

# INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, ECONOMICS & MANAGEMENT

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**A STUDY ON POTENTIALITY OF SILVER AS AN INVESTMENT ASSET**

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**ABSTRACT**

*In the last few years the countries around the world are facing burden of global economic slowdown and the same is indicated in their slower GDP growth and falling stock market prices. Even under these precarious conditions the commodity markets are experiencing considerable growth and are offering good returns to the investors. Among all commodities, though considered as highly volatile, silver is a very attractive commodity to invest. In contrast to the common belief, silver is relatively a safe investment in the long run and assures significantly high returns to the investors. The present study aims to prove potentiality of silver as an investment asset using simple risk, return analysis and other basic fundamentals. The results of the analysis prove that silver is a good asset for investment vis-à-vis gold and stock markets and is a consistent performer under different economic conditions.*

**KEYWORDS**

Risk, Return, Gold-Silver Ratio, Industrial Demand.

**INTRODUCTION**

Precious metals remain the most undervalued of all the asset classes. Precious metals, and particularly silver, remain the most undervalued of all the commodities. Silver is even more undervalued than gold and is undervalued when compared to other strategic commodities such as oil and uranium. Silver's dual role as both a precious metal for investment as well as an industrial metal for commercial use makes silver futures and options contracts invaluable financial instruments worldwide. Affected by mine production, industrial demand, and the general health of the world economy, the price of silver can be volatile beyond what many consider acceptable risk. There is less silver bullion inventory in the world than there is gold bullion inventory; around one billion ounces of silver versus three billion ounces of gold. Common sense would suggest that an item more rare than another similar item would reflect that relative rarity in price. While silver has vastly outperformed gold over any reasonable time period over the past ten years, the rarity of silver is vastly underappreciated. In spite of its splendid performance in last one year investment analysts look at silver with more skepticism and investors avoid it from their investment decisions. The present paper aims to highlight the strengths of silver as an investment asset and reasons why it should be a part of one's investment portfolio. The discussions begins with analysis of various methods available for investment in silver, factors contributing to price variation silver, test of efficiency of futures trading in silver contracts in Indian context and ends with analyses the performance of silver as an investment avenue.

**FACTORS AFFECTING SILVER AS INVESTMENT ASSET**

Major set of factors affecting the prices of Silver are

**1. RARITY**

Rarity is a very tricky factor that goes into play when evaluating prices of objects. Like gold, the role of silver historically was as a currency. And similar to gold it was removed from its role as a currency and primarily became a commodity. More recently silver is trying to regain its role as a currency. However, silver's role as a commodity was far more successful than gold's, as it has a lot more industrial uses than gold. As a result, silver is getting consumed at a faster rate than it is being mined, and therefore it is becoming rarer. Should this trend continue, silver will one day transition from precious metal to rare earth metal. This will have a significant impact on its price. Failing that, silver's price will be determined by how it stacks up against gold as a currency, and whether both are required or not.

**2. INDUSTRIAL, COMMERCIAL AND CONSUMER DEMAND**

Industrial applications of silver are limitless. Silver is a rare metal that is used in various industrial areas beyond jewelry making. In recent past the growing demand from the industry has expanded the role of silver in the global silver markets. Unique technical proficiency of silver makes it suitable for a wide array of applications, both in industry and healthcare, but also limits the ability of users to switch to other low cost alternatives. Most common uses of silver include manufacturing of Radio Frequency Identification, Super capacitors, Water purification, medical uses, wood preservatives, batteries, auto catalysts, super conductors, photovoltaic's, brazing alloys and solders, ethylene oxide etc. Silver is expected to continue its bullish run in industrial demand and the total demand is expected to increase to a record high of 665.9 Million Ounces in 2015 from present 487.4 million ounces.

**3. DECLINING SUPPLY OF SILVER**

The supply of silver is inelastic. Silver production will not ramp up significantly if the silver price goes up. Supply didn't increase in the 1970's when silver rose 35 fold in price - from \$1.40/oz in 1971 to a high of nearly \$50/oz in 1980. Importantly, silver is a byproduct metal and some 80% of mined silver is a byproduct of base metals. Higher prices for silver will not cause copper, nickel, zinc, lead or other base metal miners to increase their production. In the event of a global deflationary slowdown demand for base metals would likely fall thus further decreasing the supply of silver.

