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A Study on Relationship between Gold and Silver with Special Reference to Multi Commodity Exchange of India Limited

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Abstract

This study mainly examines the relationship between gold and silver over the 20012-2016 periods. The study covers a very extensive range of economic conditions, radical change in major producers and increased complexity in asset markets generally. Thus, prime fact is that one would not expect to necessarily see a stable relationship between gold and silver. Gold and silver have factually been seen as close alternatives for one another, both being precious metals that can be used to back currency and both having been used as currency. There is substantial 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 changing aspects. However, there are also economic essentials 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 data is collected from Multi commodity exchange of India limited. The tools used are correlation and regression. 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 help the investors who will invest in gold or silver.

Keywords: Gold, Silver, Investment, radical change, Multi commodity exchange of India limited, Economic essentials etc.

Introduction

Gold is a chemical element with symbol **Au** (from Latin: *aurum*) and atomic number 79. In its purest form, it is a bright, slightly reddish yellow, dense, soft, malleable, and ductile metal. Chemically, gold is a transition metal and a group 11 element. It is one of the least reactive chemical elements and is solid under standard conditions. Gold often occurs in free elemental (native) form, as nuggets or grains, in rocks, in veins, and in alluvial deposits. It occurs in a solid solution series with the native element silver (as electrum) and also naturally alloyed with copper and palladium. Less commonly, it occurs in minerals as gold compounds, often with tellurium (gold tellurides).

Gold is thought to have been produced in supernova nucleosynthesis, from the collision of neutron stars, and to have been present in the dust from which the Solar System formed. Because the Earth was molten when it was formed, almost all of the gold present in the early Earth probably sank into the planetary core. Therefore, most of the gold that is in the Earth's crust and mantle is thought to have been delivered to Earth later, by asteroid impacts during the Late Heavy Bombardment, about 4 billion years ago.

Characteristics of Gold

Gold is the most malleable of all metals; a single gram can be beaten into a sheet of 1 square meter, and an avoirdupois ounce into 300 square feet. Gold leaf can be beaten thin enough to become semi-transparent. The transmitted light appears greenish blue, because gold strongly reflects yellow and red. Such semi-transparent sheets also strongly reflect infrared light,

making them useful as infrared (radiant heat) shields in visors of heat-resistant suits, and in sun-visors for spacesuits. Gold is a good conductor of heat and electricity.

Significance of Gold in Indian Culture

Gold has a deep-rooted significance in Indian history, appealing people from different parts of the world with its beauty and charm. Its golden glow was visible across seas and borders, evoking emotions from millions of hearts. Over the years India's infatuation with gold has grown stronger and stronger, with Indians accounting for most of the gold consumed globally. Gold, in Indian history is more than an investment; it is a culturally significant metal which has found a place in Indian hearts and homes alike; there are a few reasons which have propelled gold to a pedestal in India, a spot which it is likely to hold on to for a long time.

- **Religious Connotations** – Gold is an integral part of religious ceremonies in India, regardless of religion. Be it Hinduism, Sikhism, Jainism or Christianity, gold is a prominent asset across all major religions in the country. Increasing gold rates do not deter devotees from donating excessive gold ornaments to temple funds, a prime example being the Tirumala Temple in Andhra Pradesh, which eyewitnesses' donations to the tune of tonnes on a yearly basis, irrespective of gold rates in Andhra Pradesh. It is common for people to purchase gold at different religious gettogethers and for different occasions.
- **Family heirloom** – Gold is part of every Indian household and is considered a family treasure by most Indians. Gold jewellery and ornaments are accepted on from generation to generation, in a bid to keep family heritage alive. It is common for most of the families to pass on jewellery from a mother to a bride in weddings, irrespective of facts like variation in design trends or value. Gold is an extremely sentimental part of certain traditions and continues to remain a precious heirloom. Passing gold from one generation to another also helps people save money on gold, avoiding ever rising gold prices in India.
- **Golden Gifts** – Gifting gold is considered fortunate in India, with gold gifts forming an integral part of all observances. Gifting gold enables recipients to use it fruitfully, as it is not only a key basis of money but is also measured lucky. It is common to gift gold during weddings, which can see brides carrying in huge quantities of gold to their new homes, which is considered fortunate. A gift of gold is perhaps the highest form of gifting in the country, showcasing the worth of an individual and purity of intent. Gifts of gold are common for birthdays and child births even in smaller towns.
- **Status Symbol** – There is no bigger status sign than gold in India, and Indians are not shy to exhibit it. In a social setting with billions of people, gold is one section which can help people stand out, literally shine in the crowd. Politicians, businessmen, actors, officials, all love to show their gold to the world, giving them new highs. Gold has been a grade symbol in India since ages, right from the time of kings and

queens to the British and independent India has downed this into its blood. The more gold one has the more power he/she has, an signal of their ability to buying gold in spite of rising gold rates.

