

DIGITAL PAYMENTS: INCREASING SIGNIFICANCE IN THE INDIAN CONTEXT

Neeraj Amarnani

Professor-Finance, Goa Institute of Management,
Sanquelim, Poriem, Sattari, Goa.

Arpita Amarnani

Associate Professor-Finance, Goa Institute of Management,
Sanquelim, Poriem, Sattari, Goa.

ISSN 2277-7733

Volume 8 Issue 1,

June 2019

Abstract

Digitisation is having a significant impact in all walks of life, including the way monetary transactions take place, even in a cash-intensive society such as India. The present paper seeks to explore if digital payments have made significant progress in India and are now gaining pre-eminence as a mode of payment, by examining multiple sources of secondary data. It establishes that the Government has taken concrete, albeit controversial measures such as demonetization, as well as direct benefit transfers, designed and implemented payments infrastructure such as Immediate Payments Service (IMPS) and Unified Payments Interface (UPI). These and the proliferation of smart devices and better internet access have led to a large increase in digital payments. However, cash still seems to dominate the marketplace, though to a marginally lesser extent, and it will take a significant behavioural shift from the consumers to eventually enable digital payments to be the dominant mode of payments in India.

Keywords: *Digital Payments, Payment systems, Fintech, Financial Technology, IMPS, UPI*

The digital revolution is here to stay. It has among other things greatly effected the way we transact on a day-to-day basis. From being a cash-driven society and economy, India is taking decisive strides in the direction of digital payments.

Payment and settlement systems are mechanisms established to facilitate the clearing and settlement of monetary and other financial transactions. Secure, affordable and accessible payment systems and services promote development, support financial stability, and help expand financial inclusion. (World Bank, 2019)

So what drives digital payments? Let's take a brief revisit to the emergence of traditional payment alternatives as they exist today, and examine some of the use cases of money:

Immediate payments: Cash and access to cash when needed were the major avenues for making payments. Access to cash would be facilitated through Automated Teller Machines (ATMs), which were first installed in 1967, and came to India much later in 1987; **Credit cards:** The payments through cash were supported by credit cards, which were introduced in 1958. These were offline payment mechanisms which were facilitated by a credit history, timely repayment and a physical hotlist of defaulting cards maintained by accepting merchants.

Domestic Transfers: Demand Drafts; Telegraphic transfers

International Transfers: Interbank: SWIFT messaging system

A major revolution was effected in this market by the advent of the internet in 1994. This led to connectivity options that did not exist earlier, both for financial communication as well as online commerce possibilities. One of the first pressing needs was for the facilitation of e-commerce, since the merchant and customer were meeting only in an online space, and would not have access to a physical means of managing the payments for the goods or services delivered. This naturally led to issues of trust on both sides, and hence a pressing need for a digital payment alternative. The

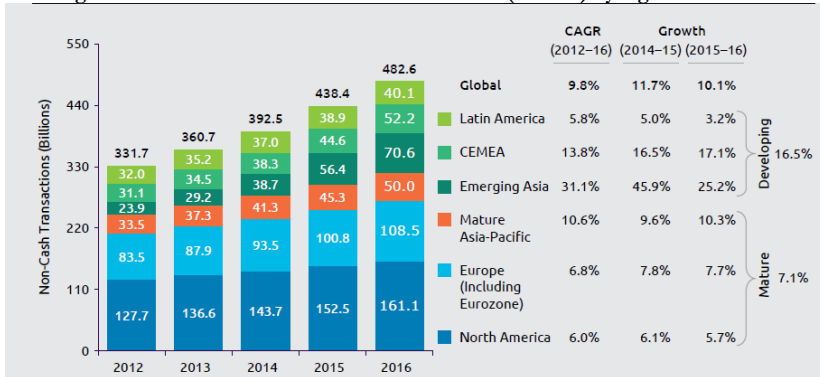
result of this was a need for creating payment instruments and systems that were digital in nature. This led to the genesis of paypal, which stepped in to provide the necessary payment mechanisms as an online intermediary facilitating the security, and convenience of online payments to e-commerce merchants(ePayments.com, 2019)

Adoption of payments depends on setup costs and ease as well as record keeping convenience, while payment characteristics such as ease of use, cost and security are found to be very important in influencing customer use of payment methods (Schuh & Stavins, 2013). Consumer behaviour at point of sale plays an important part in understanding models of monetary demand, with statistically significant effects played by transaction costs, opportunity costs and product characteristics on choice of the payment methods. In a particular study of stores purchases, higher value transactions are found to be made by credit cards, and lower value ones by debit cards(Klee, 2008)

