



DEMONETISATION AND GOLD: A STUDY OF INDIA

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Abstract

On November 8, 2016, Prime Minister Narendra Modi announced demonetization of Rs. 500 and Rs.1000 banknotes of the Mahatma Gandhi Series. This is required to tackle counterfeiting Indian banknotes, to effectively nullify black money hoarded in cash and curb funding of terrorism with fake notes. The present study examines the impact of demonetization decision on gold prices in India. It is studied by comparing the data of gold prices for 30 days, 15 days and 7 days before and after November 8, 2016. The data consists of daily prices of gold obtained from World Gold Council database. Paired t-test and wilcoxon signed ranks test are used to study the statistical significance of the results. It has been found that demonetization decision has significantly reduced the price of gold in India. It may be due to the reason that after demonetization announcement, income tax department tightened the noose around the jewellers as people rushed to convert their old currency notes (Rs. 500 and Rs. 1000) into precious metal gold. It resulted in dropping the price of gold in India in short run.

Keywords: Demonetization, Gold price, Prime Minister



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Introduction

Demonetization is a situation where the Central Bank of the country (Reserve Bank in India) withdraws the old currency notes of certain denomination as an official mode of payment. Government of India vide their Notification no. 2652 dated November 8, 2016 have withdrawn the Legal Tender status of Rs 500 and Rs 1,000 denominations of banknotes of the Mahatma Gandhi Series issued by the Reserve Bank of India till November 8, 2016. The same was announced by Prime Minister Narendra Modi at 8.00 pm on November 8, 2016. This is required to tackle counterfeiting Indian banknotes, to effectively nullify black money hoarded in cash and curb funding of terrorism with fake notes. As a result, 86% of currency in circulation in the country was withdrawn (Rowlatt, 2016). This is not the first time that demonetization has been implemented in India as mentioned in an article "Demonetisation" in *The Times of India*. In 1936, Rs 10,000, which was the highest denomination note, was introduced but was demonetized in 1946. Though, it was re-introduced in 1954 but later, in

1978, the then Prime Minister Morarji Desai in his intensive move to counter the black money, introduced The High Denomination Banks Act (Demonetization) and declared Rs 500 , Rs 1000 and Rs 10,000 notes illegal.

According to an article “Demonetization and GST adversely impacted India's GDP growth: Manmohan Singh” in *Business Today*, the Former Prime Minister in the Parliament called demonetization an 'organised loot and legalised plunder'. It would result in bringing down the GDP growth by 2 per cent. He further said that the informal and small scale sectors would be badly hit by the demonetization. The country recorded 5.7 per cent GDP growth during April-June 2017. The previous low of 4.6 per cent was recorded in January-March 2014. Furthermore, stock market was also badly hit by demonetization. According to an article “Demonetization effect on stock market”, NSE S&P CNX Nifty registered 5.1% drop in daily closing price within a week after demonetization.

Demonetization also has some favourable impacts as highlighted in an article “One year of demonetisation: Five positive impacts on economy” in *ET Now*. It increased digital transactions in all modes by 23 per cent to 27.5 million in May 2017 from 22.4 million in November 2016. Government of India deregistered over 2 lakh shell companies with doctored accounts based on data mined from demonetization, indicating the government’s intent to go after tax dodgers. Advance tax collections showed a growth of 42 per cent as on August 5, 2017 over the corresponding period in 2016-17. Soon after demonetization move, the hawala network almost went into complete paralysis because payments to the end beneficiary of hawala deals are traditionally in cash, with Rs 500 and Rs 1,000 being the favoured denomination. Demonetization helped in bringing the cash into the banking system, and hence lowering the cost of loans

From above, it is clear that demonetization has many positive as well as negative impacts on the Indian economy. Empirical studies on impact of demonetization in India are not much, as this event is approximately a year old. A few researchers have conducted the studies to examine the impact of demonetization on Indian stock market. Singh (2017) revealed that twelve sectoral indices of NSE perform significantly different in pre and post demonetization periods except the PSU bank index. Bantwa (2017) found that the absolute fall in NIFTY after one month of demonetization is 5.64%. Among the sectoral indices the highest impact of demonetization is on real estate sector followed by media and automobile sector whereas

the lowest impact is on metal index followed by PSU banks and IT sector. No study has been found that examined the impact of demonetization on gold prices. Therefore, in this paper an attempt has been made to study the impact of demonetization on gold prices in short run in India.

Objective and Hypothesis

The present study aims at examining demonetization effect on gold prices in India. On basis of the objective, following hypothesis has been formulated:

H₀: No significant difference exists between gold prices in pre and post demonetization period in India.

Data and methodology

For the present study, the data consists of daily prices of gold, obtained from official website of World Gold Council. Price of gold is in INR per troy ounce. One troy ounce is equal to 31.1034768 grams. Impact of demonetization on gold is studied by comparing the data of gold prices for 30 days before (September 27, 2016 to 7th November 2016) and 30 days after (November 9, 2016 to December 20, 2016); 15 days before (October 18, 2016 to 7th November 2016) and 15 days after (November 9, 2016 to November 29, 2016); 7 days before (October 28, 2016 to 7th November 2016) and 7 days after (November 9, 2016 to November 17, 2016) the demonetization decision. To study the statistical significance of the impact of demonetization decision, paired t-test and wilcoxon signed ranks test are used.

