

A Study on Impact of Demonetization on E-Banking in India

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Abstract

Demonetization had been implemented by India two times prior to this i.e. in 1946, 1978, and 2016. Success of demonetization depends on its implementation. For effective implementation banks play a strategic and vital role. During the 2016 demonetization Indian Banks faced numerous problem right from physical cash crunch at the outright and many more problem of very less withdrawal limits, insufficient withdrawal points etc. this led to heavy crowd in banks and ATMs leading to outrage of common people. This paved way indirectly to E-Banking system. Many started to transact on E-Banking system like NEFT, RTGS, and so on. On the other hand, GOI also encourage online banking transactions as a part of Digital India concept. This study tries to analyse the impact of demonetization on E-Banking system in the long-run. Banks are core part of any economy for channelizing the money to the smooth functioning of different sectors and the key contributors to the overall economic growth of any country. Now a day, bank services are catered at the finger tip of customers. Efforts are made in this paper to analyse the role of E-Banking pre and post demonetization. The paper also makes an attempt to analyse the importance, growth and implication of E-Banking after demonetization.

Key words: Per-Demonetization, P Online-Banking, Digital Economy.

Introduction

Almost two years ago, on 8th Nov 2016 Prime Minister Narendra Modi announced the withdrawal of high-value currency notes namely, Rs. 500/- and Rs. 1000/- denomination. These denomination, almost amounted to 86% of currency in circulation. The major objective of demonetization by GOI was supposed to be- an attack on black money, on counterfeit notes, and projected as part to promote digitization and cashless economy. In later years the progress appeared to be very modest, and should make us question whether this exercise has achieved the agenda behind it. Demonetization was initiated with a wide array of motives like stripping the Indian economy of its black money, push people to pay taxes for the unaccounted pile of cash, curb terrorism, promote the digital India movement and make India a cashless economy.

Literature Review

Manpreet Kaur (2017) conducted a study on demonetization and impact on Cashless Payment System. He said that the cashless system in the economy has many fruitful benefits less time-consuming, less cost, paper less transaction etc. and he expected that the future transaction system in all the sectors is cashless transaction system.

Lokesh Uke (2017) researched on demonetization and its effects in India. He studied positive and negative impact of demonization in India. The study was based on secondary data available in newspaper, magazines etc. The main purpose of demonetization is to eradicate the black money and diminish the corruption. He expressed that Government of India has become success to some extent. Demonetization had negative impact for a short duration on Indian financial markets. But he said that the real impact will be shown in future.

Sweta Singhal (2017) carried out research on Demonetization and E Banking in India. It was a case study to check the awareness level of people of rural areas in India about e-banking facilities and how much it has increased after demonetization. A sample size of 100 was used with ANNOVA test to show that rural people differ much with urban people in their awareness level as well as usage level of e-banking. It was found that urban male youth have higher awareness and usage of e-banking. She felt that the study shall also helpful for banks to improve their e-banking facilities.

Objective of Study

To analyse the impact of demonetization on E-Banking (Pre and Post Demonetization) using variables like NEFT, RTGS, and POS

To analyse the growth of E-Banking and bring out the issues and challenges faced in effective utilization of E-Banking services in India

Methodology of The Study

The study is descriptive and based on literature review basis. The study tries to describe the influence of demonetization on E-Banking. The data used is from secondary sources like RBI bulletin, NPCI platforms. It also includes different books, journals, newspaper and relevant websites articles as secondary source of information. Dummy Regression Analysis is used to analyse the impact of demonetization (Pre and Post) on E-Banking.

Dummy Regression Analysis: In statistics and econometrics, particularly in regression analysis, a **dummy variable** is one that takes the value 0 or 1 to indicate the absence or presence of some categorical effect that may be expected to shift the outcome. A dummy independent variable (also called a dummy explanatory variable) which for some observation has a value of 0 will cause that variable's coefficient to have no role in influencing the dependent variable, while when the dummy takes on a value 1 its coefficient acts to alter the intercept.