- **Investment** – Gold has been measured the safest investment, a sentiment which Indians live by. It is this property of gold as a shield against bad times which have broken Indians to buy it as investments. Owning gold is measured an extremely smart choice, and is replicated in the amount of gold Indians own. With gold prices fluctuating everyday it makes logic to invest in gold for a protected future.

Indians consider gold a super-metal, a super-metal which can offer a solution to multiple complications. Not everything that glitters might be gold, but for Indians gold is their knight in shining armour.

Gold as an Investment

Of all the precious metals, gold is the most popular as an investment. Investors generally buy gold as a way of spreading risk, especially through the use of futures contracts and derivatives. The gold market is issue to speculation and volatility as are other markets. Compared to other precious metals used for investment, gold has the most operative safe haven and hedging properties across a number of countries. Gold has been cast-off throughout history as money and has been a comparative standard for currency equivalents specific to economic regions or countries

Types of Gold Investments

Gold Futures

You can purchase into gold futures, which are traded on the MCX. These future prices tend to track gold prices, and the contracts have to be established with a pre-determined period. For example, if you buy a gold contract of Oct expiry, you have to make sure you settle the same by Oct. Gold Futures are risky, as you have to relax the contract, even if you make a loss. In case of gold coins and bars, you can stay to hold the same, if you incur a loss. The one advantage of buying gold in the futures market is that you have to pay only a 10 per cent margin. For example, if you buy 10 grams have gold valued at Rupees 27,000 in the physical market; here you have to pay just about Rupees 2,700.

Gold ETFs

There are various Gold Exchange Traded Funds (ETFs) that investors could purchase. Gold ETFs are healthier than physical gold, and offer many advantages. Nobody can steal gold ETFs as they are in the electronic form. On the other hand, you do not have to experience storage charges. Taxation on Gold ETFs is done in the identical means as physical gold.

Gold coins and gold bars

Invest in gold coins and bars, by obtaining them from your jeweller or from the bank. However, gold coins and bars from the banks are sure of quality, while jewellers also promise quality and purity and could bargain you a price that is slightly lower than that offered by banks. Investing in gold coins and bars is not a valuable idea, as you have to incur cost for storage.

E gold

You can invest in e-gold just as you invest in shares. The e-gold is held in electronic form or demat form, just like shares. This is probably one of the best ways to invest in gold and possibly the cheapest.

Gold Jewellery

This is the old styled way to invest in gold. However, these days' individuals do not prefer this means of investing and buy jewellery only if there is a special need like marriage or birth in the family.

Sovereign gold bonds

The best part of these funds is that you get an interest rate of 2.75 per cent and were largely distributed to slow down the use of gold consumption in the country. They are a good substitute to physical gold.

Gold Contract Specification

Symbol	Gold
Description	GOLDDMMYY
Contract Listing	Contracts are available as per the Contract Launch Calendar.
Contract Start Day	16th day of contract launch month. If 16th day is a holiday then the following working day.
Last Trading Day	5 th day of contract expiry month. If 5th day is a holiday then preceding working day.
Trading Unit	1 kg
Quotation/ Base Value	10 grams
Daily Price Limit	The base price limit will be 3%. Whenever the base daily price limit is breached, the relaxation will be allowed up to 6% without any cooling off period in the trade. In case the daily price limit of 6% is also breached, then after a cooling off period of 15 minutes, the daily price limit will be relaxed upto 9%

Factors affecting Gold prices

- Inflation
- Global Movement
- Government Gold Reserves
- Jewellery Market
- Interest Rate Trends

Largest Gold Producing Countries

S.No	Countries	Production (In Metric tonnes)
1	China	455
2	Australia	270
3	Russia	250
4	The United States of America	209
5	Canada	170
6	Peru	150
7	South Africa	140
8	Mexico	125
9	Uzbekistan	100
10	Indonesia	100

Silver

Silver is a chemical element by symbol **Ag** (from the Latin *argentum*, derived from the Greek *ἀργός*: "shiny" or "white") and atomic number 47. A soft, white, lustrous transition metal, it exhibits the highest electrical

conductivity, thermal conductivity, and reflectivity of any metal. The metal is found in the Earth's crust in the pure, free elemental form ("native silver"), as an alloy with gold and other metals, and in minerals such as argentite and chlorargyrite. Most silver is produced as a byproduct of copper, gold, lead, and zinc refining.