There are only a handful of pure silver mines remaining. This inflexible supply means that we cannot expect significant mine supply to depress the price after silver rises in price. It is extremely rare to find a good, service, investment or commodity that is price inelastic in both supply and demand. This is another powerfully bullish aspect unique to silver.

#### 4. EASE OF INVESTMENT

Like any other precious metals, silver is also used as an investment. Even in historical times silver was considered as one of the forms of money and store of value. In spite of silver losing its role of money since the end of silver standard by many developed countries, even today investors have faith in silver as a worthy investment asset. Different modes available for investors to invest in silver which makes it relatively easy to invest in them. Most important forms of investments in silver are Bullion bars, silver coins or Silver round, Silver exchange-traded products (ETPs), Silver certificates, Silver accounts offered by banks, Silver futures and options at commodity exchanges, Contract for Differences (CFD) and Shares in Silver mining companies.

#### 5. PRICE OF GOLD

Despite all of silver's fundamental drivers, gold is considered as the primary driver for silver prices. In a bullish environment, speculators tend to be interested in most of the precious metals. So it leads to an increase in the investment demand for silver. Silver having a comparatively smaller market as compared to gold, it does not take much time to drive the prices higher. At the same time when the environment is bearish, investors lose confidence in silver very fast and cause the prices to fall. Analysis of the trend of the gold-silver ratio clearly indicates that silver has a tendency to follow the prices of gold. During the subprime crisis when the view was bearish we clearly see the trend that during the days when the prices of gold increased silver also increased. However, it would pace the gain of gold at best. During the days when the gold prices decreased we see that the silver prices plummeted by an even greater margin. Similarly akin to other precious metals, Silver could be used as a hedge against financial stresses like inflation, devaluation, economic slowdowns.

#### 6. LARGE TRADERS AND INVESTORS

This is a crucial factor that many investors tend to overlook when it comes to assessing silver value. Silver market is a much smaller market than gold. Large investing funds or groups can inadvertently affect silver value in the upstream or downstream deciding to purchase significant silver assets or, on the contrary, trying to sell them off. History also gives testimony to such incidents hunt brothers (1973), warren buffet (1997) etc. driving silver prices substantially which may not be in the benefit of marginal investors.

#### 7. US DOLLAR AND OIL PRICES

In a world saturated in fiat currencies, many investors have turned to silver and gold for protection. That's because the precious metals are a natural hedge against devaluing currencies. Historically oil has shown a strong correlation with gold. Gold and silver also seem to have a stable relationship. Based on this it might be logical to conclude that oil and silver should also have a stable relationship. Moreover silver and oil should have greater correlation than silver and gold as they are industrial elements and the factors affecting their demands would be common. However, contrary to this silver is not a perishable commodity whereas oil is. Since the 1960's silver and oil have had a 0.7 positive correlation, this is quite strong.

#### 8. PERFORMANCE OF STOCK MARKETS

There appears some interplay between the fortunes of the stock markets and capital flowing into silver. Silver's appeal as an alternative asset is definitely higher when traditional investments are not faring well. Yet, the relationship between silver and the stock indices are far complex than merely a direct inverse or even parallel relationship. Running regression across top indices such as S&P 500, Dow Jones, BSE and NSE we see a common pattern emerging. The correlation between silver and the stock markets was low pre-recession. But we see that during the subprime crisis and post it, silver has been highly correlated with the stock markets. This shows the returning demand for investment in silver with the growing confidence in the markets.

### OBJECTIVE

- To analyse the efficiency of Silver as an investment asset

### METHODOLOGY

The present study is an analytical study based on secondary data. Data consisting of monthly closing prices of three investments, namely, silver, gold and BSE Sensex is analysed for a period of 18 years. Selection of assets for comparison is based on the premise that gold is the most sought after good for investment in commodity markets and BSE Sensex is considered as a proxy or benchmark for performance of equities in India. To study the efficiency of silver over other asset classes the simple techniques of risk and return analysis are performed. Analysis of its risk done using simple average of returns and risk was measured using Standard Deviation (SD). Further, the study measures the time varying performance of silver against selected assets by breaking the period under study into 3 different time parts from 1995-2000, 2001-2006, and 2007-2012. In addition price ratio between silver and gold, trends in demand for silver fabrication and trends in silver investments is also measured.

