

# Precious Metals Prices And Indian Stock Indices Movement: A Comparative Landscape

Snigdha Basu<sup>1</sup>, Dr. Tapash Ranjan Saha<sup>2</sup>

<sup>1</sup>Research Scholar, Maulana Abul Kalam Azad University of Technology, WB

<sup>2</sup>Director & Professor, Institute Of Management Study

## ABSTRACT

Wealth creation essentially involves developing and building a secure strategy, such that one does not have to compete to accomplish objectives. Propensity to save and invest helps investors to create such wealth. But it is very crucial to understand the goal of investment and to match it with available alternatives finally to become a wealthy investor. Unlike all the other investment avenues stock price and precious metal prices such as gold and silver eventually compared while allocating investible funds and reaping benefits out of such investments. But diversification decisions will always varies time to time and case to case when it comes to price movement volatility and predictions are concern. Thus the present study tries to figure out the changing landscape of price movements for two majorly significant stock indices NSE & BSE with the price movement of precious metals as well.

## Keywords

Stock Indices, Precious Metals, Volatility, Trend Analysis, Alternative investment

Article Received: 10 August 2020, Revised: 25 October 2020, Accepted: 18 November 2020

## Introduction

A person's savvy and reasoning monetary choices decide the estimation of abundance that the individual in question can make. Interests into great resources will help in producing substitute kinds of revenue. For instance, interests in values, common assets or obligation instruments will help in producing pay through interest or profits. Consequently, during retirement, these speculations will be an extra type of revenue that will help one in resigning calmly and have monetary autonomy. Additionally, in the midst of crises or wellbeing emergency, these ventures will help in tending to the possibilities. Objective based contributing is the most ideal approach to quantify one's monetary achievement. All investors have objectives and dreams about what's to come. Organizing and accomplishing each objective in turn will give the most extreme fulfillment. To reach to such objectives financial specialist intends to ensure the chief sum or principal and simultaneously, boost development. This monetary arrangement gives double advantages of development and scenes of security.

According to the concept of customary speculation, the investment is invested through substantial resources, such as shares, money, land and assets, and the capital gains, benefit, and premium income have been estimated. Conventional undertakings should vary in relation to optional speculations.

In financial business sectors, a **share** is a unit utilized as shared assets, restricted associations, and land speculation trusts. Share capital alludes to the entirety of the portions of an undertaking. The proprietor of shares in the organization is an investor (or investor) of the company. A share is an inseparable unit of capital, communicating the proprietorship connection between the organization and the investor. This includes buying an offer in the value of an organization with the assumption that the offer cost will increment. Buying a share in the organization is equivalent to possessing part of the organization. Stock putting can

come through purchasing singular stocks, shared assets, record assets and trade exchanged assets (ETFs).

Alternative investment is an investment of any asset type that does not contain equity, bonds and assets. The concept is comparatively loses and encompasses tangible assets such as "precious metals", "the art", "wine", "antiquities", "coins", or "stamps and some financial assets" such as "immovable assets", "goods", "private equity", "hedge funds", "exchange funds", "carbon loans", "risk capital", "film development", "financial derivatives", and "cryptocurrency". Immovable, forestry and maritime acquisitions are sometimes pointed to as an 'alternative,' considering the old usage of real property to improve and maintain resources:

- Low relationship with conventional monetary ventures, for example, stocks and bonds
- It might be hard to decide the current market estimation of the resource
- Alternative speculations might be generally illiquid
- Costs of procurement and deal might be moderately high
- There might be restricted authentic danger and bring information back
- A serious level of speculation examination might be needed prior to purchasing

Of the precious and valuable metals, gold is the most well known as a venture to invest. Financial specialists and general investors by and large purchase gold as a method of diversifying risk, particularly [futures contracts](#) and [derivatives](#). Gold is the most powerful safe haven in many countries relative to other precious metals used for savings. Gold was used as capital from the outset and was a norm for currency alternatives directly in the economic field or in nations before now.

Since 1919, London's gold fixing, a two-day telephone conference of representatives from five bullion exchange companies in the London bubbling market, was the most recognized benchmark at the cost of gold. Moreover, gold is

traded globally regularly, based on the spot prices, collected from the total gold trading markets far and large.

Gold, similar to every single valuable metal, might be utilized as a support against swelling, emptying or money debasement, however its adequacy as such has been addressed; generally, it has not substantiated itself solid as a supporting instrument. A novel component of gold is that it has no default hazard. The macro-economic condition, including foreign economic metrics, such as GDP growth rates, inflation, interest rates, productivity and prices of oil, is analyzed by investors using fundamental assessments. They will also evaluate the global availability of gold against demand annually.

