Technical Report 2010
http://dspace.library.iitb.ac.in/jspui/handle/10054/1732

Cashless Payment System in India- A Roadmap

Ashish Das, and Rakhi Agarwal

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

Indian Institute of Technology Bombay
Powai, Mumbai-400 076, India

Table of Contents

Foreword iii-iv

Cashless Payment System in India: The Action Plan v-viii

Executive Summary ix-xvi

Abstract and Acknowledgements 1-2

I. Introduction 3-10

- I.1 Card and Cash
- I.2 Volume of card business in India
- I.3 The card based payment system
- I.4 Regulatory stance
- I.5 Outline of what follows

II. Card Rules and Incentives 11-14

- II.1 Merchant Restraints
- II.2 Incentives and costs to merchants
- II.3 Incentives to card users
- II.4 Incentives to card issuers and acquirers
- II.5 Incentives to card companies

III. Recent Regulations and the Issues at Hand 15-18

- III.1 RBI's recent benchmarks on service charge
- III.2 Backdrop
- III.3 Issues in hand

IV. Review of International Regulatory Stances on Payment Cards 19-30

- IV.1 Review on surcharge and interchange
- IV.2 Australia
- IV.3 Europe
- IV.4 Canada
- IV.5 United States of America
- IV.6 Mexico
- IV.7 China
- IV.8 Few other countries
- IV.9 Arguments in favour of the 'no-surcharge rule' and freedom on interchange

V. The Debit Cards in India- A Meaningful Alternative **31-42**

V.1 Use of debit cards at POS
V.2 Debit cards as against credit cards
V.3 'Free' credit- the myth
V.4 Debit cards at POS for cash withdrawal
V.5 Security measures for debit cards at POS
V.6 Prepaid debit cards and debit card embedded mobile phone
V.7 Banknotes and expenditure
V.8 IIT Bombay merchant survey

VI. The Merchant Survey on Card Payments **43-50**

VI.1 Background of the survey and its objectives
VI.2 The population frame and limitations of the survey
VI.3 The survey results
VI.4 Summary of survey findings

VII. Summary, Conclusions and Recommendations **51-60**

VII.1 Background and approach
VII.2 Under utilisation of debit cards
VII.3 Allowing surcharge on credit cards
VII.4 No-surcharge rule on no-frill debit cards
VII.5 Reasonable MDR for debit cards
VII.6 Benefit to currency management
VII.7 Securing debit card usage at POS
VII.8 Mobile and prepaid debit cards
VII.9 Concluding remarks and recommendations

References **61-66**

Appendix **67-86**

Appendix A RBI studies on charges levied by banks on different payment modes
Appendix B Merchant Survey on Card Payments by IIT Bombay (August 2009)
Appendix C About the Merchant Survey 2009
Appendix D List of companies that responded to the survey
Appendix E Rejoinder: Comments from market players
Appendix F Addendum

YAGA VENUGOPAL REDDY
Former Governor, Reserve Bank of India
Emeritus Professor, University of Hyderabad

Foreword

My first personal interaction with Professor Ashish Das happened when I was being conferred the Sixth M. R. Pai Memorial Award in 2010. Professor Das had been the recipient of the same award in the previous year for his banking related research leading to regulatory changes--notably the interest computation on daily balances in savings bank accounts and standards for cheque collections--to the benefit of bank customers.

I read the report 'Cashless Payment System in India- A Roadmap' carefully and find the analysis very valuable.

The report's value is in helping readers understand the concept and workings of the card based payment system. It attempts a systematic analysis of the payment system for the country's enormous retail sector. And, it does so with the clarity and informed assurance that one would expect of a work under the umbrella of IIT Bombay.

The report carried out an extensive review of international literature and held independent interactions with the major market players in the system. To get the business perspective from the merchants' point of view, they also conducted a survey among merchants. The report thus forms an unbiased opinion on business behaviour and identifies systemic biases.

The use and acceptability of the credit and debit cards at merchant establishments, is a well debated topic worldwide. With an eye to boost an efficient cashless payment system, keeping India's merchants, cardholders and banks in forefront, the report through its structured approach has suggested directions for optimising usage and rationalising pricing patterns.

I appreciate the recommendations made and expect that the report would prove useful for the Government and Reserve Bank of India, in their endeavour towards reducing the currency management costs and bringing in an efficient cashless payment system for the country.

Yaga Venugopal Reddy
Former Governor, Reserve Bank of India
Emeritus Professor, University of Hyderabad

26th August 2010

Plot 240-B-1, Road # 18, Jubilee Hills, Hyderabad – 500 033, A.P. (INDIA)
Tel.: +91-40-23551152
Email: office.dryvr@gmail.com

Cashless Payment System in India:
The Action Plan

A. Objective

1. The card based payment system includes the card companies (switch provider), banks (acquirer and issuer), merchants and cardholders, and cannot function in absence of any of these players. It is seen that though card based payment systems have been in vogue for several years, its use and popularity is still very limited. There are 190 lakh credit and 1,900 lakh debit cards in the system, but there are just 11 transactions per credit card and one transaction per debit card annually. To locate the reasons for the subdued transition to cashless payments, this study carries out a review of the roles performed by various players of the system and then arrives at a structured and implementable roadmap to move towards a cashless retail payment system in India.

B. Present scenario

2. In the present scenario, credit card is a mode of payment that is an alternative to cash. Credit card offers free credit, bears risk, and thus is an expensive payment mode. However, the product design and promotions are such that the pricing is kept hidden and the users are oblivious of the fact that the cost is ultimately borne by them.

3. Debit card is another alternative to cash. Though this mode of payment offers no credit, carries no or minimal risk it has still been priced at par with the credit card by the banks- a price that is borne by the cardholder.

4. The costs of the debit and credit card system are passed on to the merchants who accept card payments. Such expenditures for the merchants can be as high as 50% of their profits. There are two options for the merchant- (i) if he is not allowed to surcharge; he passes this cost to his product price. The card user, who ultimately bears the cost, is not able to feel this hidden price adjustment upfront. (ii) If on the other hand, the merchant is allowed to surcharge or offer discounts for cash, the card user prefers to use cash instead leading to a payment by an inefficient mode.

C. Drawbacks of the present system

5. The oblique pricing structure that treats and prices the credit and debit card in a similar manner has several drawbacks that hinder its growth / popularity and some features of the product even cause potential risk to the users. We list few of the drawbacks.

6. **Under utilisation of debit cards:** Though the number of debit cards is currently 10 times higher than the credit cards, the average number of transactions per debit card is 10 times less. On an average, the debit and credit cards together account for only two card transactions per day per POS terminal.

7. **Lower acceptability of cards by merchants:** The unreasonable pricing of debit cards is a disincentive for small and medium merchants, who have less pricing power due to their low volumes, to transit to card based payments.

8. **Increase in cost of currency management:** In India, card transactions at POS have been only about 5% of retail sales. This large cash dependence (95% of retail sales) imposes huge pressures on currency management.

9. **Lack of accountability:** Predominance of cash in retail sales leads to deterioration in business accountability as transaction tracking is not possible, it enables tax leakage, diminishes financial inclusion and enables existence of a parallel economy.

10. **Potential of fraud:** There is greater risk attached to debit cardholders in case of fraud as cardholder is deprived of the money. Currently banks offer either pin-based or signature-based debit cards. As a lost or stolen debit card is useless without its PIN, consumers usually prefer pin-based debit cards.

D. <u>Proposed action</u>

11. There is a need for RBI to **subsidize switch charges**, to promote cashless payments.

12. The pin-based debit cards are more secure than signature-based debit cards. Since all existing debit cards (signature-based or pin-based) are already associated to a PIN, in order to mitigate risk, appropriate regulatory measures should be put in place to **make all debit card transactions at POS pin-based.** This will use the already existing resources and technology.

13. Given the cost and risks involved in handling cash, banks need to favourably price electronic products and a situation where electronic products are costlier than paper products should not arise. Thus, to glide through from cash based to card based products, our analysis suggests **the MDR[*] on debit card could be kept at 0.2% with a cap of ₹ 20.**

14. The credit card is a frilled product since it provides quick credit. The interchange on credit cards should therefore best be left to the issuer banks and competition should dictate the pricing in consonance with RBI's general policy on non-priority sector personal loans. The interchange, currently being borne by merchants, forms a part of the MDR. In order to

[*] Merchant Discount Rate – a proportion of the transaction amount borne by the merchant.

provide a level playing field, it is recommended that **the merchants should be given the freedom to surcharge on credit cards.**

15. In order to ensure that the freedom provided to merchants to surcharge does not lead to a kill for card based payment system (by disincentivising card users), it is recommended that **the no-surcharge rule be applied strictly to no-frill debit cards**.

16. In order to provide convenience to both merchants and cardholders, **cash withdrawal at POS should be clubbed along with purchase** so as to reduce costs and increase efficiency in cash handling.

17. The **usage of no-frill debit cards should be encouraged.** In order to educate people on the advantages of debit cards over cash, **RBI should organise focused financial education campaigns among merchants and cardholders.**

18. The Government may also consider promoting avenues where tax benefits are provided to merchants for accepting card based payments, e.g. **an appropriate tax rebate can be extended to a merchant if at least 50% value of his transactions are through cards.** The government should **minimize**, if not eliminate, **the duties and taxes on manufacture and sale of EDC machines** to promote its acceptability.

19. Mobile phones are expected to come up with embedded debit cards akin to other utilities like camera, radio, alarm clock, etc. Similarly, normal and GPRS EDC machines will get replaced by mobile phones with EDC capabilities. The **mobile phone debit cards and EDC enabled mobile phones could be linked to one's bank account just like an ordinary debit card / EDC machine** and can be used for retail payments.

20. Prepaid debit card is a debit card that is not linked to a regular bank account, but where the consumer instead pays a bank or merchant ₹ *x* (plus fees) and is given a debit card that can draw on up to ₹ *x*. **Banks should be encouraged to issue prepaid and reloadable debit cards to non-customers**. If the retail stores intend to issue their own prepaid debit cards to their customers for use in their stores, such cards should have a bank guarantee.

E. <u>Benefits of the proposals</u>

21. **Benefit of no-frill debit cards:** A simple debit card, equivalent to an electronic cheque, is a basic banking service for the customers and merchants alike. Any frill attached to such cards by the banks has a cost which is ultimately borne by merchants and consumers. The incentives on no-frill debit card to end users are (i) convenience of cashless settlements for merchants and customers alike, (ii) reduction in the demand for cash, (iii) quicker and secured transfer of sale proceeds to merchant's account, and (iv) cardholders earning interest on a daily basis by deferring withdrawal till the money is actually required at the POS.

22. **Benefit of reduced price to consumers:** With the proposed pricing structure of having an MDR of 0.2% with cap of ₹ 20 , it is expected that most merchants would pass on the reduced costs directly to their shoppers in the form of lower prices and the consumers will directly benefit from the reductions on debit interchange fees.

23. **Benefit to currency management:** Card transactions at POS account for about 5% of retail sales in India. Thus, with costs for printing banknotes being of the order of ₹ 2,800 crore annually, card usage at POS leads to about ₹ 140 crore of savings in currency management. Every additional 1% increase in the use of cards in retail sales, will lead to a ₹ 28 crore savings in note printing cost (excluding the huge costs incurred for secured transportation, counterfeit detection / prevention, etc.).

24. **Benefit of pin-based debit cards**: With a view to reduce instances of misuse of lost / stolen cards, one can consider (i) cards having photograph of the cardholder and (ii) debit cards which are only pin-based. Usually, consumers prefer pin-based (over signature-based) debit cards since it is perceived to offer greater security. Also, there is greater risk attached to debit cardholders in case of fraudulent use as the cardholder is deprived of the money.

25. **Benefit of electronic information:** The information generated through card payments would help track transactions, check tax avoidance / fraud etc., enhance financial inclusion and integrate the parallel economy with main stream. As the card usage gains popularity into the hinterland, the system will generate huge volumes of data on the spending behavior of persons in these areas. This information will help the Government in designing products that meet the spending behavior of individuals. Over time when card payments grow and represent a significant part of retail sales, the card payments data could also be used as a quick estimate of private consumption.

26. **Benefit of mobile and prepaid debit cards:** The easy to obtain prepaid debit cards have immense potential in a cashless payment system e.g. it is a method of 'banking' the unbanked, a means of giving electronic cash, as a method of giving cash gifts, etc. The prepaid cards can be used at any merchant establishment which accepts debit cards. Similarly, the mobile phone embedded debit cards and EDC enabled mobile phones can be used for cashless retail payments.

F. <u>Concluding remark</u>

27. The report's recommendations will lead to a transition from the expensive and thrusted credit card system to a need based debit card system which is optimal for the economy and beneficial to the end users (merchants and consumers). It is time that the artificial tilt that has been in existence for the benefit of the providers (banks and switch providers) at the cost of the users gives way to a rationalized system.

Executive Summary

A. Background and objective

1. With an aim to move towards a cashless payment system in India, we look at the existing card based payment system. The card based payment system has several players. On the one hand, we have the providers of the card based payment system- first of which is the card companies like MasterCard and Visa who provide their payment network for the system to function. The second set of providers is the banks that act as acquirers for merchants and issuers for cardholders and reach the card payment services to the ultimate users. For these two parties, the card payment system is an income generating initiative and they are motivated to run the system as they are able to generate adequate profits out of their operations. On the other side of the system are the users- both merchants and cardholders. The benefit these two players derive from the system are manifold- the convenience of electronic transactions, the ease of credit availability, increased sales, increased purchasing power, to list a few. Since they are the end users of the convenience the card payment system generates, they are the ones who bear the cost of the system. Apart from these four players there is the regulator of the payment system, usually the central bank of the country.

2. The card based payment system cannot function in absence of any of its players. The objective of this study is to carry out a rational review of the roles played by various players of the system and to see that each player is deriving the best benefit it deserves and the system is not biased in favour of one or more at the cost of others. The endeavour is to arrive at a structured and implementable roadmap to move towards a cashless payment system in India.

B. The approach

3. The approach the report took was to first study the card based system in India and the practices followed by different countries. For this an extensive review of international literature was carried out. To form an unbiased opinion on business behaviour and to help identify systemic biases, if any, the authors had independent interactions with each player. Intensive discussions were held with many of the banks in India, US and UK that are industry leaders and also with the top executives of MasterCard and Visa, both in India and in other regions across the globe. This provided a good understanding of the business philosophy and pricing strategy of the income earning and profit making players in the card based payment system. Interactions were also held with the regulators and the literature pertaining to regulations brought out by them and rationales thereof were also studied and explored.

4. To get the business perspective from the merchants' point of view a survey is being carried out among select merchants representing different sectors and size of business. From the initial set of responses of the survey that is fairly representative of size and sectoral composition, several important facts emerged. Firstly, the usage of card based payment system by and large is quite prevalent, though not yet so among smaller merchants. Secondly, the merchants reported significant differential in cost of transactions done through cash as against cards and the cost differential made cash a more preferred mode of transaction, especially so among the smaller merchants. The merchants did not distinguish between the credit and debit cards since in India the cost of using the two types of cards is similar. Thirdly, the merchants felt that the present levels of Merchant Discount Rate (MDR) are unreasonable and they generally account for it by having different profit margins for cash and card transactions. They said that they were willing to bear MDR of less than 1% and a majority of them felt that the MDR should be fixed by the regulator (RBI). Lastly, the merchants said that though at present they do not distinguish between debit and credit cards, as they cost the same to them, they would certainly have a preference for debit cards if the transaction cost was fixed realistically at, say, ₹ 4 per transaction irrespective of its size.

5. With these background and interactions it was felt that the system was biased in favour of the providers and the users were being unfairly charged for the same. The study has suggested ways to rationalize the system in order to improve its usage, efficiency and standards. **The major findings / suggestions of the study are as below:**

C. Under utilisation of debit cards

6. It is seen that while the number of valid debit cards is currently 10 times higher than the number of valid credit cards, the average number of transactions per debit card is 10 times lower than that of credit cards. Though there has been a steady increase in the number of card transactions, the average number of annual transactions per debit and credit card is merely one and eleven, respectively. India had about 0.5 million point-of-sale (POS) terminals in 2009-10 and on an average there was less than one debit card transaction and only 1.3 credit card transactions per day per POS terminal. Thus both from the merchants' and customers' angle, POS terminals are being highly under utilized. The primary reasons for under utilisation are: (i) merchants prefer cash to cards as found from the survey; (ii) debit cards are unreasonably priced; and (iii) cardholders prefer credit cards over debit cards.

D. Allowing surcharge on credit cards

7. Issuer banks participating in the card business earn income through interchange fees from credit and debit card usage at POS. These fees, paid by merchants as a percentage of each transaction when consumers swipe their card, generate a multi-crore business for banks. However, the current system appears to be biased in favour of the card companies and financial institutions participating in the card business. We suggest a model that will tackle

this systemic bias in addition to being a profitable business proposition for card companies and banks.

8. The credit card is a frilled product since it provides quick credit (though at high cost) as against a tedious process of getting a personal loan. Many banks upgrade cards for the existing customers to higher category (e.g. to platinum from silver / gold) which attracts higher interchange fee. Part of the interchange fee collected by issuing bank accounts for the lending (of about an average period of 35 days). The interchange on credit cards should therefore best be left to the issuer banks. Such a frilled product need not have any regulatory restrictions and competition should dictate the pricing in consonance with RBI's general policy on non-priority sector personal loans.

9. The interchange, currently being borne by merchants, forms a part of the MDR. At times it is as high as 50% of their profits. In such a scenario, as a means for providing a level playing field, merchants too deserve the freedom to decide the extent to which they can absorb such interchange fee (as a component of MDR) and the proportion they would pass on to the customer. Surcharging is only a deterrent for the more expensive credit card based payment mode where one resorts to borrowing. **It is thus recommended that the merchants should be given the freedom to surcharge on credit cards.** RBI may accordingly like to consider a regulation for removing the 'no-surcharge rule' on credit cards. This would bring India in line with Australia and Europe with respect to surcharge on credit cards.

E. No-surcharge rule on no-frill debit cards

10. A simple debit card, equivalent to an electronic cheque, is a basic banking service for the customers and merchants alike. However, there is a tendency by the banks to attach frills to debit cards as they do for credit cards. Such frills are in the form of facilities like cash back, free airport lounges, reward / loyalty points, discounts at specified restaurants, and other goodies like movie tickets and petrol vouchers. The cost for such frills is borne by merchants. In order to balance, merchants try to recover this cost by incorporating the cost in their selling price. As a consequence cash payers get unduly penalized and debit card users actually have no net gain. The primary incentives to the payment system on no-frill debit card are (i) convenience of plastic money for merchants and customers alike, (ii) reduction in the demand for cash and thus enabling the economy to save some resources, (iii) quicker and secured transfer of sale proceeds to merchant's account, and (iv) cardholders earning interest on a daily basis by deferring withdrawal of money from ones savings account till it is actually required, i.e., at the POS.

11. Keeping the above in view it is recommended that in order to promote the habit of card based payments the **usage of no-frill debit cards should be encouraged.** Additionally, in order to educate people on the advantages of debit cards over cash, **RBI should be proactive in bringing awareness on debit card usage among merchants and cardholders**

through focused financial education campaigns. The Government may also consider contributing to the enlargement of card based electronic payment in the retail sector of the country by promotional avenues such as those adopted by Korea, where tax benefits are provided to merchants for accepting card based payments (as it improves business accountability). Government can think of **appropriate tax rebate to a merchant if at least 50% of his transactions in value terms are through cards**. Furthermore, as a means to encourage the much needed POS terminals in the country, the government should **minimize**, if not eliminate, **the duties and taxes on manufacture and sale of EDC machines**.

12. In order to ensure that the freedom provided to merchants to surcharge does not lead to a kill for card based payment system (by disincentivising card users), it is recommended that **the no-surcharge rule be applied strictly to all no-frill debit cards**.

13. In case the banks wish to issue frilled debit cards, the associated costs on the frills should desirably be borne by the cardholder.

F. Reasonable MDR for debit cards

14. Card companies allow merchants to provide discounts to customers who use cash. Is this desirable? Cash is far less efficient a payment method than cards. As rightly indicated by RBI — "… given the cost and risks involved in handling paper instruments, banks need to favourably price electronic products and a situation where electronic products are costlier than paper products is inexplicable…" — the vital question now is how does one glide through a transition from cash based to electronic / card based products.

15. In view of the analogue that exists between POS terminals and ATMs, it is clear that the costs for a no-frill debit card system can be benchmarked by the costs involved in operating an ATM. Keeping in mind the visibly high cost of an ATM system (high instrument cost, expenditures on location, air-conditioning, security, stationary, network, cash transportation, etc.), RBI pegged the cost of cash withdrawal at an ATM at around ₹ 20. On the other hand, the cost to run a POS terminal is relatively low (low instrument cost, low maintenance cost, bank's network and switch fees, etc.).

16. Considering that every debit card transaction at POS costs ₹ 4 (Section V.1), we suggest that **the MDR on debit card could be kept at 0.2% with a cap of ₹ 20**, so as to cover the cost and generate moderate profit. However, the values 0.2% and ₹ 20 can be sharpened further based on the exact distribution of the ticket amounts for debit card transactions at POS. With mean ticket amount on a credit / debit card transaction being ₹ 2,700 / 1,500, a 0.2% MDR on debit card transactions would, on an average, cost between ₹ 3 and ₹ 5 to a merchant and earn the same amount for the banks. However, bank's earnings of ₹ 20 for larger tickets (where cost continues to be ₹ 4) compensates for the shortfall in revenue generated from small ticket transactions. Such pricing would create more demand

for POS terminals and no-frill debit cards leading to further reductions in the fixed and running costs of EDC machines. Like the cutting down of phone call charges increased the usage and user base thereby leading to increased profitability for phone companies, a reduced MDR on debit cards too will create a similar impact for the banks / card companies.

17. Cost distribution of ₹ 4 between acquirer, issuer and switch provider is of significance. Targeting for cost effectiveness through increased volumes, **it is proposed that (i) Issuer gets ₹ 1 (25%); (ii) Switch provider gets ₹ 1 (25%); and (iii) Acquirer gets ₹ 2 (50%).**

18. The advantages of such a proposal are manifold. Firstly, with about 2,000 lakh debit cards in circulation and an annual fees of ₹ 50 per card, it will generate an annual revenue of about ₹ 1,020 crore for issuers (Section V.1). Secondly, even with existing level of usage it will generate about ₹ 40 crore for acquirer through MDR. Thirdly, the issuers and acquirers will get larger balances in their CASA deposits, especially when the low to mid size customers get POS savvy. Fourthly, the increased popularity of debit card usage will reduce the burden on country's currency management. Fifthly, switch providers derive revenue similar to revenue being generated from switch charges for third party ATM usage.

19. Thus, if we consider a no-frill debit card as a basic service and have a costing and revenue sharing structure as proposed above, the system will generate direct revenue to the tune of more than ₹ 1,060 crore, from the existing user base and existing level of usage. As against this, based on card data (credit and debit both) and prevailing MDR (average taken as 1.5%), we find that the revenue earned through MDR in the card business during the year 2009-10 had been of the order of ₹ 1,340 crore.

20. There are about 500 million savings accounts in India, while there are only 200 million debit cardholders. Extending the basic service of no-frill debit card to all savings account holders will bring in an exponential growth in the debit card business and in the corresponding revenue generation.

21. In July 2009, RBI as a step towards enhancing customer convenience in using plastic money, decided to permit cash withdrawals (upto ₹ 1,000 per day) at POS terminals through use of debit cards issued in India. A vital question on the viability of the scheme is the cost aspect for which RBI is silent. It is proposed that, in order to provide convenience both to merchants and cardholders, such **cash withdrawal at POS should be clubbed along with purchase**. Having mutual benefits, such a system may reduce costs.

