

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: - <a href="http://www.journalijar.com">www.journalijar.com</a></p> <h2 style="text-align: center;">INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</h2> <p style="text-align: center;">Article DOI: 10.21474/IJAR01/3590 DOI URL: <a href="http://dx.doi.org/10.21474/IJAR01/3590">http://dx.doi.org/10.21474/IJAR01/3590</a></p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal homepage: <a href="http://www.journalijar.com">http://www.journalijar.com</a> Journal DOI: 10.21474/IJAR01</p>
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### RESEARCH ARTICLE

## ASSESSMENT OF DEMONETISATION, IT'S MATHEMATICAL ANALYSIS AND IMPACT ON THE WHOLE FINANCIAL SYSTEM, TAKING A STEP ON THE ROAD TO DIGITAL TREASURE HUNT IN INDIA.

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### Manuscript Info

#### Manuscript History

Received: 05 January 2017

Final Accepted: 02 February 2017

Published: March 2017

#### Key words:-

Demonetisation, Counterfeit

Currency,Digital

Transaction,Corruption,Black money.

### Abstract

Taking the nation by surprise, Indian Government on 8<sup>th</sup> November,2017 announced demonetisation of Rs1000 and Rs 500 notes with effect from the midnight, making these notes invalid and the move was aimed at cracking down on the shadow economy.The immediate effect of the move brought the entire financial system to halt, hitting the large sections of the economy hard.The noble move by the government was indeed to control the counterfeit currency.This paper is based on the secondary data which was collected from various sources like published journals,articles,magazines and it elucidates the impact of such a move on the different sectors of the financial system.

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### Introduction and History:-

Demonetisation means the withdrawal of the currency from circulation.The concept of demonetisation was not new.The first was when Rs 1000,Rs 5000 and Rs 10000 notes were taken out of the circulation in January 1946,a year and a half before the country won independence from the British.The Rs 10000 notes were the largest currency denomination ever printed by RBI,introduced for the first time in 1938.All three notes were reintroduced in 1954.In the early '70s,the Wanchoo Committee,a direct tax enquiry committee set up by the government,suggested demonetisation as a measure to unearth and counter the spread of Black money.However the public nature of the recommendation sparked black money hoarders to act fast and rid themselves of high denominations before the government was able to clamp down on them.Then in 1977 the Janata Party Coalition govt came into power.A year into the government's term,party leader Moraji Desai was more bullish about cracking down on counterfeits and black money.The high denomination bank notes(Demonetisation)act,instated by the ruling party on Jan 16,1978,deemed the Rs1000,Rs 5000 and Rs10000 notes illegal for the second time.The Rs 1000 note made a comeback in November 2000 and Rs 500 note was brought in to circulation in October 1987.But on November 8,2016 Rs 1000 and Rs 500 notes were demonetised with an aim to curb the black economy.The new series of Rs 500 and Rs 2000 banknotes are in circulation since 10 November,2016.

**Why was the bold step taken by the Government?** The government's stated objectives behind the demonetisation policy are as follows:

- First it is an attempt to make India Corruption free.
- Second it is done to curb the undisclosed money
- Third to control the escalating price rise
- Fourth to eliminate fake currency and dodgy funds which have been used by the terror groups to fund terrorism in India

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- Fifth to make people accountable for every rupee they possess and pay income tax return
- Finally it is an attempt to make a cashless society and create a Digital India

Though the Government pulled off a major coup today to check black money, it has laid its foundation much before. Though today's unprecedented financial measure may have come as a rude shock to many, Narendra Modi Government gave enough opportunities and threw enough hints in this regard. The following are the possible measures:

