

To Surcharge or not to Surcharge! The Plight of Small and Medium Merchants*

Ashish Das

Department of Mathematics, Indian Institute of Technology Bombay, Mumbai 400076

Received: 26 June 2019; Revised: 28 June 2019; Accepted: 29 June 2019

Abstract

Government of India on February 29, 2016 came out with cabinet approved guidelines for *Promotion of Payments Through Cards and Digital Means*. These guidelines provide some directions setting catalysts to migrate the country to a digital payment embracing society. Apart from rationalizing merchant discount rate (MDR), the guidelines emphasise withdrawal of any merchant charges (called surcharge) imposed on consumers while paying through cards and digital means.

The focus of this present paper is to understand how small and medium merchants get affected when a customer makes a credit card payment instead of a debit-based digital payment for services availed and goods purchased. We know that every debit and credit card transaction attracts a merchant fee in the form of MDR. For debit cards this MDR ranges from 0-0.9% of the transaction amount, while for credit cards it usually ranges from 1-3%.

Unlike debit cards, in the case of credit cards there are two components of MDR – one is same as that of a debit card while the other is the credit cost component. The credit card payment system is not exclusively a payment system since it contains a camouflaged loan product, which thus makes credit card MDR high.

While happily accepting payments through less expensive debit-based modes (like debit cards / BHIM-UPI/ etc., where consumer funds are used instantly), small and medium merchants consciously promote the government's initiative on digital payments. However, they fail to see why the much expensive payment mode – the credit card – be thrust onto them. Presently, in case they want to deny acceptance of credit card, it is difficult for them to distinguish a debit and a credit card during

Corresponding Author: Ashish Das
Email: ashishdas.das@gmail.com

* This paper has been culled out from the March 2019 IIT Bombay Technical Report of the author.
<http://dspace.library.iitb.ac.in/jspui/handle/100/25202>

purchases, more so after the QR code based payments are gaining grounds. Moreover, the card payment network rules force merchants to honour all cards at par, i.e., merchants who accept debit cards cannot deny credit cards. Resultantly, for small and medium merchants, there exists a strong reason for not promoting acceptance of cards due to the overall high associated MDR cost thrust on to them.

An avoidable element in the costs of digital payments is the credit cost that piggybacks on payment cost and raises the overall cost burden. We study this anomaly and provides path to cross this major road block to the spread of digital payments.

Keywords: Merchant Discount Rate, Interchange, Issuer Bank, Acquirer Bank.

1 Introduction

The government's move

In order to set catalysts for the digital payment systems, Government of India on February 29, 2016 came out with cabinet approved guidelines for the 'Promotion of Payments through Cards and Digital means'. The Finance Ministry's office memorandum provides broad guidelines on the way forward for promotion of digital payments (reference [7]).

Earlier, in September 2012, Reserve Bank of India (RBI) mandated banks to cap debit card Merchant Discount Rate¹ (MDR) at 0.75% for transactions upto Rs 2000 and 1% for transactions above Rs 2000. This continued till November 8, 2016. Moreover, since their inception in India, the '*no surcharge rule*'² had been put in place by the card payment networks (like Visa / Mastercard / RuPay) for card based POS transactions³.

The demonetization

The demonetization of Rs. 500 and Rs. 1,000 bank notes on November 8, 2016 inherently acted as a strong short term catalyst to set an increased pace for implementation of the government's 'Short Term Steps'.

¹ Merchant Discount Rate or Merchant Discount Fee is a service charge that banks take from merchants accepting card/digital payments, which is usually a certain percentage of the transaction amount. The MDR paid by merchants is shared by acquirer banks, issuer banks and the card payment networks.

² The '*no surcharge rule*' states that no merchant must require any cardholder to pay a surcharge or any part of any merchant discount or any contemporaneous finance charge in connection with a transaction. Here, a surcharge means any fee charged in connection with a transaction that is not charged if another payment method is used.

³ "POS transaction" is a Point of Sale (POS) transaction that occurs at a merchant location, whether in a Card-present environment at an attended or unattended POS terminal, or in a Card-not-present environment. In a Card-not-present environment, this may include electronic commerce ("e-commerce"), mail order, phone order, or recurring payment transactions.

Immediately after the demonetization of the specified bank notes, the government prompted banks to temporarily waive MDR imposed on merchants. Moreover, surcharging stopped in credit and debit card payments.

Thus, for the two-month period till end-December 2016, banks were not generating any direct revenue from debit and credit card transactions either from merchants or card users. This was so despite banks incurring heavy cost for providing the card-based payment system to the country.

The period January-December 2017

Subsequently, RBI effective January 1, 2017 rationalized the MDR on debit cards by capping it at (i) 0.25% for transactions valued up to Rs. 1,000, (ii) 0.5% for transactions valued in excess of Rs. 1,000 but not exceeding Rs 2000, and (iii) 1% for transactions valued in excess of Rs. 2,000. The RBI's new caps on debit card MDR were a substantial reduction to the RBI's pre-demonetization cap of 0.75% for transactions valued up to Rs. 2,000.

With the government's decision to promote cashless transactions by disallowing government merchants to surcharge card users, RBI (based on a government decision), issued directions (reference [18]) in September 2017. All acquirer banks (banks which acquire the transactions) were to claim reimbursement of MDR charges on debit cards from RBI for government transactions up to Rs. one lakh. The acquirer banks were directed not to deduct MDR charges from the receipts of government. It was categorically mentioned that MDR charges on debit card transactions above Rs. one lakh and on any credit card transaction would not be absorbed by the government and hence will not be reimbursed by RBI. However, the acquirer banks were directed not to deduct MDR charges from the receipts of the government in these cases also.⁴

The period January 2018 onwards

Effective January 1, 2018, RBI tweaked MDR rules and claimed that it would encourage small businesses to accept debit card payments. For businesses with annual revenue below Rs. 20 lakh, RBI capped the debit card MDR at 0.4% of transaction value or Rs. 200, whichever is lower. For others, the debit card MDR was capped at 0.9% of the transaction value or Rs. 1,000, whichever is lower. For QR code-based debit card acceptance, the MDR caps were set 10 basis points lower than the physical POS and online debit card acceptance infrastructure.

⁴ RBI further reiterates that "It may please be noted that as directed by the O/o the CGA vide its OM No.S-11012/1(12)/MDR/2017/RBD/824-894 dated May 11, 2017, agency banks which have remitted the net amount of Government receipts after deduction of MDR charges to the Ministries/Departments in contravention of the guidelines referred to above are required to remit the MDR charges so deducted immediately to the concerned Ministry/Department under intimation to Reserve Bank of India."

