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Impact of COVID-19 on Payment Transactions

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Abstract

Due to the extreme contagious nature of the COVID-19 virus, the Government of India has had to implement several restrictions to curb the outbreak. The brunt of the economic consequences of the restrictions has been faced majorly by the aviation, tourism and hospitality sector. Nevertheless, many other small/medium/large services are facing the economic consequences.

With the lockdown allowing mostly the essential sectors to continue to function, the spending of disposable income is expected to reduce drastically. The cash withdrawals at ATMs is a prominent measure of the general retail economic activity. We show its impact along with the impact on other digital payment modes such as Debit/Credit cards, UPI, IMPS, NEFT and RTGS. We present the extent to which COVID-19 and the subsequent nationwide lockdown and slow unlocking, during April-May-June 2020, has impacted the financial transactions in the country. The sheer slowdown of the economy gets depicted by the drastic reduction of retail payment activities in the country.

Based on transaction data during Q4 of FY20 and Q1 of FY21, we relate the economic impact of COVID induced lockdown and its subsequent relaxations. Although the economy is likely to suffer in FY21, we have begun to see some form of cautious and calibrated opening up of economic activity, as we see payment transactions picking up starting June 2020. The positive effect of COVID can be seen in form of increased levels of BHIM-UPI usage, as more and more people learn to use this mobile app-based, easy to use, digital mode of payment.

Key words: ATM cash withdrawal; Digital transactions; Polynomial trend.

1. Introduction

The first case of COVID-19 was reported in January end. While the number of cases remained low in February, the number of cases started to rise in March, which led the government to implement a nationwide lockdown in the country. As on date, the number of new cases is constantly increasing every day.

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On 1st June, the nationwide lockdown (which started from 25th March) was extended till 30th June to combat COVID-19. This increases the total lockdown period to 98 days. We provide an update on the latest COVID-19 status for India as a whole.

Some of the key observations include:

• Confirmed cases: As of 25th June, India's COVID-19 confirmed cases stood at 4.9 lakh. Before the first phase of the lockdown was initiated from 25th March, India's total confirmed COVID-19 cases stood at 519. Currently, confirmed cases are doubling in about 18 days. The timeline for the doubling of confirmed cases has shown a steady increase.

• Active cases: Active cases currently stand at 1.9 lakh and the doubling of such cases followed trends similar to confirmed cases, but on a higher side.

• Recovery cases: As of 25th June, a total of 2.9 lakh COVID positives have recovered, resulting in a nationwide recovery rate of 58%.

• Deaths: COVID-19-related deaths stood at 9 before 25th March, which has increased to more than 15,300 as on 25th June. Deaths are now doubling in about 20 days *vs*. the previous average of 9-18 days in the second half April and month of May and June. The current mortality rate based on the number of closed cases (recovered + death) is 5.1%.

• The daily new confirmed cases of COVID-19 is still at its increasing trajectory with the highest, till date, being 18,000 plus.

• State-wise trend: Maharashtra remains the worst-affected state (confirmed cases have crossed the 147,000 mark), followed by Delhi, Tamil Nadu, Gujarat, Uttar Pradesh, Rajasthan, West Bengal, Madhya Pradesh, Haryana and Karnataka. They contribute to over 85% of the total COVID-19 confirmed cases. On a combined basis, these ten states contribute about 70% to India's total GDP.

With the nationwide lockdown now being extended to a total of 98 days and fiscal stimulus is proving to be inadequate, the economy is likely to suffer a deep recession in FY21. Although we have begun to see some form of cautious and calibrated opening up of economic activity in some regions/areas starting June 2020, return to normalcy or near normalcy depends on how quickly the COVID curve flattens out.

Over the past couple of years, the GDP growth rate has been falling, 2018 (6.8%), 2019 (4.2%) and was expected to be 4.6% percent in 2020. However, due to the imposed lockdown recent conservative estimates place the growth rate to be in negative territory (for the first time since 1979).

Due to the extremely contagious nature of the COVID-19 virus, the Government of India has had to implement several restrictions to curb the outbreak. The brunt of the economic consequences of the restrictions has been faced majorly by the aviation, tourism and hospitality sector. Nevertheless, many other small/medium/large services are facing the economic consequences that include real estate, constructions, textiles, passenger/commercial vehicles, poultry/meat, etc.

According to Willis Towers Watson India COVID-19 Readiness (Survey Results and Key Insights April 2020), the following gets highlighted:

• 57% of organisations have indicated that there will be a moderate to large negative impact on their business in the next 6 months

• 46% of organisations have indicated that there will be a moderate to large negative impact on their business in the next 12 months

• 19% of organisations have indicated that there will be a moderate to large negative impact on their business in the next 12-24 months

• 5% of organisations responded that there will be a positive business impact within the next 12 to 24 months

The economic activity of the country is gauged by the retail payments activity, be it the ATM usage for cash, or other digital means of payment. To see the impact of COVID-19 on the payment systems during the past three months, we use data provided by the Reserve Bank of India (RBI) and the National Payments Corporation of India (NPCI).