Demonetization

“Demonetization is withdrawing a currency in circulation and demolishing its legal status.” In simple words, demonetization is a process by which the old currency is replaced by the new currency. Demonetization is normally a special tool to battle Inflation, Black Money, Corruption and Crime, discourage a cash dependent economy and help trade.

E-Banking/Electronic Banking

E-Banking or Electronic Banking is a method of banking in which the customer conducts transactions electronically via the Internet. E-banking is a safe, fast, easy and efficient electronic service that enables you access to bank account and to carry out online banking services, 24 hours a day, and 7 days a week. With

this service you save your time by carrying out banking transactions at any place and at any time, from your home or office, all you need is internet access.

Real Time Gross Settlement (RTGS) which can be defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting).

Electronic Clearing Service (ECS) is an electronic mode of payment / receipt for transactions that are repetitive and periodic in nature. ECS is used by institutions for making bulk payment of amounts towards distribution of dividend, interest, salary, pension, etc.

National electronic funds transfer (NEFT) is a nation-wide payment system facilitating one-to-one funds transfer.

Pre-paid Payment Instruments (PPI) are payment instruments that facilitate purchase of goods and services, including funds transfer, against the value stored on such instruments.

Digital India

E-Wallet is a type of electronic card which is used for transactions made online through a computer or a smartphone. Its utility is same as a credit or debit card. An E-wallet needs to be linked with the individual's bank account to make payments.

Unified Payments Interface (UPI) is a payment system that allows users to link more than one bank account in a single smartphone app and make fund transfers without having to provide IFSC code or account number.

Data Analysis and Findings

Impact of Demonetization on E-Banking using variables like NEFT, RTGS, POS.

H₀₁ : There is no significant impact of demonetization on NEFT transaction

H₁: There is significant impact of demonetization on NEFT transaction

$$\text{NEFT_VAL} = \beta_0 + \beta_1 D + \mu_i$$

$$E(\text{NEFT_VAL} / D_i=0) = \beta_0$$

$$E(\text{NEFT_VAL} / D_i=1) = \beta_0 + \beta_1$$

Dependent Variable: NEFT_VAL

Method: Least Squares

Date: 09/13/18 Time: 23:39

Sample: 2016M01 2018M07

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8575.790	845.1726	10.14679	0.0000
PRE_DEM	5753.656	1026.873	5.603086	0.0000
R-squared	0.519824	Mean dependent var		12473.43
Adjusted R-squared	0.503267	S.D. dependent var		3792.135

S.E. of regression	2672.670	Akaike info criterion	18.68188
Sum squared resid	2.07E+08	Schwarz criterion	18.77440
Log likelihood	-287.5692	Hannan-Quinn criter.	18.71204
F-statistic	31.39457	Durbin-Watson stat	1.084155
Prob(F-statistic)	0.000005		

(Sources: Eviews 9)

Since the $p < .05$ null hypotheses is rejected and alternative hypotheses is accepted. Therefore, there is significant impact of demonetization on NEFT transactions.

$$\text{Pre-Demonetization NEFT_VAL} = 8575.790 + \mu_i$$

$$\text{Post-Demonetization NEFT_VAL} = 8575.790 + 5753.656 D + \mu_i$$

H₀₂ : There is no significant impact of demonetization on RTGS transaction

H₂: There is significant impact of demonetization on RTGS transaction

$$\text{RTGS_VAL} = \beta_0 + \beta_1 D + \mu_i$$

$$E(\text{RTGS_VAL} / D_i=0) = \beta_0$$

$$E(\text{RTGS_VAL} / D_i=1) = \beta_0 + \beta_1$$

Dependent Variable: RTGS_VAL

Method: Least Squares

Date: 09/13/18 Time: 23:40

Sample: 2016M01 2018M07

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	78115.19	4137.680	18.87898	0.0000
PRE_DEM	18587.66	5027.222	3.697401	0.0009

