Glittering Facts Of Gold

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INTRODUCTION

The domestic Indian gold market is estimated to be more than US$15 billion and is expected to rise significantly in the coming years. The Indian gems and jewellery market is set to cross US$ 26 billion by 2012, on the back of improving lifestyle and availability of skilled labour, as per a report *'Indian Gems And Jewellery Market - Future Prospects To 2011'*, by RNCOS. United Arab Emirates imported more than 30% of gems and jewelry from India, making it the largest importer from the country. Hong Kong was the second largest importer with 25% followed by United States with 20%. The gem and jewelry industry accounts for more than 10% of India's total commodities exports.

Due to the non availability of a benchmark price, the gold prices in India vary very much from region to region. The festive and the wedding season in the country witnesses a heavy demand for gold. Despite the global economic recession, the gold consumption in the country during these times had not abetted.

GOLD PRICING

Gold's extensive appeal and functionality, including its characteristics as an investment vehicle, are underpinned by the supply and demand dynamics of the gold market. From an economic and financial point of view, movements in the price of gold are both interesting and important. It is often argued that investment in gold is historically associated with fears about rising inflation and/or political risk.

In times of uncertainty, investors turn to Gold as a hedge against unforeseen disasters, since gold is one of the few investments that is not simultaneously an asset and someone else's liability.

Like other precious metals, gold is measured by troy weight and by grams. When it is alloyed with other metals, the term carat or *karat* is used to indicate the amount of gold present, with 24 carats being pure gold and lower ratings proportionally less. The price of gold is determined through trading in the gold and derivatives markets, but a procedure known as the Gold Fixing in London, originating in September 1919, provides a daily benchmark price to the industry. The afternoon fixing was introduced in 1968 to provide a price when US markets are open. Historically, gold coinage was widely used as a currency; when paper money was introduced, it typically was a receipt redeemable for gold coin or bullion. In an economic system known as the gold standard, a certain weight of gold was given the name of a unit of currency.

OBJECTIVES OF THE STUDY

The objectives of this study are :

1. To study about the price movement of gold.

2. To predict the future trend of gold.

RESEARCH METHODOLOGY

Here, the researcher has taken 5 years gold's daily closing price (24 carat) from ncdex.com and through this, the researcher tracks the past behavior of gold.

TOOLS USED

1.Charts& tables	To analyse the past movement of gold and gold returns.
2.Moving average & moving average cross over	To find out the current trend of gold.
3.CAGR	To find out the compounded annual growth rate of gold.
4.Price elasticity of demand and supply	To know about the relationship between the gold price with its demand and supply.
5.Exponential growth rate	To find out the future trend of gold.

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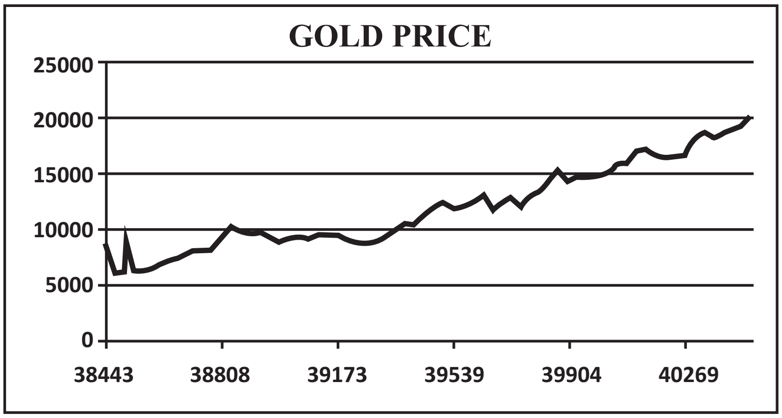
GOLD PRICE MOVEMENT & RETURN ANALYSIS

The five years (Apr'05 to Nov'10) Gold price chart as follows:

Figure 1: Gold Price Per 10 Grams (From April-05 to November-10) For 24 Carat Gold



Source: Secondary Data

And Month wise return of gold price is as follows:

Table 1: Average Monthly Returns From Gold (from April-05 To April-10) For 24 Carat Gold

