Impact of Demonetization on Digital Payments in India - Event Study Methodology

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Abstract

The abrupt announcement of demonetization of higher denomination notes in India and aftermath prolonged cash crunch provided a shift towards digital transactions. The present study is trying to analyze the impact of demonetization on digital transactions by employing event study methodology. From comparison of pre and post event window, it has been observed that demonetization had no significant impact on use of eight variables of digital payment system. However, despite the increased efforts of government to push for cashless economy India still remained a cash intensive economy with uptrend in currency in circulation to GDP ratio. So, to bring permanent change continued efforts on digitization need to be made.

Keywords: Demonetization, Digital payments, M-wallets, Event study.

Introduction

Demonetization is a way of stripping the old currency notes from circulation and introduction of new currency notes. Indian government announced the demonetization on 08 November 2016, with objective to curb black money and promote digital transactions. People were directed to deposit the previous denomination notes of rupees 500 and 1,000 in the bank and post office accounts and replace those with new currency notes of rupees 2,000. As India is largely cash based economy, the sudden withdrawal (around 86%) of currency notes from the economy unleashed an unprecedented monetary turmoil. Cash crunch in banks and ATMs stimulated people to adopt alternative means of digital payments (PWC, 2016).

Demonetization generated enormous growth opportunity for digital wallet companies to flourish by offering several digital payment services. The vigorous advertising by digital payment service providers encouraged small vendors and public to espouse digital payment system. On other side, government also launched Unified Payment Interface (UPI), Bharat Interface for money (BHIM) and awareness campaigns like Digi Dhan Melas to enhance digital literacy of people. Besides this, penetration of smart phones and internet connectivity has created positive atmosphere to help transition from cash based economy to digital economy.

Demonetization helped in reducing the currency in circulation from 11.55% in November 2016 to 10.48% of GDP in November 2018. The

use of M-Banking, M-wallets and debit card and credit card at the point of sales (PoS) have increased significantly aftermath demonetization.

However, it is postulated that the impact of demonetization on digital payment system is short lived as the currency in circulation to GDP ratio has crept up from 10.70% to 11.23% during March 2018 to March 2019. It will be disappointing if ratio goes to pre demonetization level. As adoption of digital payment system is depended on the nature and scope of transactions as well as personal factors specific to consumer such as familiarity with digital technology. Despite enormous benefits of digital payments, deep challenges such as low rate of financial inclusion, issues with network congestion and internet connectivity, insufficient point of sale machines and cultural preference for cash are preventing people from moving over to digital payment platform. Along with cultural and behavioural change, physical infrastructure and robust cyber security ecosystem are crucial to move towards digital economy (Yadav and Tiwari, 2018).

Literature Review

Sunil and Shenoy (2017) analysed the impact of demonetization on stock prices of five selected sectors by employing Capital asset pricing Model. The study used closing prices of top five companies of each five sectors listed on BSE and found temporary impact of demonetization on the stock market prices. In a study conducted by Kaur, M (2017) to analyse the impact of demonetization on the cashless payment system, the results concluded that due to demonetization the usage of credit cards, debit cards and other digital payment systems was increased.

Further, Upadhyay, (2018) in his study used event study methodology to analyse the impact of demonetization announcement on top 30 trading stocks of S&P BSE SENSEX index. The study found that there was no significant impact of demonetization announcement on stock returns. Similarly, Chauhan and Kaushik (2017) used event study methodology to capture the impact of demonetization on market reaction. The study concluded that demonetization announcement does not have any significant impact on stock market. In a study conducted by Ahmad (2017), he examined the relationship between the money in circulation with online banking transactions during demonetization. Taking into consideration data of 100 days (50 days before demonetization and 50 days after demonetization) the study concluded that usage of online transactions significantly increased due to demonetization.

The work of Bansal, (2017) conducted to examine the impact of demonetization on manufacturing, service and agriculture sector also need to be noted. It revealed that only agriculture sector grew positively while manufacturing and service sectors were crashed down after demonetization. Chandra Shekhar (2017) employed event study methodology to analyse the impact of demonetization on stock price of the hospitality industries. The results indicated that there was no significant impact of demonetization announcement on the stock price of hospitality industries. Yadav (2018) has analysed the impact of demonetization on digital transactions in India. The results showed that there was a shift towards digital payments in post demonetization period.

The extant literature reveals that impact of demonetization has been analysed mostly over the stock markets of India. While, there are limited numbers of studies examining impact of demonetization on digital payments, this motivates author to do research to evaluate the impact of demonetization on digital transactions.

Hypotheses Development

To achieve the objective of the study, the following hypotheses are assumed:

H1 : There is no significant increase in volume of RTGS transactions during event window due to announcement of demonetization.

H2 : There is no significant increase in volume of NEFT transactions during event window due to announcement of demonetization.

H3 : There is no significant increase in volume of IMPS transactions during event window due to announcement of demonetization.