Global trends in Payments:

There has been a consistent and widespread rise in non-cash payments around the world, as shown in Figure 1¹. Surprisingly, though it has a smaller base, Emerging Asia (70.6 billion transactions)not only has grown by a larger CAGR percent of 31.1%, but has even grown more than North America (161.1 bn) and Europe (108.5 bn) in absolute terms. This has led it to be the world leader in non-cash payments growth, by increasing volumes by over 14.2 billion transactions as compared to both North America and Europe. Significant growth rates have been observed in Russia (36.5%), India (33.2%) and China (25.8%) and a more modest one by South Africa (15.1%). While the mature markets still contribute 66% of global non-cash payments in 2016, this share has reduced by 20% towards developing economies who are faster in adopting newer payment modes, thus generating a faster pace of relative growth of non-cash payments.(Capgemini & BNP Paribas, 2019).

Figure 1: No of worldwide Non-cash transactions (billions) by region: 2012-2016

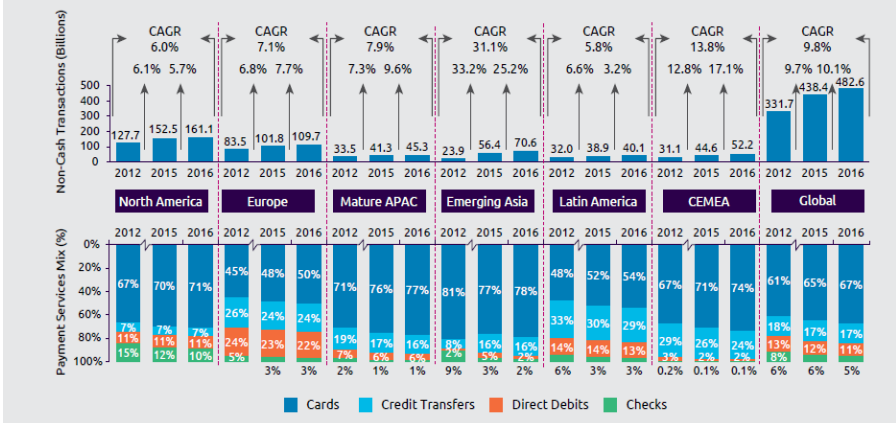


Source: World Payments Report 2018, by Capgemini & BNP Paribas

¹CEMEA (Central Europe, Middle East, Africa) includes Algeria, Bulgaria, Croatia, Kenya, Nigeria, Egypt, Israel, Morocco and UAE in other CE and MEA countries; Latin America includes Argentina, Colombia, Venezuela, Chile, Peru, Uruguay, Costa Rica, Bolivia, and Paraguay in other Latin American countries; Emerging Asia includes Malaysia, Thailand, Indonesia, Philippines, Taiwan, Pakistan, Sri Lanka, and Bangladesh in other Asian countries; Mature APAC (Asia-Pacific) includes Japan, Australia, South Korea and Singapore; NA (North America) includes the US and Canada(Capgemini & BNP Paribas, 2019)

A closer look at these numbers indicate that while the developed economies of North America and Europe clearly have large number of digital payment transactions occurring, the preference for type of digital payments varies quite a bit between the two regions, as shown in Figure 2. While North America is a card-driven region, with 71% payments by credit cards, 11% by direct debits and 10% by checks (cheques), Europe is much more distributed in its preferences with 50% transactions by credit cards, 24% by credit transfers and 22% by direct debits. Emerging Asia largely mirrors the North American credit card dominated pattern, except that credit transfers have the second largest share at 16%(Capgemini & BNP Paribas, 2019). The same report also goes on to forecast a total volume of 876 bn non-cash transactions in 2021, of which the largest share would be from emerging Asia at 251 bn, reflecting a CAGR of almost 29% from 2016-2021. At this juncture, they forecast that about half of the transactions would be from the mature economies and developing economies each.