In parallel, effective 1 January 2018, the government decided to bear MDR for two years on all Debit Card/BHIM-UPI/Aadhaar-Pay transactions valued up to Rs. 2,000. However, the government fixed the MDR at 0.4% of the transaction value for debit card transactions up to Rs. 2,000. In effect, due to the government's intervention, RBI's decision to allow banks to charge up to 0.9% as MDR for businesses with annual revenue of Rs. 20 lakh or more (even for transaction amounts less than Rs. 2,000), got overruled and the banks are now getting only 0.4% as MDR for such transactions. Corresponding to this MDR of 0.4%, the interchange⁵ fixed by card payment networks is 0.15%.

The acquirer banks are governed by the extant rules and regulations prohibiting a surcharge on payments. The Government of India supplemented RBI's direction on the same and prohibited acquirer banks from on-boarding merchants if MDR charges are designed to be passed onto the customers while accepting payments through debit cards / BHIM-UPI / Aadhaar Pay.⁶ RBI and the government remain unsure of the approach for credit card surcharges and are therefore silent on the same. Their silence thus implicitly endorses the extant card payment network rules in India that prohibit acquirer banks to do card payments business with any entity that disregards the prohibition of surcharging credit card transactions.

The special status of two merchant categories - the saga of OMCs and Railways

During late 1990s, the card payment networks allowed surcharging in India for fuel merchants. Later, they also agreed for railways to surcharge card payments. As a result, the fuel retailers and dealers or the Oil Marketing Companies (OMCs) never paid any MDR on credit and debit cards for fuel purchase, and instead a surcharge of 2.5% was imposed.

During demonetization, all surcharges had stopped including for fuel purchases. However, with RBI's new regulation on MDR that came into effect from January 1, 2017, the banks decided to impose MDR on fuel dealers @ 1% on credit cards; and as per the caps set by RBI for debit cards. Such a move by the banks resulted in controversies and the government had to intervene.

⁵ Interchange or issuer interchange is the share of the MDR that the issuer bank keeps as their commission. Thus, MDR comprises of the interchange and the acquirer's commission.

⁶ RBI's December 6, 2017 notification says "**Banks are also advised to ensure that merchants on-boarded by them do not pass on MDR charges to customers while accepting payments through debit cards.**"

The government's December 27, 2017 Gazette of India: Extraordinary notification says "**In line with the RBI instructions dated 6.12.2017, the agreements should include a clause that MDR charges should not be passed on by the merchants to the customers while accepting payments through debit cards/BHIM UPI/Aadhaar Pay.**"

Based on several rounds of negotiations, the OMCs, on behalf of their fuel dealers, decided to pay 0.75% as MDR on debit card transactions. Of the 0.75% MDR, the interchange fixed by card payment networks is 0.5%. As on date, for transactions valued up to Rs. 2,000.00, the government bears the MDR for all merchants @ 0.4%.

In the case of credit cards, however, Indian Banks' Association (IBA) has instructed the banks (vide its notification, dated September 20, 2017 to its member banks) not to impose MDR on fuel dealers or OMCs for credit card transactions. Contrary to government's earlier bid to promote cashless transactions by eliminating surcharges levied on credit (and debit cards) for fuel purchase, IBA prompted the banks to impose a maximum of 1% fuel payment surcharge onto credit card users for purchase of fuel. This notification indicated that their instructions should be positively implemented by all banks on or before 15 February 2018. Of the 1% fuel payment surcharge, the interchange fixed by card payment networks is 0.75%.

Card payment statistics

The year 2018 saw a steady growth in credit and debit cards and their usage. The number of POS terminals also grew (Table 1).

Table 1. Credit and Debit card data and number of POS for 2018

Month-Year	Credit Card Usage at POS		Debit Card Usage at POS		Number of Credit Card	Number of Debit Card	Number of POS
	Volume (Million)	Value (Rs Billion)	Volume (Million)	Value (Rs Billion)	(Million)	(Million)	(Million)
Jan-2018	130.0	414.4	301.4	411.0	36.2	846.7	3.1
Feb-2018	114.8	376.6	282.0	370.4	36.9	855.4	3.1
Mar-2018	127.3	443.1	318.9	418.6	37.5	861.1	3.1
Apr-2018	132.3	448.3	333.8	454.6	37.8	906.4	3.2
May-2018	138.3	472.8	352.1	468.1	38.6	924.0	3.2
Jun-2018	136.0	462.8	358.8	479.2	39.4	944.3	3.3
Jul-2018	145.0	477.6	367.4	483.1	40.2	962.0	3.3
Aug-2018	144.2	479.8	357.2	489.7	41.0	980.2	3.3
Sep-2018	138.2	461.0	362.7	458.4	41.8	982.4	3.4
Oct-2018	161.1	561.8	393.4	543.0	42.7	998.6	3.5
Nov-2018	145.8	516.2	376.6	540.4	43.2	992.4	3.5
Dec-2018	158.3	542.3	387.5	531.4	44.2	958.2	3.6
Total	1,671.3	5,656.7	4,191.8	5,647.8			

Data Source: RBI

Finally, we present the contribution of banks towards the card ecosystem. Looking at the credit card business, HDFC Bank, SBI, ICICI Bank and Axis Bank constitute the Big Four. They contribute to more than 70% of the country's credit card business in volume and value terms (Table 2). However, when it comes to debit cards,

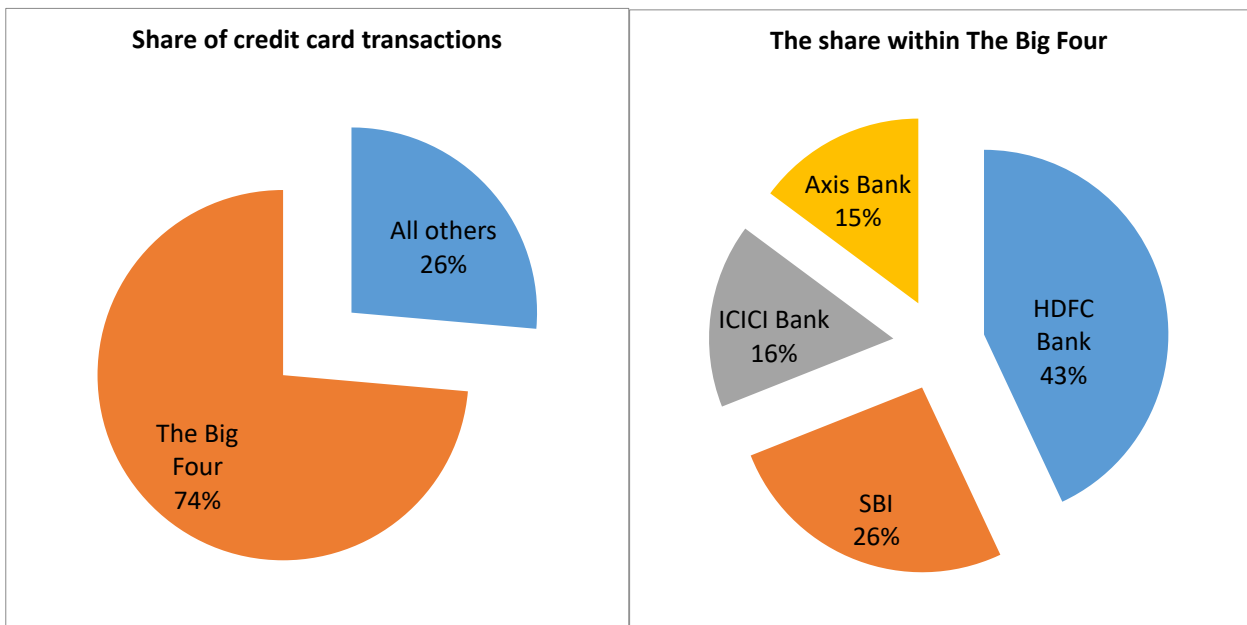
the business is about 60%. The Big Four thrust a heavy credit cost burden on the acceptance infrastructure. Chart 1 shows the share of credit card transactions within The Big Four.