#### RETURN AND RISK ANALYSIS

In order to assess the efficiency of silver as an investible asset we have compared its performance against Gold and Sensex (Volatility index of Bombay Stock Exchange). For the analysis monthly data for a period of 18 years is collected and analysed using simple risk and return parameters. Here Returns represent simple average return computed using the formula Mean Returns

$$\bar{X} = \frac{\sum X_i}{N}$$

Where

( $\bar{X}$ ) = Mean Return on Asset

$X_i$  = Return on asset for i'th period

i = time of return

N = Number of Values in the data

Similarly the volatility in returns or risk is being computed using Standard Deviation (SD)

$$SD = \sqrt{\frac{\sum (X_i - \bar{X})^2}{N}}$$

Where

SD = Standard Deviation of asset returns

( $\bar{X}$ ) = Mean Return on Asset

$X_i$  = Return on asset for i'th period

i = time of return

### ANALYSIS AND INTERPRETATION

#### 1. RISK AND RETURN ANALYSIS

Risk and return analysis of silver, gold and Sensex indicates that silver has outperformed others during the period of study with an average annual returns of 16.65% (Table 1). Further, the analysis also indicated that silver has also been more consistent and well ahead of other assets under different time periods or economic conditions. Even during non-recessionary conditions silver was found delivering higher returns gold and Sensex. On risk parameter, though gold had a lower risk, silver outperformed it in terms of return. Similarly, though Sensex indicates better performance during the second period (Jan-2001 to Dec-2006), it has underperformed in other periods and consistently carried a very high risk in terms of volatility (Chart 1 and 2).



TABLE 1: RETURNS AND RISK IN SILVER, GOLD AND SENSEX DURING 1995-2012

Time Frame		Mean Return (x)			Risk (SD)		
From	To	Silver	Gold	Sensex	Silver	Gold	Sensex
Jan-95	Dec-00	7.38%	1.53%	5.07%	0.15	0.1	0.32
Jan-01	Dec-06	19.31%	14.41%	26.78%	0.18	0.08	0.33
Jan-07	Dec-12	23.26%	22.44%	14.71%	0.32	0.12	0.48
Jan-95	Dec-12	16.65%	12.79%	15.52%	0.23	0.13	0.37

TABLE 2: ANNUALISED RETURNS SILVER, GOLD AND SENSEX DURING 1995-2012

Year	Silver	Gold	Sensex
1995	20%	14%	-14%
1996	-4%	-2%	-1%
1997	31%	-14%	19%
1998	-7%	10%	-16%
1999	9%	-1%	64%
2000	-4%	3%	-21%
2001	-4%	4%	-18%
2002	7%	21%	4%
2003	15%	16%	73%
2004	22%	5%	13%
2005	27%	20%	42%
2006	50%	21%	47%
2007	-5%	13%	47%
2008	-11%	25%	-52%
2009	64%	33%	81%
2010	61%	19%	17%
2011	20%	38%	-25%
2012	11%	7%	20%