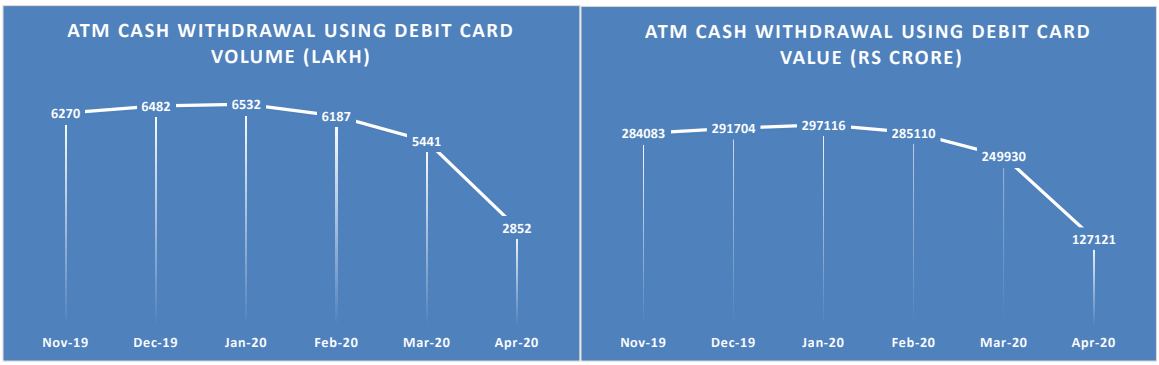
With the lockdown allowing mostly the essential sectoRs. to continue to function, the spending of disposable income is expected to reduce drastically. The cash withdrawals at ATMs is a prominent measure of the general retail economic activity. The inactivity in the economy and its extent in terms of requirement of cash is depicted in Section 2, using the ATM cash withdrawal data. In Section 3, we show the impact of lockdown on other digital payment modes such as Debit/Credit cards, UPI, IMPS, NEFT and RTGS. We present the extent to which COVID-19 and the subsequent nationwide lockdown has impacted the financial transactions in the country. The sheer slowdown of the economy gets depicted by the drastic reduction of retail payment activities in the country. Finally, in Section 4 we give some concluding remarks.

2. Impact of COVID-19 Related Lockdown on ATM Usage

We study the impact of lockdown on cash withdraws at ATMs. ATM transactions are an important indicator of the day-to-day economic activity. The ATM cash withdrawal transactions constitute the on-us and the off-us transactions. In case of on-us transactions, the ATM and the debit card that is used for cash withdrawal are of the same bank. While for the off-us transactions, the debit card of a bank is used in an ATM of a different bank. Such off-us transactions are routed through a switch, called the National Financial Switch (NFS), maintained by NPCI. We first present trends on cash withdrawals at ATM for the combined on-us and off-us transactions. This is followed by studying the trends for off-us transactions ATM only.

2.1. ATM usage for combined on-us and off-us transactions

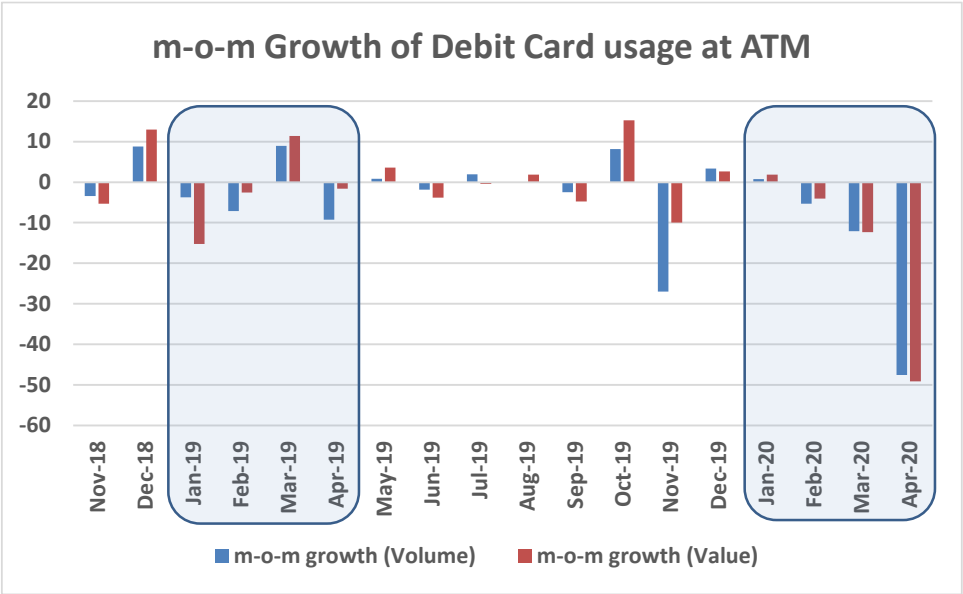
We primarily look at the volume and value data of ATM transactions for the period November 2019 through April 2020. Chart 1 shows that in April 2020, there had been Rs. 1.27 lakh crore of ATM cash withdrawals unlike monthly average of Rs. 2.77 lakh crore during Q4 of FY20. Thus, there had been less cash withdrawal to the tune of over Rs. 1.5 lakh crore in April 20, over the average monthly withdrawal in Q4 of FY20.



