2.325
Gold	0.002	0.000	18.830	0.000	0.002	0.002	0.002	0.002

INTERPRETATION

Null Hypothesis (H_0)

There is no relationship between gold prices and silver prices.

Alternative Hypothesis (H_1)

There is a relationship between gold prices and silver prices.

Level of Significance = 5%, Calculated Value R^2 = 0.972569374

Tabulated value z =12.4386

Significant correlation with R =0.986189319.

Approximately 97% of variation in gold prices accounted with silver.

Significant linear regression with p value = 0.0000000039.

Regression equation is Y= 0.002X - 1.668

Here the multiple R value is 0.986189319 which shows that there is significant correlation between the gold prices and silver prices. Also the value of R square is 0.972569374 which shows the extent to which the silver price affects the gold prices.

Therefore, the hypothesis is rejected that there is no relationship with gold and silver.

3.3 ANALYSIS OF VARIANCE (ANOVA)

TABLE 3.3

ANALYSIS OF VARIANCE (ANOVA)

Groups	**Count**	**Sum**	**Average**	**Variance**
Gold	13	182639	14049.154	101677966
Silver	13	326.805	25.138846	376.120821

ANOVA						
Source of Variation	**SS**	**Df**	**MS**	**F**	**P-value**	**F crit**
Between Groups	1278374479	1	1.278E+09	25.1454627	4.00664E-05	4.25968
Within Groups	1220140105	24	50839171			
Total	2498514584	25				

INTERPRETATION

Null Hypothesis (H_0)

There is no relationship between gold prices and silver prices.

Alternative Hypothesis (H_1)

There is a relationship between gold prices and silver prices.

Level of Significance = 5%

From the above table, the calculated value is 25.1454627

Table value of 4.25968

However, the calculated value (25.1454627) is greater than table value (4.25968), then H_0 (Null Hypothesis) is rejected and H_1 (alternate hypothesis) is accepted. It can predict that there is a relation between gold prices and silver prices.

4. FINDINGS, RECOMMENDATIONS & CONCLUSION

4.1 FINDINGS

Present project work has been undertaken to find out the relationship between gold and silver. It has been found out by calculating the previous prices of gold and silver using the following tools.

4.1.1 CORRELATION

Positive correlation (0.987215382)

When the values of two variables change in the same direction, there is a positive correlation.

Both the prices are moving in the same direction, i.e. the gold prices are increasing as well as silver prices are also increasing. There is a positive correlation between the gold prices and silver prices.

4.1.2 REGRESSION

Positive Regression (0.986189)

Gold prices have 97% dependence on silver prices. In this study, we reject the Null Hypothesis (Ho) i.e. there is no relationship between gold prices and silver prices. We accept the Alternative hypothesis (H1) There is a relationship between gold prices and silver prices.

4.1.3 ANALYSIS OF VARIANCE (ANOVA)

The calculated value (25.1454627) is greater than table value (4.25968) at 5% significance level. We reject the Null Hypothesis (Ho) i.e. there is no relationship between gold prices and silver prices. We accept the Alternative hypothesis (H1) There is a relationship between gold prices and silver prices.

4.2 RECOMMENDATIONS

This empirical study has been undertaken to identify whether there is a relationship with gold and silver along with correlation co-efficient, regression and analysis of variance (ANOVA) on the basis of analysis and findings, the following suggestions can be made the investors.

- The traders should not enter when the market will have volatility condition.
- The investors must know what the trend of market and then place the order.
- Investors not buy in bulk quantity because price fluctuates in every second. If the investors put all money at once then they will not able to buy more when it goes down. So buy in small quantities
- Investing in the gold and silver has high risk but comparing to returns both brings the high returns.
- Gold is the best alternative source of investment, when the investor's find the market is too risky.

4.3 CONCLUSION

The causal relationship was tested between the Gold and Silver. Gold price is included in the model as an additional variable, to examine whether gold price contain any additional significant information about price movements. Since gold is an important saving instrument in India and is very often used as a hedge against inflation, it is expected that gold may be looked upon as alternative asset for those holding idle money, for speculative purposes.

ANOVA proved that null hypothesis exits and thus proved there is no relation between the gold prices and silver prices. Even though, gold is considered to be the best alternative source of investment. We find investor's tendency to switch to gold investment when they find the market to be too risky

Investment in gold market has its own risk involved in it. It is better to analysis the risk involved before making the investment. The study states that silver price have certain level of positive impact on gold price movements. From the study we conclude that investor is request to invest in gold to gain short term profit.

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