Figure 2 Global Non-cash transactions (billions) and payments mix (%) by region: 2012-2016



Source: World Payments Report 2018, by Capgemini & BNP Paribas

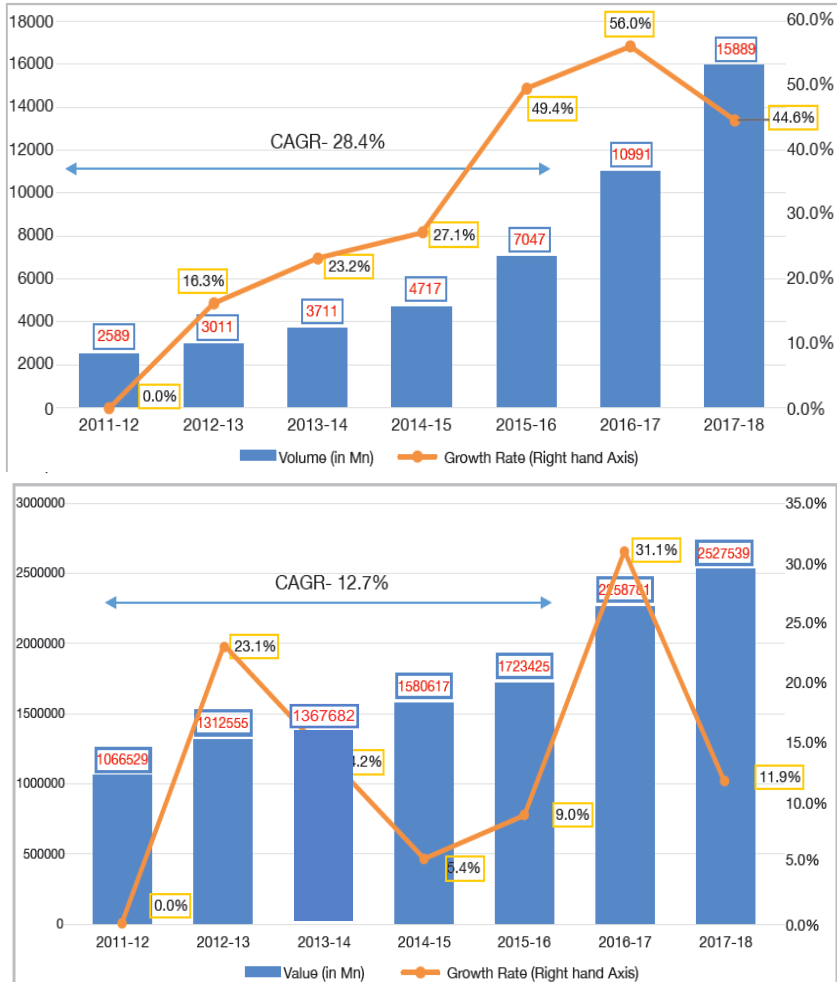
Digital Payments in India:

India has recently been witnessing a strong growth in non-cash payments. A major inflection point in this has been the demonetization exercise of November 2016, which demonetized the 500 and 1000-rupee notes, thus reducing the cash in circulation by about 86% on an almost overnight basis. (Times of India, The, 2016) This was announced by the Government of India for multiple reasons, including tackling the problem of black money and fraudulent notes in circulation as well as providing a push to digital payments to help formalise more sections of the economy. (NITI Aayog, 2018)

The overall trends of a high growing trajectory of digital retail payments is exhibited in Figure 3 below. From a very small volume of 2.59 bn transactions in 2011-12 to 15.89 bn in 2017-18 the number of transactions has multiplied manifold at a CAGR of 35.31%, of which the last three-year period from 2015-18 has seen a sharp CAGR of 49.9%. The same period of 2011-18 has witnessed a CAGR of 15.47% in value terms growing from a transaction amount of Rs 1,066.5 trillion to Rs 2,527.5 tn. The growth

in value terms has been relatively sedate except for a sharp increase of 31.1% in 2016-17, when the demonetization exercise was undertaken. This combination of a high growth in volumes and a steady growth in value of transactions actually points to a larger number of low-value transactions proliferating over time. The average transaction value emerging from this data, given below in table 1, clearly indicates a reduction in size of transaction value. This may be attributed to a larger number of people participating with smaller transaction values over the last few years.

Figure 3: Growth in Digital Payments, by volume and value



Source: RBI, as quoted in *Digital Payments, Trends Issues and Opportunities 2018*, Niti Aayog

Table 1: Digital Transactions in India

Year	Vol, in mns	Value (Rs mn)	Ave Trans. Value (Rs)
2011-12	2,589	10,66,529	411.95
2012-13	3,011	13,12,555	435.92

2013-14	3,711	13,67,682	368.55
2014-15	4,717	15,80,617	335.09
2015-16	7,047	17,23,425	244.56
2016-17	10,991	22,58,761	205.51
2017-18	15,889	25,27,539	159.07

Source: Collated and computed by Author from data in Digital Payments, Trends Issues and Opportunities 2018, Niti Aayog