Source: RBI data

Chart 1: Trend of cash withdrawal at ATM using debit card

The impact of lockdown on ATM cash withdrawals are better judged based on growth curves. Charts 2 provides month-on-month (m-o-m) percentage growths for the period November 2018 through April 2020. The m-o-m growth of ATM transactions (in value terms) for March 2020 over March 2019 had been (-)24% while for April 2020 over April 2019 had been (-)48%.



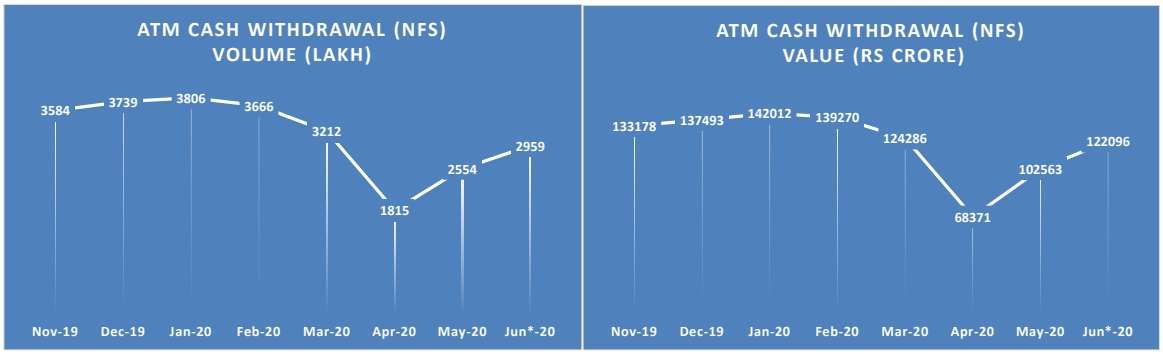
Source: RBI data and authors' computation

Chart 2: m-o-m growth of debit card usage at ATM

2.2. ATM usage for off-us transactions

Unlike RBI data for the combined on-us and off-us transactions, NPCI provides the monthly NFS data for off-us cash withdrawals at ATM. The latest data available is for the month of May 2020. Additionally, since June 2020, RBI has started disseminating daily data for cash

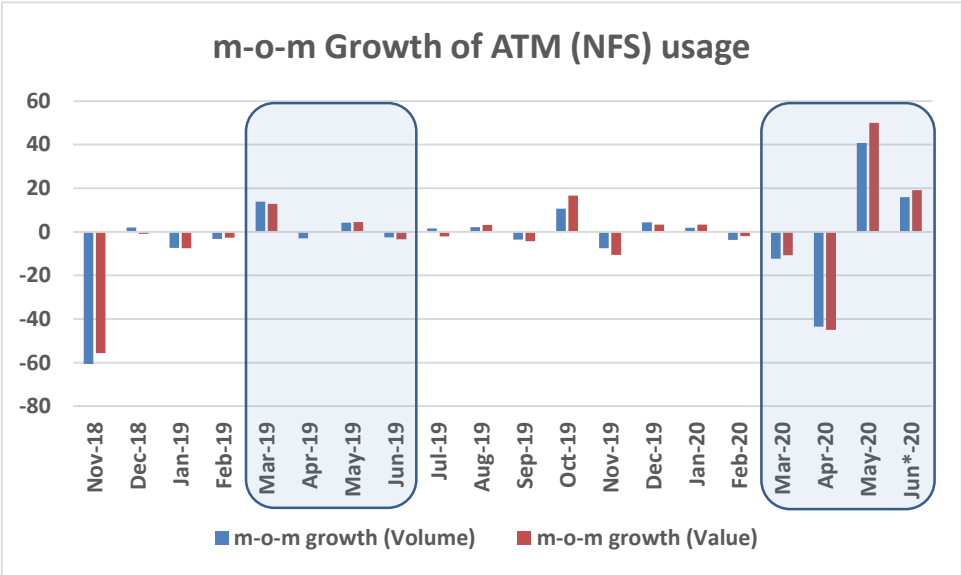
withdrawal using the NFS (through ATM). We use such daily data till June 23, 2020, to project the June figures. The off-us ATM cash withdrawals till June 23rd had been 2268.33 lakh (volume) and Rs. 93606.94 crore (volume). Therefore, based on proportions, for the 30 days of June 2020, an estimate of the cash withdrawal volume is 2268.33*30/23 = 2959 lakh and that the value is 93606.94*30/23 = Rs. 1.22 lakh crore.



Source: NPCI/RBI data and authors' computation

Chart 3: Trend of cash withdrawal at ATM for off-us transactions

Chart 3 shows that April 2020 showed a trough and thereafter things are slowly returning to normal with significant improvements in June 2020. During Q4 of FY20, the monthly average of off-us cash withdrawal at ATM had been Rs. 1.35 lakh crore, while April, May and June 2020 reflect off-us cash withdrawals of Rs. 0.68 lakh crore, Rs. 1.03 lakh crore and Rs. 1.22 lakh crore, respectively. This demonstrates the effect of some form of cautious and calibrated opening up of economic activity during the months of May and June.