CHART 1 : ANNUALISED RETURNS IN SILVER, GOLD AND SENSEX DURING 1995-2012

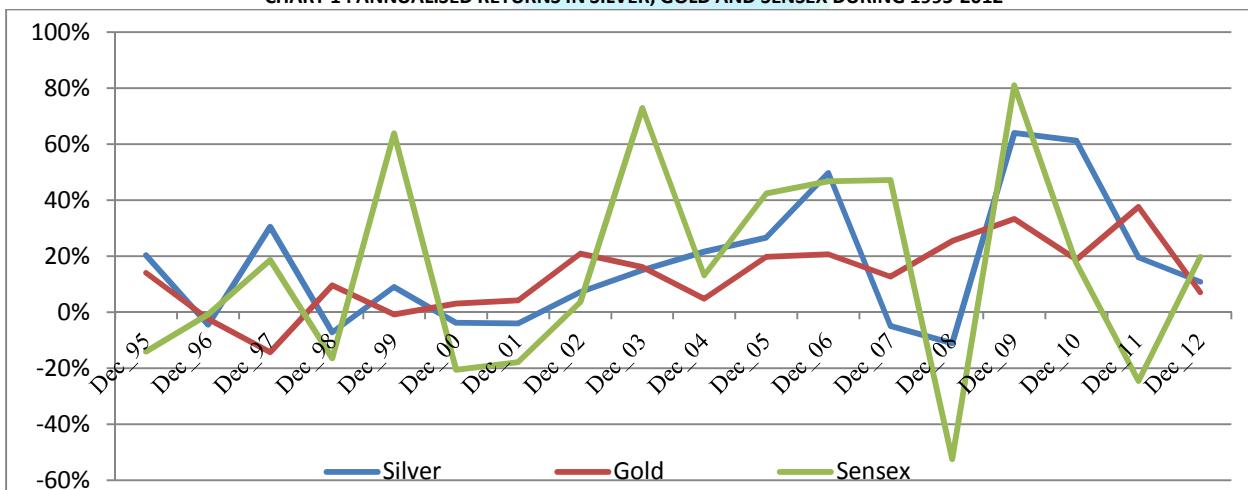
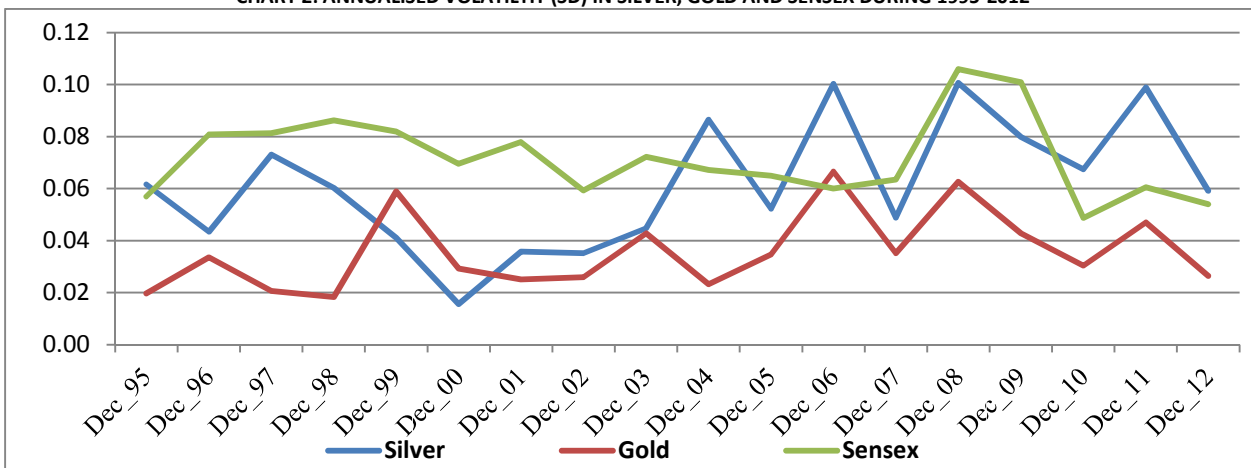


TABLE 3: ANNUALISED VOLATILITY IN SILVER, GOLD AND SENSEX DURING 1995-2012

Year	Silver	Gold	Sensex
1995	0.06	0.02	0.06
1996	0.04	0.03	0.08
1997	0.07	0.02	0.08
1998	0.06	0.02	0.09
1999	0.04	0.06	0.08
2000	0.02	0.03	0.07
2001	0.04	0.03	0.08
2002	0.04	0.03	0.06
2003	0.04	0.04	0.07
2004	0.09	0.02	0.07
2005	0.05	0.03	0.06
2006	0.10	0.07	0.06
2007	0.05	0.04	0.06
2008	0.10	0.06	0.11
2009	0.08	0.04	0.10
2010	0.07	0.03	0.05
2011	0.10	0.05	0.06
2012	0.06	0.03	0.05