Table 2. Outstanding cards and POS transactions done by cards issued by the bank - November 2018

Banks	Credit Cards			Debit Cards		
	Outstanding cards (Million)	Txn Volume (Million)	Txn Value (Rs Billion)	Outstanding cards (Million)	Txn Volume (Million)	Txn Value (Rs Billion)
HDFC Bank	12.1	40.2	148.6	26.7	45.8	70.3
SBI	7.3	22.9	89.8	323.1	109.0	166.5
ICICI Bank	5.8	19.7	55.8	45.0	37.6	57.3
Axis Bank	5.2	14.0	51.3	27.0	26.0	40.2
The Big Four	30.4	96.7	345.5	421.7	218.4	334.3
Total (excluding Amex)	41.9	139.5	469.4	992.6	376.6	540.4
The Big Four as a % of Total	73	69	74	42	58	62

Data Source: RBI

- Total is based on all banks excluding American Express which issues only Amex credit cards.



Data Source: Table 2

Chart 1: Share of credit card transactions (in value terms)

2 Surcharge, Convenience Fee and Payment Facilitators

Surcharge and convenience fee

First of all, we should clearly understand what constitutes a surcharge. Most banks, either by design or unintentionally, try to misguide by claiming a surcharge as being a “convenience fee”. Though surcharging card payments is prohibited,

convenience fee is technically allowed only in case of card-not-present transactions (i.e., online transactions). There is a subtle difference between a surcharge and a convenience fee.

Card corporations define this well⁷

“A Merchant must not directly or indirectly require any Cardholder to pay a surcharge or any part of any Merchant discount or any contemporaneous finance charge in connection with a Transaction. A Merchant may provide a discount to its customers for cash payments. A Merchant is permitted to charge a fee (such as a bona fide commission, postage, expedited service or convenience fees, and the like) if the fee is imposed on all like transactions regardless of the form of payment used, or as the Corporation has expressly permitted in writing.

For purposes of this Rule:

1. A surcharge is any fee charged in connection with a Transaction that is not charged if another payment method is used.

2. The Merchant discount fee is any fee a Merchant pays to an Acquirer so that the Acquirer will acquire the Transactions of the Merchant.”

For the purpose of illustration, Makemytrip and BookMyShow imposes a convenience fee for purchase of air tickets on their website, which is payment method agnostic. Such a convenience fee has nothing to do specifically with payments and is declared much before the payment page comes up. For that matter, many more online merchants do the same which, as on date, is perfectly in order. **Just calling a merchant’s fee as ‘convenience fee’ does not mean that it is not a surcharge unless of course the convenience fee satisfies the explicit definition as laid down by card payment networks (and that includes a condition that convenience fee needs to be payment method agnostic).**

Imposition of convenience fee is just like a charge for a service, and it remains merchant’s prerogative to apply such a charge for rendering its service. Acquirer banks have no business to either workout such convenience fees or reflect such fees in their payment related activity. Whatever a merchant decides as his net selling price (within extant business rules) is transmitted by the merchant to the acquirer bank (or any entity working on behalf of the acquirer bank). Thereafter the acquirer bank cannot manipulate or influence the selling price amount while processing the transaction.

Since their inception, the card payment networks have clearly enforced the ‘no surcharge rule’ in India with full responsibility vested onto the acquirer banks for

⁷ The card payment networks have allowed surcharging in India for only two merchant specific categories – fuel and railways. Accordingly, the same is communicated under the MOST IMPORTANT TERMS AND CONDITIONS OF CREDIT/DEBIT CARD and under the *Schedule of Charges*. However, this got overruled for debit cards through the RBI January 2018 mandate. It is pertinent to mention here that in October 2009 only Mastercard (not Visa) announced their India program – Convenience Fee Program for Education and Government Merchants. This Program is subject to a condition that "the convenience fee does not discriminate against or discourage the use of Mastercard in favor of any acceptance brand deemed by Mastercard to be a competitive brand". However, Visa’s prohibition on surcharge remained mandatory as they did not introduce a program similar to Mastercard. Thus, Mastercard’s program became discriminatory against Visa, and so technically it is not tenable. Moreover, it is impractical to selectively surcharge Mastercard cardholders but not Visa/RuPay cardholders.

compliance. The card payment networks have set procedures for acquirer banks to acquire merchants through execution of proper *merchant agreements*. All provisions required to be included in a merchant agreement have been laid down by the card payment networks. It is considered a failure of an acquirer banks not to include the substance of any one or more of the network standards in the merchant agreement. The RBI and the government are in sync with the card payment networks on the surcharging standards, at least explicitly for debit cards and, implicitly for credit cards. RBI highlighted (reference [5]) the no surcharge rule for debit cards as early as September, 2013. Department of Banking Supervision of RBI brought out a 2013 circular which stated that:

“Levying fees on debit card transactions by merchants— There are instances where merchant establishments levy fee as a percentage of the transaction value as charges on customers who are making payments for purchase of goods and services through debit cards. Such fee are not justifiable and are not permissible as per the bilateral agreement between the acquiring bank and the merchants and therefore calls for termination of the relationship of the bank with such establishments.

Though many banks have appreciated our concerns and have discontinued with the above-mentioned practices/ products, some of them still seem to persist with them. These practices/ products thwart the very principle of fair and transparent pricing of products which beholds customer rights and customer protection, especially, in the more vulnerable retail segment. Such practices thus violate, both in letter and spirit, various provisions of our MC on Interest Rate on Advances and therefore, you are advised to strictly desist from these practices hence forth.”

Moreover, in order to encourage banks to expand card acceptance infrastructure to a wider segment of merchants across all geographical locations and considering the experience gained by banks in merchant acquiring business, on May 26, 2016, RBI advised banks that they may put in place their own Board-approved policy on merchant acquisition (reference [10]). Accordingly, with acquirer banks being so proactive in surcharging credit card purchases, a question arise as to **‘whether the bank’s Board-approved policy on merchant acquisitions explicitly rejected card payment networks’ bar on credit card surcharges?’**

Payment facilitators and card payment network rules

Payment facilitators are intermediaries that facilitate acquirer banks to on-board merchants. A payment facilitator is called an aggregator when it acquires a merchant simultaneously for more than one acquiring bank. Card payment networks have also laid down proper framework for acquiring banks to acquire transactions through payment-facilitator acquired merchants. Some of the prominent payment facilitators are BillDesk, CCAvenue, TechProcess, Paytm, SBIPay, ATOM, etc. When such payment facilitators on-board or acquire merchants, these merchants

become *submerchants* of the acquirer banks. When the facilitators execute merchant agreements, they in turn become *submerchant agreements* for the acquirer banks.