Source: NPCI/RBI data and authors' computation

Chart 4: m-o-m growth of off-us ATM usage

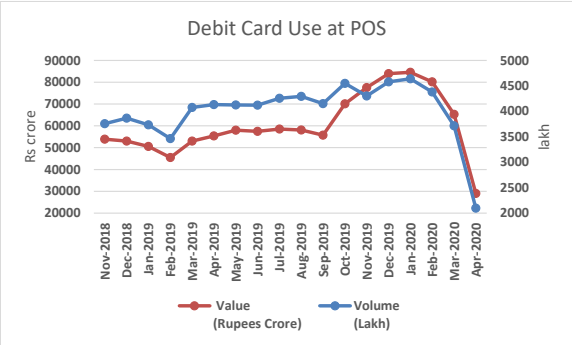
Charts 4 provides m-o-m growths for the period November 2018 through June 2020. The m-o-m growth of off-us ATM transactions (in value terms) for March 2020 over March 2019 had been (-)24%, for April 2020 over April 2019 had been (-)45%, for May 2020 over May 2019 had been 45%, while for June 2020 over June 2019 is estimated to be 22%.

3. Impact of COVID-19 Related Lockdown on Digital Payments

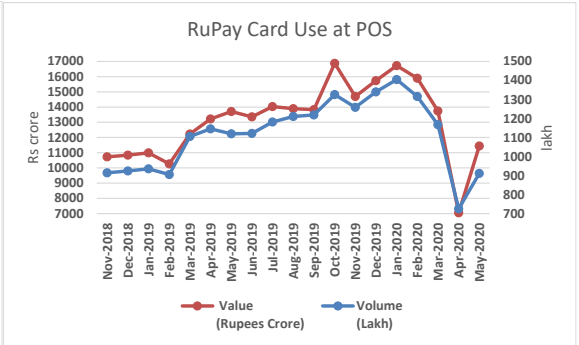
We study the impact of lockdown on some important digital payment modes such as Debit/Credit cards, UPI, IMPS, NEFT and RTGS.

3.1. Debit card usage at POS (includes e-Com)

Post demonetization, debit cards (primarily mastercard/VISA/RuPay debit cards) have seen a significant jump in usage at merchant POS, which includes e-Com mobile/computer-based online transactions. Primarily, e-Com constitutes e-commerce transactions and digital bill payments through ATMs, etc. for credit/debit cards, while for debit cards it additionally includes a card to card transfers. With lockdown in place, we see a significant drop in retail economic activity and this is seen clearly in Chart 5, where we present debit card and RuPay card transaction data for the period November 2018 through April 2010 (for RuPay debit card, we have the additional data for May 2020).



Source: RBI data



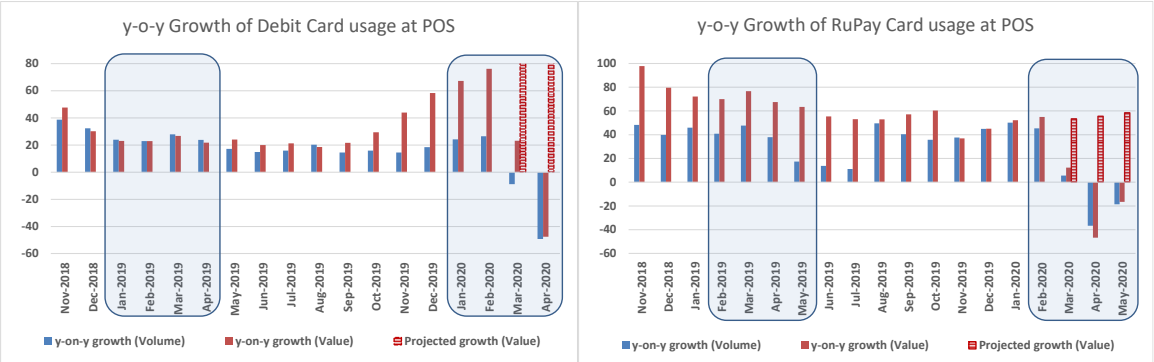
Source: NPCI data

Chart 5: Debit card and RuPay card transactions

The impact of lockdown on debit/RuPay card-based POS transactions are now judged based on growth patterns. The year-on-year (y-o-y) growth percentages for the period November 2018 through April/May 2020 are plotted in Chart 6. The impact of lockdown on POS transactions (in value terms) is now judged based on growth estimates in the absence of COVID-19 and the actual COVID-19 impacted figures. The estimates for March-April-May 2020 are based on a third-degree polynomial trend fitted from the growth (value) figures of November 2018 through February 2020. The period November 2018 through May 2020 are associated to

the variable x, taking values 1,2,…,16,17,18,19, respectively. Let y denote the y-o-y growth in transaction values at POS. The fitted curves for debit card and RuPay card are

$$\text{Debit Card:} \quad y = 47.938 - 6.934x + 0.251x^2 + 0.019x^3 \text{ with } R^2 = 0.939$$
$$\text{RuPay Card:} \quad y = 97.341 - 6.774x + 0.223x^2 + 0.001x^3 \text{ with } R^2 = 0.832$$