G. Benefit to currency management

22. A crude estimate of the life of a banknote is about 4 years. Moreover, since ₹ 10, 20, 50 and 100 denomination notes change hands more frequently, their life is estimated to be

about 3 years. Till 2008-09, the cost of printing new notes every year had been of the order of ₹ 2,000 crore. In 2009-10, this has increased to as high as ₹ 2,754 crore. Thus, the vital question remains as to how the system can reduce this cost by making debit card more attractive to merchants and consumers alike.

23. With ₹ 90,000 crore worth of transactions being through cards (credit and debit) at POS during 2009-2010, this accounts for about 5% of retail sales in India. In other words, card transactions reduced cash transactions in the retail sector by about 5%. With costs for printing banknotes being of the order of ₹ 2,800 crore annually, card usage at POS leads to about ₹ 140 crore of savings in currency management. Thus, as a crude estimate, savings on banknotes printing alone (excluding the huge costs incurred for secured transportation, counterfeit detection / prevention, etc.) are of the order of ₹ 28 crore for every 1% increase in the use of cards in retail sales.

24. Credit card is a frill based product. However, debit card need not be. By making debit cards more attractive in the retail market, the burden of currency management on RBI could be brought down. To achieve this, it is felt that **RBI could consider, subsidizing all switch charges so as to reduce costs and make card usage more attractive.**

H. Securing debit card usage at POS

25. In 2009-10, RBI, in order to enhance the security of online and IVR card transactions, took measures to mitigate risk through a system of providing for additional authentication / validation based on information not visible on the cards for all online and IVR transactions. Furthermore, with a view to reducing the instances of misuse of lost / stolen cards, RBI has recommended to banks that they may consider issuing (i) cards with photographs of the cardholder or / and (ii) cards with PIN.

26. In India, banks are still issuing both pin-based and signature-based debit cards to their savings / current account holders. The pin-based cards have an additional PIN security feature while using it at POS. Usually, consumers would prefer pin-based debit cards since it is perceived that PINs offer greater security. Understandably, a lost or stolen debit card is useless without its PIN. Another need for making debit card transactions more secure is the greater risk attached to debit cardholders in case of fraud. While in case of credit card fraud the cardholder withholds payment, in case of debit card fraud the cardholder is deprived of the money. This makes signature-based debit cardholders prone to larger risk and inconvenience.

27. Given that pin-based debit cards are more secure than signature-based debit cards for POS transactions and furthermore since all existing debit cards (whether signature-based or pin-based) are already associated to a PIN, e.g., when it is used at ATM, it is imperative that in order to mitigate risk, appropriate regulatory measures should be put in place to **make all**

debit card transactions at POS pin-based using already existing resources and technology. This is a technologically feasible and viable proposition.

I. Mobile and prepaid debit cards

28. Mobile phones are expected to come up with embedded debit cards akin to other utilities like camera, radio, alarm clock, etc. Similarly, normal and GPRS EDC machines will get replaced by mobile phones with EDC capabilities. The **mobile phone debit cards and EDC enabled mobile phones could be linked to one's bank account just like an ordinary debit card / EDC machine** and can be used for cashless retail payments.

29. Prepaid debit card is a debit card that is not linked to a regular bank account, but where the consumer instead pays a bank or merchant ₹ *x* (plus fees) and is given a debit card that can draw on up to ₹ *x*. The prepaid cards can be used at any merchant establishment which accepts debit cards. **Banks should be encouraged to issue prepaid and reloadable debit cards to non-customers**. No more than a photo id should be required for its issue. If the retail stores / store chains intend to issue their own prepaid debit cards to their customers, such cards should have a bank guarantee and its acceptability should be limited to stores / store chains which issue it. The prepaid debit cards have immense potential in a cashless payment system e.g. it is a method of 'banking' the unbanked, a means of giving electronic cash, as a method of giving cash gifts, etc.

J. Concluding remarks and recommendations

30. Cash as a mode of payment is an expensive proposition for the Government. The country needs to move away from cash-based towards a cashless (electronic) payment system. This will help reduce currency management cost, track transactions, check tax avoidance / fraud etc., enhance financial inclusion and integrate the parallel economy with main stream. Additionally as the card usage crosses the boundaries of big cities and gains popularity into the hinterland, the electronic payment system will generate huge volumes of data on the spending behavior of persons in these areas. This information will help the Government in its objective of getting more and more person under the financial inclusion net by designing products that meet the spending behavior of individuals. Over time when card payments grow and represent a significant part of retail sales, the card payments data could also be used as a quick estimate of private consumption.

31. While we present our recommendations, it is worth mentioning that the banking industry may oppose some of the recommendations, which would cut into its revenues. However, it is strongly felt that this should not be a reason (hindrance) in moving towards more efficient payment system. With the new system, it is expected that most merchants would pass on the reduced costs directly to their shoppers in the form of lower prices by an amount essentially identical to the amount, by which the merchants' transaction fee will go

down. These reductions, however, may not be across board and could vary depending on the retailer or the type of goods sold. In general, the consumers will directly benefit from the reductions on debit interchange fees.

32. Both merchants and cardholders are bank customers (depositors), safeguarding the interest of whom is the RBI's prime mandate. The study reveals that in the present pricing of the electronic payments, the structure of MDR has caused unfair treatment for both merchants and consumers. With one transaction per debit card and 11 transactions per credit card annually, such fees have acted as strong deterrent to their growth.

33. A domestic payment card (IndiaCard) and a POS switch network for issuance and acceptance of payment cards is in the pipeline. However, IndiaCard is intended to be a substitute or alternative for MasterCard / Visa branded cards with switch provider being NPCI. IndiaCard would not add much value to the payment system (other than increasing the bargaining power when dealing with MasterCard / Visa) unless it works in combination with rationalisation of the pricing structure and card rules for all cards. This applies to all types of cards - be it IndiaCard or MasterCard / Visa. As noted earlier, it is the debit card interchange fee and oblique business oriented card rules which are deterrents for boosting debit card usage rather than the switch fees.

34. We know that the costs for credit cards to the provider (banks) are different from those it incurs for debit cards. It is necessary that this cost differential is reflected to the users (merchants and cardholders) who pay for these costs. Cash handling being a challenge and a cost to the merchants, transparency on the cost per unit of transaction per type of card is important and this transparency should be promoted by the regulator.

35. Finally, considering the immense advantages the card payment system generates over the paper based payment system, the study looks into few of the ambiguities that remain and makes the following objective, meaningful and implementable recommendations so as to promote the growth of the card payments:

i. **Encourage the usage of no-frill debit cards and devise ways to bring in awareness on debit card usage among merchants and cardholders through focused financial education campaigns.**
ii. **The MDR on all no-frill debit cards could be fixed as 0.2% per transaction with a cap of ₹ 20.**
iii. **The no-surcharge rule to be applied strictly to no-frill debit cards**.
iv. **Make all debit card transactions at POS pin-based**.
v. **Cash withdrawal at POS should be clubbed along with purchase**.
vi. **Merchants to be given freedom to surcharge on credit cards.**

Cashless Payment System in India- A Roadmap*

Ashish Das[1], [2] and Rakhi Agarwal[3]

[1,3]Department of Mathematics, Indian Institute of Technology Bombay, Mumbai-400076
[2]

August 31, 2010

Abstract

India has been using electronic payment systems for many years now. However, the retail sector still has predominance of cash transactions, and payment through cards is yet to pick up. Cards (both credit and debit) are one of the most secure and convenient modes of cashless payment in retail market. The card payments data shows that even though we have 19 million credit cards, 190 million debit cards and half a million point-of-sale terminals, on an average there is just one transaction annually for every debit card and 11 transactions annually for every credit card.

While trying to look for the reasons of poor usage of payment cards, this paper studies the costs involved in India by holding independent interactions with all players in the system— the banks, the card companies and the merchants; and by comparing the practice in different countries. The objective is to rationalise the costing in such a way that the merchants and customers prefer card payments as against cash and it becomes the attractive mode of payment even in the country's hinterland. With the rationalization in costs, the banks and card companies would continue to gain, as revenues would increase due to increase in usage and user base. Additionally, for the Government, with the new pricing the gain will be twofold— firstly there will be sizable reduction in the growth of currency management cost, and secondly, the system will generate volumes of data on spending behaviour of individuals that can be used by the Government for developmental planning.

It is expected that the report would prove useful for RBI and Government to further their endeavour towards bringing in an efficient cashless payment system in the country.

---

* The views expressed in the paper are those of the authors and not necessarily of the institution to which they belong.

[1] Dr. Ashish Das is a Professor of Statistics with the Indian Institute of Technology Bombay. E-mail: ashish@math.iitb.ac.in
[2]

[3] Ms. Rakhi Agarwal had been a student with the Indian Institute of Technology Bombay. E-mail: agrakhi@gmail.com

Acknowledgements

The authors thank few officials in the card companies, banks, IBA, IDRBT, NPCI and RBI for some fruitful discussions. The merchants' contribution through their participation in the survey is duly acknowledged. We sincerely thank Dr. Y. V. Reddy, former Governor of RBI, Prof. Adam Levitin, Associate Professor of Law at Georgetown University Law Center, Prof. U. R. Rao, former Chairman of ISRO, and Dr. Shubhashis Gangopadhyay, Research Director, India Development Foundation, for their encouraging response and comments on an earlier draft. We are also thankful to few merchants in the organised retail, Standard Chartered Bank, ICICI Bank, Bank of Baroda, IBA, NPCI and Retailers Association of India for their thoughtful comments on the draft report. This research is partly supported by an Industrial Research & Consultancy Centre grant (Sponsored Project 07IR027) of IIT Bombay. In the paper all possible care has been taken to project the correct picture using the data gathered. Deviations, if any, are inadvertent.

Authors' note: ***In order to stimulate discussions and receive valued comments, the paper is being put in the public domain in form of a Technical Report. For technical reasons the name of one author is not revealed in this version of the Report.***

I. Introduction

I.1 Card and cash in retail sector

1.1 The country's payment system is rapidly transiting to more and more IT based systems. In the retail sector we have very high volumes of money transactions. Other than cash, one of the growing payment methods adopted by merchants in the sector is payment cards. Cards are one of the most secure and convenient modes of payment in retail market. The card transactions carried out at the point-of-sale (POS) are primarily either through credit cards or debit cards. Keeping merchants and cardholders in forefront, the present report is a structured approach to look into these card based payments in the country and suggest directions for its productive use and pricing patterns. It is expected that the report would prove useful for Reserve Bank of India (RBI), in its endeavour towards bringing in an efficient payment system for the country.

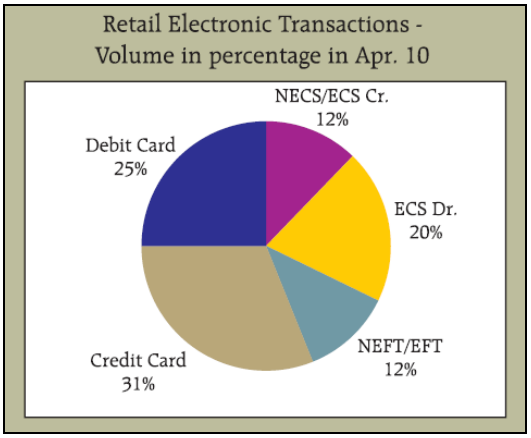
1.2 The A. T. Kearney Global Retail Development Index (GRDI) puts India in the 3rd place in the year 2010 (earlier, India had been GRDI leader during 2005-07 and 2009). India's retail market, according to A. T. Kearney, is worth about US$ 410 billion and expected to grow rapidly up to US$ 535 billion in 2013[4], reflecting a fast-growing middle and upper class consumer base and opportunities in second and third-tier cities through increased retail activities (see, reference [60]). With ₹ 90,000 crore[5] worth of transactions being through cards (credit and debit) at POS during 2009-2010, this accounts for about 5% of retail sales in India (taking US$ 1 = ₹ 46). In other words, card transactions reduced cash transactions in the retail sector by about 5%. With costs for printing banknotes being of the order of ₹ 2,800 crore annually (see, reference [66]), card usage at POS leads to about ₹ 140 crore of savings in currency management. Thus, as a crude estimate, savings on banknotes printing alone (excluding the huge costs incurred for secured transportation, counterfeit detection / prevention, etc.) are of the order of ₹ 28 crore for every 1% increase in the use of cards in retail sales.

I.2 Volume of card business in India

1.3 A snapshot, as in Figure 1 below, indicates that in volume terms 56% of retail electronic transactions are through credit and debit cards (though in value terms, it is only 10%).

[4] An alternate estimate that is dimensionally similar is from the BMI India Retail Report for the third-quarter of 2010, released in May 2010, which forecasts that the total retail sales will grow from US$ 353.0 billion in 2010 to US$ 543.2 billion by 2014.

[5] 1 crore = 10 million



Source: RBI Bulletin June 2010

Figure 1

1.4 In India, the number of valid credit and debit cards in circulation is 2,000 lakh[6]. During 2009-10, the number of transactions on such cards had been of the order of 4,040 lakh and the amount of transactions ₹ 89,270 crore. The number of card transactions increased by 193% during the period 2003-04 to 2009-10.

1.5 Tables 1 and 2 are presented below to throw some light on card usage for POS transactions.

Table 1

Credit Card Payments						
Year / Period	Number of Valid Cards as of End-March (Lakh)	Number of Transactions (Lakh)	Average Number of Transactions per Card	Amount of Transactions (Rs. Crore)	Average Amount per Transaction (Rs.)	Average Amount of Transactions per Card (Rs.)
2003-04	—	1001.79	—	17662.72	1763	
2004-05	—	1294.72 (29%)	—	25686.36 (45%)	1984	
2005-06	173.27	1560.86 (21%)	—	33886.47 (32%)	2171	
2006-07	231.23 (33%)	1695.36 (9%)	8.38	41361.31 (22%)	2440	20451
2007-08	275.47 (19%)	2282.03 (35%)	9.01	57984.73 (40%)	2541	22887 (12%)
2008-09	246.99 (-10%)	2595.61 (14%)	9.94	65355.80 (13%)	2518	25018 (9%)
2009-10	183.19 (-26%)	2340.65 (-10%)	10.88	62851.86 (-4%)	2685	29221 (17%)

Source: RBI Bulletin June 2010

Note: 1. The figures within parenthesis indicate % increase over previous year

2. The average number (amount) of transactions per card in a year is number (amount) of transactions in the year divided by mean value of the end-march figures of number of valid cards for the year and previous year

[6] 1 lakh = 100 thousand

Table 2

Debit Card Payments						
Year / Period	Number of Valid Cards as of End-March (Lakh)	Number of Transactions (Lakh)	Average Number of Transactions per Card	Amount of Transactions (Rs. Crore)	Average Amount per Transaction (Rs.)	Average Amount of Transactions per Card (Rs.)
2003-04	—	377.57	—	4873.67	1291	
2004-05	—	415.32 (10%)	—	5361.04 (10%)	1291	
2005-06	497.63	456.86 (10%)	—	5897.14 (10%)	1291	
2006-07	749.76 (51%)	601.77 (32%)	0.96	8171.63 (39%)	1358	1310
2007-08	1024.37 (37%)	883.06 (47%)	1.00	12521.22 (53%)	1418	1412 (8%)
2008-09	1374.31 (34%)	1276.54 (45%)	1.06	18547.14 (48%)	1453	1546 (10%)
2009-10	1813.87 (32%)	1701.09 (33%)	1.07	26417.97 (42%)	1553	1657 (7%)

Source: RBI Bulletin June 2010

Note: 1. Figures for 2003-04 and 2004-05 are RBI estimates based on 2005-06 figures

2. The figures within parenthesis indicate % increase over previous year

3. The average number (amount) of transactions per card in a year is number (amount) of transactions in the year divided by mean value of the end-march figures of number of valid cards for the year and previous year

1.6 Based on Tables 1 and 2, the following charts depict the growth of both credit and debit cards business in India. The debit cards have had a slow start and their growth only took off in the last three years. On the other hand, the credit cards grew faster since inception with the growth turning negative in the latest year. Nevertheless, the percentage increase in average amount being spent per credit card is more than twice than that for debit cards (being 17% and 7% respectively).

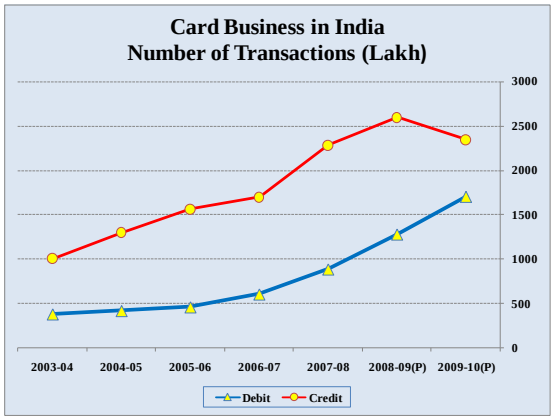


Chart 1

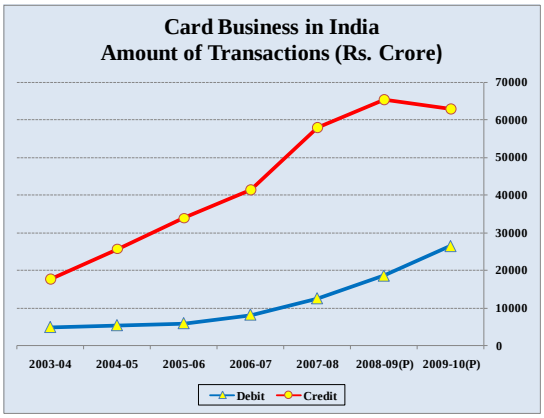


Chart 2

1.7 Over the period 2005-06 to 2009-10, the compound annual growth rates[7] in number of debit cards and its transactions are 38.2% and 38.9% respectively, while as per current trends, the annual rate of increase in the number of debit cards and its transactions are relatively lower at 32% and 33% respectively. In contrast, the credit card business grew at a

[7] Compound annual growth rate (CAGR) is given by the following formula:
CAGR = $\{(\text{Current value / Base value})^{1/\text{number of years}} - 1\} \times 100$

compound annual growth rate of merely 1.4% and 10.7% respectively in its number of cards and transactions during the same period and possibly due to the financial crisis, the credit card usage has decreased in 2009-2010 at least in nominal terms.

1.8 Although the above pictures indicate as if debit card usage vis-à-vis credit cards is picking up significantly, further analysis shows a different scenario. Based on Tables 1 and 2, we give two charts on number of valid cards and average number of transactions per card.

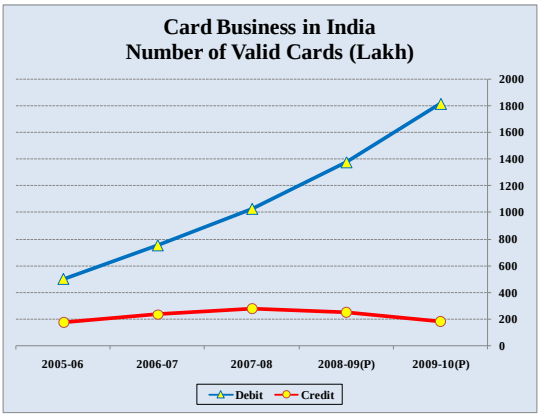


Chart 3

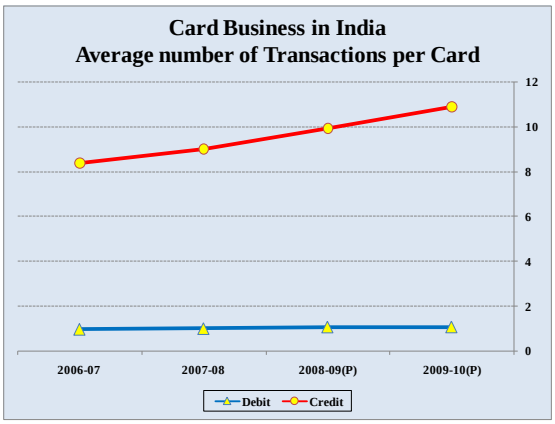


Chart 4

1.9 The charts show that while the number of valid debit cards is currently 10 times higher than the number of valid credit cards, the average number of transactions per debit card is 10 times lower than that of credit cards. Though there has been a steady increase in the number of transactions at POS, be it credit cards or debit cards, however, when one notes the striking increase in the number of debit cards issued vis-à-vis credit cards, it becomes apparent that debit cards are being under utilized at POS. The average number of annual transactions per debit card is merely one as against eleven for credit cards.

1.10 Again, as on May 31, 2009, number of POS terminals in India stood at 4,70,237. Thus considering that there had been on an average about 0.5 million terminals during 2009-10, based on data in Tables 1 and 2 we see that during the year 2009-10, on an average there had been 468 transactions per POS terminal through credit cards and only 340 transactions per POS terminal through debit cards. This indicates that on an average there is less than one debit card transaction and only 1.3 credit card transactions per day per POS terminal. Thus from the merchants' angle too a POS terminal is being highly under utilized.

I.3 The card based payment system

1.11 Payment card systems such as MasterCard and Visa involve four main parties, i.e.,

- the cardholder;
- the institution that provides the card to the cardholder – the issuer;
- the merchant that provides the goods or services to the cardholder; and

- the institution that provides services to the merchant – the acquirer.

1.12 Thus, the system consists of a customer who holds a credit / debit card from his issuing bank (issuer), a merchant who has been given the facility of accepting credit cards by his acquiring bank (acquirer) and the payment network MasterCard / Visa, etc. In this system, first a merchant who decides to accept credit or debit cards in exchange for goods or services establishes a merchant account by forming a relationship with an acquiring bank. This relationship enables the merchant to receive sale proceeds from credit / debit card purchases through credits in his account. However, the acquirer, while paying such credits to the merchant, applies a Merchant Discount Rate (MDR), which is a proportion of the sale proceed that is paid by the merchant to the acquirer in consideration for card acceptance services. Thus, the MDR is a percentage of sales that a merchant pays to the acquiring bank to process credit / debit card transactions. In India on MasterCard and Visa card transactions this rate generally varies from 1% to 2%. The MDR is generally greater for premium cards than for standard cards. Thus, considering the average MDR to be 1.5%, the revenue generated in the card business, through MDR only, is of the order of ₹ 1,340 crore. A component of MDR on every card transaction, called interchange, flows from the merchant acquiring bank to the card issuing bank. The settlement and credit transactions between the issuer and the acquirer are done using the network of MasterCard / Visa, who also gets a share of the fee in exchange. Figure 2 illustrates a typical transaction in a four-party card system.