Gold bullion production is typically contrasted with stocks as numerous investment instruments. Some consider gold to be a value store (without growth), while stocks are considered to be value returns (i.e., growth from anticipated real price increase plus dividends). In a secure political system, stocks and bonds operate well with good land rights and no turmoil. One point is that, in the long run, the extreme volatility of gold relative with inventories and bonds implies that gold can not sustain its worth over inventories and bonds:

Speculators may decide to leverage their situation by acquiring cash against their current resources and afterward buying or selling gold on record with the lent reserves. Leverage is likewise an indispensable piece of exchanging gold subordinates and unhedged gold mining organization shares. Influence or subordinates may expand venture gains yet in addition builds the relating danger of capital misfortune if the pattern turns around. . Leverage or derivatives may increase investment gains but also increases the corresponding risk of capital loss if the trend reverses.

Silver may be seen on the other side and other precious metals as an investment. For over 4000 years it was considered a currency and store of cash, even though in developing countries it lost its position as a legal tender when the usage of silver standard stopped in 1935.

Silver collectors and other precious metals gathering for investment are generally regarded as stackers, with their collections dubbed as stacks.

The price of silver is driven by speculation and supply and demand, like most commodities. Owing to a more modest sector, poorer market liquidity and demand variations between industrial and store applications of considerable value, the price of silver is highly instable relative to gold. This can trigger large market valuations over and over again, generating volatility.

## Literature Review

**Graham Smith (2001)**, Using Unit Root Test, Johansen's Co Integration Test, Vector Auto Regression and VECMM, the relationship between gold prices and stock price indices on the US market was empirically investigated..

**Smith (2002)** the subject of interest in periods of economic instability was on investing in gold as a secure heaven.

**Davidson, Faff and Hillier (2003)** gold has been proven to be a buffer against the threats of even more growth and more deflation because both phenomena include the probability of severe financial asset problems.

**Hull, J. and White, A.,( 2004)**, the extraordinary increase in commodity prices since 2002 and their successive decrease since July 2008 have rekindled the debate on the position of commodities in the strategic and tactical asset allocation phase, he clarified..

**Sarkar, P. et. al. (2005)** create that there is no favorable association between actual and stock market variables between 1950-51 and 2005, either in the short or long term.

**Erb, C., and Harvey, C. (2006)**, they studied that over time the way returns on commodity futures vary from conventional asset groups (as peroxide by stock and bond indices around the world).

**David, Paul and Robert (2006)**, the function of gold in financial markets is being studied. More precisely, it tests whether gold for inventories and bonds is a hedge or a secure haven. The findings indicate that gold over the whole survey duration is a hedge and a secure refuge for inventories in all markets. In comparison, gold only acts in the short term as a hedge and safe refuge.

**Ahmed (2008)**, the essence of the causal relationship between market prices and core macroeconomic variables reflecting the real and financial field of the Indian economy (i.e., IIP, exports, FDI and money supply, exchange rate, interest rate) has been examined. Johansen's co-integration, utilizing quarterly statistics, suggested the nature of a long association between market prices and the IIP. In the event of a short-term exchange rate triggered by BSE SENSEX.

**Kumar (2011)**, the goal was to explore the essence of the causal relationship in India between market prices and macroeconomic variables. The techniques of unit root checks, co-integration and Granger causality tests between the NSE Index and macroeconomic variables have been used for this reason.

**Kaliyamoorthy and Parithi (2012)**, Start of a report to examine the connection between the price of gold and the stock market for the duration June 2009 to June 2010. They prove that there is no connection with the stock market and that the price of gold and the stock market are not responsible for growing gold prices.

**Bhunia and Mukhuti (2013)** In their report, they clarified that while the economy is in a slump and financial prices are heading down, investors prefer to store their assets in gold and wait for the hurricane in the opposite direction. If the price of gold increases, Indian buyers prefer to spend less in inventories, allowing market values to decline.

**Dr. Shefali Dani and Riddhi Ambavale (2015)**, In their research, they noticed that the most common metals in India are gold and silver. With their other financial alternatives, such as bonds, mutual shares, real estate and the like, investors participate in Gold and Silver.

## Objectives

- i. To showcase the landscape of demand, supply, category of usage, producing countries etc. for Gold & Silver over the period of study time.
- ii. To examine the relationship between stock indices movement (Nifty 50, BSE Sensex) and precious metals (Gold & Silver) price movement.

## Research Methodology

➤ Data source: The knowledge included in the analysis consists of the S&P CNX Nifty 50 Index & BSE Sensex regular closing rates. The trade days from 1 January 2007 to 31 December 2016 were protected by the data collection. The data were derived from historical data accessible on the National Stock Exchange ([www.nseindia.com](http://www.nseindia.com)) and the Bombay Stock Exchange websites ([www.bseindia.com](http://www.bseindia.com)). All the secondary data related to Gold and Silver daily closing prices have been collected from the websites of world gold council and GFMS gold survey 2017, Thomson Reuters.

➤ Study period: January 2007—December 2016.

➤ Data analysis techniques: To analyze the specific objectives and to understand the results of the study correlation statistics has been used.

➤ Hypothesis: (**H<sub>0</sub>**) = There is a no correlation between precious metal prices and stock index movements.