Silver has long been valued as a precious metal. Silver metal is used in many bullion coins, sometimes alongside gold: while it is more abundant than gold, it is much less abundant as a native metal. Its purity is typically measured on a per-mille basis; a 94%-pure alloy is described as "0.940 fine". As one of the seven metals of antiquity, silver has had an enduring role in most human culture

After gold, silver is the utmost invested precious metal commodity. For centuries, silver has been used as currency, for jewellery, and as a long-term investment option. Various silver-based instruments are offered today for trading and investment. These include silver futures, silver options, silver ETFs, or OTC products like mutual funds based on silver. This article gives a valuable idea on silver futures trading—how it works, how it is typically used by investors, and what you need to know before trading.

Characteristics

Silver is a soft, ductile, malleable, lustrous metal. It has the maximum electrical and thermal conductivity of all metals. **Silver** is stable in oxygen and water, but tarnishes when exposed to sulfur compounds in air or water to form a black sulfide layer.

Significance of Silver in Indian Culture

The white metal is frequently called "gold's little brother," "poor man's gold," and the "common's man metal." Perhaps the best-known example calls gold the money of kings, while silver is the money of gentlemen. However, gold is not always the most-desired precious metal. In fact, one of the world's largest populated nations craves for silver.

1. Indian weddings

Indian cultural and religious customs place significant importance on gift giving, especially when it comes to weddings. Silver is a popular gift choice, as it is well-thought-out to bring good luck. The country's jewellery industry was valued at more than \$40 billion in 2013 and experiences a big demand from over 10 million Indian weddings every year.

2. Consumer by percentage of population

Silver demands to a large percentage of India. Gold may be chosen by the middle- and upper-class populations, but silver is the metal of choice between the rural populations, which represents about 70 percent of the population in India. Seeing the price tag of an ounce of gold, silver is simply more reasonable.

3. Large population overall

There is a huge crowd of people inclined to purchase silver as a gift or investment. India's population is large in percentage and absolute terms. India's population of 1.2 billion represents a sixth of the world's entire population.

4. Investment

There is a lack of investment options in India. In fact, it can be tough to invest in anything else besides precious metals. Cash is less considered because of high inflation rates of around 8 percent. Meanwhile, government corruption and distrust lead to poor sentiment in traditional financial instruments such as stocks, mutual funds, and government bonds. Indians tend to opt physical assets such as land and precious metals.

5. Physical demand

In comparison to the West, where precious metals revolve around paper and electronic trading, silver investment involves genuine physical trades in India, which adds to the demand for imports. A trade in India usually includes taking Physical possession of the silver.

6. Tax on gold imports

Gold is becoming harder to purchase on the market. To combat a rising trade deficit, the Indian government has imposed a 10 percent import tax on gold. This has driven India's monthly gold imports expressively lower, making the precious metal scarcer. Since silver is often seen as an alternative for gold, it's not amazing that India's silver demand has risen to record levels.

7. Silver as currency

Almost everyone in India's population is having a bank account. Government red tape and regulations make opening an account and depositing money difficult. In contrast, gold and silver are widely acknowledged without documentation. This makes precious metals an ideal choice as a currency.

Silver Investment

It's natural and even prudent for an investor to wonder if a specific asset is a good investment or not. That's especially true with silver, since it's such a small market and doesn't carry the same seriousness as gold.

But at this point in history, there are convincing reasons to add physical silver to your investment portfolio (and only one is because the price will rise). Here the top 10 reasons why every investor should consider some silver bullion as investment.

Silver is Real Money

Silver may not be part of our currency, but it is still money. In fact, silver, along with gold, is the definitive form of money, because it can't be created out of thin air (and thus depreciated) like paper or digital forms. And by actual money, we do mean physical silver—not ETFs or certificates or futures contracts. Those are paper investments, which don't carry the same benefits you'll find in this report.