H4 : There is no significant increase in volume of Credit card transactions at POS during event window due to announcement of demonetization.

H5 : There is no significant increase in volume of Debit card transactions at POS during event window due to announcement of demonetization.

H6 : There is no significant increase in volume of M-wallet transactions during event window due to announcement of demonetization.

H7 : There is no significant increase in volume of PPI cards during event window due to announcement of demonetization.

H8 : There is no significant increase in volume of M-banking transactions during event window due to announcement of demonetization.

Data Collection

For the purpose of present study secondary data has been collected from RBI's monthly bulletin on payment system Indicators from (November, 2014- November, 2018), which is compiled in Database on Indian Economy (DBIE).

Research Methodology

To examine the impact of demonetization on the volume of digital transactions the data of eight indicators of digital payments viz. (RTGS, NEFT, IMPS, Credit Card usage at PoS, Debit Card usage at PoS, M-wallet, PPI Cards and M-Banking) has been used. For this purpose the data spanning a period of 49 months is sub divided into pre (November, 2014- October, 2016) and post (November, 2016- October, 2018) demonetization period was used to compare the volume of digital transactions in pre and post demonetization period. The present study adopted 'event study methodology' to study the impact of demonetization announcement on usage of digital transactions. In line with previous studies, the present study has taken event window of -24; 0; +24 , where -24 represents the pre demonetization period; zero represents the event (November, 2016 demonetization announcement), and +24 represents the period after the demonetization announcement (Dichev and Piotroski, 2001).

Calculating Normal and Abnormal usage of Digital payment indicators

The study used Market adjusted model developed by Sharpe (1963) to calculate abnormal usage of payment indicators. For each payment indicator abnormal usage can be calculated as follows –

$AU = Ujt - E(Ujt)$

Where AU is the abnormal usage;

Ujt = Usage of variable 'j' in particular month

EUjt = Expected Usage of variable according to market model

i.e. $EUjt = \alpha + \beta Cm$, obtained by linear regression between money in circulation in economy and payment indicators usage.

Where α is the intercept and Cm is the money in circulation in a particular month

Results and Discussions

Table 1 Calculation of Abnormal Usage and t-statistics for RTGS

Month	RTGS	t -statistics	Month	RTGS	t -statistics
-24	-	-	**0**	0.375913	1.92599
-23	0.242884	1.244418	**1**	0.295501	1.514
-22	-0.10724	-0.54945	**2**	-0.14066	-0.72065
-21	-0.09099	-0.46619	**3**	-0.19889	-1.01904
-20	0.494416	2.53314**	**4**	0.43767	2.242409**
-19	-0.25425	-1.30267	**5**	-0.34737	-1.77974
-18	-0.10827	-0.55472	**6**	-0.02498	-0.128
-17	0.251995	1.291095	**7**	-0.00459	-0.02353
-16	-0.06081	-0.31156	**8**	-0.05846	-0.2995
-15	-0.06807	-0.34875	**9**	0.014574	0.074672
-14	0.063375	0.324704	**10**	0.110945	0.568426
-13	-0.07962	-0.40795	**11**	-0.1223	-0.62658
-12	-0.18297	-0.93747	**12**	0.051637	0.264562
-11	0.298635	1.530056	**13**	0.014074	0.072109
-10	-0.08254	-0.42292	**14**	0.022291	0.11421
-9	0.025915	0.132776	**15**	-0.17185	-0.88046
-8	0.391511	2.005906**	**16**	0.362266	1.856067

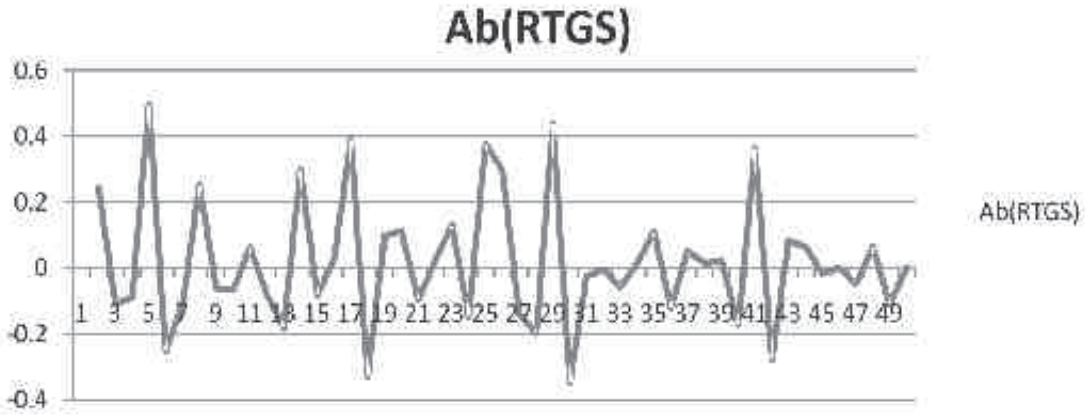
-7	-0.3299	-1.69023	**17**	-0.28008	-1.43497
-6	0.097112	0.497553	**18**	0.081783	0.419015
-5	0.110908	0.568235	**19**	0.063178	0.323694
-4	-0.09693	-0.49663	**20**	-0.01685	-0.08632
-3	0.021894	0.112175	**21**	0.001817	0.00931
-2	0.131202	0.672213	**22**	-0.04924	-0.25226
-1	-0.14641	-0.75011	**23**	0.064287	0.329375
			24	-0.11049	-0.56608