Prior to the commencement of business by a payment facilitator, the acquirer bank and the payment facilitator enter into a written agreement describing the Program Service to be performed (the “*Program Service agreement*”). In the event of any inconsistency between any provision of the Program Service agreement and the card payment network standards, the standards prevail.

An acquirer bank is entirely responsible to control their payment facilitators and enforce all program management and operating policies in accordance with the card payment network standards. The card payment network standards require that the acquirer bank must not transfer or assign any part of its responsibilities or in any way limit its responsibility with regard to any of its facilitators. An acquirer bank must conduct meaningful monitoring of its facilitators to ensure ongoing compliance by its facilitators with the standards.

The status of “no surcharge rule” – International scenario

Australia, Mexico and New Zealand: Credit and debit card payment surcharge is permitted. However, there is a ban on merchants from charging payment surcharges that are excessive, *i.e.*, from charging a customer more than what it costs the merchant to process the payment. A merchant is not required to impose a payment surcharge, but if it chooses to then it is only allowed to pass on to the customer the costs that the merchant was charged for accepting card payments.

United States of America: As a result of a legal settlement to resolve claims brought by a group of merchants, effective January 27, 2013, all merchants may add a surcharge to certain credit card transactions. The ability to surcharge applies only to credit card purchases, and only under certain conditions. The merchants may assess a surcharge on credit card purchases that does not exceed the MDR for the applicable credit card surcharged. However, only eleven states (California, Colorado, Connecticut, Florida, Kansas, Maine, Massachusetts, New York, Oklahoma, Texas and Puerto Rico) have laws that prohibit merchants from charging consumers with surcharges on credit card transactions. However, throughout the country, **merchants cannot surcharge debit card or prepaid card purchases.**

Europe: Under payment rules in Europe, effective January 13, 2018, certain types of payment surcharging are banned. The ban applies to all consumer cards, which includes debit and credit cards. The surcharge ban aims to protect consumers across Europe by prohibiting merchants from charging consumers additional fees for making payments by certain payment methods. For example, merchants, including ticketing, travel and food delivery websites, are no longer allowed to charge consumers additional fees for paying by debit or credit card.

3 The Need for a Surcharge and the MDR

Surcharging credit cards

For online payments through cards and BHIM-UPI, though surcharging is prohibited, we still see promotion of the same by acquirer banks. Instances of surcharge are fewer on debit card and BHIM-UPI transactions; however, its prevalence is rampant on credit card purchases. What could be the reason for such surcharging for online merchant payments?

Usually regular merchants resist bearing high MDR of 2% or more on credit cards. Just because card payment networks prohibit surcharges for card-present transactions and banks thrust the high credit card cost onto merchants, the merchants have to bear the high MDR burden. In case of card-not-present transactions (*i.e.*, online transactions) the leverage provided by card payment networks, in form of convenience fees, is being misused by acquirer banks (through their payment facilitators) by misrepresenting surcharges as convenience fees. In absence of in-depth knowledge among the merchants and card users, this misguided system has been working well for the acquirer banks and the online merchants.

IBA's move to balance the cost of credit for OMCs

What would we advise a small or medium merchant who hesitates while accepting credit cards, since for them credit card MDR is 2-3%⁸, but is happy to accept debit cards that bear an average effective MDR of less than 0.4%? How would it be possible to allow these small and medium merchants to display surcharges only for credit card purchases to the extent of say 1%? This way the merchant can encourage customers to use a cheaper debit-based digital mode of payment, if the customer has money in his bank account?

In this regard, discrimination in the payment system has been prompted by IBA, when IBA issued a notification to all member banks asking them **not to impose** any MDR on fuel dealers or OMCs for credit card transactions, and instead directed the banks to surcharge the credit card users (for their purchases at fuel stations) if they so desire; setting a cap of 1% for such surcharge. The move, though in the right direction, lacked a level playing field among the merchants accepting credit card payments.

Under the payments system framework, this raises a vital question as to why IBA has been allowed by the regulator to be selective (and thus discriminatory) towards favouring a particular merchant category, given that the specific concern (of

⁸ MDR is arrived by adding to the 1.85-2.02% interchange, about 0.3-0.5% acquirer bank's commission and further topping it with GST.

not wanting to bear the credit card MDR cost) is universally true for all merchants? Moreover, when the OMCs are bearing a debit card MDR @ 0.75% why IBA could not fix similar MDR (of 0.75%) for credit cards too to be borne by the OMCs? Clearly, the OMCs are availing bank's facility similar to debit card purchases while accepting credit cards. Promotion of digital payments requires addressing the surcharge issue since the genuine concern of this single (large) merchant category is no different from other merchants, particularly, small and medium merchants.

The card payment network rules in India do not allow a merchant to accept only debit cards (and not accept credit cards) and/or allow surcharging credit card purchases. However, the effective differential in MDR between credit and debit card usage ranges from 1% to 2.5%. Such an additional cost cannot be thrust onto small and medium merchants, when a big merchant like an OMC could manage exemption. This again showcases lack of a level playing field for merchants accepting different types of card payments in India.

How fair is convenience fee over surcharge?

In spirit, convenience fee is a fee paid by a customer for the convenience he gets for online purchases (and saving the trouble of queuing up at a physical counter). It is ideally a fixed amount and not a pro rata value. In contrast, surcharge is a charge for using a particular payment mode.

For online merchants, the MDR for credit card is high around 2% while that for debit card is in the range 0-0.9%. For online air ticket bookings, camouflaging some component of surcharge as convenience fee, irrespective of the mode of payment, becomes unfair to debit card/BHIM-UPI/net-banking users. However, if RBI considers permitting surcharges for credit card transactions, online merchants may consider reducing their convenience fees. Today, the quantum of convenience fees gets significantly influenced by the high MDR for credit cards in India.

It is noteworthy that, as with other business expenses, the high MDR of credit card drives up the prices paid by all consumers, even for those who did not use credit cards while the benefits of free credit and brownie points are enjoyed by the credit card holders alone.

Controlling the card MDR through prudent interchange

For transaction amounts within Rs. 2,000, the government has currently supported debit card MDR @ 0.4% and the interchange is fixed at 0.15%. However, for debit card purchases of more than Rs. 2,000, the card payment networks have set revised interchange based on RBI's new mandated debit card MDR caps. In this process, though for most general merchants the debit card interchange is fixed at 0.65%, card payment networks have carefully ensured to keep the interchange low for

many sectors/industries. We list some of such debit card interchange caps for transaction amounts exceeding Rs. 2,000.