- In the very first Cabinet meeting, the first such initiative constituted a Supreme Court Monitored Special Investigation team (SIT) on black money.
  - The second such move was the launch of Pradhan Mantri Jan Dhan Yojana (PMJDY) on August 28, 2014. People were asked to deposit all their money in the Jan Dhan accounts and do their future transactions in banking methods only. Now that the 500 and 1000 currencies are banned and transactions from banks will acquire importance. Opening of accounts even in the remote areas will help the rural villagers. They will not feel the pinch of the banning of the currency notes. Had the bank accounts not been opened, the people would have faced immense problems. Till February 22, 2017 the total 27.77Cr accounts have been opened so far and Rs 64720.94 Cr has been deposited in these accounts. 22.22Cr accounts (Rural 12.18Cr+ Urban 10.04Cr) under Public Sector Banks, 4.65Cr accounts (Rural 4Cr+Urban 0.65Cr) under Regional Rural Banks, 0.90Cr accounts (Rural 0.54Cr+Urban 0.36Cr) under Private Banks have been opened.
  - The government renegotiated the Double Taxation Avoidance Agreement (DTAA) with Mauritius to impose capital gains tax if such capital asset is situated in India. The govt also negotiated an Automatic Information Exchange Agreement with Switzerland. Agreements are also being negotiated with other Tax Havens. From 2017, Organisation of Economic Cooperation and development (OECD) countries have agreed to share information on foreign account holders with their home countries.
  - The Undisclosed Foreign Income and assets (imposition of tax) Bill, 2015 will apply to Indian Residents and seeks to replace the income tax act 1961 for the taxation of foreign income. It penalizes the concealment of foreign income and provides for criminal liability for attempting to evade tax in relation to foreign income.
  - Income Declaration Scheme 2016 came in to effect from June 1, 2016. It's an opportunity for those who didn't disclose income or pay taxes thereon in the past. Under this scheme, such persons can declare the undisclosed income and pay tax, surcharge and penalty on the declared undisclosed income. The person making a declaration under the scheme will have to pay income tax at the rate of 30% of the value of undisclosed income plus a surcharge of 25% thereon. Additionally the person will be liable to pay a penalty at the rate of 25% of the tax, which would make the total payments 45% of the undisclosed income.
  - The govt also imposed a penalty of 20% on all cash transaction exceeding 20000 in Real estate to curb black money.
- However there were many who still hoarded the black money and in order to tackle them the govt announced the demonetisation of 500 and 1000 currency notes.

#### **Mathematical calculation of the Process:-**

Let us understand the process of demonetisation through some mathematical logic to predict the impact of demonetisation in the Indian economy.

Indian GDP is supposed to be 125-130 lakh crore

Cash circulation before demonetisation was 17.54 lakh crore = approximately 14% of cash to GDP ratio

Size of the black economy = 20% of GDP

= 20% of 125-130 Lakh Crore (approx)

= 25-28 lakh crore (approx)

Black cash in the system = 4.5 Lakh crore

Some prior studies kept the black cash = 3.35 lakh crore (instead of 4.5 lakh crore)

Total cash circulation in the system = 17.5 lakh crore

Total cash in 500 and 1000 Rs denomination = 86% of 17.5 Lakh crore (approx)  
= 15 lakh crore

Black cash is worth = 4.5 lakh crore

Legitimate cash = (17.5 - 4.5) lakh crore  
= 13 lakh crore

Assuming a figure of 5% of the cash to GDP ratio in line with other similar economies, it would like to see no more than 9 lakh crore cash in circulation of which around 2.5 lakh crore of cash was in small denominations in the system already before the exercise started. This essentially means that (9 - 2.5) = 6.5 lakh crore of cash is what the

Govt will replace in lieu of the Rs 15 lakh crore (in 500 and 1000 denominations) it will take out. Now if the logic stated above is correct we will see that Rs 15 lakh crore worth of high denomination notes will be replaced by 6.5 lakh crore of cash. But we cannot expect that all replacement will be in similar high denomination notes. It may be noted that, even before the new high denominations(500 and 2000) were introduced around 50000 crore cash of new cash was injected in small denomination notes. Now say the total new high denomination notes in cash is 4 lakh crore. Therefore apart from the 4.5 lakh of black money being burnt, we can expect that 6.5 lakh of high denomination notes(old 500+1000) notes will never come back in to the system.

**Whether the process will work or will fail like 1978,1946?** After the failure of First and second demonetisation that took place in 1946,1978 it is a question that now our third demonetisation will be a success or not. The major difference is in the quantum however. The first and second demonetisation affected really high value notes which formed a small part of the notes in circulation. If we consider per capita GDP of India now and earlier then we can arrive at a conclusion. In 1978 per capita GDP of India was approximately Rs 1700 whereas today it is approximately Rs 1 lakh. At that time it was really a great thing when people earned four digit salaries. The common middle class people did not even use much of higher denomination notes. Also circulation of fake notes were also very less. Probably a very large % of the population did not even know the move as there was no effective social media and even televisions were only found in few houses. No of Banks and branches were also very less compared to the present scenario. Black money at that time was very less as of now. So only about 15% of the currency got exchanged. Above reasons are the major reasons for failure in 1946 and 1978.