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 1 represents the results of event study used to examine the impact of demonetization on adoption of RTGS transactions. The table shows abnormal usage of RTGS and t- statistics for various months during event window. The calculated values of t-statistics are found to be statistically insignificant for majority of months before and after the demonetization. Hence, Hypothesis 1 is accepted that there is no influence of demonetization on adoption of RTGS transactions.

Figure 1 Abnormal increase/decrease in Usage of RTGS during Event window



From the figure it can be inferred that RTGS transactions increased during 11 months and then decreased for 13 month prior to demonetization and thereafter increased for 12 months and decreased for rest of months after demonetization indicating that demonetization has no role in increasing RTGS Transactions, the increase may be due to some other factors such as mobile and internet expansion.

Table 2 Abnormal Usage and t -statistics for NEFT

Month	NEFT	t -statistics	Month	NEFT	t -statistics
-24	-	-	**0**	0.152628	1.636735
-23	-0.11918	-1.27802	**1**	-0.15356	-1.64671
-22	0.020824	0.223306	**2**	-0.01899	-0.20361
-21	0.139714	1.498245	**3**	0.153261	1.643525
-20	-0.12777	-1.37016	**4**	-0.11519	-1.23527
-19	0.029012	0.311118	**5**	0.022607	0.242428
-18	-0.0224	-0.24023	**6**	-0.06015	-0.64503

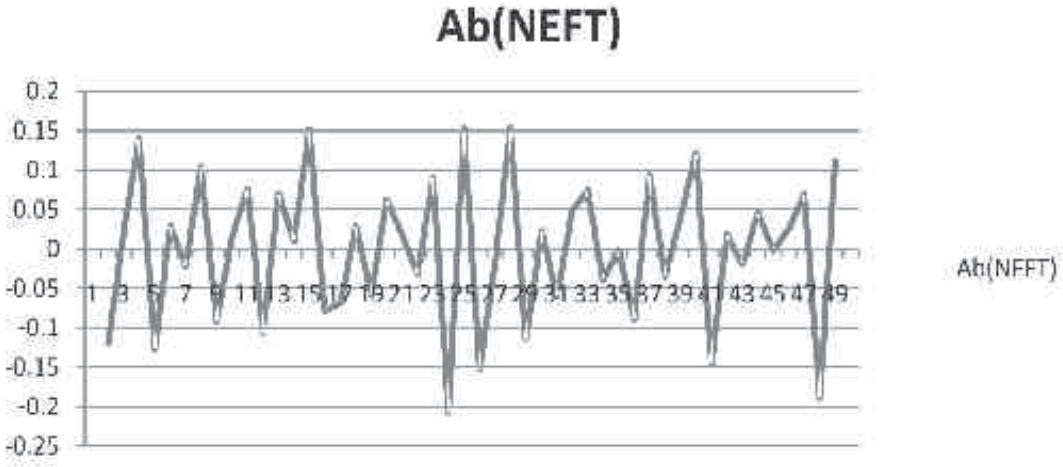
-17	0.104235	1.11778	**7**	0.048445	0.519513
-16	-0.09207	-0.9873	**8**	0.073983	0.793374
-15	0.014805	0.158768	**9**	-0.03964	-0.42508
-14	0.075033	0.804632	**10**	-0.00197	-0.0211
-13	-0.10726	-1.15023	**11**	-0.08933	-0.95798
-12	0.070367	0.754588	**12**	0.093067	0.998017
-11	0.00972	0.10423	**13**	-0.03536	-0.37919
-10	0.151606	1.625775	**14**	0.040136	0.430402
-9	-0.07898	-0.84691	**15**	0.121019	1.29777
-8	-0.06889	-0.73874	**16**	-0.14674	-1.57355
-7	0.028546	0.306116	**17**	0.017807	0.190957
-6	-0.05939	-0.63687	**18**	-0.01983	-0.21269
-5	0.062252	0.667566	**19**	0.04609	0.494251
-4	0.017993	0.192948	**20**	-0.00246	-0.02639
-3	-0.03212	-0.34447	**21**	0.025015	0.268254
-2	0.09007	0.965881	**22**	0.068848	0.738305
-1	-0.20751	-2.22522	**23**	-0.18899	-2.02671
			24	0.110687	1.186974

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 2 given above shows abnormal usage of NEFT and t-statistics for various months during event window. The values of calculated t-statistics are statistically insignificant during event window. Therefore, Hypothesis 2 is accepted.