(**H<sub>1</sub>**)= There is a correlation between precious metal prices and stock index movements.

The study tries to find the correlation between precious metals such as the daily price of Gold & Silver per gram with the daily closing price of NSE & BSE. Therefore the sub hypothesis H1<sub>0A</sub> to H1<sub>0D</sub> has been listed below:

**H1<sub>0A</sub>**: There is no correlation between daily movement of NSE & daily gold price per gram

**H1<sub>AA</sub>**: There is a correlation between daily movement of NSE & daily gold price per gram

**H1<sub>0B</sub>**: There is no correlation between daily movement of BSE & daily Gold price per gram

**H1<sub>AB</sub>**: There is a correlation between daily movement of BSE & daily Gold price per gram

**H1<sub>0C</sub>**: There is no correlation between daily movement of NSE & daily Silver price per gram

**H1<sub>AC</sub>**: There is a correlation between daily movement of NSE & daily Silver price per gram

**H1<sub>0D</sub>**: There is no correlation between daily movement of BSE & daily Silver price per gram

**H1<sub>AD</sub>**: There is a correlation between daily movement of BSE & daily Silver price per gram.

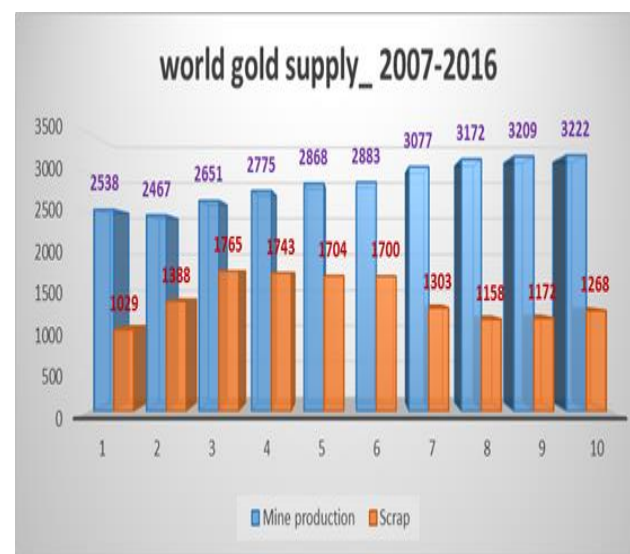
## Data Analysis & Interpretation

The objectives and the analysis will direct the landscape of this present study but before that a comparative overview of demand, supply, category of usage, producing countries etc. for Gold & Silver over the period of study time are portrayed below in a tabular & graphical form. From the Indian security market perspective yearly number of trades, capitalization, number of company listed, turnover etc. were also shown in a tabular & graphical form.

**Table 1: World Gold Supply (tons)**

| Year | Mine production | Scrap | Net Hedging supply | Total supply |
|------|-----------------|-------|--------------------|--------------|
| 2007 | 2538            | 1029  | -432               | 3134         |
| 2008 | 2467            | 1388  | -357               | 3497         |
| 2009 | 2651            | 1765  | -234               | 4182         |
| 2010 | 2775            | 1743  | -106               | 4411         |
| 2011 | 2868            | 1704  | 18                 | 4590         |
| 2012 | 2883            | 1700  | -40                | 4544         |
| 2013 | 3077            | 1303  | -39                | 4341         |
| 2014 | 3172            | 1158  | 108                | 4438         |
| 2015 | 3209            | 1172  | 21                 | 4401         |
| 2016 | 3222            | 1268  | 21                 | 4511         |

source: GFMS GOLD SURVEY 2017, THOMSON REUTERS



**Graph No. 1: World Gold Supply (tons)**

Table no 1 shows total supply of gold in tonnes for the time period ranging from 2007 to 2016. It shows that mine production and total supply both increases marginally in every year.

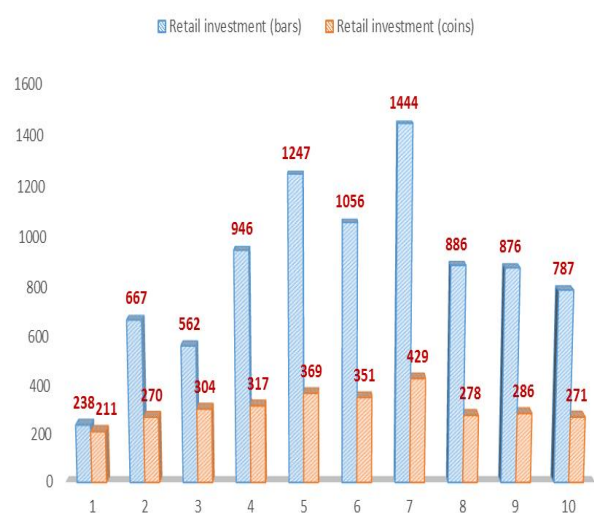
**Table No 2: World Gold Demand (tonnes)**