Source: RBI data and authors' computation *Source: NPCI data and authors' computation*

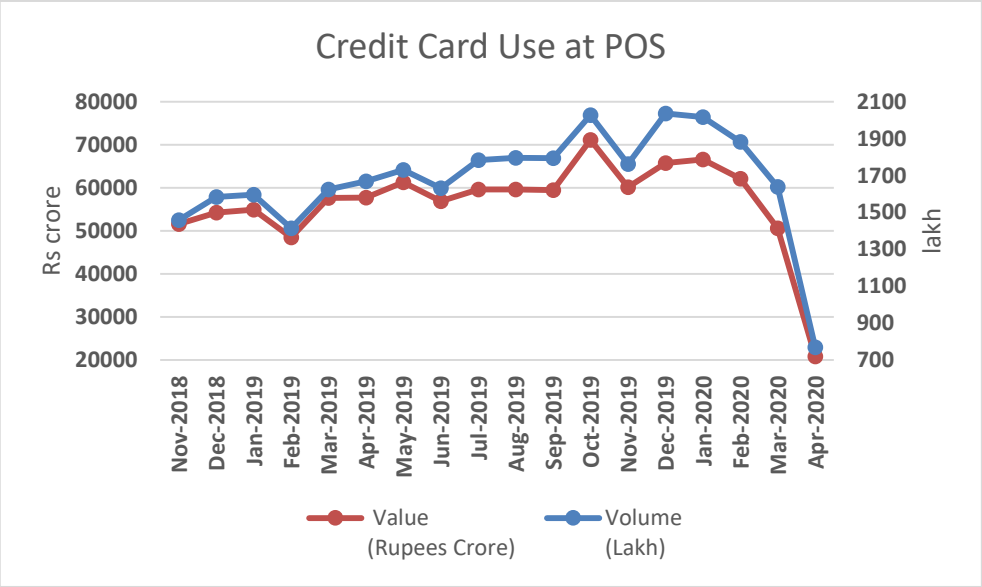
Chart 6: y-o-y growth patterns for debit/RuPay card usage at POS

The y-o-y growth of debit card transactions (in value terms) for March 2020 over its trend estimate had been (–)73%, while for April 2020, it had been (–)163%. For RuPay card the same is (–)41% and (–)102% for March 2020 and April 2020, respectively. Finally, the y-o-y growth of RuPay card transactions (in value terms) for May 2020 over its trend estimate had been (–)75%.

3.2. Credit card usage at POS (includes e-Com)

Prior to COVID outbreak, credit card (primarily mastercard/VISA credit cards) usage at POS (includes e-Com) have been increasing consistently. Lockdown induced a significant drop in retail economic activity and this is clearly reflected in Chart 7, which provides credit card transactions for the period November 2018 through April 2010.

As in case of debit cards, the impact of lockdown on credit card based POS transactions are now judged based on growth patterns. The y-o-y growth percentages for the period November 2018 through April 2020 are plotted in Chart 8, and the impact of lockdown on POS transactions is judged based on growth estimates in the absence of COVID-19 and the actual COVID-19 impacted figures. As earlier, the estimates for March-April 2020 are based on a third-degree polynomial trend fitted from the growth (value) figures of November 2018 through February 2020.

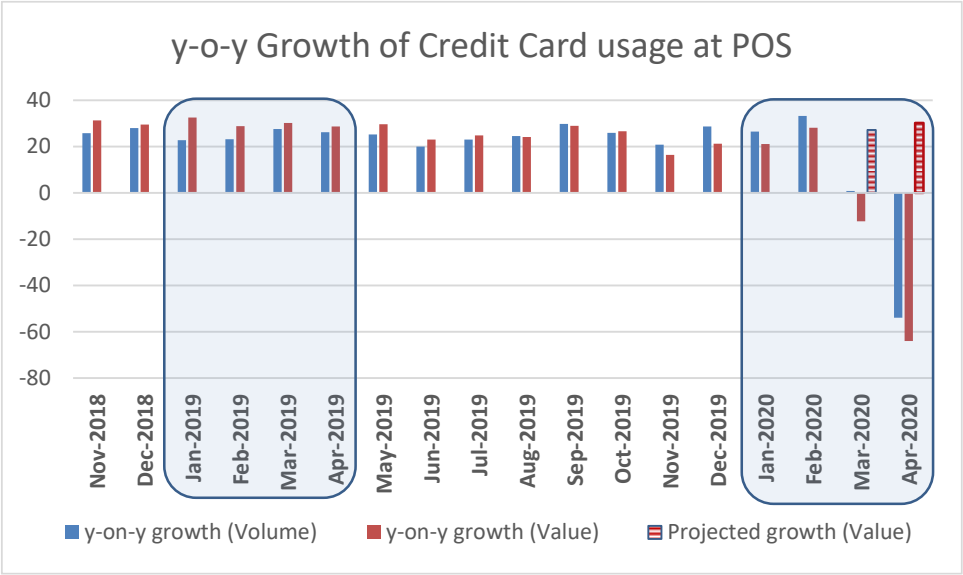


Source: RBI data

Chart 7: Credit card transactions

The period November 2018 through April 2020 are associated to the variable x, taking values 1,2,…,16,17,18, respectively. Let y denote the y-o-y growth in transaction values at POS. The fitted curve for credit card is