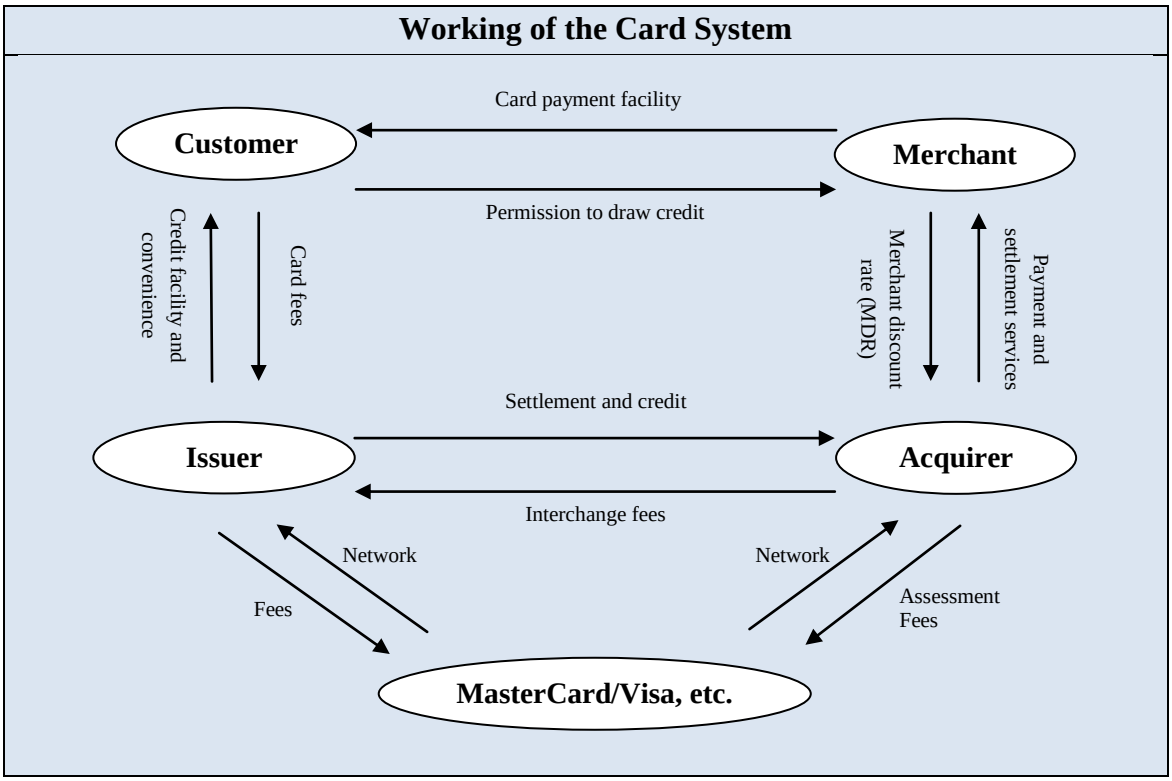


Figure 2

1.13 In practical terms, when a cardholder uses his or her card to make a purchase from a merchant, the acquiring institution makes a payment to the merchant equal to the retail price less the MDR. The acquiring institution receives a payment from the card-issuing institution equal to the retail price less an 'interchange fee'. The average interchange fee on MasterCard and Visa card transactions is approximately two-thirds of MDR. The interchange fee being a cost from the perspective of the acquiring institution affects the level of MDR. The interchange fee, however, is a source of revenue from the perspective of issuing institutions. Issuers incur a variety of costs like costs for, marketing to new cardholders, providing service to existing cardholders (including call centre services), extending credit, bearing risk, absorbing default, preventing fraud, etc. Revenues from interchange fees help issuers recover costs and help issuers hold down cardholder fees and maintain card benefits such as interest-free periods and reward programs.

1.14 It may be noted that in India a gas station (petrol pump) merchant does not charge extra, but it is the issuing bank who may charge some extra money from the cardholder for using card at gas station. Also, for purchases of train tickets over counters / net it is the bank who charges an additional amount and not the railways. Currently, such charges are 2.5% of the actual transaction amount (the exception being for train tickets bought over the net for which a rate of 1.8% applies). This raises a vital question on the reasonability of banks' charging 2.5% from cardholders for purchases of petrol / diesel / CNG at gas stations or charging 2.5% from cardholders for train ticket purchases at railway ticket counters. Based on general interaction with banks, it transpires that over the years, the average MDR has been decreasing. However, MasterCard / Visa found it justified to retain the 2.5% charge at gas stations and on train ticket purchases. Furthermore, one needs to take into consideration that nonpayment of any merchant service charges by gas station owners or railways amounts to acceptance by MasterCard / Visa that there is no value addition in terms of convenience gained by these merchants for accepting card payment as a mode of receiving sale proceeds. This may be in contradiction to the general view floated by MasterCard / Visa that MDR includes a charge that merchants pay for the convenience gained in non-handling of cash.

1.15 American Express, Discover and Diners Club are independent financial institutions performing all the three roles of issuer, acquirer and network itself. Hence a system involving them along with merchants and cardholders is often referred to as 'three party model'[8].

I.4 Regulatory stance

1.16 With the objective of strengthening the financial markets, RBI has focused on building up a strong payments system in the country. It has brought out a report on review of Payment and Settlement Systems (see, reference [11]). In this November 2007 report, in connection with debit and credit cards, it is remarked:

[8] Recently these networks began to allow other banks to issue cards with their brands and some of them have also begun to outsource their required acquirer functions.

"4.18 Credit cards and Debit cards: In case of Credit Cards and Debit Cards there is no visible charge on the customer for use of cards at merchant establishments. Charges are levied directly on customers only at few locations like petrol stations etc. and for cash withdrawal at ATMs. In all other cases, charges levied by banks have been for the credit availed (beyond the due date). In credit cards and debit cards the interchange fees - the charges paid by the merchant are an integral part of the pricing structure of credit and debit card transactions. As this fee is levied on the merchant establishment, there is differential cost for the merchant for payment received by cards or cash. This serves as a disincentive for merchants to encourage payments by cards. This was observed as the reason why the use of cards for purchase of valuable items and goods continue to be discouraged by the merchants; if payments are made by cards the interchange fee is recovered from the customer. This is because, in case of larger value purchases, the merchants find it unremunerative to absorb this interchange fee.
4.19 The interchange fees in most countries are set by credit and debit card networks except in Australia, where the central bank has been regulating interchange fees."

1.17 In the above, the interchange fee is used synonymously with MDR. Through the above the RBI shows its concern on an issue which is also the focus of this report on the usage of credit / debit cards. RBI indicates that "*if payments are made by cards the interchange fee is recovered from the customer*".

1.18 It is obvious that for increasing business in the area of credit / debit cards, apart from issuing more credit / debit cards, the banks try to acquire and thus bring more and more merchants under the umbrella. Any card transaction leads to sharing the revenue earned from use of credit / debit cards. The share holders are primarily the (1) MasterCard / Visa, (2) card issuing bank and (3) merchant acquiring bank. Every merchant acquiring bank is required to incorporate a clause in their agreement binding the merchant not to pass on any component of the MDR to a customer using a payment card.

1.19 In India, though competition guides acquirer-merchant pricing policies, it is generally understood that interchange fees is one component of the MDR established by acquirers and issuers under guidelines provided by the card companies. The implementation of proper interchange rates is necessary and also very crucial for maintaining a strong and vibrant card payments network. The banks and MasterCard / Visa generate revenue and make profits in the card system by charging fees in form of MDR.

I.5 Outline of what follows

1.20 In the remaining report, Section 2 looks into the card rules and incentives to the parties involved in the payment cards. Section 3 describes some recent regulations for rationalization in the payment mechanisms and introduces the issues under consideration in

the present study. Section 4 contains a review of literature and highlights the international scenario on card payments. Section 5 establishes debit cards as a meaningful alternative for payments. Section 6 provides findings of the Merchant Survey on card payments. The summary, concluding remarks and recommendations are presented in the last section.

II. Card Rules and Incentives

II.1 Merchant Restraints

2.1 In India, merchants who accept payment cards agree in their contracts, with their acquirer banks, to be bound by the MasterCard / Visa rules. These rules are known as merchant restraints and the general belief is that such rules increase card usage at the expense of cheaper payment modes like cash. These rules are only available to the merchants in an abridged form. Three of the rules which are of significance in our study are as follows:

(i) **No-surcharge rule:** Merchants are forbidden to impose a surcharge for the use of any brand / type of credit or debit cards, even though card transactions may cost merchants more than transactions made through other payment modes. No-surcharge rules prevent merchants from passing on the cost of the card based payment system to the consumer. All payments made through cash as well as all card brands and all card types within card brands have the same costs to consumers. Thus, consumers are not able to internalize the costs associated to their choice of the payment mode. This leads consumers to choose among the modes of payment available on the basis of one's convenience and without giving due consideration to the costs that merchants have to bear.

(ii) **No minimum or maximum amount rule:** Merchants are forbidden from imposing either a minimum or maximum charge amount, although this rule is widely flouted in regard to minimums. No-minimum / no-maximum amount rules prevent merchants from steering transactions on which card payments are particularly costly to non-card payment systems. Small transactions are less profitable for merchants when paid on a bank payment card because current interchange fee schedules typically include a flat fee and a percentage fee for every transaction. On a small transaction, the flat fee amount can consume a significant amount of a merchant's profit margin.

(iii) **Honour-all-cards rule:** Merchants are required to take all cards bearing the card company's brand. Honour-all-cards rule prevent merchants from picking and choosing what sort of cards they want to accept. Card acceptance thus becomes an all-or-none proposition. The rule forces merchants to accept every kind of card including reward cards which costs merchants higher than other standard cards.

2.2 'No-surcharge rule' and 'Honour-all-cards rule' acting simultaneously force merchants not to pass on the costs of card acceptance directly to consumers, however empirical evidence around the world shows that they do pass on such costs indirectly by raising prices across the board. This is justifiable on the merchants' front. Such a situation creates a cross-subsidy of card consumers by non-card consumers, and of rewards card consumers by all consumers not using rewards cards. This is not only harmful to cash

consumers but also to card consumers as they end up paying higher prices and subsequently in case of delayed payment they pay interest and penalty fees on the higher price amount.

2.3 The **net effects** of the card company's rules are:
(1) to force merchants to charge the same price for goods and services, regardless of the consumer's payment method;
(2) to prevent merchants from steering consumers to cheaper payment options;
(3) to increase the number of card transactions and thus increase income of banks through interchange, interest fees and larger balances in current accounts of merchants;
(4) to limit competition for price-reduction through different payment modes.

II.2 Incentives and costs to merchants

2.4 There are many potential benefits to merchants from accepting credit and debit cards that are unmatched by other payment systems. Credit cards, unlike other payment systems, enable consumers to spend beyond both their cash in hand and the funds in their bank accounts. Debit cards, on the other hand, enable consumers to spend beyond the cash they carry in person. Thus, merchants who accept cards often see increase in their average sales. Credit and debit cards facilitate bookkeeping and currency conversion and decrease the merchants' operational and credit risks. They also often improve checkout speed. These benefits are highlighted as reasons for why cards should generally cost merchants more than other payment methods. They do not, however, explain why merchants should pay even more for certain types of credit cards, such as rewards or corporate cards.

2.5 The higher the level of rewards on a card, the more expensive the card is for merchants to accept. The largest component of the fee merchants pay goes to finance reward programs, which in turn generate more credit and debit card transactions. Although merchants finance the reward programs, they derive no benefit from them. Rather than generating additional sales, reward programs merely induce consumers to shift transactions from less expensive (from merchant's view) payment systems to more expensive rewards cards. Finally, MDR for debit cards being at par with credit cards is something incomprehensible by the merchants.

2.6 Critics complain that MasterCard and Visa does not fight fair since they use their market power to force merchants to accept higher costs for debit cards. Realizing that merchants cannot refuse payment cards as it would result in lower sales, MasterCard and Visa are able to dictate such high fees for debit cards. Rejection of cards by merchants is not a viable option because customers have come to expect acceptance of these cards. Echoing the thoughts of Mallory Duncan of the National Retail Federation of U.S.A., one can say that a rupee is no longer a rupee in this country- it's a MasterCard / Visa rupee. It's only worth 99 paisa because they take a piece of every one.

II.3 Incentives to card users

2.7 Essentially a credit card provides its users immense benefits. It provides:

- Convenience of electronic payment and greater security- both domestic and overseas.
- Convenient remote purchasing - ordering / shopping online or by phone.
- Purchase products or services whenever and wherever you want, without ready cash and paying for them at a later date.
- Have the option of paying only a part of the total expenses. The balance amount can be carried forward, with an interest charged in form of finance charges.
- Enjoy a revolving credit limit without any charges for a limited period (mostly 20 to 50 days)
- Withdraw cash whenever, wherever you are, through ATM and other withdrawal centres.
- Transact in money in more than one currency in different countries.
- Under certain circumstances, they allow you to withhold payment for merchandise which proves defective.
- Earn in terms of bonus points / cash back.
- Accurate record-keeping by consolidating purchases into a single statement.

2.8 Unlike credit cards, debit card is an alternative which not only keeps one away from unnecessarily taking a credit (credit, which has high inherent cost) but also enjoys the convenience of paperless transaction. Debit cards provide its users most of the benefits as mentioned for credit cards. The only major difference is that the component of credit is missing since cardholder's bank account gets debited (by an amount equivalent to the transaction amount) immediately.

2.9 However, a key benefit of using cash includes privacy and anonymity that payment cards do not provide. Ease of concealing sale proceeds / income could also be another reason for preference of cash. These benefits to consumers and merchants are often difficult to quantify.

II.4 Incentives to card issuers and acquirers

2.10 Issuers have two different sources of earning money, i.e. they earn revenue both from cardholders and acquirers (actually, merchants):

(i) Interchange Fees: An interchange fee is the amount given on every transaction by an acquirer bank to the issuer bank. Interchange fees account for about 80% of MDR. It covers for the costs on finance for the interest-free period between the time a consumer makes a purchase and pays his bill, fraud protection and transaction processing (including providing

service to existing cardholders). It also covers for the risks involved in providing credit to customers.

(ii) Interest rates: A major part of issuers' income is through the interests (finance charges) earned from deferred payments of the full amount due. The interest rates are as high as 40% p.a. for such cases. Additionally, consumers may pay annual fees and other fees, such as cash-advance fees, late payment fees and over-the-limit fees. Currently, in India, about 10% to 20% of credit card payments involve deferred payments leading to expected revenue of about ₹ 2,500 crore through finance change and late payment fees.

2.11 Acquirers on the other hand are able to build a relationship with a merchant through his account. The balances in the current accounts of merchants are a source of cheap funds for the acquirer. Furthermore, part of the MDR (usually of the order of 20% of the MDR) is retained by the acquirer in return of the services offered by it.

II.5 Incentives to card companies

2.12 MasterCard and Visa make money in the card business primarily through two streams of income: One is called data processing fees, which are small token fees per transaction. The other is called service fees, which is based on a percentage of payment volume and is paid by the bank issuing the card. Furthermore, banks that issue MasterCard and Visa cards also pay a separate licensing fee, based on payment volume.

2.13 Although card companies receive a very small amount of the total transaction cost (usually about 0.07% to 0.09% of the transaction amount), keeping in mind that there are a large number of transactions, the total revenue generated is huge. By helping issuers in enhancing their reward programs and by framing rules as 'No-surcharge' and 'Honour-all-cards', card companies promote use of credit and debit cards to increase their profits. See, references [27], [28] and [29] for more details.

III. Recent Regulations and the Issues at Hand

III.1 RBI's recent benchmarks on service charge

3.1 The payment system in India has gone through significant transition over the past decade. Looking at the near past, in the spirit as laid down in the Payment and Settlement Systems Act 2007[9], RBI, for the development of payment system in the country and as a matter of public policy, considered it prudent to regulate the charges being imposed by the banks to their customers. Some of the examples of these regulations are:

(i) RBI, effective October 8, 2008, rationalized the charges levied by banks for outstation cheque collections and for electronic products like RTGS / NEFT / ECS.

- RBI had set a ceiling on cheque collection charges as:
  ₹ 50, ₹ 100 and ₹ 150 for cheque amounts respectively 'upto ₹ 10,000', '₹ 10,001 to ₹ 1 lakh' and 'more than ₹ 1 lakh'.

- Similarly, for Inward RTGS / NEFT / ECS transactions RBI has mandated that no charge is to be levied. For Outward transactions the charges mandated by RBI are:
  RTGS of ₹ 1 to 5 lakh (₹ 5 lakh and above) – not exceeding ₹ 25 (₹ 50) per transaction.
  NEFT of up to ₹ 1 lakh (₹1 lakh and above) – not exceeding ₹ 5 (₹ 25) per transaction.

(ii) Again, effective April 1, 2009, RBI mandated that there be no charge imposed to a debit card user for operating on an ATM machine of a bank which is different from the bank which issued the debit card. Subsequently, effective October, 2009, RBI rationalized these charges by mandating a ceiling of ₹ 20 on any third party ATM cash withdrawal after providing five such free transactions per month.

3.2 Before the above standards came into effect, RBI conducted studies leading to few approach papers (see, references [1], [2] and [3]). These relate to postal charges, outstation cheque collection charges, electronic payment products and ATM usage charges. Highlights

[9] To provide for the regulation and supervision of payment systems in India and to designate the RBI as the authority for that purpose and for matters connected therewith or incidental thereto, the Parliament passed '*The Payment and Settlement Systems Act, 2007'* (the Act, in short) which has come into force with effect from August 2008. Under the said Act, RBI is required to provide regulations and supervision as stated in Section 10 of the Act. Further, under Section 18 of the Act, the RBI may, if it is satisfied that for the purpose of enabling it to regulate the payment systems or in the interest of management or operation of any of the payment systems or in public interest, it is necessary so to do, lay down policies relating to the regulation of payment systems. Finally, under Section 38 of the Act, RBI is also required to make regulations, *inter alia*, for the format of payment instructions and other matters relating to determination of standards to be complied with by the payment systems under sub-section (1) of section 10 (see, reference [6]).

of these studies are given in Appendix A. The rationale for switching to the mandated rates, apart from improving and encouraging efficient use of existing payment system, was "**reasonableness of charges levied by banks**".

III.2 Backdrop

3.3 As rightly indicated by RBI— "… given the cost and risks involved in handling paper instruments, banks need to favourably price electronic products and a situation where electronic products are costlier than paper products is inexplicable…" —the vital question now is how does one glide through a transition from cash based to electronic / card based products in the retail sector involving sellers and buyers.

3.4 The aim of any country's payment system is to encourage secure, convenient and affordable modes of payment. The retail payments in India primarily depend on cash and card based payment systems. It is indeed commendable for the card companies to have invented the payment cards and equally praiseworthy are the banks which took the system to its current state. Just like an ATM card is used to collect money over a machine rather than a bank counter, or transactions carried over the net involve paperless transactions, the question now is how effectively can we encourage usage of plastic money which is frill free? Currently, the system dictates how the players in the market infuse a trend which may benefit few but not the system in totality. Reasons for this can be attributed to ignorance and tolerance among merchants and customers for arbitrariness in payment system standards. Such lack of egalitarianism among users of the payment system hinders its further development.

3.5 National Payments Corporation of India (NPCI) envisages functioning as a hub in all electronic retail payment systems which is ever growing in terms of varieties of products, delivery channels, number of service providers and diverse technology solutions. NPCI is prioritising setting up of a Financial Switch which would be state of the art and would have full range of switching functionalities. National Financial Switch (NFS) set up by RBI / Institute for Development and Research in Banking Technology (IDRBT) in 2004 did a splendid task of proving that ATM switching can be done domestically at one tenth of the fees then levied by the international switching companies. Based on the NFS experience, NPCI aims to put a robust and highly scalable system and plans to go beyond ATM and POS switching. Alongside, NPCI and IDRBT may like to study the online merchant community's requirements. They are experiencing low success rates on Payment Gateways when compared with POS terminals. This is primarily due to a less than optimal technology in use for online payments that lacks robustness. This impacts merchants besides customer confidence on online payments.

3.6 In a recent vision document on the payment systems in India (see, reference [42]), RBI mentions about the domestic card initiative- IndiaCard. The concept of a domestic

payment card (IndiaCard) and a POS switch network for issuance and acceptance of payment cards would be looked into. The need for such a system arises from two major considerations (a) the high cost borne by the Indian banks for affiliation with international card companies in the absence of a domestic price setter (b) the connection with international card companies resulting in the need for routing even domestic transactions, which account for more than 90% of the total, through a switch located outside the country.

3.7 In 2008, a study had been carried out on "Acceptability Standards in Credit Card Industry" (see, reference [12]). It observed the behaviour of the players in the credit card industry on the issue of surcharge. Surcharge is a charge to cardholders for use of credit / debit card at merchant establishments. It may be worthy to note that when a merchant decides to pass some component of the MDR to the customer, he may well be justified in doing so in case the MDR set by the acquirer bank is disproportionate to his profit margins or gains he has on account of increase in sales by accepting credit / debit cards. The outcome of the study indicated slipshod attitude on the part of banks to address the issue in the correct perspective. Some banks were reluctant to comment either way while some appeared to favour different treatment by merchants on receipts of cash and card. In fact MasterCard and Visa also do not discourage different treatment to cash and credit card payments through their policy of cash discounts.

III.3 Issues in hand

3.8 Some of the basic issues this report attempts to address are:

i) What is the international scenario on card based payment system?

ii) What is the total revenue earned in the credit and debit card business by the banks?

iii) How much does the card based payment system ease the burden of currency management? Through what means does RBI or the Government contribute in sharing the cost in the card based payment system?

iv) Can the cost for debit card use at POS be more than the cost for using it to make a transfer of funds from one account to another at an ATM? Also, can such a cost be more than NEFT or RTGS transfers? Will it be grossly incorrect to consider that the cost is more likely to be similar to costs for transferring funds over the net between two bank accounts?

v) Is there a need to have a frilled debit card and unnecessarily increase the cost for such a basic service which is important for the payment system?

vi) With savings accounts now generating 3.5% per annum on daily balance, would this increase the usage of credit card (which is a more expensive mode of payment in the system)

vis-à-vis debit cards? If yes, how would this benefit the debit card based payment system in India?

vii) As regards credit cards, is there a need to give more freedom to merchants as to how they should balance the variation in handling costs incurred due to different modes of payment receipts? This is a well researched topic worldwide. Different countries have debated over it and have reasoned as to whether merchants should be given freedom to surcharge. In India will it be good for the payment system by giving freedom to the merchants to surcharge depending on their judicious choice on the quantum of surcharge they feel is reasonable to charge and according to market competition and consumer behaviour?

viii) Is it justified for the banks and card companies to have set a charge as high as 2.5% on credit / debit card usage at gas stations (petrol pumps) and on train ticket purchases?

ix) Pin-based debit cards are undoubtedly more secure than signature-based debit cards for POS transactions. All existing debit cards (whether signature-based or pin-based) are already associated to a PIN, e.g., when it is used at ATM. Thus, in order to make debit card transactions more secure, is it not possible to use the already existing resources and technology to make all debit card transactions at POS pin-based?

IV. Review of International Regulatory Stances on Payment Cards

IV.1 Review on surcharge and interchange

4.1 'Priceless' is how MasterCard has touted the benefits of its cards in a successful decade-long ad campaign. But this is hardly the case. Credit cards and debit cards create significant costs for merchants and, most strikingly, for consumers who do not use cards.

4.2 In some countries, including India, merchants are not allowed to add a surcharge for payment card transactions because of legal or contractual restrictions, but they are allowed to give cash discounts. Even if differential pricing based on the payment instrument used is not common, the possibility to do so may enhance the merchants' bargaining power in negotiating their fees. If merchants charged different prices for cash and card then cash-paying consumers would be paying less vis-à-vis card-paying customers. For a review on why merchants prefer surcharging over giving cash discounts one may refer to the article "*Priceless? The Economic Costs of Credit Card Merchant Restraints*" by Levitin, Adam J. (see, reference [27]).

4.3 Schwartz and Vincent (2006) studied the distributional effects among cash and card users with and without no-surcharge rules (see, reference [23]). They find that in the absence of differential pricing based on the payment instrument used, the network profit increases while it harms cash users and merchants. The payment network prefers to limit the merchant's ability to separate card and cash users by forcing merchants to charge a uniform price to all of its customers. When feasible, the payment network prefers rebates given to card users. Granting such rebates to card users boosts their demand, while simultaneously forcing merchants to absorb *part of the corresponding rise in the merchant fee*, because any resulting uniform increase in the good's price would apply equally to cash users. In this way, the network uses rebates to indirectly extract surplus from cash-paying customers in the form of partial hike in prices.

4.4 Worldwide, the question of credit card surcharge and interchange has been and is being addressed and the decisions in this regard, taken by various countries, are mainly influenced by—(i) to what extent the business of the key players are affected and (ii) to what extent there is a benefit to the system. We review the practices and policies for few regions in the world. The regions include (i) Australia, (ii) Europe, (iii) Canada, (iv) U.S.A., (v) Mexico, (vi) China and (vii) few other countries. For a review on interchange fees in various countries as it stood in November 2005, one may also refer to Weiner and Wright (2005) (see, reference [18]).