MONTH &YEAR	GOLD RETURNS IN MONTHLY BASIS (IN PERCENTAGE)
May-05	-2.7
Jun-05	1.7
Jul-05	-1.2
Aug-05	3.2
Sep-05	4.4
Oct-05	5.3
Nov-05	3.8
Dec-05	6.2
Jan-06	4.4
Feb-06	1.4
Mar-06	0.5
Apr-06	11
May-06	11.3
Jun-06	-10.2
Jul-06	6.9
Aug-06	-0.1
Sep-06	-5.6
Oct-06	-3.5
Nov-06	5
Dec-06	-0.2
Jan-07	-1.1
Feb-07	5.3
Mar-07	-1.9
Apr-07	-0.4
May-07	-4.7
Jun-07	-1.9

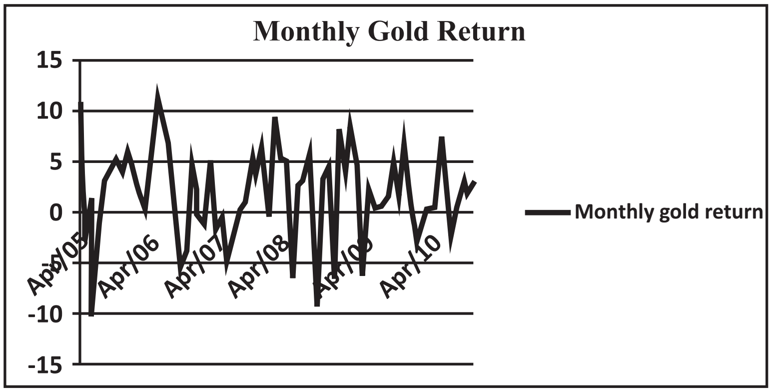
Jul-07	0.3
Aug-07	1
Sep-07	5.7
Oct-07	3.8
Nov-07	6.6
Dec-07	-0.3
Jan-08	9.6
Feb-08	5.2
Mar-08	5.1
Apr-08	-6.5
May-08	2.6
Jun-08	3.1
Jul-08	5.8
Aug-08	-9.3
Sep-08	3.3
Oct-08	4.6
Nov-08	-6.5
Dec-08	8.3
Jan-09	3.9
Feb-09	8.6
Mar-09	4.3
Apr-09	-6.3
May-09	2.2
Jun-09	0.4
Jul-09	0.5
Aug-09	1.6
Sep-09	5.1
Oct-09	1.5
Nov-09	6.9
Dec-09	0.6
Jan-10	-2.7
Feb-10	-1.1
Mar-10	0.4
Apr-10	0.5
May-10	8
Jun-10	4
Jul-10	-2
Aug-10	1
Sep-10	3
Oct-10	2
Nov-10	3

Source: Secondary Data

SUPPLY AND DEMAND ANALYSIS OF GOLD (FROM 2004-2010)

Regardless of whether the economic recovery gathers momentum or tumbles, we believe that western investment demand will remain well underpinned. If the global economy falters, then western investors will continue to look

Figure 2: Gold Price Returns (From April-05 to April-10) For 24 Carat Gold



Source: Secondary Data

towards gold for its diversification and portfolio insurance properties.

Conversely, if the economic recovery becomes more firmly entrenched, then inflation concerns are likely to continue to gain prominence. However, the outlook for non-western demand remains price dependent. While industrial and jewellery demand are expected to strengthen in an environment where economic conditions are improving, this recovery is likely to be relatively gradual.

Conditions on the supply side are also generally price supportive. While the levels of de-hedging activity that prevailed in the second half of 2009& 2010 are unlikely to continue into 2011, the official sector is likely to be a continued source of support for the gold price.

Table 2: Supply And Demand Figures For Gold (From 2004-2009)

Year / Details	2005	2006	2007	2008	2009	2010
Supply(in metric tones)	3859	3556	3471	3513	3890	4100
Demand(in metric tones)	3754	3386	3552	3806	3386	3950
Average Price(in ₹)per 10gms	6569	8966	9352	12210	15216	18301

Source: World Gold Council

Table 3 : Change In Demand And Supply In Percentage

Change in Percentage	Value
Change in supply in %	0.17
Change in Demand in %	0.042
Change in price in %	0.83