$$y = 29.264 + 1.499x - 0.351x^2 + 0.015x^3 \text{ with } R^2 = 0.565$$



Source: RBI data and authors' computation

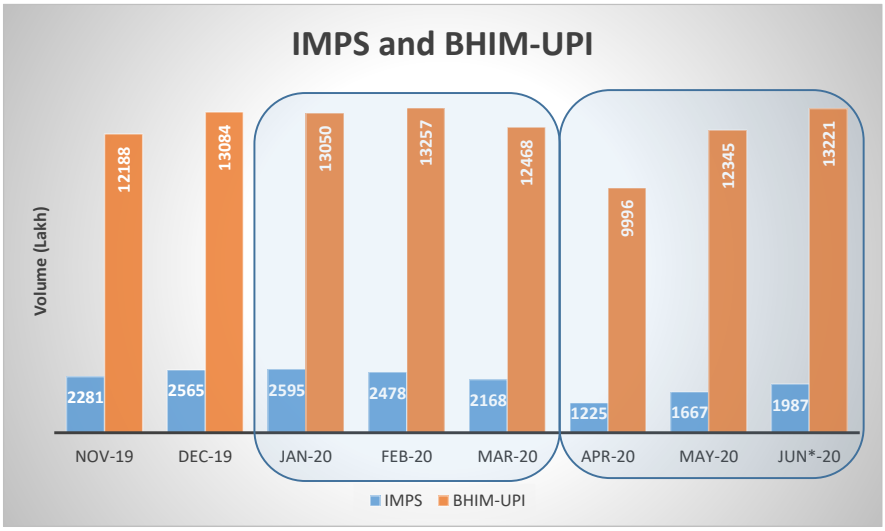
Chart 8: y-o-y growth patterns for credit card usage at POS

The y-o-y growth of credit card transactions (in value terms) for March 2020 over its trend estimate had been (–)39%, while for April 2020, it had been (–)94%. Since the third-degree polynomial fit has a relatively lower value of R^2, being conservative, we also look into the y-o-y growth (in value terms) for March 2020 over March 2019, which is (–)42% while for April 2020 over April 2019 is (–)93%.

3.3. IMPS and BHIM-UPI transactions

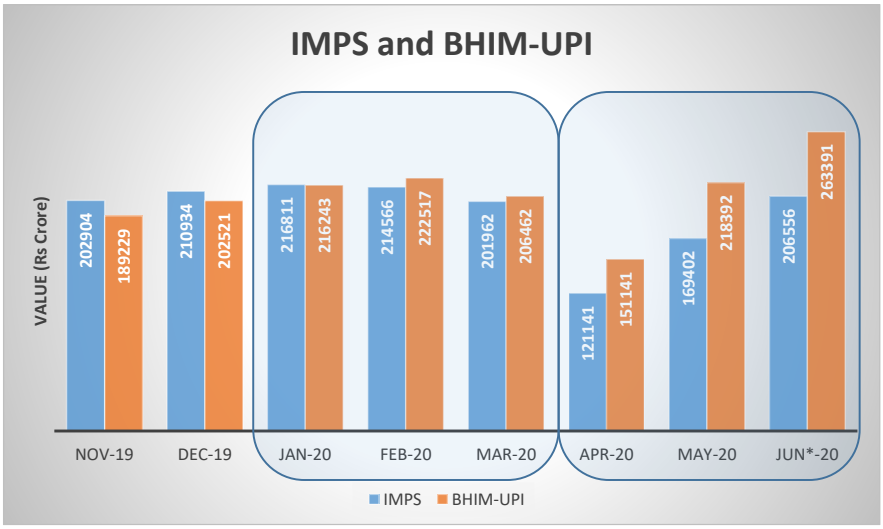
IMPS and BHIM-UPI based digital transactions allow real time account to account money transfers, be it person-to-person or person-to-merchant. Primarily based on mobile Apps, its ease of use has made it a well-accepted mode of retail payments and money transfer. NPCI has provided the transaction data till May 2020, while RBI, since June 2020, has started disseminating daily data for IMPS and BHIM-UPI transactions. Accordingly, as earlier, we use the daily data till June 23, 2020, to project the June figures. The estimated June 2020 IMPS volume and value are 1987 lakh and Rs. 2.07 lakh crore respectively. Similarly, for BHIM-UPI the volume and value estimates are 13221 lakh and Rs. 2.63 lakh crore respectively.