IV.2 Australia

4.5 Reserve Bank of Australia (RBA) intervened in the payment card industry in 2003 because it felt that the efficiency of the payment system in Australia was not up to the desired levels. Several prescription were made by RBA, viz. reducing the average interchange fee on credit card transactions from approximately 0.95% to 0.50% (Oct 2003), reducing the average interchange fee on Visa debit card transactions from 0.53% of the transaction value to 12 cents per transaction (Nov 2003), requiring banks to set the interchange fee on *Electronic Funds Transfer at Point of Sale* (EFTPOS) debit card transactions at between 4 and 5 cents, modifying 'honour-all-cards' rule, and requiring that the card schemes do not prohibit a merchant from imposing a surcharge for MasterCard or Visa credit card transactions, or for Visa debit card transactions. Most notable of the above was that the RBA cut to half the interchange fee on four-party credit cards and prohibited no-surcharge rules, i.e., gave the merchants the freedom to surcharge. RBA expected that, these regulations will help in

- Increasing fees for credit card-holders and reduce benefits, leading them to switch to more efficient payment systems such as debit cards.
- Increasing competition among retailers and ensuring that the reduction in merchant service fees would be passed through to the final prices of goods and services.
- Giving merchants the right to surcharge, although in practice it might not be widespread.

4.6 It was felt that by such a change, three things would quickly happen: (1) costs would be lower for non-card using customers with retailers earning a reasonable profit, (2) customers would reduce their usage of high priced credit cards, and (3) credit card companies would cut fees so that their cards would again become more competitive.

4.7 Subsequently, on 21 April 2008, the RBA brought out a review paper on the reform of Australia's payment system and provided preliminary conclusions of the 2007/08 review. The RBA paper (see, reference [13]) sets out analysis and discussion on each of the elements of past reforms. It also outlines the views of the Payments System Board (PSB) on the future of these reforms. The PSB found that the reforms had delivered clear benefits, in the form of lower costs to merchants and increased competition. In addition, it found that price signals had been strengthened, transparency enhanced, access improved, and that the competitive environment was more soundly based than it had been five years earlier. However, the PSB also concluded that more needed to be done. Specifically, it concluded that, (i) at 0.5%, credit card interchange fees were still too high; (ii) even with the various reforms to date, competitive pressures were still not strong enough to put downward pressure on those fees if the regulation were removed.

4.8 The RBA paper sets out three options as far as the future regulation of interchange fees for cards are concerned:

Option 1: Maintain the regulatory status quo with certain technical changes;
Option 2: Reduce interchange fees further (0.3% for credit cards, 5c positive for proprietary and scheme debit); and
Option 3: Remove explicit interchange regulation on conditions designed to promote efficiency and competition in payment cards.

4.9 The PSB indicates a preference for Option 3, and proposes to allow the industry until August 2009 to show substantial progress towards meeting the conditions. If this does not occur, the paper indicates an intention to implement Option 2. The decision was subsequently deferred. The PSB took the view that good progress was being made by the industry, but that it wasn't yet enough to provide sufficient confidence that fees would be held down in the absence of direct regulation. So the decision was to allow some further time to assess developments.

IV.3 Europe

4.10 Surcharging is allowed in Europe and the surprising fact is that MasterCard Europe itself decided to drop the 'no-surcharge' rule. MasterCard says that, by eliminating this rule, they have given merchants greater choice and flexibility in the way they manage their card acceptance business. The official stance and statement of MasterCard Europe is:

> *The decision to eliminate MasterCard's "no surcharge" rule, as of 1 January 2005 in the European Economic Area was the result of a review process that MasterCard Europe regularly undertakes to ensure that its rules and policies are in line with market evolution and trends. We were confident that, as experience elsewhere in Europe has already demonstrated, very few merchants have since chosen to implement a surcharge. Merchants have found that discouraging cards against cash, establishing systems to collect a surcharge, and the possibility of losing customers, have overridden any perceived benefit from charging customers to make purchases with their MasterCard cards.*

Nevertheless, in Europe, few airlines surcharge on credit card payments because it realizes that there is indeed a significant difference in cost for different payment modes. Through such a surcharge the airline is able to make judicious pricing structure for their air tickets.

4.11 In December 2007, the European Commission (EC) ruled that the multilateral interchange fees (MIF) for cross-border payments in the European Union applied by MasterCard Europe violated Council Regulation (European Commission) No. 1/2003. Subsequently, after EC's agreement MasterCard Europe, since July 1, 2009, established interchange fees for consumer card transactions that, on average, do not exceed 0.3% for credit cards and 0.2% for debit cards. Also, on April 26, 2010 Visa Europe announced that it will cap its weighted average intra-regional MIF for immediate debit transactions at 0.2% for

four years. The same cap will apply to domestic immediate debit rates that defaulted to the intra-regional MIF rate before 10 March 2009 and continue to do so, and to domestic immediate debit rates set directly by Visa Europe.

4.12 In Europe, there are costs and benefits for different payment methods (see, reference [16]). There are some European studies that attempt to quantify the real resource costs of several payment services. In these studies, social cost refers to the total cost for society net any monetary transfers between participants, and reflects the real use of resources used in the production and usage of payment services. Based on a panel of 12 European countries during the period 1987-99, Humphrey et al. conclude that a complete switch from paper-based payments to electronic payments could generate a total cost benefit close to 1% of the 12 nations' (Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom) aggregate GDP (see, reference [20]). These numbers confirm the widespread agreement that the ongoing shift from paper-based payments to electronic payments may result in large economic gains.

IV.4 Canada

4.13 During March-May 2006, a survey of Canadian retail businesses was conducted by Bank of Canada with the following objectives in mind:

- to determine retailer acceptance of various payment methods
- to estimate the share of retail sales paid for with cash, debit cards, and credit cards
- to obtain data on the costs incurred by retailers for each payment method

Results of the survey (see, references [31] and [32]) indicate that on an average **debit cards are cheaper than cash or credit cards.** However, small stores with low average transaction values still perceive cash as less costly than card payments. Debit cards are the least costly payment method for a broad cross-section of merchants because of the relatively low debit card fees per transaction. This suggests that as debit card use in Canada continues to grow, many merchants could benefit.

4.14 Following months of lobbying from business associations, in mid 2009, the Canadian Senate began its study of the credit card industry in Canada and the fees charged to merchants and consumers, as well as the role of Interac[10] in the Canadian payment system. Furthermore, the Competition Bureau of Canada publicly announced that it is currently investigating both Visa and MasterCard for alleged violations of the Competition Act. The investigation is focused on how both companies set interchange fees.

[10] Interac Association is a Canadian organization linking enterprises that have proprietary networks so that they may communicate with each other for the purpose of exchanging electronic financial transactions.

4.15 According to an online survey, foodservice operators reported a 24% jump in credit card processing fees between the end of 2007 and 2008 (see, reference [52]). Business associations continue to increase awareness about this issue and have sought Government intervention in order to ensure that:

- the fees charged to merchants for accepting credit cards are transparent and predictable and linked to the cost of the system,
- agreements between merchants and processors are binding and additional fees or increases in fees are not imposed on merchants without re-negotiating the agreements,
- merchants are able to pass on the cost of accepting credit cards to customers through surcharges, and
- Canada maintains a secure and cost-effective debit card system.

IV.5 United States of America

4.16 Over the past few years, MasterCard and Visa, the major credit card networks, have been pummelled by antitrust litigations. In 2003, they settled an antitrust suit for a record $3.05 billion dollars (see, reference [44]). In 2004, the Supreme Court denied the card networks' appeals from a Second Circuit ruling that they could not prohibit member banks from issuing American Express or Discover brand cards.

4.17 Credit card transactions cost merchants, on average, about six times as much as cash transactions and twice as much as check or PIN-debit card transactions. Some merchants say there should be no interchange fees on debit purchases, because the money comes directly out of a checking account and does not include the risks and losses associated with credit cards. Regardless, merchants say they inevitably pass on that cost to consumers; the National Retail Federation of U.S.A. says the interchange fees cost households an average of $427 in 2008.

4.18 Using U.S. retail payments data, Garcia-Swartz, Hahn, and Layne-Farrar attempt to quantify both the costs and benefits of POS payment instruments. They find that shifting payments from cash and checks to payment cards results in net benefits for society as a whole, but they also conclude that merchants may be paying a disproportionate share of the cost (see, reference [21]).

4.19 A recent Federal Reserve Board discussion paper (see, reference [59]) highlights the economics, development and policy issues of the payment cards. The paper indicates that if the transaction fees faced by either merchants or card users are too high (or too low), then some payment methods will be overused and others will be underused relative to the socially optimal outcome. If the net effect of card acceptance is to increase merchant cost, and if merchants do not set prices that vary by payment method, then merchant acceptance of cards could lead to higher retail prices for all consumers, including those who pay with alternative methods and receive none of the direct benefits associated with card use.

4.20 Recently, the Dodd-Frank Wall Street Reform and Consumer Protection Act 2010 got enacted (see, reference [63]). This has provisions to curtail what the industry charges merchants on debit-card purchases. Senator Richard Durbin, the Illinois Democrat and majority whip, engineered passage of curbs on interchange or 'swipe' fees that merchants pay on debit transactions, as part of the financial overhaul bill. This is a setback for MasterCard and Visa, the world's biggest payment networks, which fended off previous attempts to regulate their levies. MasterCard and Visa set interchange fees for debit and credit cards and pass along the money to card issuers including Citigroup Inc., Bank of America Corp. and JPMorgan Chase & Co. The fees average about 2% on credit cards and 1% for debit. They generate more than $40 billion a year for U.S. lenders, according to company filings.

4.21 With reference to card based payment system, Section 1075 of the Wall Street Reform and Consumer Protection Act 2010, through amendment of the Electronic Fund Transfer Act (Section 920), essentially has the following significant provisions:

- Federal Reserve to issue new rules ensuring that debit interchange fees are "reasonable and proportional" to the cost incurred by the issuer with respect to the transaction.

  Presumably, that cost is less than the 1% to 2% of the transaction amount that MasterCard and Visa currently charge.
- It would forbid card networks like MasterCard and Visa from penalizing retailers for offering discounts to customers to use competing card networks and other forms of payment like cash or check.

  Since it costs merchants more money when cards are used, they cannot price their products on an equal basis (to maximize their profits) without charging different prices depending on payment method.
- Definition of "interchange transaction fee"

  "interchange transaction fee" to include debit card fees that are established by a payment card network (e.g., Visa and MasterCard) and that accrue to either the card-issuing bank or to the network itself.
- Federal Reserve cannot regulate network fees (i.e., the fees that Visa and MasterCard charge and that accrue to themselves) except to ensure that the fees are not used to circumvent interchange fee regulation.
- Fraud prevention costs

  Federal Reserve can adjust the interchange fee rate received by a particular card-issuing bank if the bank demonstrates that the adjustment is reasonably necessary to cover fraud prevention costs incurred by the bank. In order to qualify for this adjustment, the bank would have to comply with standards established by the Federal Reserve that would demonstrate that the bank is taking effective steps to reduce fraud, and the bank would

also have to show that the adjustment it seeks is limited to those reasonably necessary fraud prevention costs.

- Discounting between card networks

Federal Reserve to issue rules preventing card networks from requiring that their debit cards can only be used on one debit card network (thereby ensuring that merchants will have the choice of at least two networks upon which to run debit transactions).

This provision also provides additional competition to a previously non-competitive part of the market. It allows merchants to choose the debit network with the lowest cost – the opposite of the current system where merchants are forced to use a specific network with fixed prices.

- Discounting between forms of payment

It is clarified that the discount must be offered to all prospective buyers and disclosed clearly and conspicuously to the extent required by federal and applicable state law, though a network would not be permitted to penalize a merchant for a discount that is provided in compliance with federal and state law.

- Setting of maximum / minimum transaction thresholds for use of a credit card

The Act provides that such a minimum may not exceed $10, with authority given to the Federal Reserve to increase that dollar amount. The Act also limits the ability to set maximums for payment by credit card to the Federal government and colleges and universities.

4.22 The intention of this legislation is to redistribute wealth from the big banks to businesses and consumers. If these fees are lowered, retailers will be able to make more profit instead and *probably* provide slightly lower prices for customers.

IV.6 Mexico

4.23 The central bank of Mexico, Banco de México (BM), took measures regarding credit and debit cards. After June, 2004, the BM enacted specific regulations as follows:

(1) In order to bring in transparency, the banks must let their clients know all credit card fees and commission that they are charging them.

(2) In terms of preventing restrictions on participation, the honour-all-cards rule has been modified. Now merchants may decide to accept only credit, only debit or both types of cards. However, if they accept one type of card, they have to take all issuers cards of that type. This may make debit card acceptance more attractive for merchants.

4.24 The interchange fee has been historically as high as 4.5% in Mexico. BM has not issued a regulation for interchange fees in credit or debit card transactions. However, the Asociación de Bancos de México (ABM) of its own accord has been rationalising the fees as follows (see, reference [17] for more details):

(1) Regarding credit cards, the ABM reduced the interchange fees to 1.84% in February, 2006 from 2.16% in April, 2005 (which was reduced from 2.42% in August, 2004).
(2) The debit card interchange fees were also reduced to 0.81% in April, 2006 from 1.53% in April, 2005 (which was 2.63% in August, 2004). These changes have made the interchange fees for debit card transactions lower on average than those for credit card transactions.
(3) The ABM has introduced several categories of interchange fees to discriminate by type of business, both for credit and non-ANTAD[11] debit. Hence, restaurants, hospitals, travel agencies, etc., are facing more appropriate rates. This promotes efficiency and entry of previously non-covered segments of the market.

4.25 To sum-up, it is observed that BM's regulatory approach has resulted in a more transparent and open system. In term of interchange fees, the new scheme implies lower fees for debit than for credit transactions, and less discrimination against small merchants. However, reducing the interchange fees is appropriate only if there is evidence of potential social gains and efficiency improvements from such reductions. In the case of Mexico, reduction in interchange fees – in particular for debit – seems to be the remedy for the network's imbalances (see, reference [24]). However, the no-surcharge rule applies in Mexico.

IV.7 China

4.26 China UnionPay (CUP) is the only domestic credit card organization in the People's Republic of China. Founded in March 2002, CUP is an association for China's banking card industry, operating under the approval of the People's Bank of China. It is also the only interbank network in China excluding Hong Kong and Macau, linking the ATMs of some fourteen major banks and many more smaller banks throughout mainland China. CUP is also an EFTPOS network.

4.27 CUP was a national agenda for a few years by mandating all domestic transactions to be routed through the national card system. Now CUP cards are accepted in 26 countries. The card base is more than 2.1 billion. Bulk of the payments is made in China by CUP cards. As of now, CUP card international acceptance network has been extended to 90 countries and regions. Amongst these markets, over 10 of them, including Japan, Korea, Singapore, Russia, Mongolia, etc., have issued CUP cards.

IV.8 Few other countries

4.28 Antitrust agencies and central banks in Argentina and Israel have also reached settlements with the card networks that require significant lowering of the fees charged to

[11]Sales at the Association of Self Service and Department Stores (ANTAD) represent around 20% of total national sales.

merchants. Furthermore, New Zealand's antitrust authority has recently brought litigation. Investigations of merchant fees are on-going in Brazil, the EU, Columbia, Hungary, Norway, Poland, Portugal, South Africa, Spain, Sweden, Switzerland, and the United Kingdom (see, references [25] and [26]). For more details on the status of interchange in various other countries, one may refer to Bradford (2008) (see, reference [54]).

4.29 Few countries are making efficient use of data generated from the card usage. For example, a unique Danmarks Nationalbank statistics of Denmark is based on the fact that a considerable part of the payments in the Danish retail sector are transacted using the Dankort – the widely used Danish debit card. Since 2005, Danmarks Nationalbank has used Dankort payments as the basis for a quick estimate of retail sales, which constitute a major element of private consumption. Dankort payments are available on a weekly basis – almost a month ahead of retail sales data. Despite considerable variation over the year and week, experience shows that Dankort model provides important and quick input for estimates of retail sales. This is useful in Denmark's ongoing cyclical monitoring (see, reference [65]).

IV.9 Arguments in favour of the 'no-surcharge rule' and freedom on interchange

4.30 This section provides arguments in favour of the no-surcharge rule and freedom on interchange. We refer to few studies and some MasterCard / Visa literatures.

4.31 In U.S.A., Visa has released statements on approval of the Durbin Amendment. Indicating disappointment, Visa considers the Senate vote as another step in a lengthy legislative process. They are hopeful that when the issue is fully reviewed by Congress, it will conclude that the amendment harms consumers, credit unions and community banks and should be eliminated from the bill. Visa says that they would continue to work with policymakers to educate them about this flawed legislation that imposes price controls on debit products and allows retailers to dictate which payment card is used by consumers at the point of sale.

4.32 Visa mentions that debit products deliver significant incremental value over cash and check, including guaranteed payment to merchants, greater security and increased sales, all of which the Durbin amendment ignores. At the direction of Congress, the U.S. Government Accountability Office has twice examined the potential impact of proposed interchange legislation, and confirmed that there is little evidence to suggest that consumers would benefit. In Australia, where price controls have been implemented, consumers have not seen a reduction in retail prices, and instead have experienced reduced consumer benefits and increased costs. Visa hoped that Congress sees the amendment for what they feel it is – an attempt by retailers to increase their profits at the expense of consumers.

4.33 The payments industry defend against efforts to regulate interchange on credit cards by saying that the fees are needed to compensate for the risk of lending money. (*However*,

this argument is not relevant to interchange on debit cards, which taps funds in consumer savings / current accounts.)

4.34 Visa actually anticipated this happening, and its annual report gives a pretty clear heads-up about what could ensue:
"If we cannot successfully defend our ability to set default interchange rates to maximize system volume, our payments system may become unattractive to issuers and / or acquirers. This could reduce the number of financial institutions willing to participate in our open-loop multi-party payments system, lower overall transaction volumes and / or make closed-loop payments systems or other forms of payment more attractive. Issuers could also begin to charge higher fees to consumers, thereby making our card programs less desirable and reducing our transaction volumes and profitability. Acquirers could elect to charge higher merchant discount rates to merchants, regardless of the level of Visa interchange, leading merchants not to accept cards for payment or to steer Visa cardholders to alternate payment systems. In addition, issuers or acquirers could attempt to decrease the expense of their card programs by seeking incentives from us or a reduction in the fees that we charge."

4.35 Visa's worry isn't that lower interchange fees will hurt Visa and MasterCard directly: It's that lowering interchange fees will hurt the issuers (the banks), which are then less incentivized to entice consumers into using debit cards. That, in turn, is an axe on Visa and MasterCard's bottom line.

4.36 Interchange is established to incent banks to issue payment cards and merchants to accept those cards. It is a small fee paid by a acquirer bank to the issuer bank and serves to compensate the issuing bank for a portion of the risks and costs it incurs to maintain cardholder accounts. These costs include finance costs for the interest-free period between the time a consumer makes a purchase and pays his / her bill, credit losses, fraud protection and processing costs.

4.37 Merchant discount fees, which can include costs like processing transactions or terminal rental, are just one of many other costs a merchant incurs for running a business, such as electricity, rent or advertising costs. Consumers understand that merchants factor all of the costs of running their businesses into their prices. Attempts to classify such costs as a 'hidden tax' on consumers would be similar to trying to misrepresent businesses' rent or utility costs as a 'hidden tax' on their customers.

4.38 Simply slashing interchange fees for merchants will result in higher costs for card issuers and their customers, the cardholder. It's that simple. MasterCard receives no revenue from those fees.

4.39 If issuers are not compensated, through interchange, for bearing the credit risk, fraud protection, and all the benefits they provide to merchants, they would likely issue fewer

cards, limit consumer rewards and benefits and raise fees for consumers. In addition, with fewer cards in circulation and fewer cardholders using them, merchants would ultimately lose the benefits they receive from electronic payments.

4.40 MasterCard has no rule prohibiting merchants from disclosing what they pay for acceptance. Merchants are free to disclose merchant discount fees, interchange fees, or any other cost they incur. They are also free to steer customers to another form of payment or to offer customers a discount for using cash or check. Merchants may choose not to disclose these costs to consumers just as they choose not to disclose any other cost of doing business or how much they 'mark up' their merchandise.

4.41 By providing incentives for card issuers, interchange encourages banks to innovate and develop new payment options, broaden the range of card programs available to consumers and invest in cutting-edge security and fraud prevention measures. Interchange helps to spur new types of card programs to meet different consumer needs and a wide variety of payment card reward and incentive programs that help people get more out of every rupee they spend. Moreover, these programs incent card usage, which ultimately benefits merchants.

4.42 Wright (2003) considers the effects of no-surcharge rules (see, reference [22]). He finds that no-surcharge rules generate higher welfare than when monopolist merchants are allowed to set prices based on the payment instrument used. He argues that merchants are able to extract consumers' surplus ex post from payment card users, while cash users are unaffected. Wright only considers equilibria where merchants will continue to sell the same quantity of goods to cash users at the same price. When merchants are allowed to surcharge, they extract 'too much' surplus ex post from customers who use payment cards because merchants set higher prices for card purchases.

4.43 In other words, interchange control and surcharging may lead to payment system actually becoming more expensive for the average cardholder. There would be no reduction in retail price by merchants; issuers will increase fees to cardholders to compensate for lower interchange fees. Also, cardholders will be subjected to random surcharging at POS for various credit card transactions. Thus from cardholder's point of view, the net results might be increased costs, reduced benefits and no savings.

V. The Debit Cards in India- A Meaningful Alternative

V.1 Use of debit cards at POS

5.1 Debit cards are an important component in the retail payment system. Unlike ATM where generally money flows out of the bank account of the cardholder in form of banknotes, in case of electronic data capture (EDC) machine the money flows into the bank account of the merchant from cardholder's account. In fact, debit card transactions over an EDC machine behaves in the same manner as a transaction at an ATM where the cardholder transfer funds from his account to another account. Thus, arguments similar to ATM apply to all debit card transactions over EDC machines whether the merchant is selling merchandise or dispensing cash.

5.2 It becomes imperative to understand the actual cost for setting up and running an ATM unit. Apart from the cost of the ATM instrument itself, the major recurring cost involves expenditure on location rent, electricity (air-conditioning), network / communication, security, stationary, maintenance and cash transportation (for off-site locations) and a possible switch (inter-connectivity of ATM Networks) fee. Thus, the cost to establish and run an ATM is visibly high.

5.3 The cost of a bank transaction on manual mode is estimated to be in the range of ₹ 45 to ₹ 50 while it is around ₹ 15 on ATM and ₹ 4 on e-banking[12]. This is consistent with the RBI's December 2007 approach paper (see Appendix A) which indicate that generally the aggregate charges per ATM transaction range from ₹ 10 to ₹ 20 for cash withdrawal. The third party ATM transaction cost includes a component called the switch (inter-connectivity of ATM Networks) fee which is the fee levied by the switch providers like NFS, Mitr, Cashnet, VISA, MasterCard etc. and varies from 'Nil' to ₹ 3 per transaction. In order to reduce the cost of operations for banks, the IDRBT, which, until recently, administered the NFS, had waived the switching fee since December 2007. Recently NPCI, while handling all retail payments and settlement activities in the country, has taken over the NFS from IDRBT. Effective January 2010, NPCI had been charging a switch fee of ₹ 1 on every ATM transaction. Lowering the cost further, NPCI currently charges 80 paisa per ATM transaction.

5.4 The cost to run a POS terminal, on the other hand, is relatively low. The cost and maintenance of the EDC machine is borne directly or indirectly by the merchants. With an increase in the demand for POS terminals, the fixed cost of these EDC machines, like those of mobile phones, is coming down. Merchants should ideally not be charged any excessive fees by the banks for such debit card transactions, except possibly a one-time cost of the

[12] Speech of Shri M. D. Mallya, Chairman and Managing Director of Bank of Baroda and the Deputy Chairman of IBA, on "Role of Technology in Enhancing Quality of Customer Service in Banks" at a function organized by the All-India Bank Depositors' Association, on June 30, 2009.

EDC machine. Alternatively, EDC machines could also be provided by banks on a rental basis. For a debit card transaction at POS, the question of interchange should not arise just as it does not arise in case of its use at an ATM, i.e., the cost for use of debit card at POS cannot be more than its cost at an ATM. In fact the cost should be substantially less. Considering that every debit card transaction at POS costs ₹ 4, we suggest that 0.2% could be fixed as the MDR on debit card use with a cap of ₹ 20, so as to cover the cost and generate moderate profit.