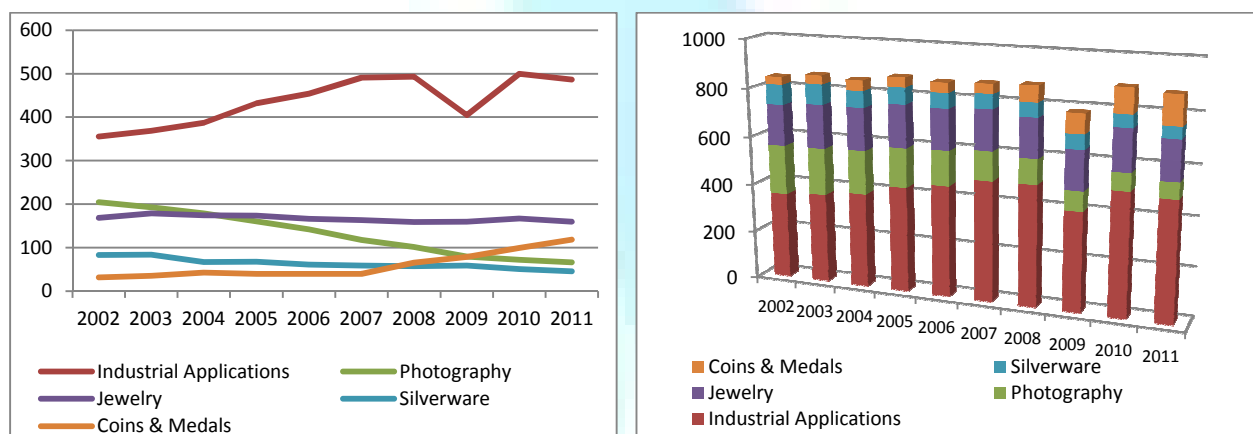
CHART 2: ANNUALISED VOLATILITY (SD) IN SILVER, GOLD AND SENSEX DURING 1995-2012



**2. INDUSTRIAL DEMAND ANALYSIS**

Silver is a very unique metal which acts both as an asset and an industrial commodity. Due to its distinctive physical properties silver enjoys a higher demand from industrial users. Though silver continues good run from Jewelry and coins and medals a large portion of its demand comes from Industrial buyers. Even though there was a temporary decline in industrial demand during 2008-10 (on account of global economic crisis), chart 3 clearly indicates this trend of increasing demand by the industry. The industrial experts also forecast the upward trend to continue for a long period on account of lack of substitutes and continued exploration on new applications of silver in industry.

CHART 3 : GLOBAL SILVER FABRICATION DEMAND (in millions of ounces)