Tables 9 and 10 shows a marginal decrease in volume and values of such transactions in April 2020. However, omnipresence and proliferation of BHIM-UPI app has come very handy in the days of COVID (distancing from physical contacts) for day-to-day usage. This has led to a significant increase in BHIM-UPI transactions for the months of May and June 2020. IMPS has also shown recovery of transaction levels in May and June over April 2020.



Source: NPCI/RBI data and authors' computation

Chart 9: IMPS and BHIM-UPI transaction volumes



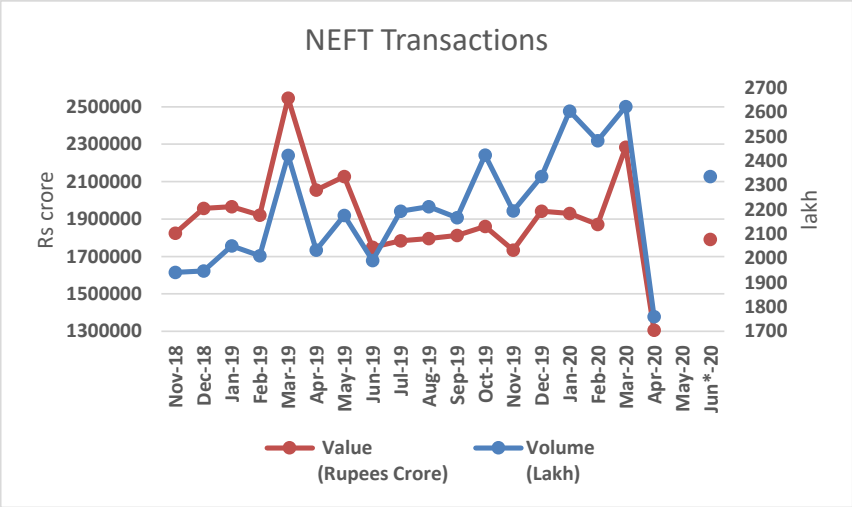
Source: NPCI/RBI data and authors' computation

Chart 10: IMPS and BHIM-UPI transaction values

3.4. NEFT transactions

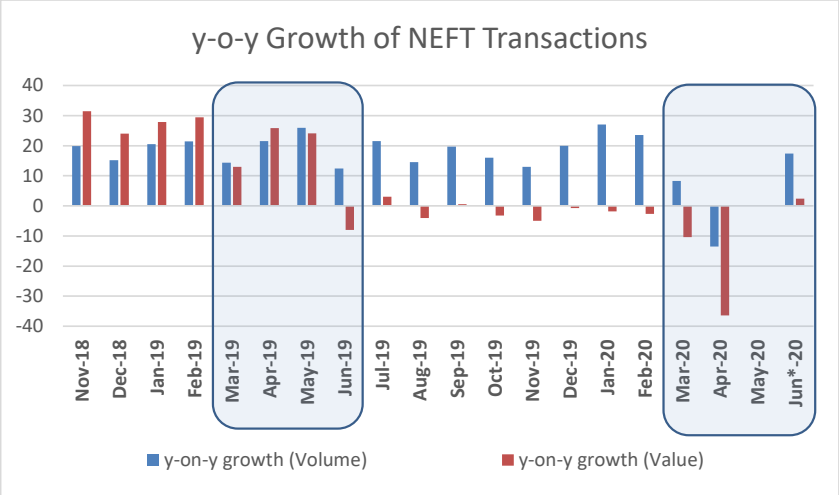
NEFT transactions are an important indicator of economic activity. In addition to the monthly data till April 2020, RBI's daily data for the period June 1-23, 2020 is used to project the June month's NEFT transactions. Following proportions, the estimated June 2020 volume is 2337 lakh and the value is Rs. 17.92 lakh crore. Trends in the NEFT transaction are provided in Chart 11 for the period November 2018 through April 2010 and June 2020. NEFT transactions usually increase in the month of March, being the financial year-end. The same is seen in March 2020 but to a lesser extent than in March 2019. However, for both volume and value, we see a significant drop in NEFT transactions in April 2020. In April 2020, there had been Rs. 13.06 lakh crore of NEFT transactions unlike a monthly average of Rs. 20.20 lakh crore during Q4 of FY20 (*i.e.*, a drop of over Rs. 7 lakh crore). However, in June 2020, we see a significant turnaround with increased NEFT transactions, being Rs. 17.92 lakh crore in value terms.

The impact of lockdown on NEFT transactions are better judged based on growth curves. In Chart 12, we provide y-o-y growths for the period November 2018 through April 2020. We see that the y-o-y growth of NEFT transactions (in value terms) for March 2020 over March 2019 had been (–)23%, for April 2020 over April 2019 had been (–)62%, while for June 2020 over June 2019 is estimated to be 10%. This indicates a revival of some economic activities, shown at least in terms of NEFT transactions.