R-squared	0.320378	Mean dependent var	90706.83
Adjusted R-squared	0.296943	S.D. dependent var	15604.92
S.E. of regression	13084.49	Akaike info criterion	21.85858
Sum squared resid	4.96E+09	Schwarz criterion	21.95110
Log likelihood	-336.8081	Hannan-Quinn criter.	21.88874
F-statistic	13.67077	Durbin-Watson stat	1.892724
Prob(F-statistic)	0.000904		

(sources: Eviews 9)

Since the $p < .05$ null hypotheses is rejected and alternative hypotheses is accepted. Therefore, there is significant impact of demonetization on RTGS transactions.

$$\text{Pre-Demonetization RTGS_VAL} = 78115.19 + \mu_i$$

Post-Demonetization RTGS_VAL = 78115.19 + 18587.66 D + μ_i

H₀₃ : There is no significant impact of demonetization on POS transaction

H₃: There is significant impact of demonetization on POS transaction

POS_VAL = $\beta_0 + \beta_1 D + \mu_i$

E(POS_VAL / D_i=0) = β_0

E(POS_VAL / D_i=1) = $\beta_0 + \beta_1$

Dependent Variable: POS_VAL

Method: Least Squares

Date: 09/13/18 Time: 23:41

Sample (adjusted): 2016M01 2018M06

Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	200.2200	12.73035	15.72777	0.0000
PRE_DEM	261.6593	15.59143	16.78225	0.0000
R-squared	0.909574	Mean dependent var		374.6595
Adjusted R-squared	0.906344	S.D. dependent var		131.5445
S.E. of regression	40.25689	Akaike info criterion		10.29278
Sum squared resid	45377.28	Schwarz criterion		10.38619
Log likelihood	-152.3917	Hannan-Quinn criter.		10.32266
F-statistic	281.6441	Durbin-Watson stat		1.919032
Prob(F-statistic)	0.000000			

(sources: Eviews 9)

Since the p<.05 null hypotheses is rejected and alternative hypotheses is accepted. Therefore, there is significant impact of demonetization on POS transactions.

Pre-Demonetization POS_VAL = 200.2200 + μ_i

Post-Demonetization POS_VAL = 200.2200 + 261.6593D + μ_i

Role of E-Banking during Demonetization

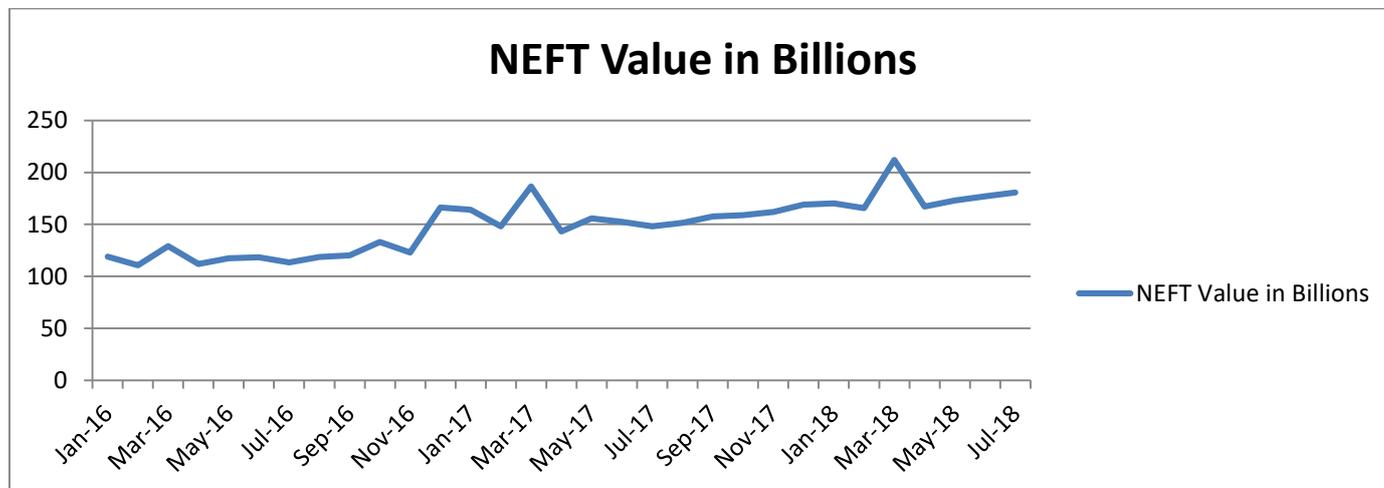
Amid the ongoing raging debate on the benefits of demonetisation, there's been a strong growth in digital payments and transactions in the months since the currency swap was announced on November 8, according to Reserve Bank of India data.