Physical silver is a store of value, just like gold. Here's why. Silver has

- No counterparty risk. If you hold physical silver, you don't need another party to make good on a contract or promise. This is not the case with stocks or bonds or virtually any other investment.
- Never been defaulted on. If you own physical silver, you have no default risk. Not so for almost any other investment you make.

- Long-term use as money. A scan of monetary history shows that silver has been used in coinage more often than gold!

Physical Silver is a Hard Asset

Of all the investments you own, how many can you hold in your hand? In a world of paper profits, digital trading, and currency creation, physical silver stands in contrast as one of few assets that you can carry in your pocket anywhere you go, even another country. And it can be as private and confidential as you want. Physical silver is also a tangible hedge against all forms of hacking and cybercrime.

Silver is Cheap

What if I said you could buy a hard asset at 1/70th the price of gold—and it would protect you just as well against crisis?

That's what you get with silver! It is much more affordable for the average investor, and yet as a precious metal will help maintains your standard of living as good as gold. If you can't afford to buy a full ounce of gold, silver can be your ticket to holding some precious metals. This is also true for gift-giving.

Silver is More Practical for Everyday Small Purchases

Silver isn't just inexpensive to buy, but can be more hands-on when you need to sell. Maybe someday you don't want to sell a full ounce of gold to encounter a small financial need. Enter silver. Since it frequently comes in smaller denominations than gold, you can sell only what you want or need at the time. Every investor's ought to have some silver around for this very reason. Keep in mind that silver coins and bars bullion can be sold virtually anywhere in the world.

Silver Outperforms Gold in Bull Markets

Silver is a very small market—so small, in fact, that a little money touching into or out of the industry can affect the price to a much greater degree than other assets (including gold). This greater volatility means that in bear markets, silver falls more than gold. But in bull markets, silver will soar much further and faster than gold.

Silver Inventories Are Falling

Governments and other institutions have traditionally held accounts of silver. But today, most governments no longer hold stockpiles of the metal. In fact, the only countries that warehouse silver are the US, India, and Mexico.

Industrial Use is Growing

Believe it or not, you don't go one day without using a product that contains silver.

It's used in nearly every major industry, from electronics and medical applications to batteries and solar panels. Silver is everywhere, whether you see it or not. As Mike says in his book, "Of all the elements, silver is the indispensable metal. It is the most electrically conductive, thermally conductive, and reflective. Modern life, as we know it, would not exist without silver." Due to these rare characteristics, the number of industrial applications for silver has skyrocketed. In fact, industry now gobbles up more than half of all silver demand.

Supply is about to fall

As you might be aware, the silver price crashed after peaking in 2011. Over the next five years it fell a whopping 72.1%. As a result, miners had to scramble to cut costs to turn a profit. One of the areas cut dramatically was exploration and development of new silver mines.

World Demand is growing

Global demand for silver is growing. Virtually all major government mints have seen record levels of sales, with most are operating at peak production. Surging demand is nowhere more evident than China and India. These two behemoth markets have long histories of cultural sympathy toward precious metals. And with their populations growing (the opposite of what is happening in the West), their incredible appetite will continue.

The Gold/Silver Ratio Favours Silver

Last, the gold/silver ratio (the price of gold divided by the price of silver) can give signs about which metal might be the better buy at any given time. Especially when the ratio reaches an extreme. The gold-to-silver ratio averaged 47:1 during the 20th century. It's averaged about 61:1 in the 21st century. So a ratio at or above 70 is in outlier territory and thus brands silver a good buy relative to the price of gold.

Types of Silver Investment

Jewellery / Bullion: Silver is also known as poor man's gold. Silver jewellery gives the advantage of owning silver physically and also using it for fashion as well as prestige. Bars can also be bought in 1 Gram to 400 ounces. It offers the satisfaction of holding the precious metal and ease of purchase online. There may be loss of value due to impurity, making charges and exchange rates if you need to sell them in case of jewellery.

Commodity Futures: You can trade in commodity futures in India, and silver is one of the commodities that get traded, so you could potentially take a position in silver by trading on its futures. You can enable commodity trading by a special request to your broker, and thereafter trade in all the commodities available in exchanges like MCX and NCDEX, which include silver futures as well.