| Year | Jewellery | Industrial Fabrication | Net official sector | Retail investment (bars) | Retail investment (coins) | Total physical demand |
|------|-----------|------------------------|---------------------|--------------------------|---------------------------|-----------------------|
| 2007 | 2474      | 492                    | -484                | 238                      | 211                       | 2930                  |
| 2008 | 2355      | 479                    | -235                | 667                      | 270                       | 3536                  |
| 2009 | 1866      | 426                    | -34                 | 562                      | 304                       | 3125                  |
| 2010 | 2083      | 480                    | 77                  | 946                      | 317                       | 3903                  |
| 2011 | 2091      | 471                    | 457                 | 1247                     | 369                       | 4635                  |
| 2012 | 2061      | 429                    | 544                 | 1056                     | 351                       | 4441                  |
| 2013 | 2610      | 421                    | 409                 | 1444                     | 429                       | 5314                  |
| 2014 | 2469      | 403                    | 466                 | 886                      | 278                       | 4501                  |
| 2015 | 2395      | 365                    | 436                 | 876                      | 286                       | 4357                  |
| 2016 | 1891      | 354                    | 257                 | 787                      | 271                       | 3559                  |

source: GFMS GOLD SURVEY 2017, THOMSON REUTERS

**Graph no. 2: World gold demand for Jewellery\_2007-2016**

In the above table demand of gold for jewelry making, industrial fabrication, retail investment in Gold bar, retail investment in coins in total physical demand have shown. Total demand of physical gold was highest in year of 2013 within the study period.

**Graph No 3: World gold demand for industrial fabrication\_2007-2016****GRAPH NO 4:WORLD GOLD DEMAND FOR RETAIL INVESTMENT\_2006-2017**

In graph no. 3 & 4 World gold demand for industrial fabrication and retail investment over the period of ten years have shown. Retail investment consist of investment in bars and coins. 2013 is the year where maximum was the demand for gold in jewelry making as well as retail investment sector.

**Table No. 3: Physical Bar investment in Tonnes in India**

| Year | Physical Bar investment in Tonnes in India |
|------|--------------------------------------------|
| 2007 | 148.6                                      |
| 2008 | 159.9                                      |
| 2009 | 117.5                                      |
| 2010 | 266.3                                      |
| 2011 | 288                                        |
| 2012 | 205.9                                      |
| 2013 | 265.8                                      |
| 2014 | 109.8                                      |
| 2015 | 124.2                                      |
| 2016 | 87.6                                       |

**GRAPH NO. 5: PHYSICAL BAR INVESTMENT IN TONNES IN INDIA 2007-2016**

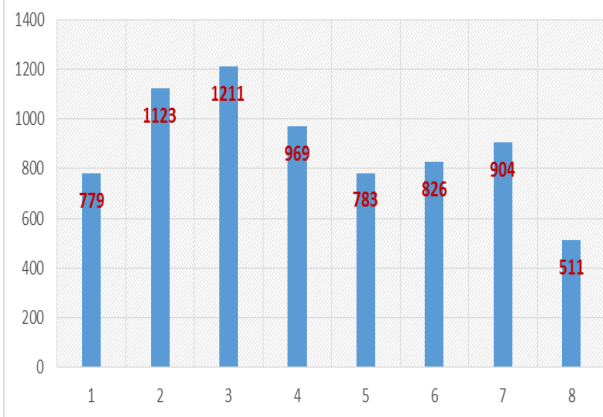
The above table and graph represents physical bar investment in India for the year ranging 2006-17.

**Table No. 4: Gross Indian Bullion Imports (Tonnes)**

| Year | *Gross Indian Bullion Imports (Tonnes) | Local Price (Rs./10g) |
|------|----------------------------------------|-----------------------|
| 2009 | 779                                    | 1123                  |
| 2010 | 15310                                  | 18386                 |
| 2011 | 1211                                   | 24003                 |
| 2012 | 969                                    | 29730                 |
| 2013 | 783                                    | 29310                 |
| 2014 | 826                                    | 28278                 |
| 2015 | 904                                    | 26488                 |
| 2016 | 511                                    | 29395                 |

\*including duty paid, duty free & fine gold from Dore

Graph No. 6: \*Gross Indian Bullion Imports (Tonnes)\_2009-2016



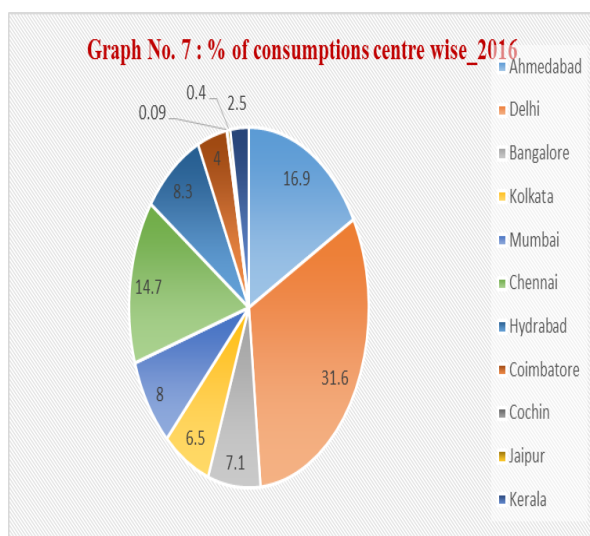
The above mentioned table and graph describes gross Indian bullion imports for the period 2009 to 2016.