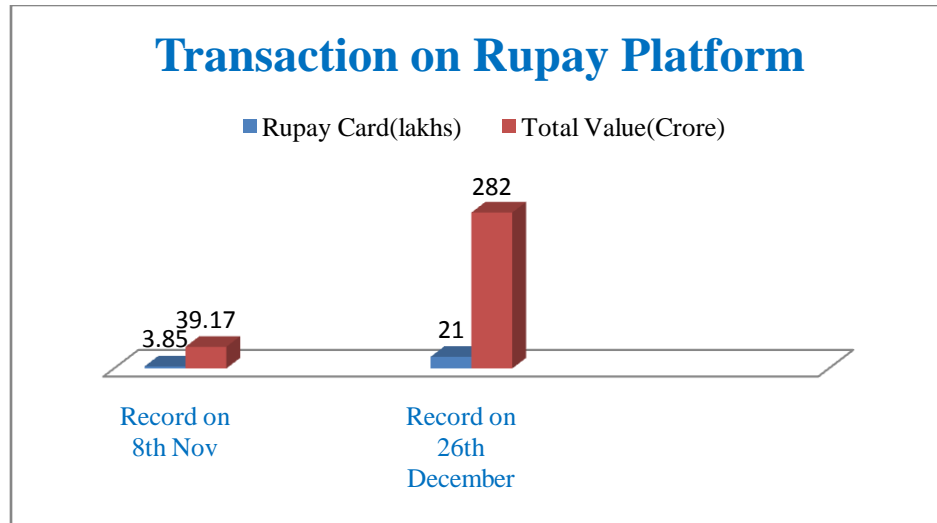
But now the situation is a lot different. The black money has increased drastically with no leaps and bounds. It was held mainly in form of Jewellery, Currency notes in denomination of 500 and 1000 which accounts for 85% of total currency and in real estate market etc and in the recent times the circulation of fake notes has also increased rapidly. Also IDS ,2016 was declared prior to the demonetisation which was a strong move against the black money. Most important thing is that now cashless move is adopted and so illegal way of transmitting money will be reduced. The govt is just in the beginning of effort against black money but it will surely be a success in the long run.

**Impact of Demonetisation :** Demonetisation effected various sectors of economy. Few are discussed as

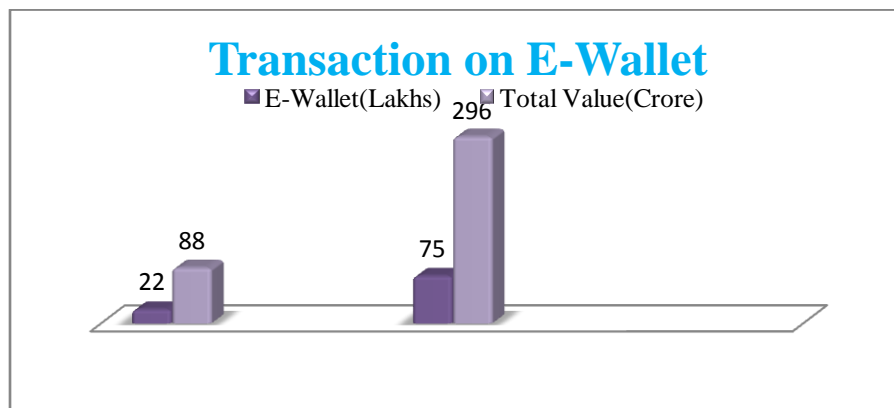
- **Effect on Agriculture:** The move hit badly the farmers as people in cities could queue-up to exchange or deposit their old notes at banks but people staying at villages, miles away from cities are not in a position to carry out exchange or deposit properly. The entire agricultural system runs on cash and the poor farmer might become the worst casualty in this drive. Not only are farmers likely to find it hard to pay off their debts, they may not get any further credit for processing seeds and other inputs for the next sowing season. The situation is exacerbated by the fact that poor sections are reportedly being used as middle man to exchange old notes for new by the black money hoarders.
- **Effect on Real Estate:** The real estate sector, especially the secondary market, has virtually come to a standstill. Black money has been to the Indian real estate sector, what foreign institutional investors have been to the stock markets. Much of the boom of the Real Estate sector has been due to the proliferation of the black money, which accounts for anywhere from 30% to 40% of the secondary market. With black money being sucked out of the market, real estate prices in bigger cities should see a correction of 30%.
- **Effect on Gold and other precious metals:** After demonetisation the demand for gold and other precious metals has increased greatly because people with black money trying to invest in gold to make it white. But the govt has said that it is aware of this and is cracking down with tax raids on jewellers across the country. Moreover jewellers will be required to produce details of any cash transactions. In the long run though with cash being sucked out of the system, sales will take a hit, as most jewellery purchases are done using cash.
- **Effect on anti social funding:** Money laundering is one of the important financial mechanism for terrorists. The antimoney laundering investigation fails when the money trail leads to cash. In India the terror finance trail starts and ends with cash making it impossible to get early alerts of terrorist active in the country. Demonetisation will upset the financing chain for the terrorists as all the money will get back to the banks and from there it is easy to identify the fake currency.
- **Effect on Political funding and donations:** Demonetisation has badly affected the political parties. After the note ban, the govt also put some restrictions regarding the party fund and donations. Anonymous donations are going to get identified now and upcoming 2017 elections will be transparent to some extent.