	Sectors/industries	Visa	Mastercard	RuPay
1	Government	Rs. 10	Rs. 10	Rs. 5
2	Education	0.65%	Rs. 15	Rs. 5
3	Railways	Rs. 6	Rs. 6	Rs. 5
4	Insurance	Rs. 6	Rs. 10	Rs. 6
5	Mutual funds	Rs. 15	Rs. 15	Rs. 10
6	Fuel	0.5%	0.5%	0.5%

In most developed countries in America and Europe, the lending rates are far less than in India to reflect significant difference in the MDR's for credit and debit cards. As against a credit card interchange of 0.3% in Europe, in India the credit card interchange, in general, is as high as 1.85-2.02%. We list some of the sectors/industries for which the credit card interchange caps have been kept low. This list is provided for two card payment networks operating in India.

Card Payment Network - A

- (i) 0.7% - railways/ transport, post office, government, insurance, education, public/private utilities, grocery stores, supermarkets, miscellaneous food stores, convenience stores, market speciality stores;
- (ii) 0.75% - fuel.

Card Payment Network - B

- (i) 0.7% - railways/ transit/ transport, post office, government, insurance, public/private utilities, education;
- (ii) 0.75% - fuel;
- (iii) 1.1% - supermarkets.

Interchanges arrived at by the card payment networks are usually *ad valorem* (fixed interchange applies only for some special merchant categories for debit cards). In the case of credit cards, the *ad valorem* interchange is extensively differentiated based on type of merchant (*e.g.*, 0.7% for private utilities, 0.7-1.1% for supermarkets and 1.85-2.02% for general stores). The differentiation has been made to such an extent that it can be almost three times more expensive for small and medium merchants as compared to bigger merchants like supermarkets, fuel, railways/ transport, post office, government payments, insurance, public and private utilities, and educational institutions. This is so despite the issuer bank's cost to serve is same whether the credit card is used at a post office or a supermarket or a small general store irrespective of the volume of business. In short, the approach doesn't promote RBI's and the government's vision towards digital payments in an equitable fashion. Digital payment, for the present, is of equal necessity for all and cannot be considered

a luxury for some who are selectively identified to pay more for digital payment acceptance. RBI and the government should desirably protect small and medium merchants who have embraced digital payments in lieu of cash to support government's initiatives. Accordingly, in the interest of being fair to small and medium merchants, the *ad valorem* interchange should be a fixed percentage and not change from one merchant category to another. This will, however, not affect the acquirer banks' commission.

Balancing the cost of credit in the digital payment space

The issue of sanitising credit card distortions in India's digital payments space has been dealt thoroughly in Das and Das (2016) (reference [13]). Today with credit cards being an important and relatively expensive mode of digital payments, do merchants have a level playing field while accepting such credit cards vis-à-vis debit cards or BHIM-UPI? If not, this needs to be addressed appropriately to avoid disadvantaging merchants while accepting cards (credit/debit) and other forms of digital payments (UPI/mobile wallets, etc.) at par.

MasterCard / Visa / Amex are pioneers of credit cards business since they set the business model in absence of other cashless retail payments. They could effectively develop this digital payment system through well researched strategies on interchange. They became the giants of the digital payments. However, with the inception of debit cards and its real time capabilities (thanks to Core Banking Solutions), is it time now to have a fresh relook at digital payment system models in India.

As a financial product, credit card is a combination of the payment system and the credit system of the country. Until debit cards came into being, credit cards were primarily the only digital payment product available. Unlike credit cards, the debit cards and BHIM-UIs are solely payment product.

For any credit product (of which loans through credit cards falls in the category of unsecured credit), RBI has mandated a minimum rate, called Marginal Cost of funds based Lending Rate (MCLR), at which such credits can be given. The prevailing MCLR is of the order of 8.5% per annum. Thus, for the average credit of 38 days⁹ provided for credits enjoyed through credit cards, the credit card issuing bank, as per the RBI mandates, has to necessarily receive interest for the credit at least at the MCLR. Accordingly, the cost of credit for the 38 days (adopting the annual credit card loan rate at MCLR) works out to be at least 0.88% of the credit amount. However, given the nature of the unsecured loans being provided through credit cards, the capital adequacy requirements would lead to further increase in capital charge, which is expensive. Considering this additional risk based cost at 0.1%, a

⁹ Based on average of the number of days of credit, i.e., 24 days through 52 days.

conservative cost of credit for the 38 days works out to be at least 1% of the credit card transaction amount. This 1% cost has to be part of the interchange and thus of the MDR. This makes credit cards an expensive payment product as against debit cards or other credit-less payment products. It would be unfair to thrust such a credit loaded payment product in the name of digital payments. However, to retain such an excellent digital product for the payment needs, it would be fair to see that the beneficiaries of credit facility bear the interest burden and that the cost is not passed on in a camouflaged manner to the digital payment systems' cost.

Based on the country's current data on credit and debit card spends at POS, it is seen that though in volume terms credit cards constitute only 30% of the card transactions, in value terms credit cards constitute 50% of card transactions. Also, even if we consider a conservative estimate of the true average differential of MDR between credit cards and debits cards as 1%, the RBI data¹⁰ suggests that, on an average, credit cards have burdened the payment system users by nearly Rs. 60 Billion¹¹ in 2018 alone. Users of the payment system are unknowingly bearing this avoidable cost, even though other cheaper and equally efficient modes of digital payments (like debit cards / BHIM-UPI) exist alongside credit cards. This means that the non-credit card users transacting digitally are cross subsidizing for the expensive credit card system in use.

In case of online payments through cards and digital means, we have demonstrated through several illustrations that the country's payment system users are being burdened with organised surcharging, in violation to the extant rules and regulations. For the banks to do payment's business gainfully, this has led to fraudulent extortions by the acquirer banks and their payment facilitators from their gullible customers to the tune of Rs. 2 Billion in 2018 alone.¹² This is a conservative estimate since we restrict only to the online credit and debit card payments. Naïve card users, oblivious of the set rules and regulations that prohibit surcharging, are ignorant of the fact that it is the banks that owe them this fraudulently extorted money.

Presently merchants are not allowed to surcharge customers on credit card purchases. Credit cards being a credit mode of payment, merchants could possibly be given freedom to charge for the credit cost only. It should be made very clear that the surcharge is for use of credit and not for using digital means of payment.

One has to be careful to address the concerns of the merchants and consumers (on this disparity designed in the electronic payment system of the country), where

¹⁰ Rs. 5,657 Billion worth of credit card POS transactions took place in 2018.

¹¹ 1 Billion = 100 Crore.