**Table no. 5:** Statistics of regional Gold delivery centers

Statistics of regional Gold delivery centers\_2016

| Serial No. | Regional Centers | Delivery | Consumption % |
|------------|------------------|----------|---------------|
| 1          | Ahmedabad        |          | 16.9          |
| 2          | Delhi            |          | 31.6          |
| 3          | Bangalore        |          | 7.1           |
| 4          | Kolkata          |          | 6.5           |
| 5          | Mumbai           |          | 8             |
| 6          | Chennai          |          | 14.7          |
| 7          | Hyderabad        |          | 8.3           |
| 8          | Coimbatore       |          | 4             |
| 9          | Cochin           |          | 0.09          |
| 10         | Jaipur           |          | 0.4           |
| 11         | Kerala           |          | 2.5           |

Graph No. 7: % of consumptions centre wise\_2016

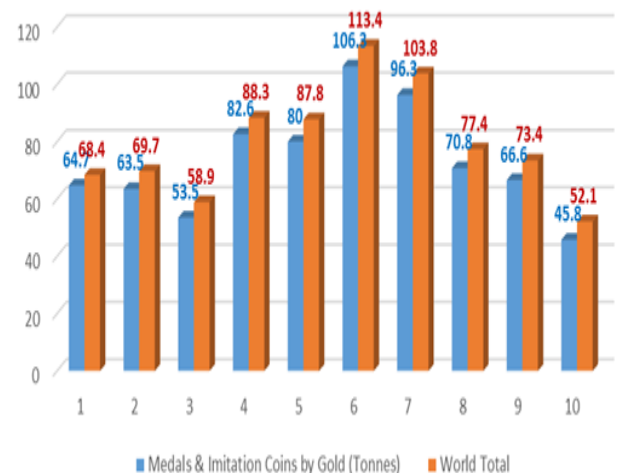


The above table and graph shows statistics of regional Gold delivery centers across Indian cities and center wise the percentage of consumption for the year 2016.

**Table No.6:** Medals & Imitation Coins by Gold

| Year | Medals & Imitation Coins by Gold (Tonnes) | World Total |
|------|-------------------------------------------|-------------|
| 2007 | 64.7                                      | 68.4        |
| 2008 | 63.5                                      | 69.7        |
| 2009 | 53.5                                      | 58.9        |
| 2010 | 82.6                                      | 88.3        |
| 2011 | 80                                        | 87.8        |
| 2012 | 106.3                                     | 113.4       |
| 2013 | 96.3                                      | 103.8       |
| 2014 | 70.8                                      | 77.4        |
| 2015 | 66.6                                      | 73.4        |
| 2016 | 45.8                                      | 52.1        |

Graph No 8: Medals &amp; Imitation Coins by Gold (Tonnes)\_2007-2016

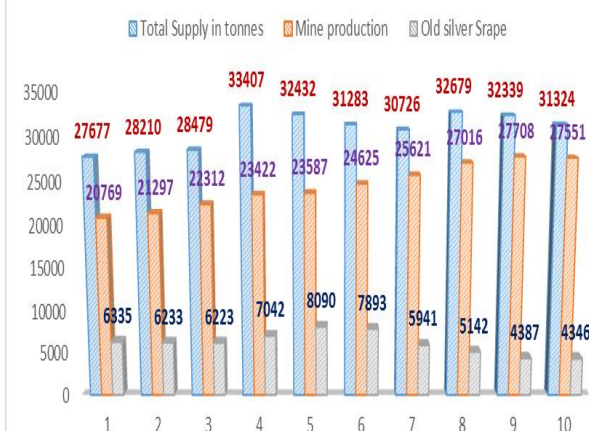


The above table and graph shows statistics for Medals & Imitation Coins by Gold over the period of ten years.

**Table No. 7: World silver supply\_2007-2016**

| Year | Total Supply in tonnes | Mine production | Old silver Scrape |
|------|------------------------|-----------------|-------------------|
| 2007 | 27677                  | 20769           | 6335              |
| 2008 | 28210                  | 21297           | 6233              |
| 2009 | 28479                  | 22312           | 6223              |
| 2010 | 33407                  | 23422           | 7042              |
| 2011 | 32432                  | 23587           | 8090              |
| 2012 | 31283                  | 24625           | 7893              |
| 2013 | 30726                  | 25621           | 5941              |
| 2014 | 32679                  | 27016           | 5142              |
| 2015 | 32339                  | 27708           | 4387              |
| 2016 | 31324                  | 27551           | 4346              |

The above table shows total world Silver supply inclusive of mine production and old silver scrape for the time period of 2007-2016. It is also increasing over the period of time.