Milestone Bullion Series 1: This is a structured product, and the minimum investment needed to get into this product is Rs. 5 lakhs, so this is clearly not for everyone. The way it works is that they take the money and invest in a portfolio with the following assets: Silver: Up to 40%, Gold forwards / Gold deposit schemes: up to 40%, Gold linked structure: up to 30%.The fee charged is as follows: One time set up fee of 2% or 2.5% in case of investment less than 10 lacs. Annual Management fee of 1.5% of the committed amount.

Buy US silver ETFs from your trading account: You can ask your broker to enable overseas trading to you, and once enabled – you can buy and sell selected securities that trade in the US from your trading account. There are quite a few silver options available including silver futures, silver mining companies, and silver ETFs as well, so this option is something that you can also consider if you are interested in investing in silver.

Factors affecting Silver Prices

- Supply and Demand
- Silver Scrap
- Technology
- Economic Trends (Micro)
- National and Global Economic Trends (Macro)
- Inflation
- Strength of the Dollar
- Gold Prices
- Interest Rates
- Government Policies

World's Largest Silver Producing Countries In 2018

S.No	Countries	Production (In Metric tonnes)
1	Mexico	5,600
2	Peru	4,100
3	China	3,600
4	Chile	1,500
5	Australia	1,400
6	Russia	1,400
7	Poland	1,400
8	Bolivia	1,300
9	United States	1,100
10	Canada	500

Contract Specifications of Silver

Symbol	Silver
Description	SILVERMMYY
Contract Listing	16th day of contract launch month. If 16th day is a holiday then the following working day.
Last Trading Day	5 th day of contract expiry month. If 5th day is a holiday then preceding working day.
Trading Unit	30 kg
Quotation/Base Value	1 kg
Daily Price Limit	The base price limit will be 4%. Whenever the base daily price limit is breached, the relaxation will be allowed upto 6% without any cooling off period in the trade. In case the daily price limit of 6% is also breached, then after a cooling off period of 15 minutes, the daily price limit will be relaxed upto 9%.

Objectives

To know the relationship between Gold and Silver Bullion commodities

Scope of the Study

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

Limitation of the Study

- 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 investment decisions of the investors may depend on their level of expectations and perspective of the future performance of the market.

Research Methodology

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

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 through the statistical process. Yearly closing prices are taken from investing and MCX website

Period of the Study

The study covers a period of 5 years spanning from January 2012 to December 2016

Tools Used

Correlation Analysis
Regression Analysis

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. 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.
3. 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.

4. 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 a stable gold and silver price 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.
5. P.Prakash and Dr.S.Sundararajan (2014) examines a period 2001- 2013. This period covers a very extensive range of economic conditions, political change in major producers and increased sophistication in asset markets generally. 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.

Analysis and Interpretation

Correlations

		VAR00001	VAR00002
VAR00001	Pearson Correlation	1	.746**
	Sig. (2-tailed)		.000
	N	1399	1399
VAR00002	Pearson Correlation	.746**	1
	Sig. (2-tailed)	.000	
	N	1399	1400

** . Correlation is significant at the 0.01 level (2-tailed).

Interpretation

There exists a positive correlation between gold price movement and silver price movement (i.e.) increase in gold price lead to increase in silver price too.

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746 ^a	.556	.556	5.76228

a. Predictors: (Constant), VAR00001

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	58156.876	1	58156.876	1751.507	.000 ^b
	Residual	46419.053	1398	33.204		
	Total	104575.928	1399			

a. Dependent Variable: VAR00003

b. Predictors: (Constant), VAR00001

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-50.515	2.323		-21.748	.000
	VAR00001	.003	.000	.746	41.851	.000

a. Dependent Variable: VAR00003

Interpretation

Gold price positively influence silver price. A unit of increase in gold price will increase silver price by 0.003 units. Further the result of R square discloses increase in gold price contributes to an approximate 55.60% in silver price.

Websites

www.bankbazaar.com
www.goodreturns.in
www.mcxindia.com

Finding, Suggestion and Conclusion**Correlation**

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.

Regression

Gold price positively influence silver price. So, there exist positive correlations.

Conclusion

A casual relation found between Gold and Silver. The traditional form of investing in gold is slowly making way for other ways to invest in gold, particularly gold futures. Gold price positively influences Silver price too. 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.

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