NEFT Transaction Value monthly data (Value in Billions)

Months	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
NEFT Value	7086.7	7278.6	10226.3	8324.5	7732.5	8815.3	8145.3	8764.1
Months	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
NEFT Value	9880.1	9504.5	8807.8	11537.6	11355.1	10877.9	16294.5	12156.2
Months	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17

NEFT Value	12410.8	12694.2	12011.6	12500.4	14182.1	13851.3	13884.0	15779.2
Months	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	
NEFT Value	15374.1	14843.9	22540.7	16326.6	17152.0	19017.00	17321.4	

(Source: <https://rbi.org.in/Scripts/NEFTView.aspx>)

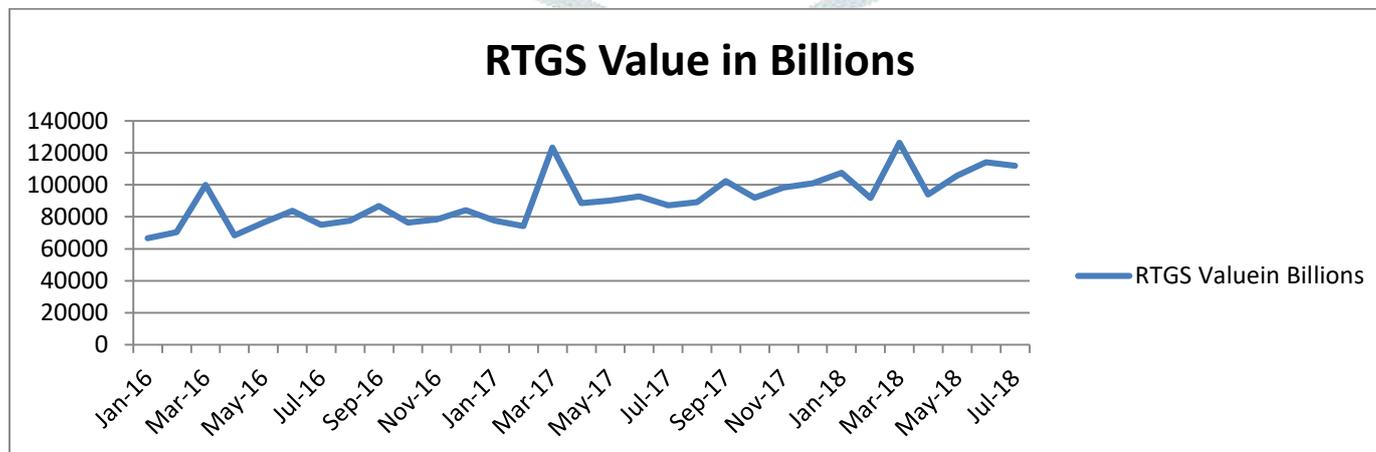


In Jan, 2016 the NEFT value of total transactions of all banks was at a aggregate of Rs. 7086.7 billions and in Nov., 2016 when demonetization was implemented it almost amounted to Rs. 8807.8 billions and in march, 2017 it was Rs. 16294.5 billions double the amount when the demonetization process had started.