5.5 The values 0.2% and ₹ 20 can be sharpened further based on the exact distribution of the ticket amounts for debit card transactions at POS. With mean ticket amount on a credit / debit card transaction being ₹ 2,700 / 1,500 (see Tables 1 and 2), a 0.2% MDR on debit card transactions would, on an average, cost between ₹ 3 and ₹ 5 to a merchant and earn the same amount for the banks. However, bank's earnings of ₹ 20 for larger tickets (where cost continues to be ₹ 4) compensates for the shortfall in revenue generated from small ticket debit card transactions. The banks break-even at this level and this is best achieved through volumes. With more traffic on debit card transactions (which can be achieved more through financial education) the cost on establishing / maintaining network and switches can be more than balanced even on reduced per transaction fee for merchants. This philosophy works successfully as one can see from the current reduced tariff on telecommunication and domestic airlines.

5.6 Cost distribution of ₹ 4 between acquirer, issuer and switch provider is of significance. Targeting for cost effectiveness through increased volumes, it is proposed that (i) Issuer gets ₹ 1 (25%); (ii) Switch provider gets ₹ 1 (25%); and (iii) Acquirer gets ₹ 2 (50%). To reason why such a proposal, we look at the incentives to the players.

(i) Currently the weighted average on debit card annual fees is about ₹ 50 (see, reference [43]). With about 2,000 lakh debit cards in use, annual fees generate revenue of ₹ 1,000 crore annually for the issuers. Again considering 2,000 lakh debit card transactions annually at POS, the revenue earned from MDR would be of the order of ₹ 20 crore annually. Thus we are looking at about ₹ 1,020 crore annual revenue for issuers.

(ii) The acquirer needs to invest more to increase POS terminals. With 2,000 lakh debit card transactions annually at POS, the revenue earned by acquirers from MDR would be of the order of ₹ 40 crore. Additionally, in the process acquirers are mobilizing cheap funds in their merchant's current accounts. This is indeed a major incentive for acquires.

(iii) The switch charge is analogous to existing switch charges for third party ATM transactions.

(iv) It may be mentioned that the current distribution of earnings from MDR (say, 1.5% of the transaction amount) is roughly 80% to issuers, 15% to acquirers and 5% to switch provider. As against this, our suggested pricing model for debit cards is MDR of 0.2% with a distribution of earnings as 25% to issuers, 50% to acquirers and

25% to switch provider. The new model is envisaged to bring down the costs in the debit card system by about ₹ 500 crore to the merchants and consumers with an average card transaction ticket size of ₹ 2,000 and with about 2,000 lakh debit card transactions.

(v) Finally, for the Government / RBI, one can envisage reduced burden on the country's currency management and increased efficiency in the payment system. Thus, even though financial institutions, over the years, have invested in marketing / promotions and have played a key role in establishing cashless card based payments, **RBI should be proactive in bringing awareness on payment card usage among merchants and cardholders through proper campaigns under their financial education programs.**

V.2 Debit cards as against credit cards

5.7 Prohibition to surcharge on credit card payments tantamount to merchants paying interest for the loans (credit) taken by customers while using such cards. Although it may be correct for merchants to own some component of MDR, since the use of credit cards at POS terminal provides convenience as compared to cash transactions, debit cards provides an equal convenience at much less operational cost to the system (due to lack of the credit component).

5.8 Though it may not be so conceived, the credit card is a frill based product. Banks in order to promote debit card usage, and thus gain on the existing high interchange, have also started providing free of charge frills to debit cardholders. These frills are in the form of facilities like cash backs, free airport lounges, reward / loyalty points, discounts at specified restaurants, and other goodies like movie tickets and petrol vouchers. The cost for such frills is borne by merchants. The banks and card companies argue that such free frills are an incentive for debit card users and thus increase its usage in the system. What is not clearly understood is that this brings in a cost to a merchant which gets built into the selling price of the merchandise. As a consequence cash payers get unduly penalized and debit card users actually have no net gain. In this connection we quote what the National Consumer Disputes Redressal Commission (NCDRC) said in its final order related to consumer complaint CC 51 (see, reference [58]): "*Further, it is to be stated that the burden of commission, which the bank gets would usually be passed on to the purchasers as it would generally be included in the price of the goods / services so transacted through credit cards. That is to say, the payment of commission to the bank by a trader or service provider would be at the cost of the consumer / credit card holder.*"

5.9 Giving discounts on cash as against cards (or surcharging on cards as against cash) tempts and results card holders to transact in cash. This leads to a less efficient payment system when both merchants and cardholders were within reach to carry out a card transaction. Bringing debit cards at par with cash in terms of transaction costs for merchants

would result in preference of debit card over cash. Given that equal discounts are offered on debit cards and cash, it would automatically lead cardholders to transact in debit cards. Furthermore, to be fair to debit card / cash payers, credit card users may be surcharged to keep the merchandise cost exclusive of interchange.

5.10 Occasionally one would find a cardholder preferring a debit card swipe over a credit card to protect against unnecessary costs that would be incurred due to unintentional delay in payment. This happens with most of those having had a bad experience of just missing the due date. Cardholder's busy schedule at work and chances of ensuring target dates for credit card payment cheque reaching the bank becomes a deterrent for enjoying the free credit period.

5.11 Merchants do not have any say and are unable to make reasonable demands like willingness to accept only no-frill debit cards which have minimal interchange attached to it. Merchants are customers to acquirer banks while receiving the debit card acceptance facility. Moreover, according to RBI, debit card is a *basic service* not only for cardholders but also for merchants.

5.12 One would appreciate that even on a no-frill debit card there are basic incentives like (1) convenience of plastic money, (2) reduction in the demand for cash, thereby enabling the economy to save some resources, (3) cardholders earning interest on a daily basis by deferring withdrawal of money from ones savings account till it is actually required, i.e., at the POS. Thus, there is a need to encourage usage of no-frill debit cards. However, with savings account now furnishing 3.5% p.a. on daily balance, one would have no good reason to use a debit card over a credit card. In case of credit cards there is a deferred payment leading to interest free loan for 20 to 52 days. By using a credit card one can thus earn interest at the rate of 3.5% p.a. for the same period by just keeping the money in the savings account. This would increase the usage of credit card which is a more expensive mode of payment in the system vis-à-vis debit cards. The question is how it benefits the payment system in India to let such an expensive mode of payment flourish?

5.13 Considering the importance of debit card usage at POS for increasing efficiency in the payment system, a suitable control on MDR of debit cards would automatically make debit cards frill-free. Furthermore, relaxing the merchant restraint of the no-surcharge rule for credit cards would allow one to differentiate credit and debit cards. One needs to internalize the difference between a credit and debit card while using at the POS.

5.14 Tables 3 and 4 below compare credit and debit cards with respect to the distribution of MDR (existing and proposed) among issuers, acquirers and switch providers. It also highlights the functions of the respective providers.

Table 3

Distribution of MDR among providers for Credit Card		
	Considering MDR = 1.5%	
Player	**Functions**	**Share**
MasterCard / Visa	• Providing switching service	5%
Acquirer	1. Providing POS terminal	20%
	2. Maintaining POS terminal	
	3. Providing current account facility to the merchant	
	4. Collecting transaction amount	
	5. Paying periodic lumpsum fee to the switch provider	
	6. Providing merchant service (call centre)	
Issuer	1. Marketing & issuing credit card (usually free)	75%
	2. Periodic lumpsum payment to switch provider	
	3. Providing customer service (call centre)	
	4. Extending credit to credit card holder	
	5. Bear cost of free credit for 35 days	
	6. Extending credit to those who pay late	
	7. Bearing risk for credit default	
	8. Bearing cost of fraudulent usage	

Table 4

Distribution of MDR among providers for Debit Card			
Player	**Functions**	**Existing share**	**Proposed share**
		(MDR = 1.5%)	*(MDR = 0.2%)*
MasterCard / Visa	• Providing switching service	5%	25%
Acquirer	1. Providing POS terminal	20%	50%
	2. Maintaining POS terminal		
	3. Providing current account facility to the merchant		
	4. Collecting transaction amount		
	5. Paying periodic lumpsum fee to the switch provider		
	6. Providing merchant service (call centre)		
Issuer	1. Marketing & issuing debit card (usually free)	75%	25%
	2. Periodic lumpsum payment to switch provider		
	3. Providing customer service (call centre)		

5.15 Tables 5 and 6 below compare credit and debit cards with respect to the distribution of income through MDR (existing and proposed) among issuers, acquirers and switch providers. It also highlights other income sources of the respective providers.

Table 5

₹ Crore

Total credit card usage in 2009-10 = ₹ 63000 Crore			
Income through MDR (1.5%) = ₹ 945 Crore			
	Share in MDR (%)	Income through MDR	Other income sources
MasterCard/Visa	5	47	Lumpsum fees
Acquirer	20	189	Larger CA balances
Issuer	75	709	Larger SA balances

Table 6

₹ Crore

Total debit card usage in 2009-10 = ₹ 26500 Crore						
	Income through MDR (1.5%) = ₹ 398 Crore		Proposed income through MDR (0.2%) = ₹ 53 Crore			Change in revenue income = ₹ 345 Crore
	Share in MDR (%)	Income through MDR	Proposed share in MDR (%)	Income through proposed share	Other income sources	Change
MasterCard/Visa	5	20	25	13	Lumpsum fees	7
Acquirer	20	80	50	27	Larger CA balances	53
Issuer	75	298	25	13	Larger SA balances; Annual fees	285

V.3 'Free' credit- the myth

5.16 Considering that use of credit cards leads to an average deferred payment of, say, 30 days (minimum being around 20 days and maximum 52 days), the loan cost (in the form of MDR with interchange of, say, 1%) in the credit card system is of the order of 12% p.a. while the credit card user earns 3.5% p.a. on the money kept with him in the savings bank account. This raises a vital question as to what could be the good reason to introduce a forced market lending, leading to a net cost of 8.5% p.a. being passed as expenditure to the card user (in form of increased prices). Lending needs to be segregated from the payment system and should not be hidden in the system in disguise.

5.17 As per MasterCard, interchange is a component of the MDR, which merchants pay for the extraordinary benefits they receive when they choose to accept payment cards. These include increased sales, fraud protection and faster payment, among other benefits. MDR, which can include costs like processing transactions or terminal rental, are just one of many other costs a merchant incurs for running a business, such as electricity, rent or advertising costs. **Consumers understand that merchants factor all of the costs of running their businesses into their prices**. (see, reference [33])

5.18 Thus, there is no guarantee that the credit card users are not unnecessarily taking the burden of this 8.5% p.a. through merchants' appropriate pricing of displayed selling price. One may note that such a burden would be more for debit card (15.5% p.a. as they are paying the 12% p.a. for MDR and also loosing 3.5% p.a. of their earnings on savings account) and cash (15.5% p.a. or more, as they are also paying the 12% p.a. and had debited their savings account at a date on or prior to the date of transaction) payments. Note that, for the existing system where credit and debit cards are costing the same for a merchant, we are referring to the differential cost between credit and debit cards with respect to only the loan component associated in card use.

5.19 One may also note that there is a lacuna of double payment. When payment by the cardholder is not made on the due date, the interest is charged from the date of purchase of the product. Thus, in this case, the (20 to 52 days) grace period attracts revenue in form of a component of interchange as well as the interest to the cardholder for late payment.

5.20 People use a credit card not because they do not have money in their bank accounts but because of convenience (just like a debit card). The system, however, discourages one to use a debit card over a credit card just because a scenario has been created showing that credit card payment involves no cost for the loan taken. Actually, there is an unseen cost (or sometimes even a cost that can be seen) that one may be bearing. Cardholders are unable to internalize these non-transparent mechanisms of the payment system. Bringing awareness among merchants and cardholders in form of differential credit and debit cards costs will not kill credit cards but rationalise its usage to people who are really in need of credit.

5.21 The above points suggest that there is a component of monetary incentive for the banks to have created the present system at a direct cost to the merchants and an indirect cost to the consumers of merchandise and services. This can be purely attributed to imbalance in standards maintained in the payment system and tolerance from merchants and customers for the same.

V.4 Debit cards at POS for cash withdrawal

5.22 As on May 31, 2009, number of POS terminals in India stood at 4,70,237. In July 2009, RBI as a step towards enhancing the customer convenience in using the plastic money, decided to permit cash withdrawals at POS terminals (see, reference [39]). To start with, this facility will be available for all debit cards issued in India, upto ₹ 1,000 per day. Banks offering this facility shall on approval by their respective Boards obtain a onetime permission from RBI. A vital question on the viability of the scheme is the cost aspect for which RBI is silent. Banks are also not sure of its business prospects since technically it would fall under a basic service.

5.23 While using debit cards at merchant establishments, it can be used more efficiently provided one visualizes the following. Banknotes in circulation primarily change hands between a consumer and a merchant. Usually, at the end of the day every merchant accounts for his net sales and collate the cash in hand. The excess cash in hand is then deposited in a bank. Such notes in turn are again disbursed by the bank to its customers. It may be more practical, without the system incurring any additional cost, to allow merchants to part away with excess cash while a customer uses a debit card at POS. The merchant needs to ask "Would you like some cash withdrawal". If yes, the amount of cash withdrawal along with purchase can be clubbed. To illustrate, consider that one purchases 14 items at Big Bazaar totalling ₹ 1,257. You are asked if you would like some cash withdrawal and you request for ₹ 2,000. A separate entry is made for cash withdrawal and a total bill of ₹ 3,257 is charged to

your debit card. You leave the store with your 14 items of merchandise and also ₹ 2,000 banknotes. The process leads to a two pronged benefit. The customer gets cash which would otherwise have amounted to another transaction either at an ATM or bank branch. Simultaneously, the merchant is able to shed excess cash during the day without any significant additional cost. The question of costing in this process is limited to the cost that merchants would bear on a debit card transaction which, as proposed, is 0.2% with a ceiling of ₹ 20. However, given that cash withdrawal at a bank's own ATM is free of charge for the cardholder, there is no reason for a bank which is both an issuer and an acquirer, to charge for such cash withdrawals at the bank's acquired POS terminals. This aspect needs to be pondered further.

V.5 Security measures for debit cards at POS

5.24 In India, State Bank of India has extensively provided pin-based debit cards to their savings / current account holders. The pin-based cards have an additional PIN security feature while using it at POS. On the other hand, there are banks which issue only signature-based debit cards. Usually, consumers would prefer pin-based debit cards since it is perceived that PINs offer greater security. Understandably, a lost or stolen debit card is useless without its PIN. Many consumers also find PIN debit easier to use and manage.

5.25 In 2009-10, RBI, in order to enhance the security of online and IVR card transactions, took measures to mitigate risk through a system of providing for additional authentication / validation based on information not visible on the cards for all online and IVR transactions (see, references [61] and [62]). Furthermore, with a view to reducing the instances of misuse of lost / stolen cards, RBI has recommended to banks that they may consider issuing (i) cards with photographs of the cardholder or / and (ii) cards with PIN.

5.26 These days pin-based debit cards are standard world-wide. Technologically it is a feasible and viable proposition to switch to pin-based debit cards from signature-based debit cards. Taking a cue from RBI, banks should think towards transiting to pin-based debit cards. This aspect is more of significance since while all credit cards are enabled for online usage, some debit cards are not accepted online which also contributes to their lower usage. Online acceptability of debit cards needs to be brought at par with credit cards.

5.27 Another point of significance for making debit card transactions more secure is the greater risk attached to debit cardholders in case of fraud. When there is a case of credit card misuse (despite the cardholder not losing the card), the bank carries out investigations while the cardholder withholds payment. However in case of debit card fraud of the same nature, again investigations are carried out while the cardholder is deprived of the money. This makes signature-based debit cardholders prone to higher risk and inconvenience due to difficulties faced by the bank's handling of the investigations.

5.28 Given that pin-based debit cards are undoubtedly more secure than signature-based debit cards for POS transactions and furthermore since all existing debit cards (whether signature-based or pin-based) are already associated to a PIN (e.g., when it is used at ATM), it is imperative to understand why appropriate risk mitigating regulatory measures should not be put in place to use the already existing resources and technology to make all debit card transactions at POS pin-based?

V.6 Prepaid debit cards and debit card embedded mobile phone

5.29 Mobile phones are expected to come up with embedded debit cards akin to other utilities like camera, radio, alarm clock, etc. Similarly, normal and GPRS EDC machines will get replaced by mobile phones with EDC capabilities. The mobile phone debit cards and EDC enabled mobile phones could be linked to one's bank account just like an ordinary debit card / EDC machine and can be used for cashless retail payments.

5.30 Prepaid debit card is a debit card that is not linked to a regular bank account, but where the consumer instead pays a bank or merchant ₹ *x* (plus fees) and is given a debit card that can draw on up to ₹ *x*. The prepaid cards can be used at any merchant establishment which accepts debit cards.

5.31 Banks should be encouraged to issue prepaid and reloadable debit cards to non-customers. No more than a photo id should be required for its issue. Manufacturing such prepaid plastic cards does not cost more than ₹ 15 per card. If required, RBI may even consider subsidizing 50% of the card issue cost for the first three years. When required, NPCI should provide the switch service for all transactions involving such prepaid debit cards. The MDR sharing should be same as the one proposed for no-frill debit cards. If the retail stores / store chains intend to issue their own prepaid debit cards to their customers, such cards should have a bank guarantee and its acceptability should be limited to stores / store chains which issue it.

5.32 The prepaid debit cards have immense potential in a cashless payment system e.g. it is a method of 'banking' the unbanked (the prepaid card functions like a bank account), a means of giving electronic cash, as a method of giving cash gifts- giving a card is somehow seen as classier than giving cash, etc.

V.7 Banknotes and expenditure

5.33 As against cards, banknotes are the most common mode of payment in the retail market. The distribution of fresh notes as well as withdrawal and destruction of soiled notes constitute the core of the currency management operations of the RBI.

5.34 In India, as of March 2010, 56,549 million pieces of banknotes worth ₹ 7.88 lakh crore were under circulation[13]. Both in value as well as volume terms, the banknotes in circulation increased at an annual rate of 16% during 2009-10 (see, reference [66]).

5.35 Coming to printing costs of banknotes, RBI, for the past four years has been spending over ₹ 2,000 crore each year with spends touching as high as ₹ 2,754 crore during 2009-10 (see, reference [66]). During 2008-09, RBI spent ₹ 2,063 crore for printing 13,661 million pieces of banknotes and as many as 11,962 million pieces of soiled banknotes (24.4% of banknotes in circulation) were processed and removed from circulation (see, reference [8]). As against this, 13,809 million pieces of fresh banknotes were supplied to members of public and currency chests during the year 2008-09. The number of banknotes withdrawn from circulation and eventually disposed of at RBI offices increased during the year.

5.36 Another important issue is counterfeit banknotes. Detection of counterfeit banknotes showed a rising trend (see, reference [66]). Containment of fake notes is an expensive affair and existence of fake notes in circulation may hit the economy hard.

5.37 Apart from increase in demand, the major factor for the requirement of huge supplies of fresh banknotes is the short life of banknotes. Based on published banknotes data (see, reference [66]) we provide a crude estimate of the life of banknotes. Ignoring the banknotes in currency chests (which do not form part of notes in circulation but are stocks for issue / re-issue), a crude estimate of the life of banknotes is provided below in Table 7[14]. Information on other expenditures involved like security after printing and forgery control are not available.

Table 7

Life in years						
Denomination	2005-06	2006-07	2007-08	2008-09	2009-10	Avg. 2005-10
Up to Rs. 5	12.79	12.64	15.68	21.06	18.97	16.23
Rs. 10	2.50	2.98	2.57	3.06	4.54	3.13
Rs. 20	3.46	3.76	2.59	2.59	3.37	3.15
Rs. 50	3.01	3.85	2.74	2.60	2.43	2.93
Rs. 100	4.15	5.16	3.53	3.55	3.30	3.94
Rs. 500	11.95	12.16	8.90	5.84	4.03	8.58
Rs. 1,000	73.80	77.00	45.06	33.15	20.46	49.89
Total	4.11	4.98	3.85	3.94	4.18	4.21

5.38 Though cash happens to be vastly used for monetary transactions, cash as a mode of payment is expensive for the Government (printing cost / security / transportation / forgery control, etc.). By making debit cards more attractive in the retail market, the burden of

[13] The notes in circulation are the notes with public. It increases with the issue of new / re-issuable notes and decreases by deposits in currency chest branches of banks.

[14] Just for illustration, the entry 3.06 years for life of ₹ 10 notes in 2008-09 is calculated by taking the reciprocal of the ratio of number of soiled notes in 2008-09 to number of notes in use until 2008-09 (notes in circulation at End-March 09 + soiled notes in 2008-09 – fresh notes supplied during 2008-09).

currency management on RBI could be brought down. With decrease in volumes of cash transactions, RBI would be able to bring down its expenditure on management of banknotes. To achieve this, RBI could consider channelising the savings (arrived at through more and more use of card based transactions) towards part of expenditure incurred in card transactions. For this, it is felt that RBI could consider, as a first step, subsidizing all switch charges so as to reduce costs and make card usage at POS more attractive.

V.8 IIT Bombay merchant survey

5.39 A confidential draft report of the study "Acceptability Standards in Credit Card Industry" (see, reference [12]), was sent for comments to RBI. The central bank noted the increased usage of credit cards in India of late and considered the study timely but needed to ensure that the reflections of such a study provide the right perspective to the common man. One of the concerns raised by RBI was that no input from merchant / POS end has been a part of the study which it felt was necessary for arriving at some crucial conclusions.

5.40 With an objective to understand the payment system from the perspective of an Indian retail merchant, at Indian Institute of Technology (IIT) Bombay, we are conducting a Merchant Survey (http://www.math.iitb.ac.in/events/help_merchantsurvey2009.html) on card payments. The survey is expected to throw some light in understanding whether there is a need for improved regulations in the card based payment system.

5.41 Since the MDR and other charges applied in form of tariffs and rates for various categories of merchants are just a part of interest rates and service charges of the bank to setup merchant accounts, these should ideally be transparent and available on the banks website. However, it is felt that there are presently some inhibitions on bank's part to share some of this information in a transparent fashion.

5.42 The next section provides preliminary results of the survey carried out at IIT Bombay.

VI. The Merchant Survey on Card Payments

VI.1 Background of the survey and its objectives

6.1 It is felt that reasoned views and comments of the merchants is crucial in deciding whether they feel there is some component of unreasonableness in arriving at the MDR, more so since currently credit and debit cards have taken the place of a basic banking service for the merchants. As mentioned earlier, the central bank has noted the increased usage of credit cards in India and considers it prudent to have inputs from merchants in order to arrive at some crucial conclusions. A merchant survey has been undertaken on lines similar to the Canadian survey carried out and reported in a recent Discussion paper by Bank of Canada (see, references [31] and [32]). Apart from studying the MDR, the survey aims to analyse opinions from merchants and service providers on existing rules made by credit card companies such as MasterCard and Visa.

6.2 In order to address the issues of credit and debit card usage, we consider the following parameters of interest from a merchant's point of view.

- Amount of transactions through cards / cash.
- Cost to merchants for handling cards / cash.
- Pricing policy by merchants to accommodate costs incurred in payment mode.
- Discrimination between credit and debit cards, if any.

6.3 The merchant survey is conducted to look at each of the above points and to statistically address the decision making problem of what could be the desired policy on surcharge in the country. The survey is designed in such a way that it can reach every section of the merchants. A two pronged approach is designed where we consider a (i) web-based survey to approach big merchants and (ii) face-to-face interview for small and medium merchants.

6.4 A web-based merchant survey on payment cards was launched during the fourth quarter of year 2009. The interactive questionnaire has been hosted at a IIT Bombay webpage having the link http://www.math.iitb.ac.in/~ashish/merchantsurvey2009.html For ready reference, the questionnaire is given in Appendix B. Details of the survey, as put on the web, is given in Appendix C.