Figure 2 Abnormal increase/decrease in Usage of NEFT during Event window



Source: Author's Calculations

It can be inferred from data given above that NEFT transactions increased during 13 months and decreased for 11 month prior to demonetization and increased for 12 months and decreased for 12 months after demonetization indicating that demonetization has no role in increasing NEFT Transactions.

Table 3 Abnormal Usage and t -statistics for IMPS

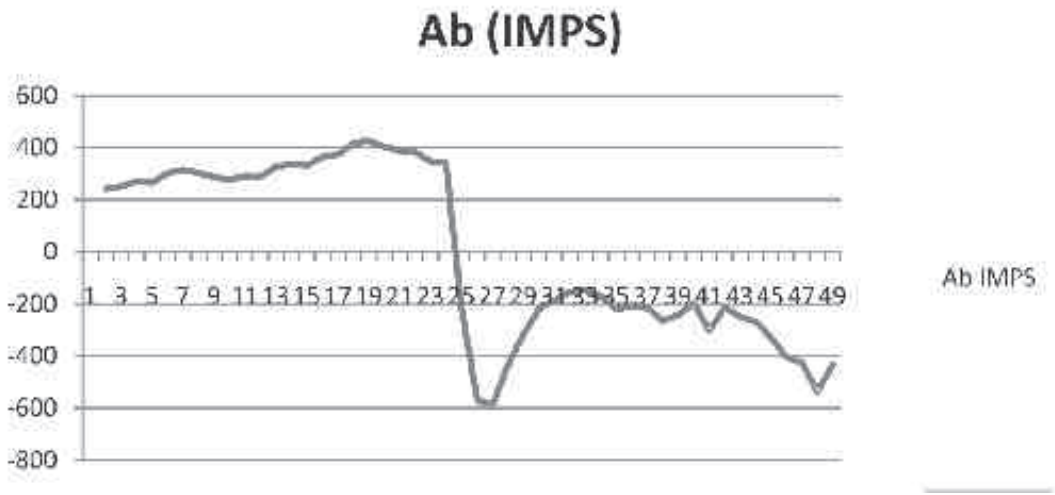
Month	IMPS	t -statistics	Month	IMPS	t -statistics
-24			**0**	-221.959	-0.65666
-23	241.281	0.713829	**1**	-571.019	-1.68936
-22	252.0803	0.745779	**2**	-586.471	-1.73507
-21	268.5829	0.794602	**3**	-435.286	-1.28779
-20	265.1336	0.784397	**4**	-316.932	-0.93764
-19	303.6323	0.898295	**5**	-218.751	-0.64717
-18	315.0772	0.932155	**6**	-187.138	-0.55365
-17	304.5167	0.900911	**7**	-153.936	-0.45542
-16	286.1182	0.84648	**8**	-147.124	-0.43527
-15	278.1942	0.823036	**9**	-171.003	-0.50591
-14	289.4553	0.856352	**10**	-219.755	-0.65014
-13	289.108	0.855325	**11**	-207.187	-0.61296
-12	326.6123	0.966281	**12**	-214.396	-0.63429
-11	337.2616	0.997787	**13**	-266.026	-0.78704
-10	330.6785	0.978311	**14**	-241.664	-0.71496
-9	363.0871	1.074192	**15**	-198.359	-0.58684
-8	372.8531	1.103084	**16**	-302.777	-0.89576
-7	417.0432	1.233821	**17**	-213.824	-0.6326
-6	424.4659	1.255781	**18**	-250.425	-0.74088
-5	403.1325	1.192666	**19**	-268.514	-0.7944
-4	387.3452	1.145959	**20**	-330.546	-0.97792
-3	383.4675	1.134487	**21**	-405.097	-1.19848
-2	346.022	1.023705	**22**	-426.525	-1.26187
-1	340.5691	1.007572	**23**	-537.645	-1.59062
			24	-433.36	-1.28209

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 3 demonstrated that calculated values of t-statistics are statistically insignificant for all months before and after the demonetization. Hence, Hypothesis 3 is accepted that demonetization has no influence on adoption of IMPS transactions.

Figure 3 Abnormal increase/decrease in Usage of IMPS during Event window



It is observed from above data that IMPS transactions increased during all months prior to demonetization and then start decreasing for all months after demonetization indicating that demonetization has no specific role in influencing IMPS Transactions.