RTGS Transaction Value monthly data (Value in Billions)

Months	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
RTGS Value	66517.71	70341.9	100045.3	68411.27	76332.5	83834.9	74919.5	77588.3
Months	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
RTGS Value	86687.3	76473.2	78479.2	84096.5	77486.1	74218.8	123375.8	88512.2
Months	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
RTGS Value	90170.5	92812.6	87149.3	89163.4	102348.1	92056.1	98410.5	100907.8
Months	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	
RTGS Value	107488.4	91765.6	126340.3	94045.7	105720.9	114199	112012.9	

(Source: <https://rbi.org.in/Scripts/NEFTView.aspx>)

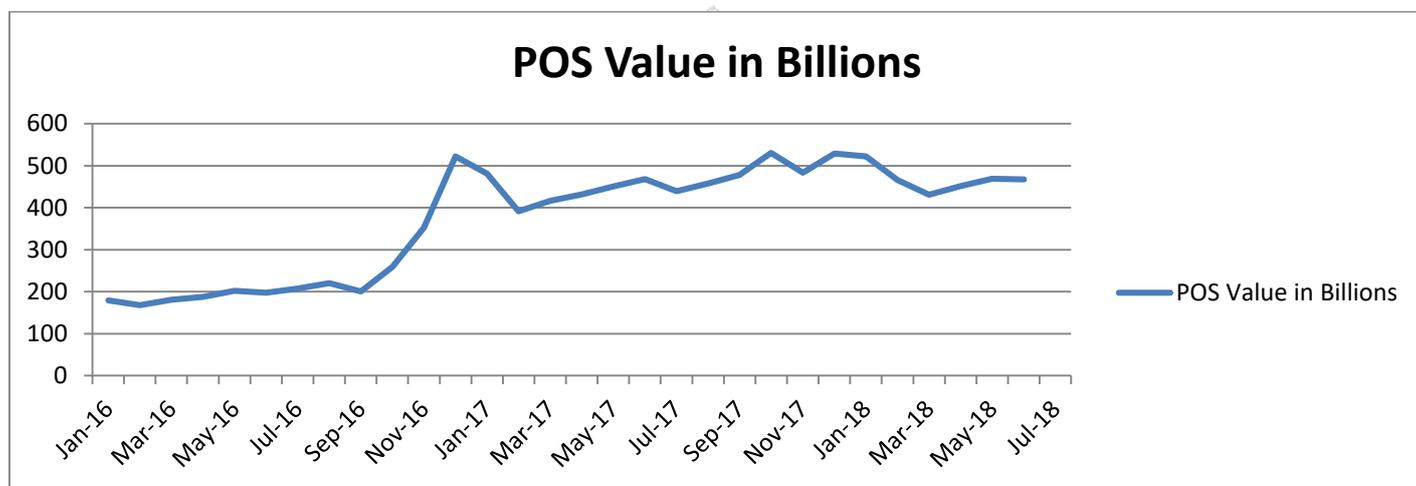


In, Jan 2016 the RTGS value of total transactions of all the banks was at a aggregate of Rs. 66517.71 billions and in Nov., 2016 when demonetization was implemented it almost amounted to Rs 78479.2 billions and in march, 2017 it was Rs. 123375.8 billion double the amount when the demonetization process had started.

Debit and Credit Card POS Transaction Value monthly data (Value in Billions)

Months	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
POS Value	178.9	167.9	180.7	187.6	202.3	197.2	207.1	220.5
Months	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
POS Value	200.6	259.4	352.4	522.2	481.2	391.5	416.2	431.4
Months	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
POS Value	450.8	468.2	439.3	457.1	478.2	530.5	483.3	528.7
Months	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18		
POS Value	521.9	465.9	430.7	451.4	469.2	467.4		

(Source: <https://rbi.org.in/Scripts/NEFTView.aspx>)