6.5 The survey also covers some aspects of the merchant restraint rules and their behavioural / social impact on Indian merchants. Specifically, we look into:

- The no-surcharge rule.
- Non-popularity of debit cards vis-à-vis the credit cards.

- Europe and Australia's strategy on the mechanism to differentiate credit cards, debit cards and cash in terms of the cost associated with the payment modes, through removal of the 'no-surcharge rule'.
- Inherent lacunae in the credit card system where in combination with convenience, it forces one to take a possibly unintended loan (and thus increase the cost of the payment mechanism).

6.6 The survey questionnaire has 16 questions and primarily aims to:

- estimate the share of cash and cards in retail sales.
- obtain the costs incurred by retailers for accepting cards (be it credit or debit cards) as against cash.
- determine retailers' preference of accepting various modes of payment.
- establish whether credit and debit cards costs the same to merchants.
- understand how merchants account for MDR and their willingness to bear it.
- determine whether there is any indirect subsidization provided by cash consumers for card consumers.
- know whether the displayed selling price of goods could be reduced if merchants are allowed to surcharge.
- know merchants' opinion on the effect of freedom to surcharge.
- know whether merchants prefer a ceiling on debit card fee or not.

VI.2 The population frame and limitations of the survey

6.7 This web based survey is being conducted by reaching company management and / or senior accountants / employees fairly conversant with the payment methods accepted by their businesses. The survey envisages achieving a representative sample of different categories of retail businesses. Target population consists of Indian retailers which have been categorized in several sectors. These are General Department Stores; Supermarkets; Hotels and Restaurants; Clothes; Electronic items; Books; Leather / leather products; Pharmaceutical and medicinal products; Wood / wood products; Motor vehicles; Petroleum and petroleum products; Glass shops; Hardware Shops; Gold / silver / artificial jewellery; Hospitals; Others.

6.8 In this survey, for small retailers we have targeted only Mumbai merchants. The big merchants / retailers are contacted over internet and telephones across India to have their opinion. Though it had been quite a motivating survey, during its conduct we came across few difficulties. One of the major bottlenecks had been to approach the right people having competence to answer all the questions. This led to the survey being quite time consuming. We had to go through several steps starting from a shop in a mall, to board line phone numbers of the main office of the company which has such shops in malls or other shopping complex. Finally this process led us to the finance controller or head of the company. Such competent authorities were then sent e-mails providing details of the survey and the link to the questionnaire. For small merchants we reached the owner in this process. Apart from

web-based survey, we have also collected responses through face-to-face interviews. The initial list of retailers in our sample in this survey is provided in Appendix D.

6.9 Though our sample consists of feedbacks from merchants and organizations, further inputs from companies are required to have a well represented view of the entire merchant community in India. However, it is expected that the results based on a larger sample would not be markedly different from those obtained here.

VI.3 The survey results

6.10 *Sample Coverage:* Till March 2010, we could get responses from 35 merchants. As the survey is still on, we are still in the process of approaching merchants to get more response and still better sectoral representation. The sample merchant establishments represented good mix of sizes with 43% establishments having 10 or more employees. The annual sales of these establishments show that one in every two establishments has sales more than ₹ one crore and one in every five has sales more than ₹ 100 crore. Though the sample size is small, we could get a good sectoral representation of the retail businesses. The categories from which we do not have representation are Hotels and Restaurants, Petroleum and petroleum products, Books, Motor Vehicles and Hospitals. The sectoral coverage of the sample is as under:

Merchant Category	Frequency
General Departmental Stores	3
SuperMarkets	2
Clothes	5
Electronic items	3
Leather Products	1
Pharma and Medical products	3
Wood and wood Products	1
Glass Products	4
Hardware Shops	1
Jewellery	5
Travels	2
Others	5

6.11 *Modes of Payments:* The prevalence of various modes of payment for the sample merchants is presented below. It is seen that for two-fifths of the establishments, the card payments constitute at least 40% of the total payments, while a tenth of the merchants have more than 60% of their sales through cards. Most of the establishments where the usage of cards is least are small establishments (annual sales less than ₹ 1 crore). The chart below shows the frequency distribution.

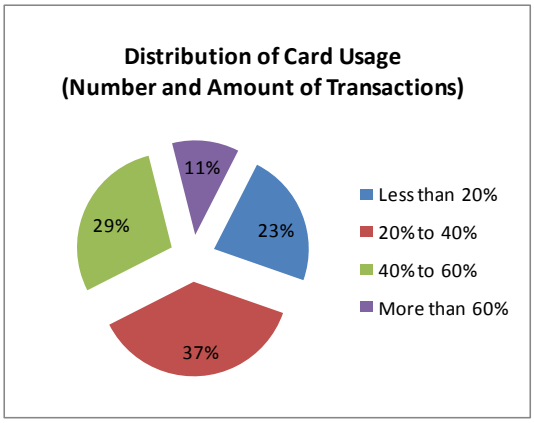


Chart 5

6.12 *Cost of Payment Modes:* The merchants were asked to provide costs incurred by them to handle every ₹ 100 received through cash and cards. The charts presented below show that for 80% of the respondents the cost of handling every ₹ 100 through cash is less than 5 paisa while the corresponding cost for card is more than ₹ 1 for all respondents and more than ₹ 2 for one in every four respondents.

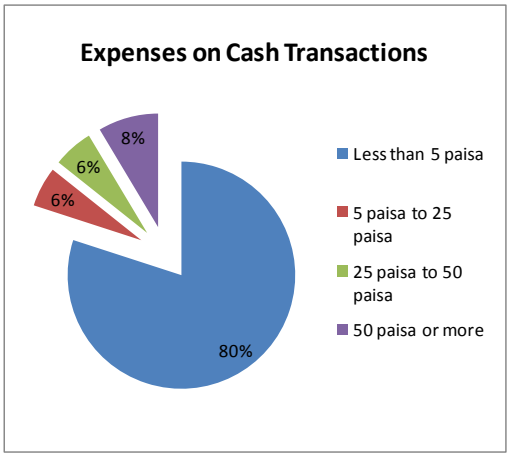


Chart 6

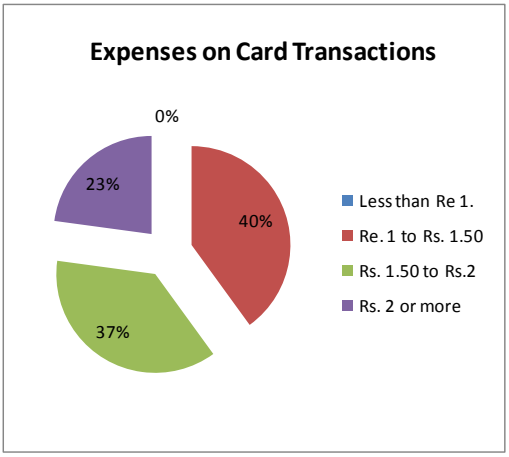


Chart 7

6.13 *Preference of Payment Modes:* The respondents were asked about their preference of mode through which the payment is received by them. Due to the wide differential in cost of handling cash vis-à-vis card, 63% of the merchants preferred cash over cards. Ease of concealing sale proceeds / income could also be another reason for this preference. Again, most of the merchants who preferred cash are small with annual sale of less than ₹ 1 crore. The merchants did not show any preference between the choice of debit and credit cards (as in India for a merchant the cost of both these payment modes is same) and one in every three merchants preferred card payments over cash. The distribution of these choices is presented in the chart below.

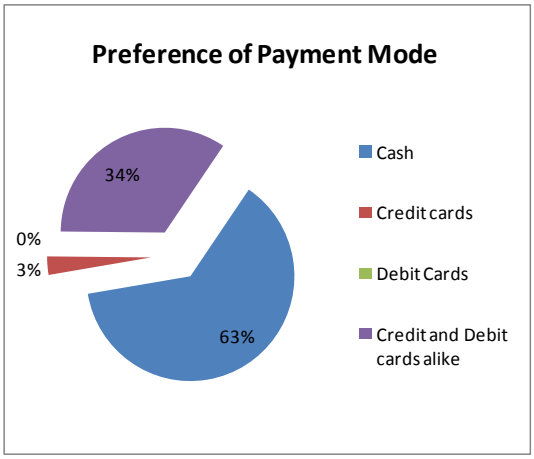


Chart 8

6.14 *Accounting for MDR:* The merchants were queried how they accounted for the cost they incur in the form of the MDR paid to their bank for using card facilities and whether the loan component associated to these costs were reasonable to bear. Most of the establishments responded by saying that they maintain different profit margins while accepting cards and cash. However, it is reasonably felt that when establishments target a given level of net profits in their businesses, they take such costs into account while fixing the final selling price of their products. It is interesting to note that three-fourths of the merchants found it unreasonable to bear the loan component of the MDR. These responses are presented in the following charts. Since the merchants find handling cards much more expensive than handling cash, most of them (91%) felt that their customers should be aware of the MDR that the merchants have to bear.

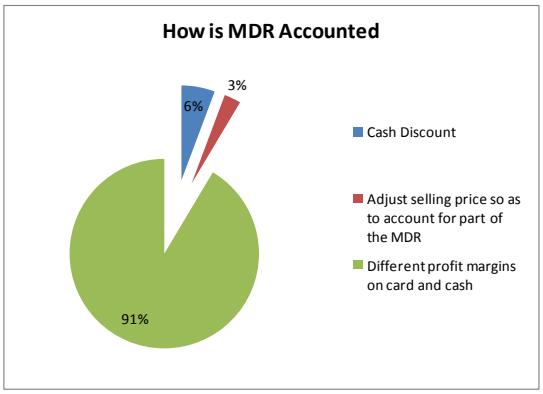


Chart 9

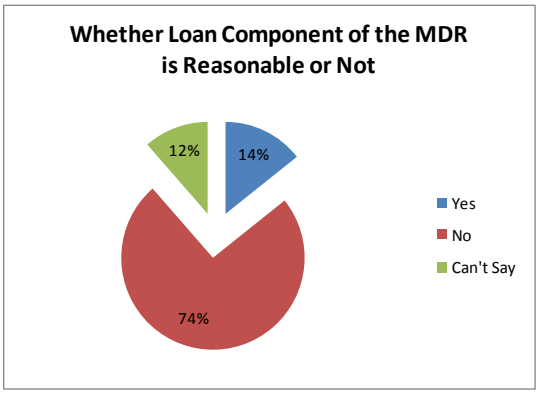


Chart 10

6.15 *Impact of Freedom to Surcharge:* The merchants were enquired that if they are allowed to separately charge some component of MDR, will this facilitate in reducing the displayed selling price of the goods and services. Nearly two-fifths responded affirmative conveying that the ability to surcharge would reflect on reduction in their tag prices. The remaining merchants were either unsure or did not think that the freedom to surcharge would affect their selling prices.

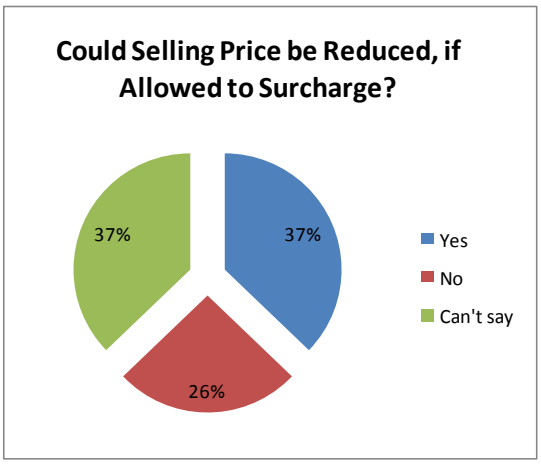


Chart 11

6.16 *Merchants' Reasonable MDR:* Keeping in mind the cost of cash handling (e.g. risk of theft in cash handling, risk of encountering forged currency, high labour costs, etc.) and the convenience of cards (improved cash flow, automatic currency conversion, etc.), the survey asked how much % of displayed selling price are merchants willing to bear (or consider reasonable) as MDR on transactions through cards. While no merchant was willing to bear more than 1% of the transaction cost as MDR, nearly 43% of respondents opined that the MDR should be 0.5% or less.

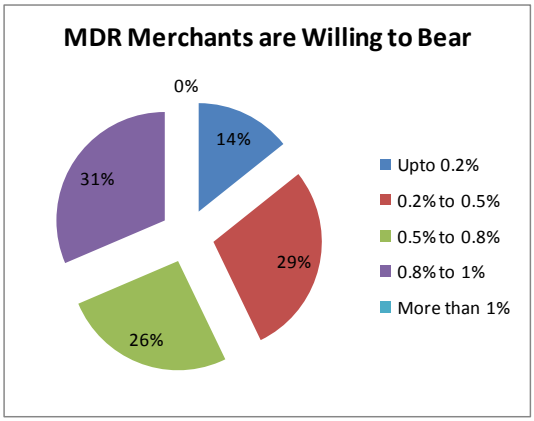


Chart 12

6.17 *Who Should Decide MDR:* The merchants were enquired who in their opinion should decide MDR- (i) the credit card companies, (ii) the parties involved (merchants and banks) or (iii) the regulator, RBI. While three-fourths voted in favour of RBI, the remaining thought that this should be decided by the merchants and banks. No one thought that this should be a prerogative of the card companies.

6.18 *Position vis-à-vis International Practice:* When merchants were queried if they were aware that in Europe and Australia merchants are allowed to surcharge, about 70% replied in

negative. They were then asked if they felt that merchants in these countries are better placed to make a judicious choice on the quantum of surcharge they feel is reasonable to charge according to market competition and consumer behaviour. 77% of the merchants felt that European and Australian merchants were better placed.

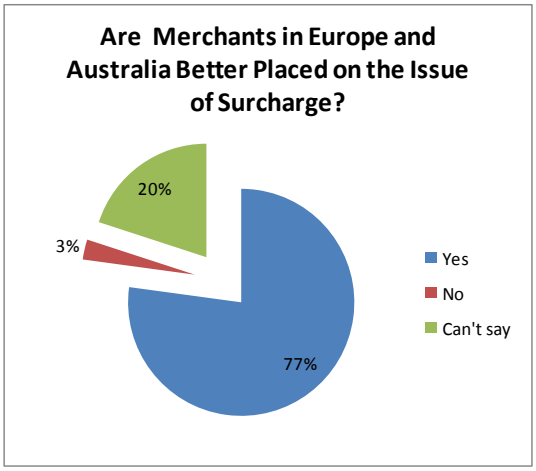


Chart 13

6.19 *Preference for Debit Card if MDR has a Ceiling:* Merchants were asked that if the actual transaction cost for debit cards is roughly ₹ 4 for any size of a transaction, keeping in mind the convenience of electronic payment, increased sales due to consumers attitude to spend more when they are not constrained by cash at hand, etc., would they prefer debit card transactions over cash transactions. Most of the merchants (86%) said that if the transaction costs were low they would certainly prefer use of debit cards.

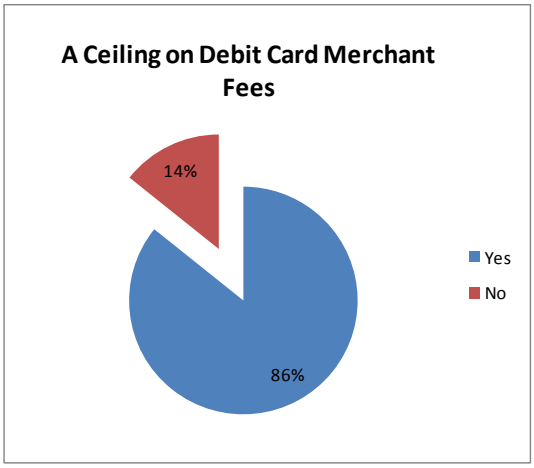


Chart 14

VI.4 Summary of survey findings

6.20 A merchant survey on card payments is being carried out at IIT Bombay. From the initial set of responses of the survey, that is fairly representative of size and sectoral composition, several important facts emerged. Firstly, the usage of card based payment system by and large is quite prevalent (two-fifth of the respondents reported more than 40% sales through cards), though not yet so among smaller merchants. Secondly, the merchants reported significant differential in cost for transactions done through cash as against cards and the cost differential made cash a more preferred mode of transaction, especially so among the smaller merchants. The merchants did not distinguish between the credit and debit cards since, in India, the cost of using the two types of cards is similar. Thirdly, the merchants felt that the loan component of MDR is unreasonable and they account for it by having different profit margins for cash and card transactions. They said that they were willing to bear MDR of less than 1% and when asked who according to them should fix MDR, a majority of them (three-fourth) felt that the MDR should be fixed by the regulator (RBI). Fourthly, two-fifths of the merchants said that the ability to surcharge would reflect on reduction in their tag prices. The remaining merchants were either unsure or did not think that the freedom to surcharge would affect their selling prices. Lastly, the merchants said that though at present they do not distinguish between debit and credit cards, as they cost the same to them, they would certainly have a preference for debit cards if the transaction cost was fixed realistically to, say, ₹ 4 per transaction irrespective of its size.

VII. Summary, Conclusions and Recommendations

VII.1 Background and approach

7.1 The card based payment system has several players. On the one hand, we have the providers of the card based payment system- first of which is the card companies like MasterCard and Visa who provide their payment network for the system to function. The second set of providers is the banks that act as acquirers for merchants and issuers for cardholders and reach the card payment services to the ultimate users. For these two parties, the card payment system is an income generating initiative and they are motivated to run the system as they are able to generate adequate profits out of their operations. On the other side of the system are the users- both merchants and cardholders. The benefit these two players derive from the system are manifold- the convenience of electronic transactions, the ease of credit availability, increased sales, increased purchasing power, to list a few. Since they are the end users of the convenience the card payment system generates, they are the ones who bear the cost of the system. Apart from these four players there is the regulator of the payment system, usually the central bank of the country.

7.2 The card based payment system cannot function in absence of any of its players. The objective of this study is to carry out a rational review of the roles played by various players of the system and to see that each player is deriving the best benefit it deserves and the system is not biased in favour of one or more at the cost of others. The endeavour is to arrive at a structured and implementable roadmap to move towards a cashless payment system in India.

7.3 The approach the report took was to first study the card based system in India and the practices followed by different countries. For this an extensive review of international literature was carried out. To form an unbiased opinion on business behaviour and to help identify systemic biases, if any, the authors had independent interactions with each player. Intensive discussions were held with many of the banks in India, US and UK that are industry leaders and also with the top executives of MasterCard and Visa, both in India and in other regions across the globe. This provided a good understanding of the business philosophy and pricing strategy of the income earning and profit making players in the card based payment system. Interactions were also held with the regulators and the literature pertaining to regulations brought out by them and rationales thereof were also studied and explored.

7.4 To get the business perspective from the merchants' point of view a survey is being carried out among select merchants representing different sectors and size of business. From the initial set of responses of the survey that is fairly representative of size and sectoral composition, several important facts emerged. Firstly, the usage of card based payment

system by and large is quite prevalent, though not yet so among smaller merchants. Secondly, the merchants reported significant differential in cost of transactions done through cash as against cards and the cost differential made cash a more preferred mode of transaction, especially so among the smaller merchants. The merchants did not distinguish between the credit and debit cards since in India the cost of using the two types of cards is similar. Thirdly, the merchants felt that the present levels of MDR are unreasonable and they generally account for it by having different profit margins for cash and card transactions. They said that they were willing to bear MDR of less than 1% and a majority of them felt that the MDR should be fixed by the regulator (RBI). Lastly, the merchants said that though at present they do not distinguish between debit and credit cards, as they cost the same to them, they would certainly have a preference for debit cards if the transaction cost was fixed realistically at, say, ₹ 4 per transaction irrespective of its size.

7.5 With this background it was felt that the system was biased in favour of the providers and the users were being unfairly charged for the same. The study has suggested ways to rationalize the system in order to improve its usage, efficiency and standards.

VII.2 Under utilisation of debit cards

7.6 In Section I.2 we saw that while the number of valid debit cards is currently 10 times higher than the number of valid credit cards, the average number of transactions per debit card is 10 times lower than that of credit cards. Though there has been a steady increase in the number of transactions at POS, be it credit cards or debit cards, when one notes the striking increase in the number of debit cards issued vis-à-vis credit cards, it becomes apparent that debit cards are being under utilized at POS. The average number of annual transactions per debit and credit card is merely one and eleven, respectively. India had about 0.5 million POS terminals in 2009-10 and on an average there had been 468 transactions per POS terminal through credit cards and 340 transactions per POS terminal through debit cards. Thus on an average there was less than one debit card transaction and only 1.3 credit card transactions per day per POS terminal. Thus from the merchants' angle too a POS terminal is being highly under utilized.

7.7 The primary reasons for under utilisation are: (i) merchants prefer cash to cards as found from the survey; (ii) debit cards are unreasonably priced; (iii) cardholders prefer credit cards over debit cards; and (iv) lack of awareness among cardholders and merchants of the benefits of debit cards.

VII.3 Allowing surcharge on credit cards

7.8 Issuer banks participating in the card business earn income through interchange fees from credit and debit card usage at POS. These fees, paid by merchants as a percentage of each transaction when consumers swipe their card, generate a multi-crore business for banks.

However, the current system appears to be biased in favour of the card companies and financial institutions participating in the card business. In order to remove the possible bias one needs to plan carefully, take appropriate precautions and avoid any pitfalls. We therefore take a moderate approach while suggesting a model that will tackle this systemic bias.

7.9 The credit card is a frilled product in a sense that it provides quick credit (though at high cost) than through a tedious process of getting a personal loan. Many banks upgrade cards for the existing customers to higher category (e.g. to platinum from silver / gold) which attracts higher interchange fee. With part of the interchange accounting for the lending cost of funds the issuer is providing for an average period of about 35 days, this implies that interchange on credit cards should best be left to banks in consonance with RBI's general policy on non-priority sector personal loans where banks are free to determine the rate of interest (in terms of the Master Circular on Interest rates on advances, see references [40] and [41]). Thus, such a frilled product need not have any regulatory restrictions on its fees and competition should dictate the market.

7.10 A person who is in need of money to purchase a product by using credit card and paying an interest as high as 40% p.a. would not mind paying an additional component (say, 1%) due to interchange cost. This interchange, currently being borne by merchants, forms a part of the MDR. At times it is as high as 50% of their profits. Major part of the interchange accounts for interest cost for the grace period.

7.11 In such a scenario, as a means for providing a level playing field, merchants too deserve the freedom to decide the extent to which they can absorb such interchange which gets reflected at their end in form of a component of MDR. Competition will dictate the proportion of MDR, if any, that the merchant would pass on to the customer. Surcharging is only a deterrent for the more expensive credit card based payment mode where one resorts to borrowing. **It is thus recommended that surcharging should best be left to merchants.** RBI may accordingly like to consider a regulation for removing the 'no-surcharge rule' on credit cards. This would bring India in line with Australia and Europe with respect to surcharge on credit cards.

VII.4 No-surcharge rule on no-frill debit cards

7.12 A simple debit card, equivalent to an electronic cheque, is a basic banking service for the customers and merchants alike. However, there is a tendency by the banks to attach frills to debit cards as they do for credit cards. Such frills are in the form of facilities like cash back, free airport lounges, reward / loyalty points, discounts at specified restaurants, and other goodies like movie tickets and petrol vouchers. The cost for such frills is borne by merchants. In order to balance, merchants try to recover this cost by incorporating the cost in their selling price. As a consequence cash payers get unduly penalized and debit card users actually have no net gain. The primary incentives to the payment system on no-frill debit

card are (i) convenience of plastic money for merchants and customers alike, (ii) reduction in the demand for cash and thus enabling the economy to save some resources, (iii) quicker and secured transfer of sale proceeds to merchant's account, and (iv) cardholders earning interest on a daily basis by deferring withdrawal of money from ones savings account till it is actually required, i.e., at the POS.

7.13 Keeping the above in view it is recommended that in order to promote the habit of card based payments the **usage of no-frill debit cards should be encouraged.** Additionally, in order to educate people on the advantages of debit cards over cash, **RBI should be proactive in bringing awareness on debit card usage among merchants and cardholders through focused financial education campaigns**.