**India's Way to the Cashless:** The demonetisation drive has forced millions of Indians to fall in line with Narendra Modi Govt's Cashless move. The immediate impact of demonetisation is seen across the country where even small

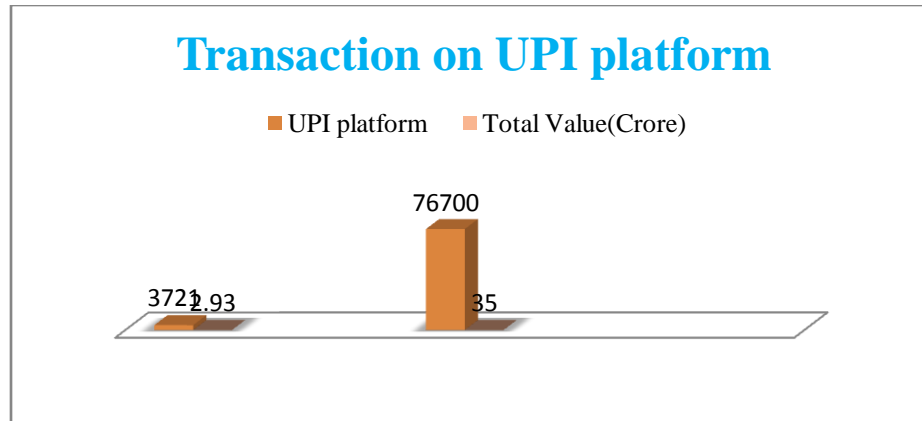
traders took to digital modes of transactions including E-wallets ,POS terminals etc.The consumer class also found prices of commodities like pulses,edible oil,fruits and vegetables coming down in retail market.Perhaps the biggest beneficiaries are Paytm,Freecharge and Mobikwik. Digital payments have increased in the range of 400 to 1000 percent since November 8<sup>th</sup>.Transactions on Rupay cards have increased from 3.85 lakh per day to 21 lakh per day and the value of transactions have increased from 39.17crore to 282 crore.Net percentage change is 445% in terms of subscribers and 620% in terms of transactions.



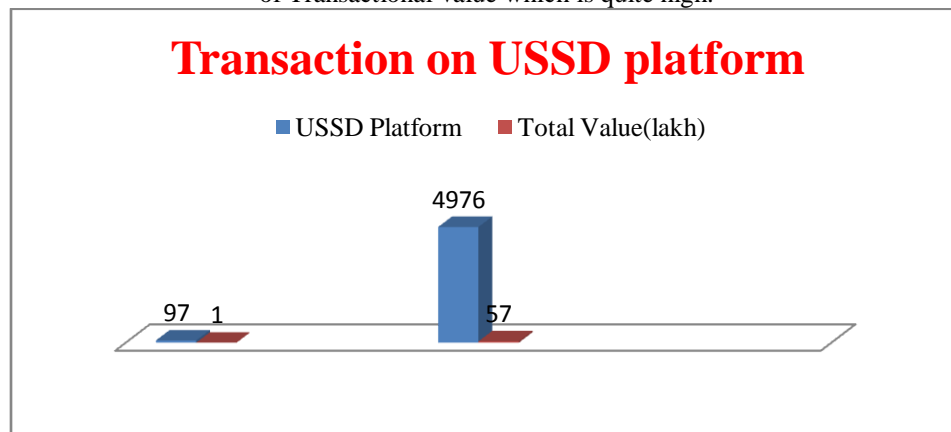
E-wallets have increased from 22 lakhs per day to 75 lakh per day and the value of transactions have increased from 88 crore to 296 crore.The net percentage change is 240% in terms of subscribers and 236% in terms of Transactional value.