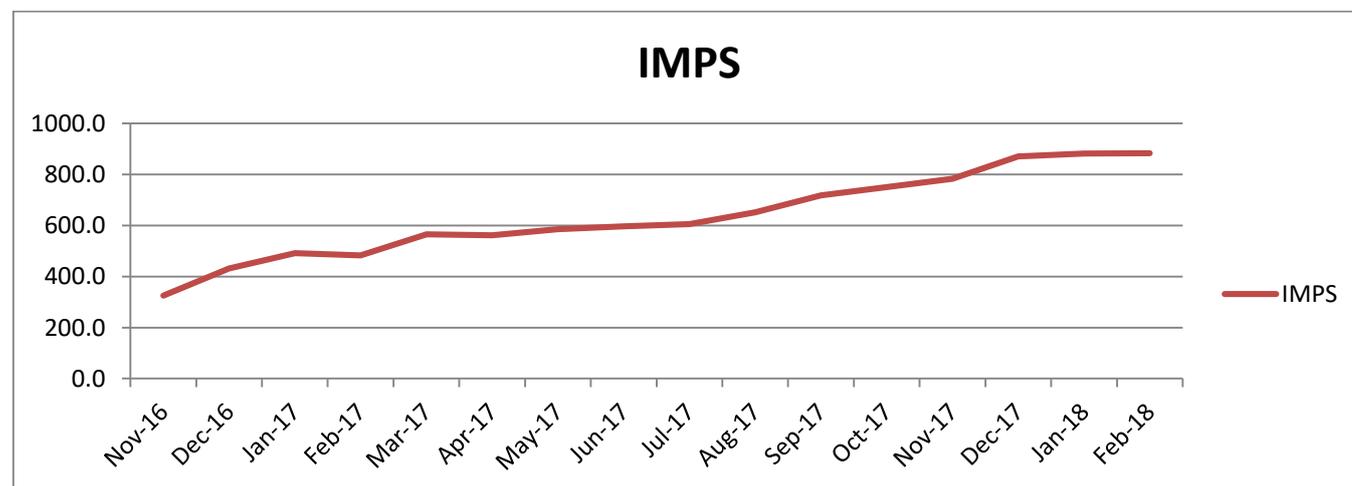


In, Jan 2016 the POS value of total transactions of all the banks was at a aggregate of Rs. 178.9 billions and in Nov,2016 when demonetization was implemented it almost amounted to Rs 352.4 billions and in march, 2017 it was Rs. 416.2 billion double the amount when the demonetization process had started.

IMPS Transaction Value monthly data (Value in Billions)

Months	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
IMPS	324.8	431.9	491.2	482.2	564.7	562.1	585.6	596.5
Months	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
IMPS	604.8	651.5	717.6	750.4	782.6	871.1	882.1	882.7

(Source: <https://www.npci.org.in/statistics>)

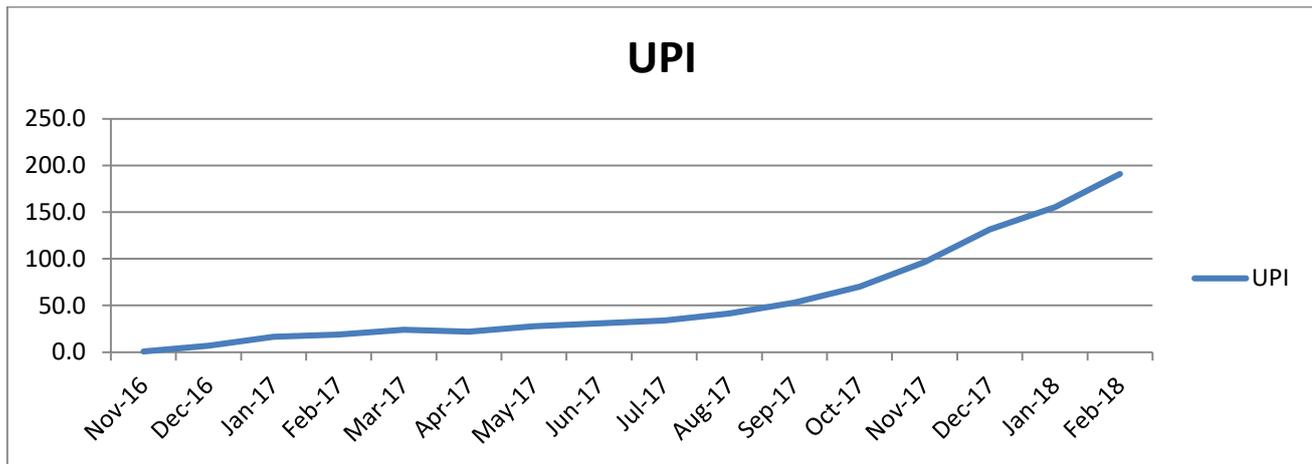


In Nov., 2016 when demonetization was implemented IMPS almost amounted to Rs 324.8 billions and in March, 2017 it was Rs. 564.7 billion.