7.14 The Government may also consider contributing to the enlargement of card based electronic payment in the retail sector of the country by promotional avenues such as those adopted by Korea, where tax benefits are provided to merchants for accepting card based payments (as it improves business accountability). Government can think of **appropriate tax rebate to a merchant if at least 50% of his transactions in value terms are through cards**. Furthermore, as a means to encourage the much needed POS terminals in the country, the government should **minimize**, if not eliminate, **the duties and taxes on manufacture and sale of EDC machines**.

7.15 In order to ensure that the freedom provided to merchants to surcharge does not lead to a kill for card based payment system (by disincentivising card users), it is recommended that **the no-surcharge rule be applied strictly to all no-frill debit cards**.

7.16 In case the banks wish to issue frilled debit cards, the associated costs on the frills should desirably be borne by the cardholder.

VII.5 Reasonable MDR for debit cards

7.17 Card companies allow merchants to provide discounts to customers who use cash. Is this desirable? Cash is far less efficient a payment method than cards. As rightly indicated by RBI— "… given the cost and risks involved in handling paper instruments, banks need to favourably price electronic products and a situation where electronic products are costlier than paper products is inexplicable…" —the vital question now is how does one glide through a transition from cash based to electronic / card based products in the retail payment system involving sellers and buyers.

7.18 In view of the analogue that exists between POS terminals and ATMs, it is clear that the costs for a no-frill debit card system can be benchmarked by the costs involved in operating an ATM. Keeping in mind the visibly high cost of an ATM system (high instrument cost, expenditures on location, air-conditioning, security, stationary, network,

cash transportation, etc.), RBI pegged the cost of cash withdrawal at an ATM at around ₹ 20. On the other hand, the cost to run a POS terminal is relatively low (low instrument cost, low maintenance cost, bank's network and switch fees, etc.).

7.19 Considering that every debit card transaction at POS costs ₹ 4 (Section V.1), we suggest that **the MDR on debit card could be kept at 0.2% with a cap of ₹ 20**, so as to cover the cost and generate moderate profit. However, the values 0.2% and ₹ 20 can be sharpened further based on the exact distribution of the ticket amounts for debit card transactions at POS. With mean ticket amount on a credit / debit card transaction being ₹ 2,700 / 1,500 (see Tables 1 and 2), a 0.2% MDR on debit card transactions would, on an average, cost between ₹ 3 and ₹ 5 to a merchant and earn the same amount for the banks. However, bank's earnings of ₹ 20 for larger tickets (where cost continues to be ₹ 4) compensates for the shortfall in revenue generated from small ticket debit card transactions. Such pricing would create more demand for POS terminals and no-frill debit cards leading to further reductions in the fixed and running costs of EDC machines.

7.20 Cost distribution of ₹ 4 between acquirer, issuer and switch provider is of significance. Targeting for cost effectiveness through increased volumes, **it is proposed that**

i) Issuer gets ₹ 1 (25%)
ii) Switch provider gets ₹ 1 (25%)
iii) Acquirer gets ₹ 2 (50%).

7.21 The advantages of such a proposal are manifold. Firstly, with about 2,000 lakh debit cards in circulation and an annual fees of ₹ 50 per card, it will generate an annual revenue of about ₹ 1,020 crore for issuers (Section V.1). Secondly, even with existing level of usage it will generate about ₹ 40 crore for acquirer through MDR. Thirdly, the issuers and acquirers will get larger balances in their CASA deposits, especially when the low to mid size customers get POS savvy. Fourthly, the increased popularity of debit card usage will reduce the burden on country's currency management. Fifthly, switch providers derive revenue similar to revenue being generated from switch charges for third party ATM usage.

7.22 Thus, if we consider a no-frill debit card as a basic service and have a costing and revenue sharing structure as proposed above, the system will generate direct revenue to the tune of more than ₹ 1,060 crore, from the existing user base and existing level of usage. As against this, based on card data (credit and debit both) and prevailing MDR (average taken as 1.5%), we find that the revenue earned through MDR in the card business during the year 2009-10 had been of the order of ₹ 1,340 crore.

7.23 There are about 500 million savings accounts in India, while there are only 200 million debit cardholders. Extending the basic service of no-frill debit card to all savings account holders will bring in an exponential growth in the debit card business and in the corresponding revenue generation.

7.24 In July 2009, RBI, towards enhancing customer convenience in using plastic money, decided to permit cash withdrawals (upto ₹ 1,000 per day) at POS terminals through use of debit cards issued in India. A vital question on the viability of the scheme is the cost aspect for which RBI is silent. It is proposed that, in order to provide convenience both to merchants and cardholders, such **cash withdrawal at POS should be clubbed along with purchase**. Having mutual benefits, such a system may reduce costs.

VII.6 Benefit to currency management

7.25 A crude estimate of the life of a banknote is about 4 years. Moreover, since ₹ 10, 20, 50 and 100 denomination notes change hands more frequently, a refined estimate indicate that their life is about 3 years. Till 2008-09, the cost of printing new notes every year had been of the order of ₹ 2,000 crore. In 2009-10, this has increased to as high as ₹ 2,754 crore. Thus, the vital question remains as to how the system can reduce this cost by making debit card more attractive to merchants and consumers alike.

7.26 With ₹ 90,000 crore worth of transactions being through cards (credit and debit) at POS during 2009-2010, this accounts for about 5% of retail sales in India. In other words, card transactions reduced cash transactions in the retail sector by about 5%. With costs for printing banknotes being of the order of ₹ 2,800 crore annually, card usage at POS leads to about ₹ 140 crore of savings in currency management. Thus, as a crude estimate, savings on banknotes printing alone (excluding the huge costs incurred for secured transportation, counterfeit detection / prevention, etc.) are of the order of ₹ 28 crore for every 1% increase in the use of cards in retail sales.

7.27 Credit card is a frill based product. However, debit card need not be. By making debit cards more attractive, the burden of currency management on RBI could be brought down. To achieve this, it is felt that **RBI could consider, subsidizing all switch charges so as to reduce costs and make card usage more attractive.**

VII.7 Securing debit card usage at POS

7.28 In 2009-10, RBI, in order to enhance the security of online and IVR card transactions, took measures to mitigate risk through a system of providing for additional authentication / validation based on information not visible on the cards for all online and IVR transactions. Furthermore, with a view to reducing the instances of misuse of lost / stolen cards, RBI has recommended to banks that they may consider issuing (i) cards with photographs of the cardholder or / and (ii) cards with PIN.

7.29 In India, banks are still issuing both pin-based and signature-based debit cards to their savings / current account holders. The pin-based cards have an additional PIN security

feature while using it at POS. Usually, consumers would prefer pin-based debit cards since it is perceived that PINs offer greater security. Understandably, a lost or stolen debit card is useless without its PIN. Another point of significance for making debit card transactions more secure is the greater risk attached to debit cardholders in case of fraud. When there is a case of credit card misuse (despite cardholder not losing the card), the bank carries out investigations while cardholder withholds payment. However in case of debit card fraud of the same nature, again investigations are carried out while the cardholder is deprived of the money. This makes the signature-based debit cardholders prone to larger risk and inconvenience.

7.30 Given that pin-based debit cards are undoubtedly more secure than signature-based debit cards for POS transactions and furthermore since all existing debit cards (whether signature-based or pin-based) are already associated to a PIN, e.g., when it is used at ATM, it is imperative that in order to mitigate risk appropriate regulatory measures should be put in place to use the already existing resources and technology to **make all debit card transactions at POS pin-based**. Technologically it is a feasible and viable proposition to switch to pin-based debit cards from signature-based debit cards.

VII.8 Mobile and prepaid debit cards

7.31 Mobile phones are expected to come up with embedded debit cards akin to other utilities like camera, radio, alarm clock, etc. Similarly, normal and GPRS EDC machines will get replaced by mobile phones with EDC capabilities. The **mobile phone debit cards and EDC enabled mobile phones could be linked to one's bank account just like an ordinary debit card / EDC machine** and can be used for cashless retail payments.

7.32 Prepaid debit card is a debit card that is not linked to a regular bank account, but where the consumer instead pays a bank or merchant ₹ *x* (plus fees) and is given a debit card that can draw on up to ₹ *x*. The prepaid cards can be used at any merchant establishment which accepts debit cards. **Banks should be encouraged to issue prepaid and reloadable debit cards to non-customers**. No more than a photo id should be required for its issue. Manufacturing such prepaid plastic cards does not cost more than ₹ 15 per card. If required, RBI may even consider subsidizing 50% of the card issue cost for the first three years. When required, NPCI should provide the switch service for all transactions involving such prepaid debit cards. The MDR sharing should be same as the one proposed for no-frill debit cards. If the retail stores / store chains intend to issue their own prepaid debit cards to their customers, such cards should have a bank guarantee and its acceptability should be limited to stores / store chains which issue it. The prepaid debit cards have immense potential in a cashless payment system e.g. it is a method of 'banking' the unbanked (the prepaid card functions like a bank account), a means of giving electronic cash, as a method of giving cash gifts- giving a card is somehow seen as classier than giving cash, etc.

VII.9 Concluding remarks and recommendations

7.33 During June 2010, an earlier draft of this paper was circulated among researchers, retailers, banks, regulators and other professional bodies for receiving comments and inputs. Each financial institution's top management was contacted and reverts obtained based on such communications. In Appendix E we have listed bodies / organizations contacted and itemized the responses received along with our rejoinder.

7.34 The retailers, banks and few professional bodies have expressed strong support to most of the recommendations of the report. On the other hand, few banks have expressed a concern that since the volumes of the card business are not yet large enough, the suggestions may kill the credit card system. It is strongly felt that the system of forcing card users to avail credit should not exist and credit (through credit cards) should be used only by those who are in need of real credit. If customers use card for ease of cashless transactions, a rationally priced no-frill debit card is the right option.

7.35 Cash as a mode of payment is an expensive proposition for the Government. The country needs to move away from cash-based towards a cashless (electronic) payment system. This will help reduce currency management cost, track transactions, check tax avoidance / fraud etc., enhance financial inclusion and integrate the parallel economy with main stream. Additionally as the card usage crosses the boundaries of big cities and gains popularity into the hinterland, the electronic payment system will generate huge volumes of data on the spending behavior of persons in these areas. This information will help the Government in its objective of getting more and more person under the financial inclusion net by designing products that meet the spending behavior of individuals. Over time when card payments grow and represent a significant part of retail sales, the card payments data could also be used as a quick estimate of private consumption.

7.36 While we present our recommendations, it is worth mentioning that the banking industry may oppose some of the recommendations, which would cut into its revenues. However, it is strongly felt that this should not be a reason (hindrance) in moving towards more efficient payment system. With the new system, it is expected that most merchants would pass on the reduced costs directly to their shoppers in the form of lower prices by an amount essentially identical to the amount, by which the merchants' transaction fee will go down. These reductions, however, may not be across board and could vary depending on the retailer or the type of goods sold. In general, the consumers will directly benefit from the reductions on debit interchange fees.

7.37 Both merchants and cardholders are bank customers (depositors), safeguarding the interest of whom is the RBI's prime mandate. The study reveals that in the present pricing of the electronic payments, the structure of MDR has caused unfair treatment for both merchants

and consumers. With one transaction per debit card and 11 transactions per credit card annually, such fees have acted as strong deterrent to their growth.

7.38 A domestic payment card (IndiaCard) and a POS switch network for issuance and acceptance of payment cards is in the pipeline. However, IndiaCard is intended to be a substitute or alternative for MasterCard / Visa branded cards with switch provider being NPCI. IndiaCard would not add much value to the payment system (other than increasing the bargaining power when dealing with MasterCard / Visa) unless it works in combination with rationalisation of the pricing structure and card rules for all cards. This applies to all types of cards - be it IndiaCard or MasterCard / Visa. As noted earlier, it is the debit card interchange fee and oblique business oriented card rules which are deterrents for boosting debit card usage rather than the switch fees.

7.39 We know that the costs for credit cards to the provider (banks) are different from those it incurs for debit cards. It is necessary that this cost differential is reflected to the users (merchants and cardholders) who pay for these costs. Cash handling being a challenge and a cost to the merchants, transparency on the cost per unit of transaction per type of card is important and this transparency should be promoted by the regulator.

7.40 Finally, considering the immense advantages the card payment system generates over the paper based payment system, the study looks into few of the ambiguities that remain and makes the following objective, meaningful and implementable recommendations so as to promote the growth of the card payments:

i. **Encourage the usage of no-frill debit cards and devise ways to bring in awareness on debit card usage among merchants and cardholders through focused financial education campaigns.**
ii. **The MDR on all no-frill debit cards could be fixed as 0.2% per transaction with a cap of ₹ 20.**
iii. **The no-surcharge rule to be applied strictly to no-frill debit cards**.
iv. **Make all debit card transactions at POS pin-based**.
v. **Cash withdrawal at POS should be clubbed along with purchase.**
vi. **Merchants to be given freedom to surcharge on credit cards.**

7.41 To set a roadmap, it is suggested that
i) All POS debit card swipe be made PIN based at an early date, say by the end of the current financial year.
ii) Debit card MDR be fixed at 0.2% with a cap, from beginning of the next financial year.
iii) Merchants be advised to take recourse to suitable pricing models thereafter, for example, (a) merchants who are not currently imposing any surcharge on card payments may like to offer 0.5% discount on use of debit cards; (b) merchants who would like to price their products independent of the relative additional costs due to the mode of payment involved,

may like to impose a surcharge on credit cards (considering that the MDR on credit card is disproportionately higher).

References

[1] Courier / Postal Charges Levied by Commercial Banks in India. RBI. June 09, 2008.
http://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=18416

[2] Approach Paper for Rationalisation of Service Charges levied by banks on Electronic Payment Products (RTGS / NEFT / ECS) and Outstation Cheque Collection. RBI. September 11, 2008.
http://rbidocs.rbi.org.in/rdocs/Content/PDFs/86901.pdf

[3] ATMs of Banks: Fair Pricing and Enhanced Access – Draft Approach Paper dated December 24, 2007.
http://www.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=1102

[4] Levy of Service Charges for Electronic Payment Products and Outstation Cheque Collection. RBI/2008-09/207 DPSS.CO.No. 611/03.01.03(P)/2008-09 dated October 08, 2008.
http://rbidocs.rbi.org.in/rdocs/notification/PDFs/87656.pdf

[5] Customer charges for use of ATMs for cash withdrawal and balance enquiry. RBI/2007-2008/260 DPSS No.1405 / 02.10.02 / 2007-2008 dated March 10, 2008.
http://www.rbi.org.in/scripts/NotificationUser.aspx?Id=4076&Mode=0

[6] Payment and Settlement Systems Act, 2007.
http://www.rbi.org.in/Scripts/OccasionalPublications.aspx?head=Payment%20and%20Settlement%20Systems%20Act,%202007

[7] Report of the Working Group to formulate a scheme for ensuring reasonableness of bank charges. RBI/2006-2007/245 DBOD.No.Dir.BC.56 /13.03.00/2006-2007 dated February 02, 2007.
http://www.rbi.org.in/scripts/NotificationUser.aspx?Id=3268&Mode=0

[8] Annual Report of the RBI for the Year 2008-09. Aug 27, 2009.
http://rbi.org.in/scripts/AnnualReportPublications.aspx?year=2009

[9] Reserve Bank of India Bulletin, June 2010.
http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/0JUNE112010_F.pdf

[10] Trend and Progress of Banking in India. RBI Publication, October 2009.
http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/RTP0809PRD_Full.pdf

[11] Review of Payment and Settlement Systems in India 2006 – 2007, RBI, November 2007.
http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/81035.pdf

[12] Das, Ashish (2008). Acceptability Standards in Credit Card Industry. Draft report.
http://www.math.iitb.ac.in/~ashish/workshop/CreditCard23November10.pdf

[13] Reform of Australia's Payments System: Preliminary Conclusions of the 2007/08 Review. April 2008, Reserve Bank of Australia.
http://www.rba.gov.au/payments-system/reforms/review-card-reforms/pdf/review-0708-pre-conclusions.pdf

[14] Regulatory intervention in the payment card industry by the Reserve Bank of Australia: Analysis of the Evidence. April 2008, CRA International.
http://www.crai.com/ecp//assets/Regulatory_Intervention.pdf

[15] Competition and regulation in the card payments market. Speech by Malcolm Edey Assistant Governor (Financial System), Reserve Bank of Australia. March 2010.
http://www.rba.gov.au/speeches/2010/pdf/sp-ag-150310.pdf

[16] Bolt, Wilko and Chakravorti, Sujit (2009). A Review of Payment Card Economics. Pymnts.com/journal.
http://www.pymnts.com/a-review-of-payment-card-economics/

[17] Osband, R. L. (2009). Interchange fee reform in Mexico: A bank-driven approach.
http://www.rkmc.com/files/Interchange-Fee-Reform-in-Mexico-A-Bank-Driven-Approach.pdf

[18] Weiner, Stuart E. and Wright, Julian (2005). Interchange Fees in Various Countries: Developments and Determinants. Federal Reserve Bank of Kansas City. Working Paper 05-01.
http://www.kansascityfed.org/publicat/psr/rwp/WeinerWrightWorkingPaper113005.pdf

[19] Hunt, Robert M. (2003). An Introduction to the Economics of Payment Card Networks. Review of Network Economics. Vol. 2, Issue 2, 80-96.
http://web.cenet.org.cn/upfile/31290.pdf

[20] Humphrey, David et al. (2006). Benefits from a Changing Payment Technology in European Banking. *Journal of Banking and Finance* 30(6): 1631-1652.

[21] Daniel D. Garcia-Swartz, Robert W. Hahn, and Anne Layne-Farrar (2006). A Move Toward a Cashless Society: A Closer Look at Payment Instrument Economics. *Review of Network Economics* 5(2): 175-198.

[22] Wright, Julian (2003). Optimal Card Payment Systems. *European Economic Review* 47(4): 587-612.

[23] Schwartz, Marius and Vincent, Daniel R. (2006). The No Surcharge Rule and Card User Rebates: Vertical Control by a Payment Network. *Review of Network Economics* 5(1): 72-102.

[24] Negrin, Jose L. (2005). The Regulation of Payment Cards: The Mexican Experience. Review of Network Economics, 4, 243-265.
http://www.bepress.com/cgi/viewcontent.cgi?article=1076&context=rne

[25] Levitin, Adam J. (2007). Payment Wars: The Merchant-Bank Struggle for Control of Payment Systems , Stanford Journal of Law, Business, and Finance, 12.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=981637

[26] Levitin, Adam J. (2006). The Merchant-Bank Struggle for Control of Payment Systems. Journal of Financial Transformation, 17, 73-84.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=904183

[27] Levitin, Adam J. (2008). Priceless? The Economic Costs of Credit Card Merchant Restraints. Georgetown Universal Law Centre Research Paper # 973974.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1017894

[28] Levitin, Adam J. (2008). Priceless? The Social Costs of Credit Card Merchant Restraints. Georgetown Universal Law Centre Research Paper # 973970 (January 2008).
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1004396

[29] Levitin, Adam J. (2005). The Anti-Trust Superbowl: America's Payment Systems, No-Surcharge Rules, and the Hidden Costs of Credit , Berkeley Business Law Journal, 3(1), 265.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=889460

[30] Arango, C, Taylor, V. (2008-2009). Merchants' Costs of Accepting Means of Payment: Is Cash the Least Costly? Bank of Canada Review. 15-23.
http://www.bank-banque-canada.ca/en/review/winter08-09/arango_taylor.pdf

[31] Arango, C and Taylor, V. (2008). Merchant Acceptance, Costs, and Perceptions of Retail Payments: A Canadian Survey.
http://www.bank-banque-canada.ca/en/res/dp/2008/dp08-12.pdf

[32] Retail Survey of Merchants (2006) By Bank of Canada.
http://www.bankofcanada.ca/en/banknotes/survey/rsm_2006.pdf

[33] Interchange Myths and Facts. MasterCard Fact Sheet
http://www.mastercard.com/us/company/en/docs/021208MythsFacts.pdf

[34] Interchange and the Payments Industry. MasterCard Fact Sheet
http://www.mastercard.com/us/company/en/docs/Interchange%20backgrounder.pdf

[35] Stillman, R., Bishop, W., Malcolm, K., Hildebrandt, N. (2008). Regulatory Intervention in the Payment Card Industry by the RBA- Analysis of the evidence. CRA Project No. D11723.00. (April 2008)
http://www.mastercard.com/us/company/en/docs/BUG_4455_CRA%20report%20-%2028%20April%202008%20-%20FINAL.pdf

[36] Interchange Regulations: Lessons Learned from RBA Intervention in Australia. MasterCard Fact Sheet.
http://www.masterintelligence.com/upload/169/113/MC53-Interchange-FNL-S.pdf

[37] Anand Goel. (2008). How accepting ATM Cards improve Merchant Profitability. Optimized Payments Consulting, Inc.
http://www.optimizedpmts.com/ATM_Analysis.pdf

[38] Constantine, L. (2005) The Need for Federal Reserve and Antitrust Intervention in the Failed U.S. Debit and Credit Card Markets. May 2005. Proceedings – Payments System Research Conferences. 157-167.
http://www.kansascityfed.org/PUBLICAT/PSR/Proceedings/2005/Constantine.pdf

[39] Cash Withdrawal at Point-of-Sale. RBI/2009-10/105 DPSS.CO.PD.No. 147/02.14.003/ 2009-10 dated 22nd July 2009.
http://www.rbi.org.in/scripts/NotificationUser.aspx?Id=5184&Mode=0

[40] Master Circular on Credit Card Operations of banks. RBI/2009-10/64 DBOD.No.FSD.BC.19 / 24.01.011/ 2009-10 dated July 1, 2009.
http://www.rbi.org.in/scripts/NotificationUser.aspx?Id=5110&Mode=0

[41] Master Circular - Interest Rates on Advances. RBI/2009-10/66 DBOD. No.Dir. BC 10/13.03.00/2009-10 dated July 1, 2009.
http://www.rbi.org.in/scripts/NotificationUser.aspx?Id=5133&Mode=0

[42] Payment Systems in India - Vision 2009-12
http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/VIS01092009.pdf

[43] Das, Ashish (2009). Customers providing benefit to banks through usage of ATM and EDC machines.
http://www.math.iitb.ac.in/~ashish/workshop/ATMfees.pdf

[44]http://www.inrevisacheckmastermoneyantitrustlitigation.com/history.php3

[45]http://www.businessweek.com/news/2010-05-19/credit-card-fees-may-be-next-as-lobby-smells-blood-update2-.html

[46]http://www.theatlantic.com/business/archive/2010/05/reform-extends-to-debit-card-interchange-fees/56746/

[47]http://www.nytimes.com/2010/01/05/your-money/credit-and-debit-cards/05visa.html?ref=business&pagewanted=all

[48]http://www.mastercard.com/us/company/en/newsroom/new_survey_results.html

[49]http://www.denverpost.com/business/ci_13383010

[50]http://www.denverpost.com/breakingnews/ci_13529876?source=rss#

[51]http://news.theage.com.au/breaking-news-business/debit-card-use-on-the-rise-report-says-20090710-dfqy.html

[52]http://www.crfa.ca/news/2009/senate_reviews_credit_and_debit_card_fees.asp

[53]http://www.dailytelegraph.com.au/money/banking/debt-shy-aussies-turn-to-debit-cards/story-e6frezc9-1225748286486

[54] Bradford, T. (2008). Developments in interchange fees in the United States and abroad. Payments system research briefing. Federal Reserve Bank of Kansas City.
http://www.kansascityfed.org/Publicat/PSR/Briefings/PSR-BriefingApr08.pdf

[55] Gans, J. (2003). The Case for Credit Card Reform: A Primer for Students. Ecodate, 17(3).
http://www.mbs.edu/home/jgans/papers/Gans-Ecodate.pdf

[56] Gulati, V. P. and Srivastava, Shilpa (2007). The Empowered Internet Payment Gateway.
http://www.iceg.net/2007/books/2/10_342_2.pdf

[57] Report of the Working Group on Regulatory Mechanism for Cards. (2005) RBI report. April , 2005.
http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/62518.pdf

[58] Complaint Case No. 51 of 2007, National Consumer Disputes Redressal Commission, New Delhi.
http://ncdrc.nic.in/CC512007.html

[59] Robin A. Prager, Mark D. Manuszak, Elizabeth K. Kiser, and Ron Borzekowski (2009). Interchange Fees and Payment Card Networks: Economics, Industry Developments, and Policy Issues. Finance and Economics Discussion Series. Divisions of Research & Statistics and Monetary Affairs. Federal Reserve Board, Washington, D.C.
http://www.federalreserve.gov/pubs/feds/2009/200923/200923pap.pdf

[60] Expanding opportunities for global retailers- The 2010 A.T. Kearney Global Retail Development Index.
http://www.atkearney.com/images/global/pdf/2010_Global_Retail_Development_Index.pdf

[61] Credit/Debit Card transactions-Security Issues and Risk mitigation measures. RBI / DPSS No. 1501 / 02.14.003 / 2008-2009. February 18, 2009.
http://rbidocs.rbi.org.in/rdocs/notification/PDFs/Circular-1809.pdf

[62] Credit/Debit Card transactions- Security Issues and Risk mitigation measures for IVR transactions. RBI / DPSS No. 2303 / 02.14.003 / 2009-2010. April 23, 2010.
http://rbidocs.rbi.org.in/rdocs/notification/PDFs/IVR230410.pdf

[63] Dodd-Frank Wall Street Reform and Consumer Protection Act 2010.
http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf

[64] Reserve Bank of India Bulletin, August 2010.
http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/0SBUAUG090810_F.pdf

[65] Statistical challenges due to the economic and financial crisis. Speech by Mr. Nils Bernstein, Governor of the National Bank of Denmark, at the Nordic Statisticians Meeting, Copenhagen, 12 August 2010.
http://www.bis.org/review/r100816a.pdf

[66] Annual Report of the RBI for the Year 2009-10. Aug 24, 2010.
http://rbi.org.in/scripts/AnnualReportPublications.aspx?Id=987

Appendix A

RBI studies on charges levied by banks on different payment modes

A. The study on postal charges

The survey carried out by RBI indicated that for services such as mailing a cheque book, monthly accounts statement or collection of outstation cheques, most public sector banks are charging their customers more than their private sector counterparts.