¹² With Rs. 11.3 Trillion worth of credit and debit card transactions and 30% of such transactions being on eCom (refer to RuPay Card usage data <https://www.npci.org.in/statistics>), it is estimated that online card usage had been worth Rs. 3.4 Trillion. Even if we consider that only 6% of such online transactions were surcharged at an average rate of 1%, the amount of surcharge exceeds Rs. 2 Billion.

though a merchant is happy to accept cheaper modes like debit cards/BHIM-UPI (and accordingly price his products) but develops a negative impression of the electronic payment modes just because he is forced to accept a premier credit card with an associated MDR as high as 3%. Under the current regulations, in general, merchants are prohibited to show different prices of a product/service based on different payment modes. Going by the current mandate of honouring debit and credit cards at par, if the selling price is uniformly hiked by the merchant, it becomes unfair and discriminatory for the users of debit card and BHIM-UPI.

So, should we allow surcharge on credit cards? Merchants being given the freedom to surcharge only on credit cards could lead to misuse, given the gullible nature of customers. It will also be difficult to implement, since it is difficult to assess when a merchant is overcharging, etc. Thus, for credit card based transactions, merchants being given the freedom to surcharge based on the differentials in MDR (that exist vis-à-vis debit cards) does not appear to be a good idea.

Instead MDR for credit cards should be made same as that for debit cards (or similar forms where there is no credit cost involved) and let issuing bank be given the freedom to impose their Board-approved credit fee onto the credit card users when the credit card monthly statements are generated (compensating for the decreased interchange that the issuing bank may receive).

Such a move would impact the domestic credit card usage (and the credit card business) and one would see decline in the usage by explicit credit-cost conscious customers for sure but would lead to migration of credit card payments to other non-credit based electronic payments which are seamless, secure and cheaper for merchants with no apparent cost to consumers.

4 Concluding Remarks and Way Forward

The game and its rules

In any game, given the set of standards and rules and presence of umpires who ensure that standards are maintained and rules are observed, players channelize their energies to give in their best so as make the game attractive, make it more popular and draw more participation. However, if players/observers see that people within the game play with the rules and not by the rules, the game may lose its sheen and people may over time choose to bow out.

The rules of digital payments are similar. They are set by RBI, the government and also by the network providers like RuPay, Mastercard and Visa. Having set the rules and regulations, ensuring compliance is also their responsibility. That the payment system space is duly regulated and supervised gives confidence to its users to migrate from the hitherto traditional/physical modes of payments to digital

alternatives. During the last five years, riding on the digital payment wave, our country has invested enormous resources to include all citizens under the financial services cover. While the cover has nearly reached the last mile, and the users are more sanguine about the digital payment alternatives now than ever in the past, its sustenance should not be taken for granted.

No surcharging on digital payments, for services availed and goods purchased, is one such rule in the digital payment space that ensures that no additional costs are thrust on the user of digital payments. This rule is intended to check any discrimination between various digital payment modes and also cash.

Impact of credit cards and organised surcharges

It is estimated that the merchants were burdened with nearly Rs. 100 Billion towards credit card MDR in 2018 alone. This is exorbitant in contrast with the overall cost (Rs. 35 Billion) towards debit card MDR, even though in value terms, credit and debit card transactions are nearly the same – Rs. 5.7 Trillion each in 2018.

Moreover, if we consider a conservative estimate of the true average differential of MDR between credit cards and debits cards as 1%; on an average, credit cards have burdened the payment system users by nearly Rs. 60 Billion in 2018 alone. It is noteworthy that, as with other business expenses, the high MDR of credit card drives up the prices paid by all consumers, even for those who did not use credit cards while the benefits of free credit and brownie points are enjoyed by the credit card holders alone.

Unauthorised surcharging has also burdened the payment system users with huge additional costs. Just for the online payments, it has led to extortions by the acquirer banks and their payment facilitators/aggregators to the tune of Rs. 2 Billion in 2018 alone. This is a conservative estimate since we restrict only to the online credit and debit card payments. Naïve card users, oblivious of the set rules and regulations that prohibit surcharging, are ignorant of the fact that it is the banks that owe them this fraudulently extorted money.

Organised surcharging is by the banks themselves

The acquirer banks have been vested with the responsibility to protect the card and BHIM-UPI users in the country from illegal incidence of merchant surcharging. Unfortunately, rather than merchants, it is banks themselves who are causing fraudulent surcharging by resorting to outsourcing of their payments' services. Banks remain fully liable. For instance in the case of online transactions, the acquirer banks, through their payment facilitators/aggregators, add a surcharge amount in the final transaction amount. As a consequence, the acquirer banks/ payment facilitators/aggregators expand their business and revenue, at the cost of card and

BHIM-UPI users. An analogy is a situation where an autorickshaw has a fast tempered meter, or demands extra money to take you to your destination; and one doesn't know how to smoothly get a redressal. This does not mean that not highlighting the issue absolves the autorickshaw driver of his fraudulent act of cheating/extortion.

For improvement in efficiency, in case we bring in more players, that should be within the given cost structure of the ecosystem (*e.g.*, food delivery Apps have not increased food cost but rather increased sales for food venders which pays for the App providers' revenue). Banks should not create layers that add to the costs of the digital payments ecosystem, making it expensive for end users. The relationship between a bank (highly regulated entity) and a payment facilitator/aggregator (unregulated entities within the regulated space) should be symbiotic whereby not only banks and aggregators gain but the penetration of digital acceptability also grows. With a growing pie, every entity's share enlarges. However, contrastingly, rather than a symbiotic relation, if the aggregators become parasitic and feed on to the system by adding to its cost, it will not only hurt the banks and their customers, but will also lead to loss of trust in digital acceptability. This will be a retrograde step, negating all the efforts government has put in towards promotion of payments through cards and digital means. The responsibility to curtail such cost escalations should lie with the entity that has brought the intermediaries in or are functioning with them. If banks are doing business with them then banks have to own the responsibility.

Discriminatory ecosystem for credit cards

For two specific categories of merchants – the oil industry, and the Indian railways, there exists a clear bias. These merchants are big and thus enjoy a significant hold on policy matters to their advantage. They do not pay the MDR for credit card transactions, though they bear the MDR in the case of debit cards. In fact, Indian Banks' Association has instructed the acquirer banks not to impose credit card MDR onto fuel dealers and instead surcharge the credit card holders for the same. However, when it comes to the small and medium merchants, there is discrimination since the credit card MDR is unilaterally thrust on them. Given that urban India has the largest share of small and medium merchants and also deepest penetration of credit cards, Reserve Bank of India (RBI) and the government need to eliminate such bias.

Are digital payments a necessity for one merchant (and so fees are controlled and low) and a luxury for another (and so fees are high)? If not, why do card payment networks discriminate merchants on the basis of merchant categories when it comes to interchange? The interchanges arrived at by the card payment networks are usually *ad valorem*. In the case of credit cards, the *ad valorem* interchange is extensively differentiated based on type of merchant (*e.g.*, 0.7% for private utilities and 1.85-2.02% for small general stores). The differentiation has been made to such an extent

that it can be almost three times more expensive for small and medium merchants as compared to bigger merchants like private utilities, say. This is so despite the issuer bank's cost to serve is same whether the credit card is used at a post office or a supermarket or a small general store irrespective of the volume of business. In the interest of being fair to small and medium merchants, the *ad valorem* interchange should be a fixed percentage and not change from one merchant category to another. This will, however, not affect the acquirer banks' commission.