UPI Transaction Value monthly data (Value in Billions)

Months	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
UPI	0.9	7.0	16.6	19.0	23.9	22.0	27.7	30.7
Months	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
UPI	33.8	41.3	52.9	70.3	96.4	131.4	155.4	191.0

(Source: <https://www.npci.org.in/statistics>)

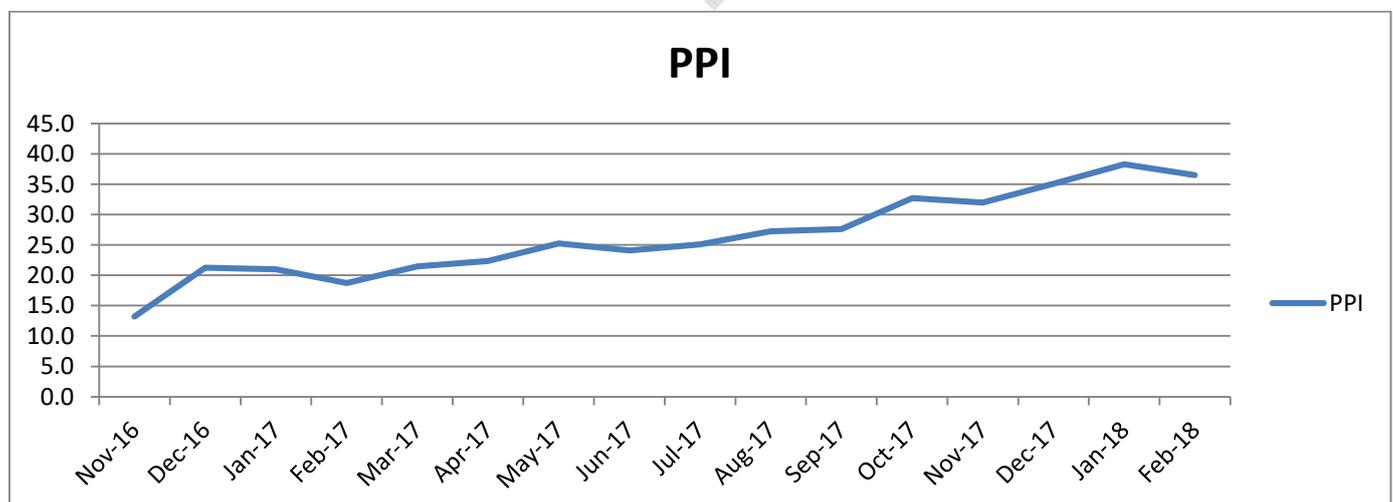


In Nov., 2016 when demonetization was implemented it almost amounted to Rs 0.9 billions and in march, 2017 it was Rs. 23.9 billion double the amount.

PPI Transaction Value monthly data (Value in Billions)

Months	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
PPI	13.2	21.3	21.0	18.7	21.5	22.3	25.3	24.1
Months	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
PPI	25.1	27.2	27.6	32.7	32.0	35.1	38.3	36.5

(Source: <https://www.npci.org.in/statistics>)



In Nov., 2016 when demonetization was implemented it almost amounted to Rs. 13.2 billions and in March, 2017 it was Rs. 21.5 billion double the amount.

Challenges in E-Banking

Security Risk: One of the major challenge of E-Banking is security risk. Security has become one of the major concerns for banks. Still a major portion of customers refuses to opt for e-banking facilities due to security concerns.

Implementation of Global Technology: As a developing country, in India there is gap between the infrastructure and human capacity building in adopting the global technologies for local requirements. This poses an barrier for consumer as they do not either trust or do not access to the necessary infrastructure to be able to process e-banking services available.