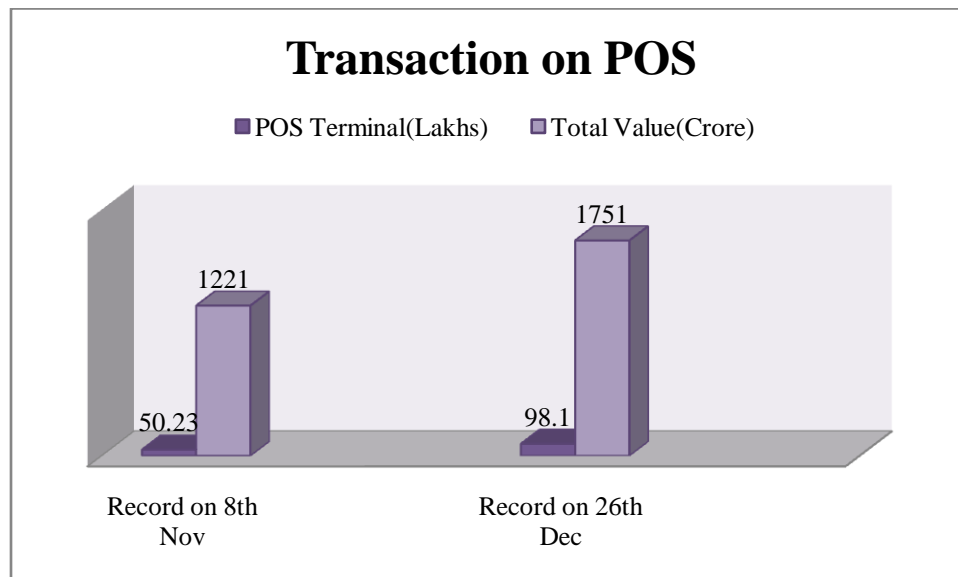
Transactions on UPI have increased from 3721 per day to 76700 per day and the value of transactions have increased from 2.93 crore to 35 crore.The net percentage change is 1961 % in terms of subscribers and 1095 % in terms of Transactional value.



Transactions on USSD platform have increased from 97 per day to 4976 per day and the value of transactions have increased from 1 lakh to 57 lakh. The net percentage change is 5000% in terms of subscribers and 1095 % in terms of Transactional value which is quite high.



Transactions on POS Terminals have increased from 50.23 lakhs per day to 98.1 lakhs per day and the value of transactions have increased from 1221 crore to 1751 crore. The net percentage change is 95% in terms of subscribers and 43% in terms of Transactional value.



**Detailed Analysis of Digital Transaction:-**

Demonetisation Impact on Cashless Transaction						
Mode of Transaction	Record on 8th Nov		Record on 26th December		Total % Change	
Rupay Card(lakhs)	3.85		21		445.4545	
Total Value(Crore)	39.17		282		619.9387	
E-Wallet(Lakhs)	22		75		240.9091	
Total Value(Crore)	88		296		236.3636	
UPI platform	3721		76700		1961.274	
Total Value(Crore)	2.93		35		1094.539	
USSD Platform	97		4976		5029.897	
Total Value(lakh)	1		57		5600	
POS Terminal(Lakhs)	50.23		98.1		95.30161	
Total Value(Crore)	1221		1751		43.40704	

**Conclusion:-**

It can not be told now clearly that whether the ban on 500 and 1000 notes will completely eradicate the black money or not but it is just one move of one piece in the chess board of black money. To checkmate the black money king, have to win the board. The effort of the govt was supported by majority of common people. Although the process did not prove that much success but a good sign is the move to the Cashless. Since demonetisation was carried out to curb the black money and soon after the move to digital transaction will surely portray some good result. Since with digital transactions money will come into the system, it will be accountable, generate tax and help develop the country's economy. When money will come in to the banks the govt will be able to come up with better welfare schemes. The govt will significantly benefit from the additional cash that is pushed in to the system. There will also be a much higher collection of income taxes and other taxes by the govt. More than short term benefits, there is an angle of long term GDP growth which will positively impact our economy by around 2018. To sum up a little patience will go a long way in making this demonetisation growth a success. The inconveniences or difficulties of time consuming, currency exchange and reduced withdrawal limits at ATMs and Banks will gradually pave the way for a more resilient economy. The entire process in turn will not only benefit us individually but as a nation proceeding towards a glorious future.

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