Source: RBI data and authors' computation

Chart 11: NEFT transactions



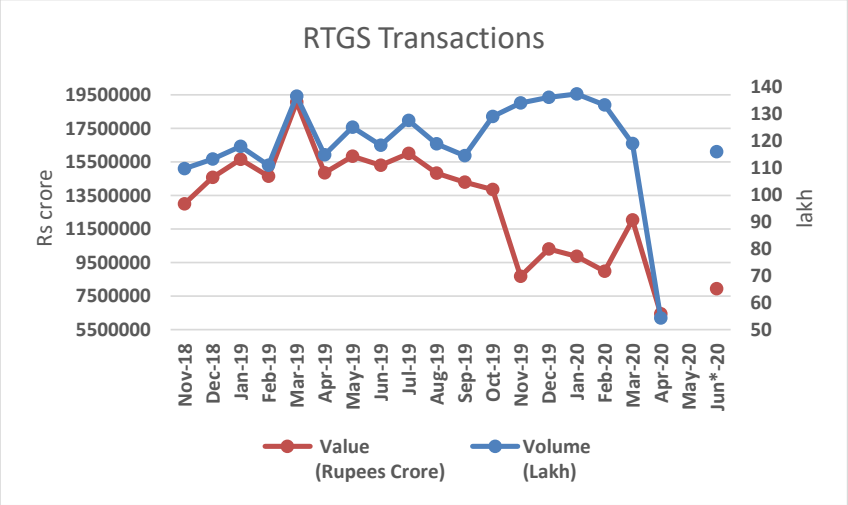
Source: RBI data and authors' computation

Chart 12: y-o-y growth of NEFT transactions

3.5. RTGS Transactions

RTGS transactions constitute RTGS customer transactions and RTGS interbank transactions. We focus on the RTGS transactions, being an indicator of economic activity. As earlier, the daily data for RTGS transactions till June 23, 2020 is used to project the June month's figure. The estimated June 2020 volume is 116 lakh and the value is Rs. 79.36 lakh crore for the RTGS transactions. Trends in the RTGS transaction for the period November 2018 through April 2020 and June 2020 is provided in Chart 13. For both volume and value, we see a significant drop in RTGS transactions in April 2020. In April 2020, there had been Rs. 64.44

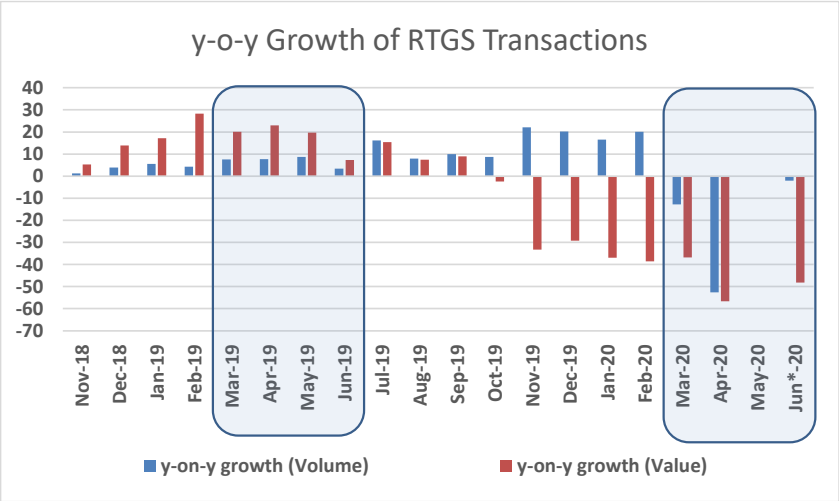
lakh crore of RTGS transactions unlike a monthly average of Rs. 103.06 lakh crore during Q4 of FY20 (*i.e.*, a drop of Rs. 38.62 lakh crore). However, in June 2020, we see a recovery with increased RTGS transactions, being Rs. 79.36 lakh crore in value terms.



Source: RBI data and authors' computation

Chart 13: RTGS transactions

In Chart 14, we provide y-o-y growths for the period November 2018 through April 2020 and that of June 2020. The y-o-y growth of RTGS transactions (in value terms) for March 2020 over March 2019 had been (–)57%, for April 2020 over April 2019 had been (–)80%, while for June 2020 over June 2019 is estimated to be (–)55%. One may note that such contracted growth are consistent and persisted since November 2019. It is remarked that from November 2019, RBI had introduced a new format for data dissemination.



Source: RBI data and authors' computation

Chart 14: y-o-y growth of RTGS transactions

4. Concluding Remarks

In India, COVID-19 cases started increasing exponentially from mid-March 2020. The subsequent lockdowns and thereafter slow unlocking had been witnessed during April-May-June 2020. Based on transaction data during Q4 of FY20 and Q1 of FY21, we relate the economic impact of COVID induced lockdown and subsequent relaxations in lockdown.

Although the economy is likely to suffer in FY21, we have begun to see some form of cautious and calibrated opening up of economic activity, as we see payment transactions picking up starting June 2020. This is clearly reflected in the country's ATM usage for cash withdrawal and a few other forms of digital payments. However, return to normalcy or near normalcy would depend on how quickly the COVID curve flattens out. The positive effect of COVID can be seen in form of increased levels of BHIM-UPI usage, as more and more people learn to use this mobile app-based, easy to use, digital mode of payment. Moreover, money transaction using BHIM-UPI does not cost the users of this payment mode.

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