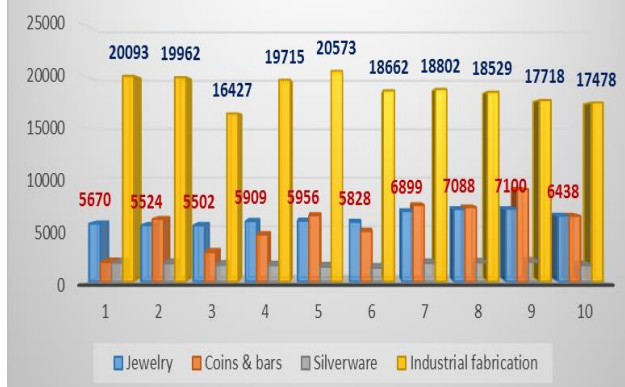
**GRAPH NO.9: WORLD SILVER SUPPLY\_2007-2016**

The tabular value has been represented graphically to portray the total silver supply including mine production in the world for the period of 2007 to 2016.

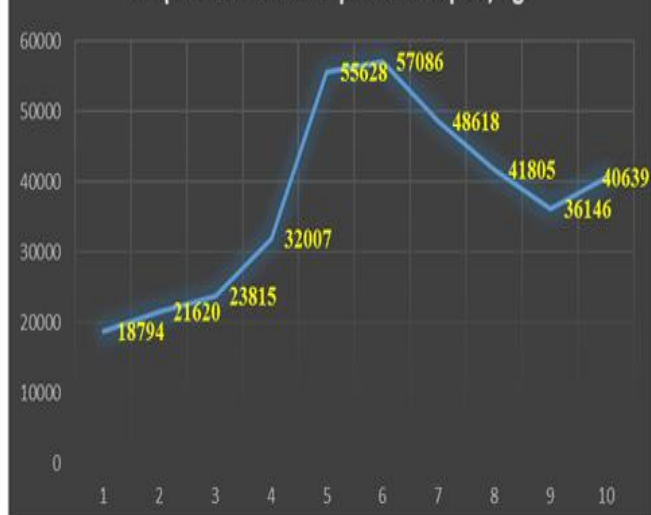
**Table no. 8: World silver demand in tonnes \_2007-2016**

| Year | Jewelry | Coins & bars | Silverware | Industrial fabrication |
|------|---------|--------------|------------|------------------------|
| 2007 | 5670    | 1917         | 1873       | 20093                  |
| 2008 | 5524    | 6116         | 1818       | 19962                  |
| 2009 | 5502    | 2890         | 1654       | 16427                  |
| 2010 | 5909    | 4594         | 1606       | 19715                  |
| 2011 | 5956    | 6483         | 1467       | 20573                  |
| 2012 | 5828    | 4950         | 1359       | 18662                  |
| 2013 | 6899    | 7485         | 1830       | 18802                  |
| 2014 | 7088    | 7279         | 1887       | 18529                  |
| 2015 | 7100    | 9042         | 1956       | 17718                  |
| 2016 | 6438    | 6431         | 1621       | 17478                  |

In table no 8, World's total silver demand for the period ranging from 2007 to the year 2016 in the form of jewelry, coins & bars, silverware and industrial fabrication have been represented in a tabular format. Below in graph no 10, it was presented in a graphical form.

**Graph no 10: World Silver Demand 2007-2016****Table no. 9: Silver price\_ India**

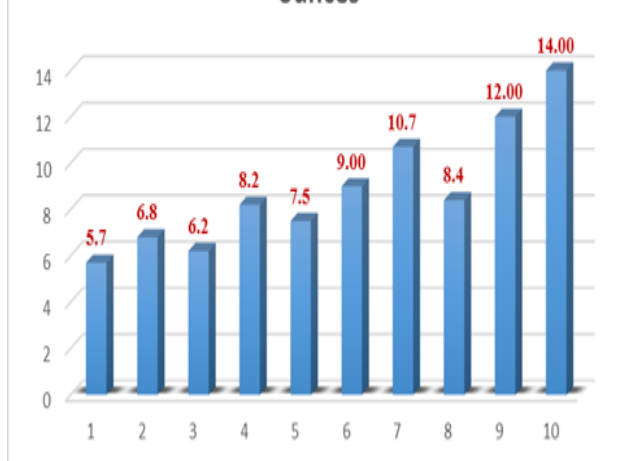
| Year | Rupee/Kg. |
|------|-----------|
| 2007 | 18794     |
| 2008 | 21620     |
| 2009 | 23815     |
| 2010 | 32007     |
| 2011 | 55628     |
| 2012 | 57086     |
| 2013 | 48618     |
| 2014 | 41805     |
| 2015 | 36146     |
| 2016 | 40639     |

**Graph no. 11: Silver price in Rupee/Kg.**

In the above mentioned table and graph silver price per kg in Indian market for the year 2007 to 2016 was depicted.