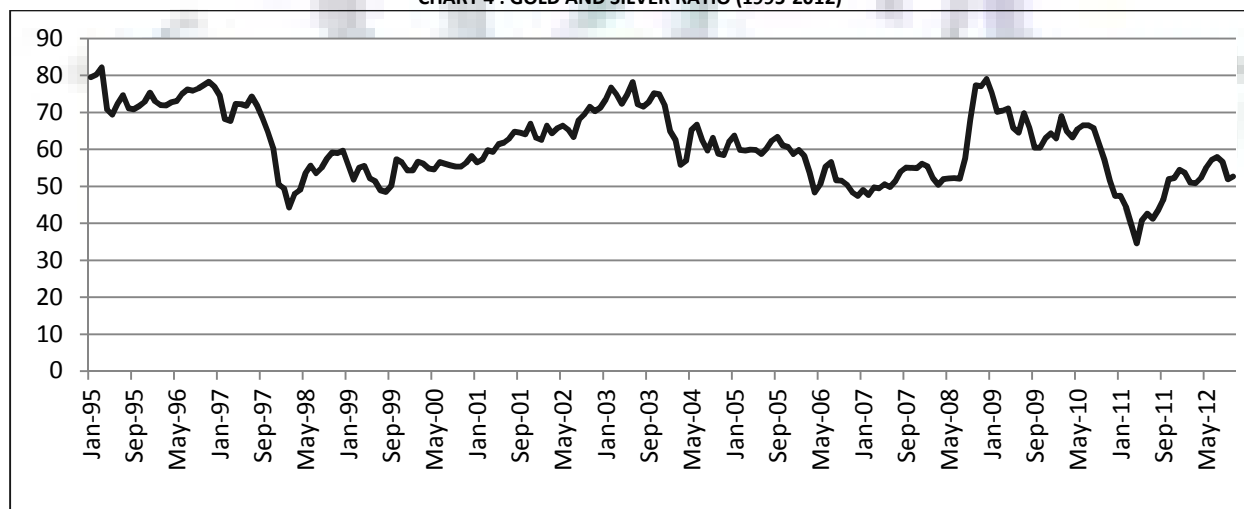


Source : World Silver Survey 2012

**3. GOLD AND SILVER RATIO**

A series of recent announcements of aggressive stimulus programmes by United States, European Union, Bank of Japan joined the Fed, ECB, China, South Korea and others are extremely inflationary and bullish for gold and silver and bearish for the purported safe havens namely the U.S. dollar, long term treasuries, Euro, Yen and Yuan. Silver has been outperforming gold over the past few years as investors are hoarding and buying poor man's gold to hedge against worldwide quantitative easing and pump-priming being implemented by Central Banks around the world to devalue their respective currencies. Chart 4 indicates the trend of silver outperforming gold resulting in narrowing down the differences between them since 2003. The years 2006, 2008 and 2011 saw the ratios reaching new low marks indicating changes in preference towards silver. In 2011 the ratio between gold and silver had touched historical of 33:1. The experts opine that though analysts still placing their confidence in gold - and skepticism in silver, the trend may change in future in the light of economic development happening round the globe and unique advantages of silver over gold discussed in preceding sections.

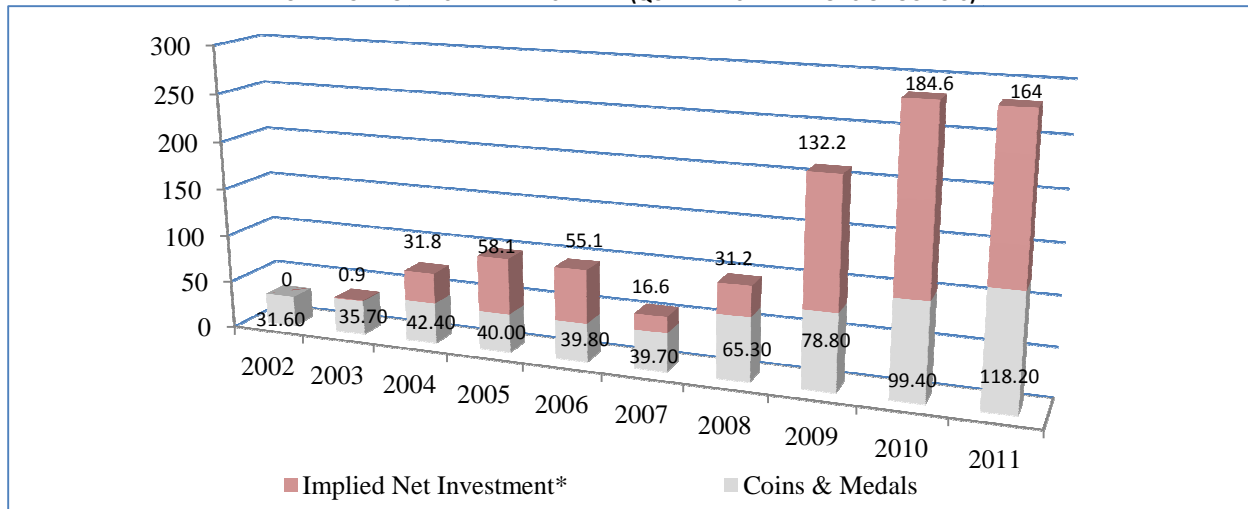
CHART 4 : GOLD AND SILVER RATIO (1995-2012)



**4. WORLD SILVER INVESTMENT**

Since the revival of silver market in 2003 and the subsequent Bull Run it experienced, the demand for silver investment has grown beyond expectations. Though the growth in coins, medals, silverware and jewelry has been moderate other implied net investments in silver has grown beyond leaps and bounds (Chart 5). Here implied net investments physical silver that is held by an ETF and silver held in various commodity warehouses such as COMEX and TOCOM. In other words it indicates the silver kept by investment houses and investors for investments purposes and this also prove the growing potentials of silver as an investment asset.

**CHART 5: WORLD SILVER INVESTMENT (QUANTITIES IN MILLIONS OF OUNCES)**



\* Physical silver held by ETF's, Commodity warehouses

**CONCLUSION**

Analysis of risk and return of Silver, gold and BSE Sensex indicates that though silver suffers from a higher volatility compared to gold but still is a good option for investors as the returns are consistently higher than gold in last 18 years and even its volatility is lesser compared to BSE Sensex, which is the market index for India. Increasing industrial demand, improvement in ratio between gold and silver, availability of good number of variety in silver are the other factors contributing to the substantial rise in demand and price of silver. In addition the advantages of higher liquidity, wider marketability, store of value, psychological satisfaction etc it makes it one of the best assets to invest in. Further, bad outlook in US and Euro zone countries and their impact on trade and industry coupled with relative saturation of gold prices would certainly drive people to this unique commodity known as poor man's gold.

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