Table 4 Abnormal Usage and t-statistics for Credit cards

Month	Credit Card	t -statistics	Month	Credit Card	t -statistics
-24			**0**	0.143125	1.553423
-23	-0.13267	-1.43995	**1**	-0.14156	-1.53645
-22	0.007236	0.078537	**2**	0.009295	0.10088
-21	0.123238	1.337579	**3**	0.171005	1.856029
-20	-0.14129	-1.53355	**4**	-0.09715	-1.05439
-19	0.015341	0.166501	**5**	0.032682	0.354717
-18	-0.03556	-0.386	**6**	-0.0492	-0.53395
-17	0.089003	0.966004	**7**	0.056805	0.616537
-16	-0.10437	-1.13277	**8**	0.079091	0.858427
-15	0.003056	0.033168	**9**	-0.03198	-0.34712
-14	0.062174	0.674812	**10**	0.006475	0.070282
-13	-0.11697	-1.26954	**11**	-0.07593	-0.82414
-12	0.059324	0.643879	**12**	0.101986	1.106921
-11	-0.00143	-0.01551	**13**	-0.02412	-0.26181
-10	0.137091	1.487933	**14**	0.049883	0.541411
-9	-0.09123	-0.99018	**15**	0.125691	1.364201
-8	-0.07924	-0.86006	**16**	-0.13586	-1.47462
-7	0.017681	0.191907	**17**	0.027995	0.303847

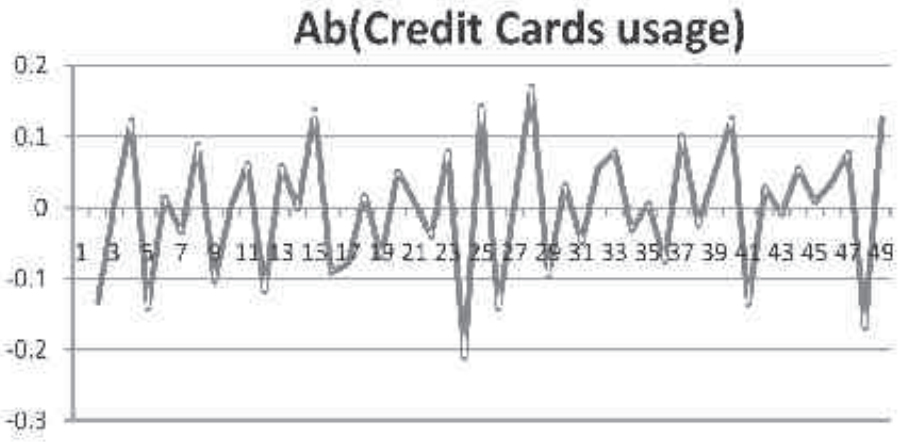
-6	-0.06883	-0.74711	**18**	-0.00921	-0.09991
-5	0.051709	0.561234	**19**	0.055324	0.600463
-4	0.007777	0.084407	**20**	0.00757	0.082159
-3	-0.04072	-0.44193	**21**	0.035752	0.38804
-2	0.079612	0.864074	**22**	0.077934	0.845867
-1	-0.21126	-2.29294	**23**	-0.16977	-1.84263
			24	0.124505	1.35133

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 4 demonstrates that the values of t-statistics are statistically insignificant for all months before and after the demonetization as seen in table 4. Therefore, Hypothesis 4 i.e. demonetization has no influence on adoption of credit card transactions is accepted.

Figure 4 Abnormal increase/deercease in Usage of Credit cards at POS during Event window



Data given above revealed that credit card transactions increased during 12 months and decreased for 12 month prior to demonetization and increased for 15 months and then decreased for 9 months after demonetization. This indicates that demonetization has no specific role in influencing credit card usage.

Table 5 Abnormal Usage and t-statistics for Debit cards

Month	Debit Card	t -statistics	Month	Debit card	t -statistics
-24	--	---	**0**	-83.6468	-0.55112
-23	148.0374	0.975375	**1**	-380.092	-2.50432
-22	148.8496	0.980726	**2**	-283.965	-1.87096
-21	183.126	1.206563	**3**	-133.382	-0.87881
-20	158.4615	1.044056	**4**	-105.136	-0.69271