The burden of credit pollutes the digital payment space

An avoidable element in the costs of digital payments is the credit cost that piggybacks on payment cost and raises the overall cost burden. For small and medium merchants – the largest in number among the merchant community – this cost hurts. Such merchants hesitate to accept credit cards, since for them credit card MDR is 2-3%, but are happy to accept debit cards that bear an average effective MDR of less than 0.4%? The present study showcases that while for big merchants who are not ready to bear this credit cost, the banks resort to surcharging; for small and medium merchants, who have no bargaining power and no saviour, the cost burden continues to be theirs. Moreover, with front ends like physical cards and BharatQR, the merchant cannot upfront distinguish whether the card presented by customer is debit or credit card. Thus, despite all efforts by RBI and the government on the MDR front, we are unable to see a seamless and happily acceptable digital payments infrastructure vis-à-vis cash.

The way forward

Reasonable MDR for small payments: The government has decided to bear the MDR for debit card and BHIM-UPI acceptance infrastructure for transaction amounts not exceeding Rs. 2,000. As it stands today, this provision of bearing MDR for the merchants is for two years, ending on December 31, 2019. However, merchants are usually paying monthly/annual fees for the physical POS or the payment gateway infrastructure. Moreover, the QR code-based debit card/ BHIM-UPI/ etc. acceptance infrastructure is asset light. Thus, to retain the encouragement of small and medium merchants, in general, MDR should be brought down to zero for all debit-based transactions not exceeding a reasonably small amount, say Rs. 1,000. The payments ecosystem can easily bear the expenditure for these small transactions akin to free ATM withdrawals. This move would also help in migration of ATM expenses to digital payments-based expenses. Alongside, free-ATM withdrawals should be reduced in urban India.

Reasonable MDR for asset light acceptance infrastructure: For the asset light QR code-based debit card acceptance RBI has set MDR caps at 0.3% and 0.8%, only 10 basis point lower than the physical POS debit card acceptance (where MDR is 0.4% and 0.9%). However, this 10-basis point differential (which is a meagre 11%

lower than MDR of 0.9%) is not commensurate enough to promote such asset light payments infrastructure. For asset light QR code-based debit card / BHIM-UPI, etc. acceptance infrastructure, the MDR should be 30-60% lower than the physical POS debit card infrastructure.

Separating digital payment and credit feature of credit card: The credit card as a payment product can be bundled with a loan product to serve the payment needs of India so long as the credit cost is not thrust onto the merchants. Due to the inherent difference in cost while executing a credit card transaction (vis-à-vis a debit card transaction), there should be distinction while carrying out such digital payment transactions using credit card so as to separately reflect the true cost of availing credit and the cost of processing the payment. Accordingly, to be fair, one needs to be transparent in showing the cost of (conscious or unconscious) credit taken by the unsuspecting card holder while transacting using a credit card. The average cost of such credit is about 1% of the transaction amount, which is currently overburdening the payment system. The freedom of choice does not exist today (in the present credit-and debit-card model) to allow reduction in the cost of digital payments because of a forced-expense, polluting the digital payment system of the country. Accordingly, as a corrective measure, we should make the MDR for credit cards same as that of debit cards and let banks be given the freedom to separately charge their customers for the inherent loan associated to credit cards. Such a move would remove the discrimination between customers at the hands of the merchants created by the card payment system where cost to the merchant is as high as 2% more for credit card purchases over debit cards.

Banks may surcharge credit card users for the credit cost: For credit card based transactions, merchants should not be given the freedom to surcharge based on the differentials in MDR that exist vis-à-vis debit cards. Instead MDR for credit cards should be made same as that for debit cards or similar forms where there is no credit involved. The issuing bank will have the freedom to impose a credit fee when the credit card monthly statements are generated.

Conscious credit in the hands of the card holder: Credit card business should earn from conscious credit offered in the hands of the card holder and the scope of more credit utilization through rollover of credit dues. The flip side in the promotion of acceptance infrastructure (including BharatQR) is the current credit card payment system, where the cost of providing such credit is not borne by the person enjoying the benefits but are borne by the merchants (which is eventually borne unconsciously by all the other customers). Therefore, it is time that the government and RBI take appropriate steps to control such negatives in the digital payments system by making things more apparent and upfront. This would help in the true discovery of reduced acceptance costs for our digital payments system.

Incentivising and awareness building for non-cash usage: It is important to project that electronic transactions, if not better, are at par with cash transactions. Thus any scope of potential disincentives of the use of non-cash over cash transactions or/and incentives of use of cash over non-cash transactions should be recognised beforehand. There is a requirement of awareness building through a concentrated financial education program to educate the people of India on the country's benefits of cashless/paperless transactions. People should make cashless transactions a culture and RBI should impart this important message of financial/depositor education.

With the government's initiative in place and with RBI as the regulator of financial systems, we conclude by saying that this paper is intended to help them smoothen some of the existing frictions in the payments systems, thereby leading the country to a seamless digital payments society.

Summarising major action points

MDR and surcharging for debit-based transactions:

- i) All debit-based payment modes like debit cards/ prepaid cards/ mobile wallets/ BHIM-UPI/ NEFT/ net banking/ etc. use consumer funds instantly. Accordingly, for all types of debit-based payment modes, MDR should not exceed that of debit cards.
- ii) Merchants are usually paying monthly/annual fees for the physical POS or the payment gateway infrastructure. Moreover, the QR code based debit card/ BHIM-UPI/ etc. acceptance infrastructure is asset light. Accordingly, MDR should be brought down to zero for all debit-based transactions not exceeding a reasonably small amount, say Rs 1000. The payments ecosystem would bear the expenditure for these small transactions akin to free ATM withdrawals. This move would also help in migration of ATM expenses to digital payments based expenses. Alongside, free-ATM withdrawals should be reduced in urban India.
- iii) For the asset light QR code based debit card acceptance RBI has set MDR caps at 0.3% and 0.8%, only 10 basis points lower than the physical POS debit card acceptance (where MDR is 0.4% and 0.9%). However, this differential is not commensurate enough to promote such asset light payments infrastructure. For asset light QR code based debit card/ BHIM-UPI/ etc. acceptance infrastructure, the MDR should be 30-60% lower than the physical POS debit card infrastructure.
- iv) The 'no surcharge rule' should be strictly applied and enforced for all debit-based payment modes. Public awareness against surcharging should be promoted along with developing streamlined processes of reporting a surcharge and getting appropriate redressal in form of a chargeback.