**Table No. 10: Silver mine production in India**

| Year | Production in million ounces |
|------|------------------------------|
| 2007 | 5.7                          |
| 2008 | 6.8                          |
| 2009 | 6.2                          |
| 2010 | 8.2                          |
| 2011 | 7.5                          |
| 2012 | 9.00                         |
| 2013 | 10.7                         |
| 2014 | 8.4                          |
| 2015 | 12.00                        |
| 2016 | 14.00                        |

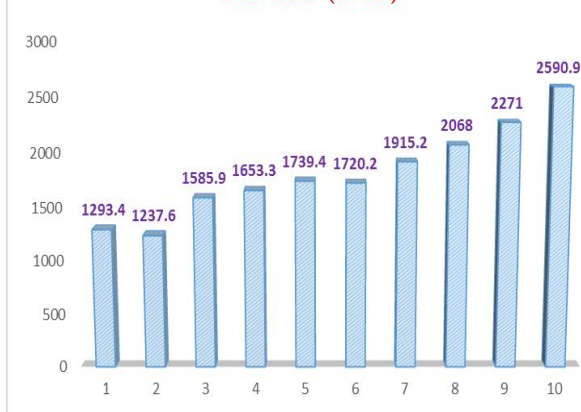
**Graph No 12: Silver Production in million ounces**

Silver mine production in million ounce were depicted in the above tabular and graphical representation for the period of ten years.

The below mentioned table no. 11 & graph no. 13 is all about identifiable silver bullion stock above ground for the period ranging 2007-to 2016. The graph clearly shows that the amount of silver bullion stock increased by the year passes away.

**Table no 11: Identifiable above ground silver bullion stocks**

| Year | Total (Moz) |
|------|-------------|
| 2007 | 1293.4      |
| 2008 | 1237.6      |
| 2009 | 1585.9      |
| 2010 | 1653.3      |
| 2011 | 1739.4      |
| 2012 | 1720.2      |
| 2013 | 1915.2      |
| 2014 | 2068        |
| 2015 | 2271        |
| 2016 | 2590.9      |

**GRAPH NO 13: TOTAL IDENTIFIABLE ABOVE GROUND SILVER BULLION STOCKS (MOZ)**

The below mentioned **table no. 12**, shows the world's largest silver producing country based on ranks.

**World's largest Silver producing Countries in recent times (FIRST 10 COUNTRIES)**

| COUNTRIES     | PRODUCTION IN METRIC TONNES |
|---------------|-----------------------------|
| Mexico        | 5400 metric tonnes          |
| China         | 4100 metric tonnes          |
| Peru          | 3800 metric tonnes          |
| Australia     | 1700 metric tonnes          |
| Chile         | 1600 metric tonnes          |
| Russia        | 1500 metric tonnes          |
| Bolivia       | 1300 metric tonnes          |
| Poland        | 1300 metric tonnes          |
| United states | 1100 metric tonnes          |
| Canada        | 500 metric tonnes           |

**Correlation** is a **statistical** technique that can show whether and how strongly pairs of variables are related. To analyse the second objective, the present study used MS-Excel version 13, moreover the daily closing prices of the four data series has been analyzed to examine how each day's price movements of NSE, BSE and Gold, Silver were correlated in the period of study. The Correlation analysis has given certain results as below

|                         | Gold Price/gram | Silver Price/gram | Daily Closing price_NSE | Daily Closing price_BSE |
|-------------------------|-----------------|-------------------|-------------------------|-------------------------|
| Gold Price/gram         | 1               |                   |                         |                         |
| Silver Price/gram       | 0.864040255     | 1                 |                         |                         |
| Daily Closing price_NSE | 0.585520529     | 0.280843475       | 1                       |                         |
| Daily Closing price_BSE | 0.57247809      | 0.274944787       | 0.994858129             | 1                       |

A mathematical indicator that measures the frequency of the association between the relative motions of the two variables is the correlation coefficient. The spectrum of values for the coefficient of correlation is 1.0 on the basis of an absolute value or between -1.0 and 1.0.0. The interaction between four data sets was explored in a certain way in this analysis.

| VARIABLES                                                   | CORRELATION COEFFICIENT |
|-------------------------------------------------------------|-------------------------|
| Gold price per day per gram & Silver price per day per gram | 0.864040255             |
| Gold price per day per gram & NSE per day closing           | 0.585520529             |
| Gold price per day per gram & BSE per day closing           | 0.57247809              |
| Silver price per day per gram & NSE per day closing         | 0.280843475             |
| Silver price per day per gram & BSE per day closing         | 0.274944787             |
| Daily Closing Price of NSE & BSE                            | 0.994858129             |

The above correlation matrix shows that Gold price per gram per day and Silver price per gram per day is 0.864040255 that suggests that the Gold & Silver prices has a strong positive correlation for past 10 years. Similarly gold price per day per gram is having a positive correlation with daily closing price of NSE (0.585520529). Per day closing price of BSE is also having a positive correlation (0.57247809) with Gold price per day per gram. Silver price per day per gram is also having a positive correlation (0.280843475) with NSE daily closing price and BSE daily closing price (0.274944787). Again Daily closing price of NSE & BSE has a strong positive correlation (0.994858129) for past 10 years ranging from 2007 to 2016.