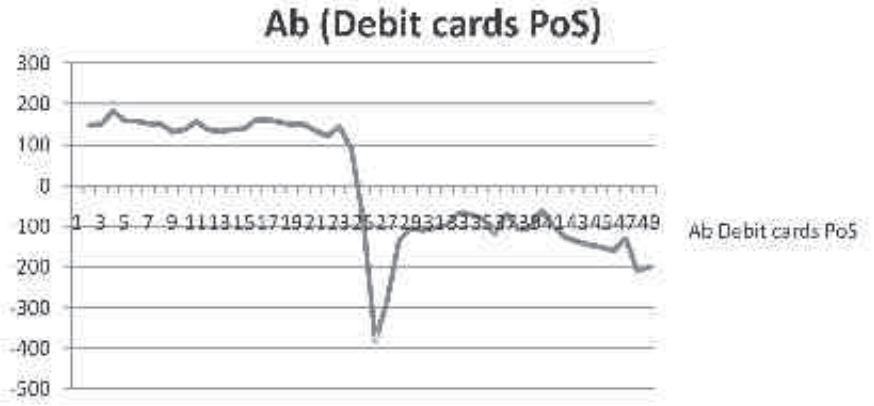
-19	157.93	1.040554	**5**	-110.211	-0.72615
-18	151.8398	1.000428	**6**	-103.11	-0.67936
-17	150.9817	0.994774	**7**	-97.3756	-0.64158
-16	131.8778	0.868904	**8**	-65.8105	-0.43361
-15	136.2498	0.89771	**9**	-71.2103	-0.46918
-14	156.7432	1.032735	**10**	-81.0534	-0.53404
-13	136.5465	0.899665	**11**	-117.395	-0.77348
-12	132.6067	0.873706	**12**	-70.5646	-0.46493
-11	136.9661	0.902429	**13**	-108.056	-0.71195
-10	138.9162	0.915278	**14**	-103.335	-0.68084
-9	160.3566	1.056543	**15**	-60.24	-0.3969
-8	160.4491	1.057152	**16**	-101.643	-0.6697
-7	155.0806	1.02178	**17**	-127.857	-0.84241
-6	149.5575	0.985391	**18**	-137.797	-0.9079
-5	149.2417	0.98331	**19**	-145.439	-0.95825
-4	134.5505	0.886514	**20**	-151.123	-0.9957
-3	122.1174	0.804596	**21**	-159.848	-1.05319
-2	144.2429	0.950374	**22**	-128.854	-0.84898
-1	90.69298	0.597549	**23**	-208.679	-1.37493
			24	-199.597	-1.31509

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 5 show the results of event study regarding abnormal adoption of Debit card transactions. It revealed that calculated values of t-statistics are statistically insignificant for all months before and after the demonetization. Accordingly, Hypothesis 5 is accepted that there is no influence of demonetization on adoption of debit card transactions.

Figure 5 Abnormal increase/decrease in Usage of Debit cards at POS during Event window



Therefore, it can be concluded that debit card transactions at POS increased during 24 months prior to demonetization and decreased for all months after demonetization during event window. It shows that debit card usage is not influenced by demonetization.

Table 6 Abnormal Usage and t-statistics for M-wallets

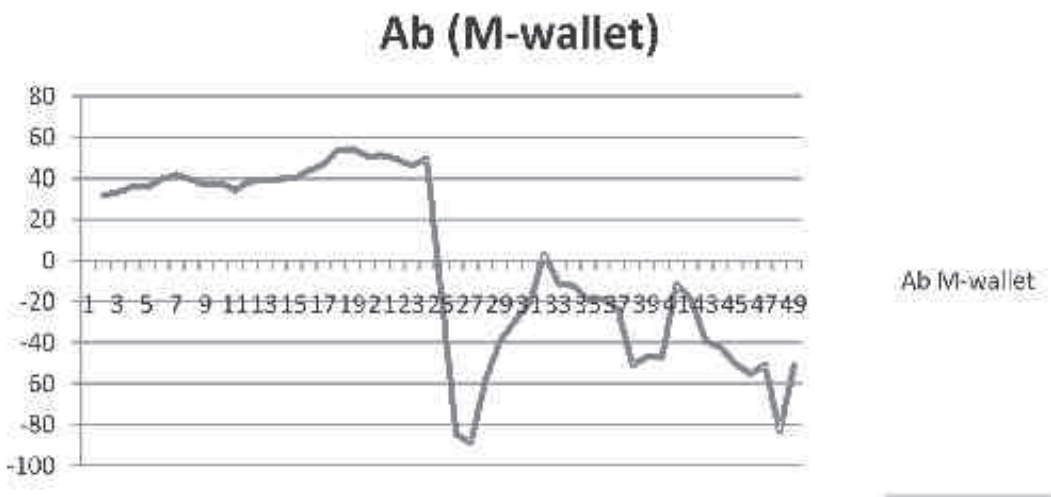
Month	M-wallet	t -statistics	Month	M-wallet	t -statistics
-24			**0**	-15.8261	-0.35029
-23	31.64643	0.700456	**1**	-84.8878	-1.87889
-22	33.30985	0.737274	**2**	-88.9268	-1.96829
-21	36.05916	0.798126	**3**	-58.2733	-1.28981
-20	35.68945	0.789943	**4**	-39.3484	-0.87093
-19	39.71589	0.879064	**5**	-29.7349	-0.65815
-18	41.89218	0.927233	**6**	-20.9574	-0.46387
-17	39.36528	0.871303	**7**	2.926143	0.064767
-16	36.67394	0.811734	**8**	-11.5983	-0.25671
-15	37.49584	0.829926	**9**	-12.2686	-0.27155
-14	34.36034	0.760525	**10**	-19.2062	-0.42511
-13	38.69563	0.856482	**11**	-19.0828	-0.42237
-12	39.19073	0.86744	**12**	-23.5133	-0.52044
-11	39.58142	0.876087	**13**	-51.1049	-1.13115
-10	40.01368	0.885655	**14**	-47.0072	-1.04045
-9	43.81082	0.9697	**15**	-47.4076	-1.04931
-8	46.96491	1.039512	**16**	-11.5221	-0.25503
-7	54.20893	1.19985	**17**	-19.1295	-0.42341
-6	54.29216	1.201692	**18**	-39.5947	-0.87638
-5	50.86295	1.12579	**19**	-42.4433	-0.93943
-4	51.36985	1.13701	**20**	-50.4825	-1.11737
-3	49.194	1.08885	**21**	-55.3466	-1.22503
-2	46.0936	1.020227	**22**	-50.7671	-1.12367
-1	49.75926	1.101362	**23**	-83.5471	-1.84922
			24	-51.1957	-1.13316