Government Impetus to Digital Payments in India

Some of this increase may be due to an increased impetus given by the Indian Government to digital payments over the last few years. Measures in this direction have been the introduction of Immediate Payments Service (IMPS) by the National Payments Corporation of India (NPCIL) in 2010. The IMPS has, in fact, been adjudged the best fin-tech innovation in payment systems in the world, rated at 5 on a 5 point scale, doing better than countries such as US and China (Business Today, 2018). The service allows bank customers to use a mobile number, the internet and other channels to make instant payments. As a matter of fact, India could take credit for having arguably the most evolved and sophisticated public digital payments infrastructure in the world. This is further enhanced by the presence of an overlay layer developed by the NPCIL called the Unified Payments Interface (UPI), which makes the IMPS service quite accessible. It is actually this platform and overlay that are the backend infrastructure of the fast-emerging payment services such as Google Pay and PayTM in India currently. (FIS, 2018).

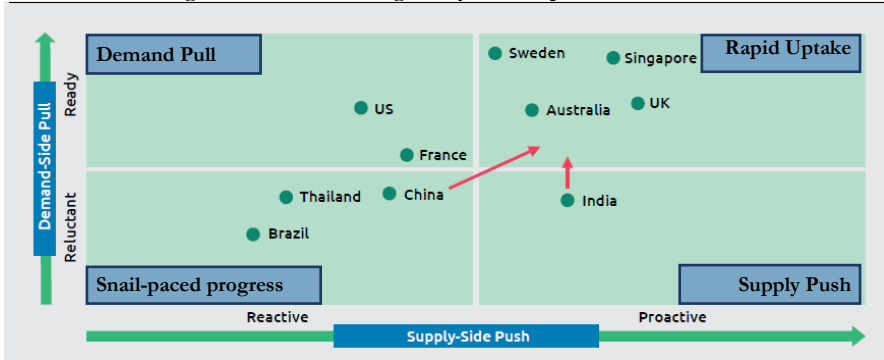
The importance being gained by digital payments in the India can be gauged by the fact that the Reserve Bank of India (RBI) is undertaking progressive steps to further the planning and implementation of digital payment systems in India.

The RBI has notified a dedicated ombudsman scheme for digital transactions (Reserve Bank of India, 2019a). This has been done with a view to provide speedy and cost-free complaint redressal mechanism for issues in digital transactions conducted by non-bank entities regulated by the RBI. The digital payments managed by banks will be under the purview of the Banking Ombudsman scheme governed by the RBI.; RBI has a constituted a high-level committee on Deepening of Digital Payments, under the chairpersonship of Shri Nandan Nilekani, the former chairman of the Unique Identification Authority of India, and consisting of very prominent officials from RBI, the banking sector, the ministry of finance as well as academia. The committee is tasked with reviewing the status of digitisation of payments in India, examining issues with the same, ascertaining the financial inclusion benefits of this process, study global best practices, suggest means of strengthening the security and safety of digital payments as well as provide a roadmap to help improve customer confidence in digital payments (Reserve Bank of India, 2019b)

This thrust by Indian authorities is also captured by Capgemini World Payments Report in the graphic below in Figure 4. India is already categorised as a country with a Supply push, characterised by e-payments being proactively pushed to reduce the cost of payments with new schemes / products being defined and development of required infrastructure. The report also suggests that India is moving into the north-eastern quadrant of Rapid Uptake, which is characterised by targeted e-payments growth enabled by both supply enablement as well as demand stimulation, in which a collaborative approach delivers visibility to suppliers and value to buyers (Capgemini & BNP Paribas, 2019). At the same time, we can see China also adding momentum to its

digital payments efforts and looking poised to move directly from the upper end of the Snail-Paced Progress of the lower left quadrant, directly to the Rapid Uptake quadrant.

Figure 4: Evolution of Regulatory Landscape across Countries



Source: Capgemini Financial Services Analysis, 2018, as quoted in World Payments Report 2018

Alternate Perspectives

While there is clear evidence that digital payments are growing rapidly in the Indian context, there is also a school of thought which states that the overall impact of this is still a minuscule percentage of all transactions, and hence it will take time for this to be meaningful in quantum. A report by payments-focussed website pymnts.com estimates that India has a cash propensity of 51.8% and will continue to have a similar cash usage upto the year 2020, which is the range of its projection (Pymnts, 2017). There are even reports that the amount of cash in circulation has gone up in absolute terms, to about Rs 21.40trillion in March 2019, which is more than the pre-demonetisation level of around Rs 17.98 trillion. However, measured in terms of the currency-to-GDP ratio, as on end-March 2019, the level of currency is 11.23% of GDP. While this is higher than the ratios of March 2017 and 2018 at 8.69% and 10.70%, respectively, it still lower than the long-term average of 12.03% witnessed between 20014-05 and 2015-16. Moreover, this increase is not necessarily a negative event, but may actually be an indicator of revival of the large, informal sector of the Indian economy (Kaul, 2019).