Source: Table No:2

1. Price elasticity of Demand = $\dfrac{\text{Change in percentage in Demand}}{\text{Change in percentage in price}}$

PeOD=0.05

Here PeOD is less than1.**So, Demand is inelastic**

2. Price elasticity of Supply = $\dfrac{\text{Change in Percentage of supply}}{\text{Change in percentage in price}}$

PeOS = 0.2

Price elasticity of supply is less than 1. **So, supply is also inelastic with price.**

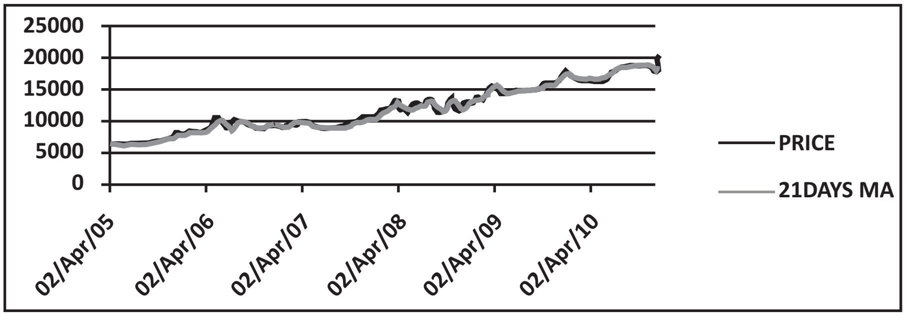
So, Gold price is not affected by its supply and demand (i.e) whatever may be the demand and whatever may be the supply, gold price is not affected by that.

MOVING AVERAGE ANALYSIS FOR GOLD PRICE

A simple, or arithmetic, moving average that is calculated by adding the closing price of the security for a number of time periods and then dividing this total by the number of time periods. Short-term averages respond quickly to changes in the price of the underlying, while long-term averages are slow to react.

Short-term averages (e.g.15-period SMA) act as levels of support when the price experiences a pullback. Support levels become stronger and more significant as the number of time periods used in the calculations increases. Here, the researcher has taken 21 days MA and 200days MA to find out the bullish/Bearish trend in Gold.

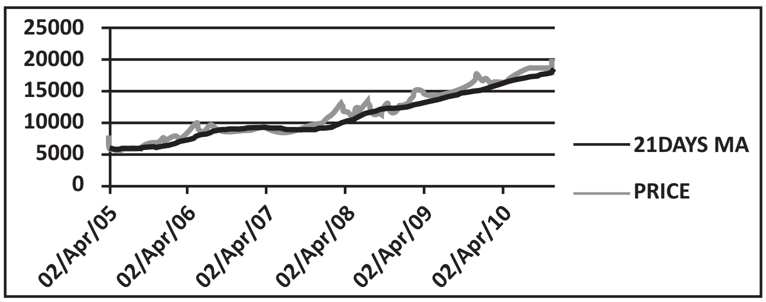
Figure 3: 21 Days Moving Average Analysis



Source: Secondary Data

As per 21days MA analysis, the **trend line shows the uptrend** of gold price, because the price trend line is above the 21 days moving average line and it is confirmed that price level of ₹16078 acts as a good support for the gold price.

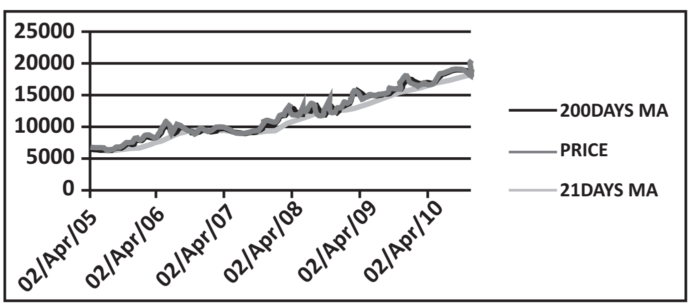
Figure 4 : 200 Days Moving Average Analysis



Source: Secondary Data

As per 200days MA analysis, the **trend line shows the uptrend** of gold price because the price trend line is above the 200 days moving average line and it is confirmed that price level of ₹ 16528 act as a good support for the gold price.
Moving average crossovers are a common way to identify the trend. A crossover occurs when a faster Moving Average (i.e. a shorter period Moving Average) crosses either above a slower Moving Average (i.e. a longer period Moving Average), which is considered a **bullish crossover** or below**,** which is considered a **bearish crossover**.