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 6 demonstrates the abnormal usage of M-wallets and t- statistics for various months during event window. It revealed that the values of t-statistics are statistically insignificant for all months. Hence, Hypothesis 6 is accepted that there is no influence of demonetization on adoption of m-wallets transactions.

Figure 6 Abnormal increase/decrease in Usage of m-wallets during Event window



It can be inferred that M-wallet transactions increased during all months prior to demonetization and decreased for all months after demonetization. Thus, demonetization has no role in increasing m-wallet transactions during event window.

Table 7 Abnormal Usage and t-statistics for PPI Cards

Month	PPI cards	t –statistics	Month	PPI cards	t -statistics
-24			**0**	6.850418	1.101411
-23	9.926448	1.595975	**1**	-0.43022	-0.06917
-22	9.414023	1.513588	**2**	-3.61321	-0.58093
-21	8.439986	1.356982	**3**	-4.10696	-0.66032
-20	5.889575	0.946927	**4**	-9.12412	-1.46698
-19	8.641144	1.389324	**5**	-5.37395	-0.86402
-18	8.029122	1.290923	**6**	-10.4892	-1.68645
-17	5.33198	0.857276	**7**	-7.46123	-1.19962
-16	0.620257	0.099725	**8**	-4.6109	-0.74134
-15	-1.20321	-0.19345	**9**	-5.99434	-0.96377
-14	2.24005	0.360155	**10**	-3.59618	-0.57819
-13	1.853599	0.298022	**11**	-6.05412	-0.97338
-12	0.681365	0.10955	**12**	-14.8805	-2.39249
-11	1.251552	0.201225	**13**	6.612942	1.063229
-10	-2.03147	-0.32662	**14**	2.311689	0.371674
-9	-2.58922	-0.41629	**15**	5.568656	0.895329
-8	-9.91913	-1.5948	**16**	6.099267	0.980641
-7	1.348157	0.216757	**17**	7.004895	1.126248
-6	-0.35774	-0.05752	**18**	9.154515	1.471864
-5	0.061108	0.009825	**19**	7.162567	1.151598

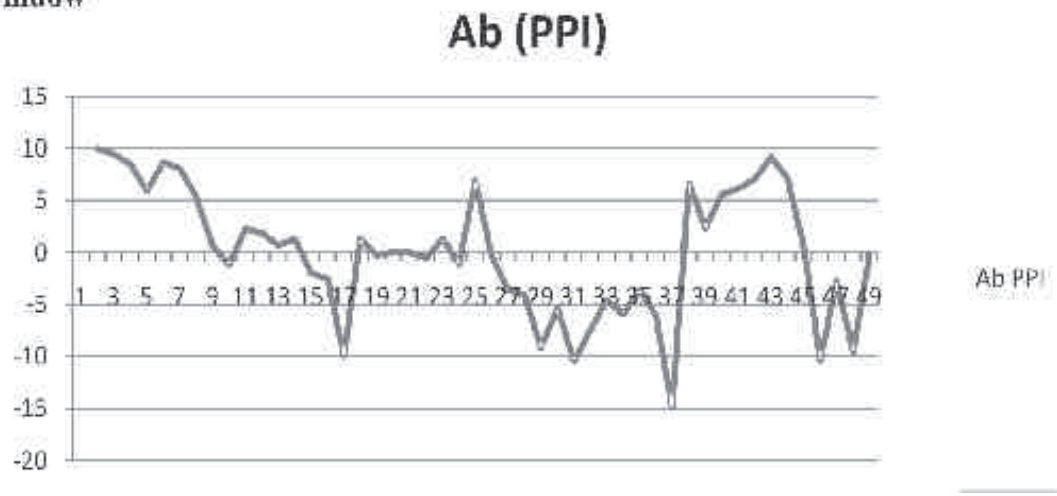
-4	-0.00813	-0.00131	**20**	0.583944	0.093887
-3	-0.57984	-0.09323	**21**	-10.3658	-1.66662
-2	1.313818	0.211236	**22**	-2.76374	-0.44436
-1	-1.12202	-0.1804	**23**	-9.59464	-1.54263
			24	-0.12119	-0.01948

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 7 highlighted abnormal usage of PPI cards and t-statistics during event window. The values of t-statistics are found to be statistically insignificant for all months before and after the demonetization, this accepted the Hypothesis 7.