Findings

Descriptive Statistics

Table 1 provides descriptive statistics of three paired samples- 30 days, 15 days and 7 days pre and post demonetization periods. It shows mean of daily gold prices, number of observations (N) and standard deviation of the sample. In the final column, standard error is shown, which is the sample standard deviation divided by the square root of sample size. One can find from the table that mean gold price in pre demonetization period is more than mean gold price in post demonetization period in all the paired samples. It implies that price of gold is negatively effected by demonetization decision in India.

Table 1: Descriptive Statistics - Paired Samples

		Mean*	N	Std. Deviation	Std. Error Mean
Pair 1	30 days pre demonetization	85315.973	30	1530.2800	279.3896
	30 days post demonetization	80550.063	30	2414.0344	440.7404
Pair 2	15 days pre demonetization	85306.89	15	967.11104	249.7070
	15 days post demonetization	82585.47	15	1179.7852	304.6192
Pair 3	7 days pre demonetization	86060.671	7	902.5971	341.1496
	7 days post demonetization	83390.27	7	1164.4426	440.1179

*Mean is of daily gold prices (INR per troy ounce). Data of daily gold prices is obtained from World Gold Council Database.

Inferential statistics

In this section, statistical significance of the impact of demonetization decision on gold prices in India is analyzed. Paired t- test is used to examine whether the difference between mean of prices of gold (pre and post demonetization) is large enough or due to chance (Field 2005).

Table 2 presents the results of paired t- test on three paired samples.

Table 2: Paired t-test Statistics - Paired Samples

		Paired Differences			T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	30 days pre and post demonetization	4765.91	3151.768	575.431	8.282	29	0.000*
Pair 2	15 days pre and post demonetization	2721.413	1171.969	302.601	8.993	14	0.000*
Pair 3	7 days pre and post demonetization	2670.400	1664.193	629.005	4.245	6	0.005*

*Denotes statistical significance at 5% level

One can find from table 2, that difference between the mean price of gold in pre and post demonetization period of all three pairs is positive. In case of pair 1, mean price of gold of 30 days pre demonetization period is significantly higher than mean price of gold of 30 days post demonetization period (mean difference = 4765.91, S.E. = 575.431, t (29) = 8.282, p < 0.05). In case of pair 2, mean price of gold of 15 days pre demonetization period is

significantly higher than mean price of gold of 15 days post demonetization period (mean difference = 2721.413, S.E. = 302.601, $t(14) = 8.993$, $p < 0.05$). Similar result has been found in pair 3, mean price of gold of 7 days pre demonetization period is significantly higher than mean price of gold of 7 days post demonetization period (mean difference = 2670.400, S.E. = 629.005, $t(6) = 4.245$, $p < 0.05$).

Further, wilcoxon signed ranks test is also applied to all paired samples. This test is used as an alternative to a paired t-test, to test whether the median difference between the pairs of observations (gold price post and pre demonetization decision) is significantly different from zero or not. This test considers both the sign and magnitude of the differences (Gali 2015). Table 3 presents the results of wilcoxon signed ranks test for three paired samples. One can find that price of gold is significantly lower in post demonetization period as compared to price of gold in pre demonetization period in pair 1 ($Z = -4.782$, Asymp. Sig < 0.05), pair 2 ($Z = -3.408$, Asymp. Sig < 0.05) and pair 3 ($Z = -2.366$, Asymp. Sig < 0.05)

Table 3: Wilcoxon Signed Ranks Test Statistics – Paired samples

	Pair 1	Pair 2	Pair 3
	30 days post-demonetization	15 days pre post-demonetization	7 days pre post-demonetization
Z	-4.782(a)	-3.408(a)	-2.366(a)
Asymp. Sig. (2-tailed)	0.000*	0.001*	0.018*

(a) Based on positive ranks.

*Denotes statistical significance at 5% level

Both, paired t- test and wilcoxon signed ranks test exhibited that demonetization decision has significantly reduced the price of gold. Therefore, the above formulated hypothesis (H_0) stands rejected.

Summary and conclusion

The present study is undertaken to examine whether demonetization decision announced by Prime Minister Narendra Modi on November 8, 2016, effect gold prices in India. The data consists of daily prices of gold obtained from World Gold Council database. Impact of demonetization on gold is studied by comparing the data of gold prices for 30 days, 15 days and 7 days before and after November 8, 2016. To study the statistical significance of the impact of demonetization decision, paired t-test and wilcoxon signed ranks test are used. The results show that demonetization decision has significantly reduced the price of gold in India. Copyright © 2017, Scholarly Research Journal for Interdisciplinary Studies

It may be due to the reason that after demonetization announcement, income tax department tightened the noose around the jewellers as people rushed to convert their old currency notes (INR 500 and INR 1000) into precious metal gold. Further, actions taken by income tax department had put lot of pressure on gold prices domestically which dropped gold prices in India.

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