MDR and surcharging for credit card transactions:

- v) Merchants have to honour and accept debit and credit cards at par. For them, the ease of receiving money is the same for both debit and credit card. However, the high MDR for credit card acceptance overburdens small and medium merchants. Thus, from a

merchant's perspective the rules of credit card MDR need to be aligned with those of debit card MDR. Accordingly, the extant rules and regulations set towards MDR/interchange/ acquirer commission for debit cards should apply for credit cards as well.

vi) The cost of credit associated with credit card usage should be borne by the credit card user and not the merchant (who is presently bearing it by default). This does not imply that we allow merchants to surcharge for credit card usage since surcharging in the hands of a merchant has a potential of misuse by the unregulated merchant space and may not only be retrograde to the use of digital payments but also negatively impact customers' sentiments. Issuer banks alone should be allowed to impose any additional fees on to their credit card users for every credit card transaction and this should reflect in the credit card monthly statements.

vii) The credit card issuing bank should keep credit card holders informed of their Board-approved schedule of credit fees depending on the credit card type.

References (*Chronological from oldest.*)

[1] Das, Ashish (2008). Acceptability Standards in Credit Card Industry. November 10, 2008.

<http://www.math.iitb.ac.in/~ashish/workshop/CreditCard23November10.pdf>

[2] Das, Ashish Das and Agarwal, Rakhi (2010). Cashless Payment System in India- A Roadmap. IIT Bombay Technical Report. May 31, 2010.

<http://dspace.library.iitb.ac.in/jspui/handle/10054/1732>

[3] Merchant Discount Rates Structure for Debit Card Transactions. RBI/2011-12/625 DPSS.CO.PD.No.2361/02.14.003/ 2011-12 dated June 28, 2012.

https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=7304&fn=9&Mode=0

[4] Merchant Discount Rates (MDR) structure for debit card transactions. RBI/2012-13/110 DPSS.CO.PD.No. 27/02.14.003 /2012-13 dated July 04, 2012.

https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=7422&fn=9&Mode=0

[5] Pernicious practices of select banks deterring customer protection and accounting integrity. RBI/2013-14/292 DBS.CO.PPD No. 3578 /11.01.005/2013-14 dated September 17, 2013.

<https://www.rbi.org.in/scripts/NotificationUser.aspx?Id=8461&Mode=0>

[6] Das, Ashish (2016a). Incentivising ATM-cash and cheques over electronic transactions - A policy gap. IIT Bombay Technical Report. January 26, 2016.

<http://dspace.library.iitb.ac.in/jspui/handle/100/18425>

[7] Promotion of Payments through Cards and Digital means. Government of India OM (Ministry of Finance), DEA F.No-01/02/2015-Cy.I dated February 29, 2016.

https://dea.gov.in/sites/default/files/Promo_PaymentsMeans_Card_Digital_0.pdf

[8] Concept Paper on Card Acceptance Infrastructure. RBI, March 8, 2016.

<https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=840>

- [9] Das, Ashish (2016b). Promotion of payments through cards and digital means. IIT Bombay Technical Report. April 24, 2016.
<http://dspace.library.iitb.ac.in/jspui/handle/100/18428>
- [10] Merchant Acquisition for Card transactions. RBI/2015-2016/410 DPSS.CO.PD.No./ 2894/02.14.003/2015-2016 dated May 26, 2016.
https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=10418&fn=9&Mode=0
- [11] Payment and Settlement Systems in India: Vision-2018. RBI, June 23, 2016.
<https://www.rbi.org.in/Scripts/PublicationVisionDocuments.aspx?Id=842>
- [12] Merchant Discount Rates (MDR) structure – unbundling of charges. RBI/2016-17/59 DPSS.CO.PD No.639/02.14.003/2016-17 dated September 1, 2016.
<https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=10591&Mode=0>
- [13] Das, Ashish and Das, Praggya (2016). Sanitising Distortions in Digital Payments. IIT Bombay Technical Report. November 28, 2016.
<http://dspace.library.iitb.ac.in/jspui/handle/100/18430>
- [14] Special measures upto March 31, 2017: Rationalisation of Merchant Discount Rate (MDR) for transactions upto ₹ 2000/-. RBI/2016-17/184 DPSS.CO.PD.No. 1515/02.14.003/2016-17 dated December 16, 2016.
https://rbi.org.in/scripts/FS_Notification.aspx?Id=10780&fn=9&Mode=0
- [15] Draft Circular - Rationalisation of Merchant Discount Rate (MDR) for Debit Card Transactions. RBI. DPSS.CO.PD.No./02.14.003/2016-17. February 16, 2017.
https://www.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=3317
- [16] Das, Ashish (2017). Discovering the right MDR for India. IIT Bombay Technical Report. February 28, 2017.
<http://dspace.library.iitb.ac.in/jspui/handle/100/18431>
- [17] Rationalisation of Merchant Discount Rate (MDR) for Debit Card Transactions – Continuance of Special Measures RBI/2016-17/264 DPSS.CO.PD No. 2737/02.14.003/2016-17 dated March 30, 2017.
https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=10901&fn=9&Mode=0
- [18] Reimbursement of Merchant Discount Rate (MDR) Charges for Government transactions up to Rs. 1 lakh through debit cards. RBI/2017-18/55 DGBA.GBD.No. 505/31.02.007/2017-18 dated September 7, 2017.
<https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11117&Mode=0>
- [19] Das, Ashish and Das, Praggya (2017). Digital payments in India: The road ahead. IEEE Potentials. November 10, 2017.
<http://www.math.iitb.ac.in/~ashish/workshop/08103109.pdf>
- [20] Rationalisation of Merchant Discount Rate (MDR) for Debit Card Transactions. RBI/2017-18/105 DPSS.CO.PD No. 1633/02.14.003/2017-18 dated December 06, 2017.
https://www.rbi.org.in/scripts/FS_Notification.aspx?Id=11183&fn=9&Mode=0
- [21] Subsidizing MDR charges on Debit Cards/BHIM-UPI/AePS transactions of value less than or equal to Rs. 2000/-. Gazette of India notification, Ministry of

Electronics and Information Technology, New Delhi, the 27th December, 2017.
No. 6(19)/2017-DPD-1.

http://meity.gov.in/writereaddata/files/gazette_notification_on_subsidizing_mdr_charges.pdf

[22] RuPay debit card interchange structure. NPCI/2018-19/RuPay/011 dated June 20, 2018.

<https://www.npci.org.in/sites/default/files/circular/RuPay%20Interchange.pdf>

[23] Visa Core Rules and Visa Product and Service Rules. 13 October 2018. © 2014-2018 Visa.

<https://usa.visa.com/dam/VCOM/download/about-visa/visa-rules-public.pdf>

[24] Chargeback Guide. 13 December 2018. ©1988–2018 Mastercard.

<https://www.mastercard.us/content/dam/mccom/en-us/documents/rules/chargeback-guide.pdf>

[25] Mastercard Rules. 18 December 2018. ©1969-2018 Mastercard.

<https://www.mastercard.us/content/dam/mccom/global/documents/mastercard-rules.pdf>