Figure 7 Abnormal increase/decrease in Usage of PPI cards during Event window



The result highlighted that PPI card transactions increased during 15 months prior to demonetization and after demonetization for first 8 months it increased and thereafter start decreasing. Therefore, it is inferred that demonetization has no role in changing PPI transactions.

Table 8 Abnormal Usage and t-statistics for M-banking transactions

Month	M-banking	t -statistics	Month	M-banking	t -statistics
-24			**0**	-762.82	-1.18395
-23	683.8737	1.061423	**1**	-1116	-1.73211
-22	686.9214	1.066153	**2**	-959.558	-1.4893
-21	688.5558	1.06869	**3**	-722.621	-1.12156
-20	682.5193	1.059321	**4**	-984.022	-1.52728
-19	705.3377	1.094737	**5**	-775.84	-1.20416
-18	711.0688	1.103632	**6**	-1244.83	-1.93206
-17	675.8326	1.048942	**7**	-877.832	-1.36246
-16	652.3788	1.012541	**8**	142.5996	0.221325
-15	669.1854	1.038625	**9**	170.1021	0.264011

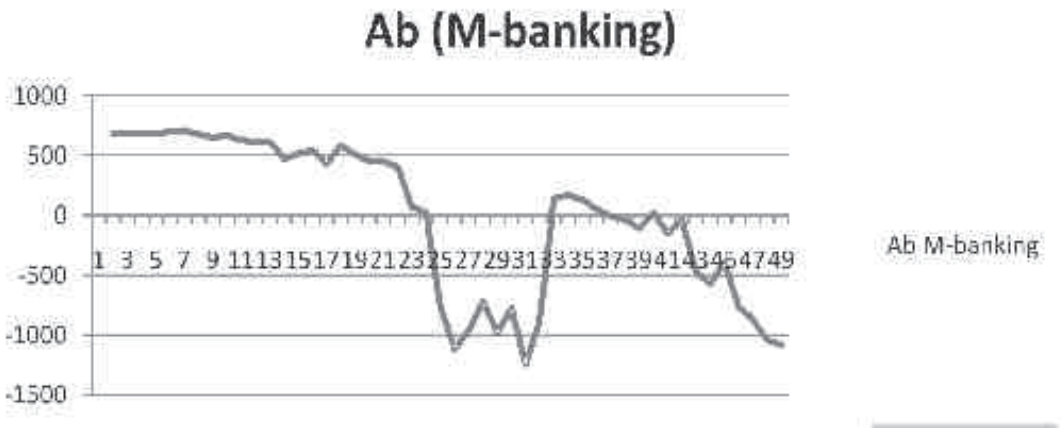
-14	629.6701	0.977295	**10**	133.3433	0.206959
-13	608.6364	0.944649	**11**	53.41196	0.082899
-12	615.5067	0.955312	**12**	-6.20887	-0.00964
-11	474.0284	0.735727	**13**	-35.518	-0.05513
-10	515.1189	0.799503	**14**	-108.742	-0.16878
-9	549.9498	0.853563	**15**	20.78349	0.032258
-8	426.2212	0.661527	**16**	-153.548	-0.23832
-7	584.6864	0.907477	**17**	-34.9302	-0.05421
-6	507.7979	0.78814	**18**	-474.949	-0.73716
-5	453.2047	0.703407	**19**	-570.397	-0.8853
-4	450.9092	0.699845	**20**	-393.089	-0.6101
-3	405.0769	0.628709	**21**	-768.839	-1.1933
-2	68.49651	0.106312	**22**	-870.689	-1.35137
-1	21.55306	0.033452	**23**	-1041.54	-1.61655
			24	-1084.8	-1.6837

Source: Author's Calculations

Note: **indicates significant at 5% level of confidence

Table 8 demonstrated that calculated values of t-statistics are statistically insignificant for all months before and after the demonetization. Hence, Hypothesis 8 is accepted that there is no influence of demonetization on adoption of M-banking.

Figure 8. Abnormal increase/decrease in Usage of M-banking during Event window



It can be inferred that M-banking transactions increased during most of months prior to demonetization and then start decreasing after demonetization. This indicated that demonetization has no specific role in increasing M-banking transactions.

Conclusion

The results demonstrate temporary transition of Indian economy from cash to cashless payment system as after demonetizations cash circulation in economy started creeping up. In order to make India a truly digital economy multipronged efforts by the government to bring behavioural change and spread financial literacy through education and awareness accompanied by robust digital

payment ecosystem are required. So, policymakers need to consider barrier to digital payment system and design appropriate policies to remove these barriers to facilitate pace of adoption.

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