Conclusion

The number and value of digital payments have risen significantly in the last few years in India. However, there is still lack of conclusive evidence as to the long-term shift in payment methods, more so because of the disproportionately large contribution of the informal sector to the Indian economy. On the one hand, the government has been pushing digital payments in a big way, by shock events such as demonetisation, as well as pushing direct benefit transfers to banks, implementing path-breaking technical platforms and layers such as IMPS and UPI. On the other hand, the relatively slower change in behaviour patterns and limited penetration of smartphones and internet connectivity may be holding back customers from a more widespread adoption of digital payments in a traditionally cash-driven society. As (Schuh & Stavins, 2013) report, younger customers are more likely to adopt digital payments as are more educated ones, which gets further increased if the payment method is easy to set up and execute. Given the impetus by the government on digital payments, a young

population with the average level of education rising (Office of the Registrar General & Census Commissioner, India, 2019), India seems well poised to increase the quantum of digital payments in its economy if it is able to ensure ease of setting up the payment method, and sustenance of its financial inclusion efforts.

References

- Business Today. (2018, September 27). *India's IMPS rated best payments service in the world*. Retrieved January 22, 2019, from <https://www.businesstoday.in/sectors/banks/imps-rated-best-payments-innovation-in-the-world/story/282949.html>
- Capgemini & BNP Paribas. (2019). *World Payments Report 2018*. Retrieved January 15, 2019, from <https://worldpaymentsreport.com/>
- ePayments.com. (2019, January 31). *A brief history of digital payments*. Retrieved March 3, 2019, from <https://blog.epayments.com/a-brief-history-of-digital-payments/>
- FIS. (2018). *Flavors of Fast 2018*. FIS. Retrieved February 2, 2019, from <http://empower1.fisglobal.com/rs/650-KGE-239/images/FLAVOR-OF-FAST-Report-2018.pdf>
- Kaul, V. (2019, April 9). *Why currency in circulation going up is good news*. Retrieved April 14, 2019, from www.livemint.com: <https://www.livemint.com/market/stock-market-news/why-currency-in-circulation-going-up-is-good-news-1554702838049.html>
- Klee, E. (2008, April). How People Pay: Evidence from Grocery Store Data. *Journal of Monetary Economics*, 55(3), 526-541. doi:<http://dx.doi.org/10.1016/j.jmoneco.2008.01.009>
- NITI Aayog. (2018, July). *Digital Payments: Trends, Issues & Opportunities: July 2018*. Retrieved December 16, 2018, from https://niti.gov.in/writereaddata/files/document_publication/DigitalPaymentBook.pdf
- Office of the Registrar General & Census Commissioner, India. (2019, March 1). *Census of India Website*. Retrieved April 10, 2019, from http://www.censusindia.gov.in/2011census/population_enumeration.html
- Pymnts. (2017). *Global Cash Index*. Pymnts.com. Retrieved November 3, 2018, from <http://pymnts.fetchapp.com/files/035d3d>
- Reserve Bank of India. (2019a, January 31). *Ombudsman Scheme for Digital Transactions*. Retrieved April 17, 2019, from <https://rbidocs.rbi.org.in/rdocs/Content/PDFs/OSDT31012019.pdf>
- Reserve Bank of India. (2019b, January 8). *Reserve Bank of India: Press Releases*. Retrieved February 27, 2019, from https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=45949
- Schuh, S., & Stavins, J. (2013). How Consumers Pay: Adoption and Use of Payments. *Accounting and Finance Research*, 2(2), 1-21. doi:10.5430/afr.v2n2p1
- Times of India, The. (2016, November 8). *500, 1000 Notes Banned: Rs 500 and Rs 1,000 notes pulled out of circulation immediately | India News - Times of India*. Retrieved January 24, 2019, from <https://timesofindia.indiatimes.com/india/Rs-500-and-Rs-1000-notes-pulled-out-of-circulation-immediately-PM-Narendra-Modi/articleshow/55315473.cms>
- World Bank. (2019). *Payment Systems*. Retrieved February 10, 2019, from <https://www.worldbank.org/en/topic/paymentssystemsmremittances>