Table No- 13

#### Hypothesis Testing Results

| Hypothesis       | Conditions                                                                          | Result                                  |
|------------------|-------------------------------------------------------------------------------------|-----------------------------------------|
| H1 <sub>0A</sub> | There is no correlation between daily movement of NSE & daily Gold price per gram   | Null rejected, and Alternative accepted |
| H1 <sub>AA</sub> | There is a correlation between daily movement of NSE & daily Gold price per gram    |                                         |
| H1 <sub>0B</sub> | There is no correlation between daily movement of BSE & daily Gold price per gram   | Null rejected, and Alternative accepted |
| H1 <sub>AB</sub> | There is a correlation between daily movement of BSE & daily Gold price per gram    |                                         |
| H1 <sub>0C</sub> | There is no correlation between daily movement of NSE & daily Silver price per gram | Null rejected, and Alternative accepted |
| H1 <sub>AC</sub> | There is a correlation between daily movement of NSE & daily Silver price per gram  |                                         |
| H1 <sub>0D</sub> | There is no correlation between daily movement of BSE & daily Silver price per gram | Null rejected, and Alternative accepted |
| H1 <sub>AD</sub> | There is a correlation between daily movement of BSE & daily Silver price per gram  |                                         |

## Conclusion

National Stock Exchange and Bombay Stock Exchange both are considered as the indicators of the Indian capital market developments. The current study was attempted to explore the connection between value developments with regard to price movements of valuable metal, for example, Gold and silver with the daily closing index of NSE and BSE. Gold and Silver in valuable metal section were played a persuasive just as significant segment in different parts of

reserve funds, speculation, investment and business. The examination makes a degree for the speculators to see how the securities exchange return and the return out of interest in valuable metals are inter related. The analyses proves that used data series of this study have got a strong correlation among them in this examination period. The attempt is for taking better and safe investment choice and designating the investible assets in various financial avenues dependent on their price movement pattern, conduct and unpredictability. A few past studies likewise uphold that gold may not perform well as a place of refuge during the monetary emergency time frame because of bi directional reliance among gold and stock return however gold might be utilized as a support against securities exchange returns and instability in a few monetary financial conditions.

## References

- [1] **Ahmed, S. (2008).** Aggregate Economic Variables and Stock Markets in India. *International Research Journal of Finance and Economics*, 1, 141-164.
- [2] **Bhunja, A., & Mukhuti, S., (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*/2013, 2(2), 35-43
- [3] **Dani, S., & Ambavale, R. (2015),** A Study of Investor's Preference and Risk & Return Analysis of Precious Metals (Gold and Silver in India). *International Journal of Advanced Research in Management and Social Sciences*, February 2015, 4(2), 51-60
- [4] **David, H., Paul, D., & Robert, F. (2006).** Do Precious Metals Shine? An Investment Perspective. *Financial Analysts Journal*, 62 (2), 98.
- [5] **Davidson, S., Faff, R., & Hillier, D. (2003).** Gold Factor Exposures in International Asset Pricing. *Journal of International Financial Markets, Institutions and Money*, 13 (3), 271-289
- [6] **Erb, C., & Harvey, C. (2006).** Conditional Return Correlations between Commodity Futures and Traditional Assets. *Financial Analysts Journal*, 62 (2) 2006, 69-97
- [7] **Hull, J., & White, A. (2004).** Conditional Correlation and Volatility in Commodity Futures and Traditional Asset Markets. *Journal of Derivatives* 2, 8-23.

- [8] **Kaliyamoorthy, S., & Parithi, S. (2012).** Relationship of Gold Market and Stock Market: An Analysis. *International Journal of Business and Management Tomorrow*, 2(6), 1-16
- [9] **Kumar, A. (2011).** An Empirical Analysis of causal relationship between stock market and macroeconomic variables in India. *International Journal of computer Science and Management Studies* 11(1), 8-14
- [10] **Naresh Chandra Sahu, Deepinder H. Dhiman. (2010).** Correlation and Causality between Stock Market and Macro Economic Variables in India: An Empirical Study. *International Conference on E-business, Management and Economics IPEDR*, Vol.3

#### Websites

- [1] <https://papers.ssrn.com/>
- [2] <http://www.spdrgoldshares.com/>
- [3] [https://wiki2.org/en/Alternative\\_investment](https://wiki2.org/en/Alternative_investment)
- [4] <https://en.wikipedia.org/>