Privacy Risk: On account average computer literacy in India, many consumer are influenced by the risk of disclosing private information and fear of identity theft. This act as a barrier to the accessibility of e-banking services provided.

Managing Technology: In India the major challenge for banks is developing or acquiring the right technology, deploying it effectively is essential to achieve and maintain high service and efficiency standards while remaining cost effective and delivering sustainable returns to shareholders.

Future Prospects of E-Banking:

Untapped Rural Market: Around 70% of India's population is rural. Only 20% of the rural population have the knowledge about the technology development in banks. Government of India and Reserve Bank of India have been continuously working to achieve complete financial inclusion i.e. timely and sufficient access to financial services and credit at an affordable cost, in the vast expanse of the country.

Multiple Channels: With the development of information science and innovative technologies banks are able to provide their services by different channels like ATM, telephone or mobile banking, etc which has increased banking business in a new dimension. Developing the channels to provide banking services in the most effective and efficient ways is challenge to many banks.

Competitive Advantage: E-Banking is a phenomena which in itself has added competitive advantage to the banks over other players. E-Banking has resulted in the cost effective management of banks, improve customer relations, increase the reach of the bank to its remotest area etc and has contributed to manage their business in a better way.

Increasing Internet Users & Computer Literacy: Today internet user and computer awareness is increasing at an alarming rate which has provided the biggest opportunity for E-Banking system. Banking industry still needs to ancash this opportunity to attract more internet users to adopt internet banking services.

Findings

Digital India and Demonetization

- Demonetization has a significant impact on NEFT, RTGS and POS. In case of demonetization and NEFT value R square is 0.51, adjusted R² is 0.50 and Durbin Watson Stat is 1.08 showing a good model fit. In case of demonetization and RTGS value R square is 0.32, adjusted R² is 0.29 and Durbin Watson Stat is 1.89 showing a average model fit. In case of demonetization and POS value R square is 0.90, adjusted R² is 0.90 and Durbin Watson Stat is 1.91 showing a excellent model fit.
- Pushing India towards becoming a cashless economy was one of the reason that demonetization was publicized for. People turned towards digital transactions at the backdrop of physical cash crunch.

However, demonetization contributed tremendously towards E-Banking. This is evident as the digital transactions under study have trebled and quadrupled in value across various modes from wallets to cards and interbank transfers from the period of implementation of demonetization.

In case of NEFT transaction value has increased by 98% from Nov., 2106 to July, 2018.

In case of RTGS transaction value has increased by 42% from Nov., 2106 to July, 2018.

In case of POS transaction value has increased by 32% from Nov., 2106 to July, 2018.

In case of IMPS transaction value has increased by 171% from Nov., 2106 to Feb., 2018.

In case of UPI transaction value has increased by 21122% from Nov., 2106 to Feb., 2018.

In case of PPI transaction value has increased by 176% from Nov., 2106 to Feb., 2018.

The statistics reflects the tremendous growth E-Banking has experienced on account of demonetization and the impact has shown a promising future for E-Banking in India.

- E-Banking has got attention amid demonetization and GOI initiative to make digital economy. All the banks have already initiated E-Banking facilities, as it is beneficial to both the bank and the customers. As E-Banking is in its initial stage of implementation there a numerous challenges and opportunities faced by our banking sector. Recently, the electronic payment system has changed the face of Indian banking sector completely.

Conclusion

E-Banking is a non-reversible phenomenon which will gain more momentum in the coming years. With digitalization of Indian economy and move to turn India into cashless society, e-banking is going to be strengthened.

Demonetization had a strongly positive effect on financial inclusion, leading to increases in ebanking facility availed by the people. **“While digital transactions had been consistently growing over the years, demonetisation gave it an additional legup.”**

In Indian banking scenario E-Banking has pave way to the paradigm shift from the seller’s market to buyer’s market. This shift has changed the approach of banks from conventional banking to convenience banking and from mass banking to class banking. The shift has increased the accessibility of banking facilities to a larger number of common people. In years to come E-Banking will not only be acceptable mode of banking but will be the preferred mode of banking in India.

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