Figure 5: Moving Average Cross Over Analysis (200 days and 21 Days)



Source: Secondary Data

As per the chart, the short term moving average (21 days MA) is above the long term moving average (200 days MA). So, here also, the bullish trend is confirmed.

COMPOUNDED ANNUAL GROWTH RATE OF GOLD PRICE

The year-over-year growth rate of an investment over a specified period of time has been calculated. The compounded annual growth rate was calculated by taking the nth root of the total percentage growth rate, where n is the number of years in the period being considered. This can be written as follows:

$$\text{CAGR} = \left\{\frac{\text{Ending Value}}{\text{Beginning Value}}\right\}^{\left\{\frac{1}{\text{\# of years}}\right\}} - 1$$

Table 4: Year Wise Price Details Of Gold From 2005-2010

S.no	Year	Avg. yearly gold price
1	2005	6569
2	2006	8966
3	2007	9352
4	2008	12210
5	2009	15216
6	2010(up to Nov'10)	18301

Source: Secondary Data

So, by applying the compounded annual growth rate formula, we can get the result as **18.62%.**Over the course of 6 periods, the investment grew from ₹ 6,569 to ₹ 18301, its compounded annual growth rate, or its overall return, is 18.62%.

FORECASTING FOR GOLD PRICE FOR THE YEAR 2010 & 2011

In economic data, very often, we come across situations in which in the beginning, the growth is very slow, but as the product is accepted, the demand increases by a greater amount each year and finally, as the market becomes more and more developed, the curve continues to grow more and more slowly, approaching an upper limit but not reaching it. Such series are best represented by **growth curves**. The growth curve does not reach a maximum and turn down .This concept of growth curve is very much suitable to the gold price movements. So, this method of exponential growth curve formula is applied for finding out the gold future price projections.

The formula below show different ways of writing the **exponential growth formula**, where b is the **initial value** (or y-intercept) at x=0, r =m-1 is the **growth rate**, and x is the number of **time intervals**.

$$\text{Exponential Growth Formula: } y = b^*m^x = b^*e^{\ln(m)^*x} = b^*(1+r)^x$$

By applying the 5years monthly average gold price in the above mentioned formula, we can get the average projected price for the year 2010 & 2011 as follows:

Table 5 : Predicted Monthly & Yearly Average Gold Price

Year	Average Quarterly Gold price (In ₹)per 10gms		Average yearly price (In ₹)per 10gms
2011	March	21999	23348
	June	23244	
	September	24283	
	December	25456	
2012	March	21895	23426
	June	23174	
	September	24524	
	December	25805	

Source: Secondary Data

FINDINGS OF THE STUDY

☸ The five year price patterns of gold (April'2005 to November 2010) shows a continuous uptrend in gold from ₹ 6230 in April '2005 to ₹ 20500 in November'2010.

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☸ The month wise return data for gold chart shows that in the month of Jan'08,Dec'08,Feb'09 & November'09, gold returns were nearly +10%.

☸ The month wise return data for gold chart shows that in the months of Jun'05,Sep'06,May'07,Apr'08,Aug'08,Nov'08 & Apr'09, gold returns were nearly -10%.

☸ Based on price elasticity of demand and supply theory, the researcher identified that gold price is not affected by its demand and supply.

☸ Based on the Moving average (21 days & 200 days) chart, gold shows an uptrend because the price line is above the trend line and is based on moving average cross over. The researcher confirmed the uptrend of gold price again because the short term moving average line(21DMA) is above the long term Moving average(200days).

☸ The compounded annual growth rate for gold was 18.62% for the year April'2005-November'2010 and as per the exponential growth rate formula, the predicted average yearly rate for gold in 2011 is ₹ 23348 and in 2012 is ₹ 23426.

CONCLUSION

Gold has traditionally been seen as a very conservative investment due to its relative scarcity, but it tends to be a very accurate reflector of short term fear about the economy in general. And based on the above said analysis, it is implied that gold is going to have bull trend in the future. So, people can go for gold investments with a short term stop loss of ₹ 18700 levels to earn a good return.

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