The study stated that most of the public sector banks recover actual costs from their customers for delivery of cheque books and account statements at their homes and some banks for instance, Chennai-based Indian Bank has extra charges for sending a statement. Bank charges ₹ 23 to send a statement to its customers' homes in addition to the actual postage. It even charges ₹ 12 for emailing a statement. Leading private banks such as ICICI Bank Ltd., HDFC Bank Ltd., Axis Bank Ltd. and Kotak Mahindra Bank Ltd. are providing such services free. Even Citibank NA, Hongkong and Shanghai Banking Corp. Ltd. (HSBC) and Standard Chartered Bank do not charge a fee to send statements to customers' homes.

The public sector banks such as State Bank of Bikaner and Jaipur, levies a courier charge on customers for collection of outstation cheques. The public sector banks' charging fees for the service also vary according to the denomination of cheques.

B. The study on outstation cheque collection charges

The charges levied for outstation cheque collection service were not uniform and each bank followed its own policy. Most of the bank's policies were on *ad valorem* basis. The charges (in ₹) levied by banks were,

For cheques of value upto ₹ 10,000 –

Amount Range	**1-1000**	**1001-5000**	**5001-10,000**	**Overall 1-10,000**
Minimum	12.36	18	30	12.36
Maximum	100	100	100	100
Average	36	41.46	50	42

For amounts between ₹ 10,000 and ₹ 1,00,000 most banks charged as a percentage of cheque value. Also, for amounts above ₹ 1,00,000 all banks charged as a percentage of cheque value.

Amount Range	**10,001-1,00,000**	**1,00,001-10,00,000**
Minimum	0.1% of cheque value	0.1% of cheque value
Maximum	0.6% of cheque value	0.6% of cheque value
Average	0.4% of cheque value	0.4% of cheque value

The RBI study also revealed that there is no uniformity either in the amount or basis for levy of charges.

The RBI study proposed to set thresholds, for the three slabs (based on cheque amounts, i.e., {up to ₹ 10,000}, {₹ 10,000 to ₹ 1 lakh}, {₹ 1 lakh and above}) at ₹ 25, 50 and 100, respectively.

C. The study on Electronic Payment Products

The study carried out by RBI revealed the following:
a) There is no uniformity either in the amount or basis for levy of charges –
- While some banks levy based on the number of transactions, some others go by the amount to be transferred.
- Some banks charge multiple slabs based on amount, with a base minimum stipulation.
- Quite a few banks have different charges for local and outstation transactions.
- None of the banks charge for inward NEFT / ECS transactions. However, charges for inward RTGS are being levied by some banks. Destination banks also charge a lump sum amount for ECS (Debit) returns.
- One public sector bank has made all electronic payments free.

b) With the passage of time, banks have reduced the charges. Some banks have waived all charges for all outward / inward RTGS / NEFT / ECS transactions.

c) RBI offers electronic products free of charge to member banks. Multiplicity of slabs levied by banks and lack of transparency in norms adopted by them for various segments of customers has led to confusion in minds of customers, acting as a hindrance to the overall growth of the electronic payment products.

d) Given the cost and risks involved in handling paper instruments, banks need to favourably price electronic products and a situation where electronic products are costlier than paper products is inexplicable.

RBI concludes that

1. There is a need to rationalise and bring in uniformity in the mode and amount of service charges for electronic payment products and outstation cheque collection.

2. The endeavour should be to migrate to electronic modes of payment, more so for large-value and inter-city transactions.

3. The benefit of waiver of charges offered by RBI should get passed on to customers to the extent possible.

The RBI study proposed to set thresholds as under:-

a) Inward RTGS / NEFT / ECS transactions – Free, no charges to be levied.

b) Outward transactions –

(i) RTGS	– ₹ 1 to 5 lakh	– not exceeding ₹ 25 per transaction
	– ₹ 5 lakh and above	– not exceeding ₹ 50 per transaction
(ii) NEFT	– Upto ₹ 1 lakh	– not exceeding ₹ 5 per transaction
	– ₹ 1 lakh and above	– not exceeding ₹ 25 per transaction

c) Banks may prescribe charges not higher than cheque return charges for ECS debit returns.

D. ATMs of Banks: Study on Fair Pricing and Enhanced Access

Information collected from all public sector banks and a cross section of other banks indicates that they do not charge their customers that use their own ATMs for cash withdrawals and balance enquiry.

The charges range from 'Nil' to ₹ 57/- per transaction when their customers use the ATMs of other banks for cash withdrawals and balance enquiry. The charges depend on the network relationship between the bank owning the ATM and the customer's own bank.

- Under bilateral arrangement, charges levied are Nil to ₹ 50 for cash withdrawal and Nil to ₹ 20 for balance enquiry.
- Under shared Network (other than National Financial Switch (NFS)), charges levied are Nil to ₹ 55 for cash withdrawal and Nil to ₹ 20 for balance enquiry.
- Under Shared network (connected to NFS), charges levied are Nil to ₹ 55 for cash withdrawal and Nil to ₹ 20 for balance enquiry.
- Under Visa and MasterCard (direct connection), charges levied are Nil to ₹ 57 for cash withdrawal and Nil to ₹ 20 for balance enquiry.

Reasonableness of charges levied by banks

The component(s) for service charges may be as under:

(A) When customer uses his/her own bank ATM: It may relate to cost of ATM operation less cost of operation if the customer visits the branch for cash withdrawal or balance enquiry at the counter. This cost generally works out to be negative, as cost of servicing at counters is much higher than servicing through ATMs.

(B) When customer uses ATM of other banks: When a bank customer uses an ATM of a bank other than his/her own bank, it is reasonable that the service charge that the customer pays should reflect the interchange fee that his/her bank will pay to the ATM-owning bank and switching fee, if any.

The data collected from various banks indicates that, generally, the aggregate charges per transaction range from ₹ 10 to ₹ 20 for cash withdrawal and ₹ 5 to ₹ 8 for balance enquiry.

It is gathered that switching fee being levied by the switch providers like NFS, Mitr, Cashnet, Visa, Mastercard etc. varies from 'Nil' to ₹ 3 per transaction.

Recent Initiative

In order to reduce the cost of operations for banks, the Institute for Development and Research in Banking Technology (IDRBT), which, until recently, administered the NFS, had waived the switching fee since December 2007. Recently National Payments Corporation of India (NPCI), while handling all retail payments and settlement activities in the country, has taken over the NFS from IDRBT. Effective January 2010, NPCI had been charging a switch fee of ₹ 1 on every ATM transaction. Looking at lowering the cost further, NPCI currently charges 80 paisa per transaction.

Case for rationalisation

Use of technology should, among others, lead to reduction in transaction costs to banks. Over a period, with the increasing adaptation of the people to the use of technology in their daily transactions, it is expected that there will be a further reduction in the transaction costs. In these circumstances, the regulator, by authorising the establishment of an ATM, has a ***responsibility*** to ensure transparency and fair charges for the use of ATMs.

There is also a good case for establishing greater level of transparency in the context of adoption of technology to enhance the level of financial inclusion. In this background, there is also a case for rationalizing the service charges for ATM transactions such that it becomes affordable for the common man. Enhanced and cost effective access to ATMs plays an important role in technology based financial inclusion.

Appendix B

http://www.math.iitb.ac.in/~ashish/merchantsurvey2009.html

Merchant Survey on Card Payments by I I T Bombay (August 2009)

The QUESTIONNAIRE

Name of the Establishment or Service Provider:

Name and Designation of Respondent:

E-mail Contact:

Phone Contact:

This Questionnaire has only 16 questions. Please TICK against the most appropriate answer (o) as per your choice.

1. Number of employees in your establishment:

- ***Less than 10***
- ***10 or more but less than 20***
- ***20 or more***

2. Annual sales (Rs. crores):

- ***Less than 1***
- ***1 or more but less than 50***
- ***50 or more but less than 100***
- ***100 or more***

3. Considering card and cash payments received from your customers, for every 100 receipts, the number of payments received through cards is

- ***Less than 20***
- ***20 or more but less than 40***
- ***40 or more but less than 60***
- ***60 or more***

4. Considering card and cash payments received from your customers, the percentage share of transaction volume (value) through cards is

- ***Less than 20%***
- ***20% or more but less than 40%***
- ***40% or more but less than 60%***
- ***60% or more***

5. Considering that the cost to handle cash include the risk of theft, robbery, counterfeiting, risk of human error during exchange, armored transportation for depositing the money, etc., the cost that you incur to handle every Rs. 100 received through a cash transaction is

- ***Less than 5 paisa***
- ***5 paisa or more but less than 25 paisa***
- ***25 paisa or more but less than 50 paisa***
- ***50 paisa or more***

6. How much do you pay to your bank for ***every*** *Rs.100 paid through credit cards?*

- ***Less than Re. 1***
- ***Re. 1 or more but less than Rs. 1.50***
- ***Rs. 1.50 or more but less than Rs. 2***
- ***Rs. 2 or more.***

7. The payment method which you would prefer a customer to use at your establishment

- ***Cash***
- ***Credit Cards***
- ***Debit Cards***
- ***Credit and Debit cards alike***

8. Merchant Discount Rates (MDR) is the cost you incur by paying your bank on a card transaction. How do you account for the MDR?

- ***Fix the displayed selling prices so as to include MDR in it and then provide discounts to cash payers to attain balance.***
- ***Maintain a balance by incorporating some part of the MDR in the displayed selling price itself.***
- ***Do not attempt any balance by absorbing the full additional cost on MDR and thus maintain different profit margins for cash and card payments.***

9. Do you feel it is reasonable for the merchants to pay for a loan taken by the customers from their bank while using a credit card for making purchases (through a substantial part of the MDR)?

- ***Yes***
- ***No***
- ***Can't Say***

10. In your opinion should customers know how much MDR merchants have to pay to their banks when customer chooses to pay with different payment systems (card / cash)?

- ***Yes***
- ***No***

11. After deciding on the net % profit, if merchants are allowed to separately charge some component of MDR, will this facilitate you to reduce the displayed selling price of your goods and services?

- ***Yes***
- ***No***
- ***Can't Say***

12. Keeping in mind the cost of cash handling (including risk of theft in cash handling, risk of encountering forged currency, high labour costs, etc.) and the convenience of cards (improved cash flow, automatic currency conversion, etc.), how much % of displayed selling price are you willing to bear (or consider reasonable) as MDR on transactions through cards?

- ***Upto 0.2%***
- ***0.2% to 0.5%***
- ***0.5% to 0.8%***
- ***0.8% to 1%***
- ***More than 1%***

13. Should MDRs, Interchange fees, etc. be decided by the parties involved such as merchants and issuer/acquirer banks or by the credit card companies like MasterCard and Visa or by the regulator, RBI?

- ***Parties involved(Merchants and banks)***
- ***Credit card companies***
- ***Regulator, RBI***

14. In Europe and Australia (unlike India) all merchants are allowed to pass a surcharge (some component of MDR) to their customers. Are you aware of this fact?

- ***Yes***
- ***No***

15. Given the above fact, do you think that merchants in these countries are better placed to make a judicious choice on the quantum of surcharge they feel is reasonable to charge according to market competition and consumer behavior?

- ***Yes***
- ***No***
- ***Can't Say***

16. Suppose the actual transaction cost involved in a debit card payment of any amount is roughly Rs. 4/-. Keeping in mind the convenience of electronic payment, increased sales due to consumer's attitude to spend more when they are not constrained by cash at hand, etc., would you prefer debit card transactions over cash transactions?

- ***Yes***
- ***No***

Appendix C

http://www.math.iitb.ac.in/events/help_merchantsurvey2009.html

--- MERCHANT SURVEY ON CARD PAYMENTS ---
Indian Institute of Technology Bombay (August 2009)

ABOUT THE MERCHANT SURVEY 2009

Objective: The merchant survey on card payments is being conducted with an objective to understand the payment system from the perspective of an India retail merchant and to try rationalizing its costing structure.

Background: In India the MasterCard and Visa rules prohibit surcharging by merchants unlike in Europe and Australia. This has been a very big issue for the merchants in various countries. In India, the card usage is increasing at more than 22% per year with last year's transaction volume being Rs. 83,903 crore. An approach paper is under preparation and in this connection, opinions on having an appropriate system in place is being sought from all players. As is correctly suggested by RBI, for such matters, merchant participation/consultation is very crucial. It is expected that the study will be able to highlight several issues that the regulator may find useful in its endeavour towards bringing in an efficient payment system for the good of all players including the merchants and the customers.

Conduct and Coverage: This web based survey is being conducted by reaching company management and/or senior-level employees familiar with the payment methods accepted by their businesses. The survey is so designed as to achieve a representative sample of different categories of retail businesses based on company size (as measured by number of employees and annual sales) and activity. Retailers are being asked questions regarding their acceptance and perceptions of various payment methods which primarily includes cash, debit cards and credit cards. The purpose of the survey is

- to determine retailers' acceptance of various payment methods
- to estimate the share of retail sales proceeds from cash, debit cards and credit cards
- to obtain data on the costs incurred by retailers for each payment method
- to understand possible indirect subsidization provided by cash consumers for card consumers

The survey also addresses some of the existing rules of major credit card networks (MasterCard/Visa) and its impact on retail business. The survey aims to analyze several aspects of these rules and their behavioral and social impact on Indian merchants, including

- the no-surcharge rule (i.e., merchants are prohibited to pass the bank imposed merchant discount rate, that they incur on every card transaction, on to their customers),
- less popularity of debit cards vis-a-vis credit cards,
- Europe and Australia applying mechanisms to differentiate credit cards, debit cards and cash in terms of the cost associated with the payment modes,
- inherent system in the credit cards payments which is convenient to use but forces one to take loan (and thus increase the cost of the payment).

To merchants, a credit card transaction usually costs more than the corresponding cash transaction because someone has to pay for the credit (or loan) taken while using a credit card. ***By not passing the surcharge, merchants allow consumers to perceive that all payment systems have the same transaction costs.*** This leads them to choose among the modes of payment available on the basis of one's convenience and without giving due consideration to the costs that merchants have to bear. This usually leads to unwarranted cost pressures on the merchants necessitating adjustment in pricing structure of their merchandise.

Some merchants correctly believe that not accepting credit cards would lead to ***downslide of their business*** since consumers want to make use of their plastic money rather than carrying cash in hand. But there are alternate (though less popular, as of now, in India) plastic money which is relatively cheap for the merchants and a good substitute of credit cards, for example the (pin-based) debit cards. Needless to say, the survey results that are expected to bring in rationalization of costing structure of the payment system cannot be completed without active support from the merchants. Your opinion is therefore very valuable to us. Kindly respond to all the questions. This will help in building opinions across the cross-sections of the retail sector. Your responses would not associate your company name at the time of collating the data. For any enquires, you may contact Prof. Ashish Das at ashish@math.iitb.ac.in

Appendix D

List of companies that responded to the survey[15]

Lucky Stores
Atmosphere
Vaishali
999 Stores
T.B.Z
Trent Limited
KIDDIES CORNER
Bharati Jewellers
Venus Medicals
Maharashtra Appliances
MSH SAREES P.LTD.(JASHN)
InterGold Gems Pvt. Ltd.
Galleria Optics
Starlite Optiks
Navrang Optiks
Cellucom Retail India Private Limited
Baggits
Standard Clothes Stores
Shrusti Jewellery
Designs for Dress Materials
HyperCITY Retail India Limited
MAKEMYTRIP (INDIA) PVT LTD
J Marks(Dep. Store)
JMV Lifestyles
TANISHQ BOUTIQUES
Sagar Matching Center
Pratap Meddicals
Pyramid Optics
Haiko
Anmol Jwellers
Maharashtra Family Showroom
Prameet Medicals
PLANET M RETAIL LIMITED
7 Seas Tours n Travels
DMart

[15] Individual responses not associated.

Appendix E

Rejoinder: Comments from market players

Significant and thoughtful inputs received from institutions and market players (banks and merchants) on the study are listed below. Our rejoinder is indicated in italics.

A. Future Group

1. The MDR cost of retailer is as high as 50% of their profits. In other words, the money they are able to give to their stake holders (who invest into the business) is just 2 times of what they pay towards MDR cost.
This makes cost towards MDR relatively very expensive for the merchants.

2. Higher interchange rate on premium credit cards is inducing issuer banks to issue more premium cards than ordinary cards with the same credit limit. For example ICICI Bank is issuing platinum credit card to the same customer to whom it was earlier issuing gold / silver card. This is just a mask change to get higher interchange rate. This is increasing cost for the merchants.
Encouraging incentives while accepting debit cards in combination with minimal surcharge on credit cards would address the issue under our set of recommendations.

B. makemytrip.com

1. The current regime is throttling growth and eventually increasing costs, some of which are visible and some are not. The online merchant community is affected adversely from the additional burden which is lack of a robust and predictable refund / reversal mechanism. Customers often complain that while it takes a second to debit, it takes a lot of time (no Service Level Agreements) to get their money back in case of refunds, etc. The processes are non-standard, largely manual, not scalable enough and depend on banks' own way of dealing with the process. Merchants take the brunt of the damage as customers bad mouth the merchants whereas the problems are largely between the payment gateway and banks. With so many banks, payment gateways and instruments, this becomes a complex system to work with. As merchants or even as banks, there is no way to check the status of a refund and where it lying in its processing cycle. This tears into the confidence of customers who taste e-commerce only to be disappointed. There is no regulatory mechanism in place to rein in the rogue banks.
Credit reversal from merchants to cardholder needs to be streamlined. RBI may consider venturing into its operational aspects which may involve unfair games, in form of float funds, by some of the players in the system.

C. Standard Chartered Bank

1. The sales volumes going through Credit and Debit cards in India are still too small to compensate the issuing and acquiring banks for the investments made in putting up an issuance and acquiring infrastructure including cost of terminals, even with the current revenue model across the value chain.
The card based transactions, though not very large, already constitute more than 2% of India's GDP. They are growing fast and with focused educational campaigns will achieve exponential growth. On the other hand, EDC machine prices have come down in line with prices of mobile phones.

2. Most large issuers of cards were also the pioneers in terminalising the market in order to create the acceptance infrastructure for the usage of their cards. Due to a wider penetration, debit cards require even more electronic acceptance sometimes in locations where credit usage is negligible and hence the entire business case rests only on debit card acceptance. In order to provide an equitable return, the MDR even on debit cannot be lowered beyond a certain point.
Debit cards as business proposition for POS usage brings in significant gains for the banking industry since it helps in reducing branch visits of bank account holders (merchants and consumers alike) for cash deposits and withdrawals and less dependence on ATM usage. Both the latter means of payment vehicles are relatively more expensive for the banks. Moving from such expensive payment vehicles to debit card at POS gives banks a means for cutting costs and increasing efficiency leading to increased profits. Alongside, such an innovative development in the payment system leads to increased convenience, security, accountability and financial inclusion for our countrymen. Furthermore, with advancement of time, debit cards are now looked as nothing but electronic cheques. Transactions through paper cheques is still one of the basic mandatory payment modes in use and one does not attach much business economics to it. The same should apply with more vigour for electronic cheques.

3. It would be useful to compare the economics of Banks, Merchants and Visa/MC even at the lower inter-changes in the Western and Australian markets with that of Banks and Merchants in India at the higher MDRs and inter-change. There may be a message in there somewhere.
Based on international stance, the message is clear- India needs to rationalize the debit card based payment system which is very basic in nature.

4. Another important area that we must deal with is the Customer attitude toward using debit cards to make payments at merchants. While most banks today issue debit cards in lieu of ATM cards, ATM activation rates (i.e. customers using debit cards to withdraw cash from

ATMs and then spend this at merchant outlets) is upwards to 50-60% while POS activation rates after more than a decade are 12-15%. Why is it so? This is in spite of all the rewards, bells and whistles that banks have added to debit cards to make customers use them at point of sale. Perhaps customer education by the Govt., Visa/MC or any PAN industry body can play a more significant role at this juncture than any change in the various revenue / cost dynamics. Once spends go up, the next level of how the revenue pie is being shared and needs to be tweaked can be looked at.

It is rightly pointed out that the debit card usage has not picked up. It is therefore suggested in this study to give an added incentive to merchants and debit cardholders to bring in a transition from cash to debit cards. Let us have a two pronged approach (as suggested in our recommendations) rather than one.

5. I find several useful recommendations in the report to promote card payments like Govt backed advertising campaigns, promoting cash withdrawals at merchant outlets. Some more like Tax subsidies to merchants on card payments can also result in increase in card acceptance. Also, cost of equipment can be reduced by bringing down statutory duties (import or excise) and providing local entrepreneurs incentives to manufacture it here. A local switch would also help as this can be a major technology cost - both capital and transaction based.

The above is in agreement to our report.

6. In general, surcharging is dangerous in a fast growing / lesser regulated environment. It is best avoided or else regulated tightly in order to protect the interest of the end customer i.e. the card holder.

Surcharging is only a deterrent for the more expensive credit card based payment mode where one resorts to borrowing. Surcharging, in general, does not make sense and that had been the core reason why we strongly recommended 'no surcharging' for debit cards.

7. Making statutory/utilities related payments by debit cards could attract differential MDR to prevent surcharging and this could help in reducing cheque/cash transactions by card payments.

The study suggests that the MDR for <u>all</u> debit card payments should go down. Additionally, an external body, rather than banks, could further rationalize aspects pertaining to statutory payments.

8. Also, by making terminals multi purpose - merchants should be able to use POS terminals for Pre-Paid mobile top ups, utility bill payments, cash advance and several other uses - the total revenue earning opportunity for the Merchant will increase and his willingness to pay for the terminal will go up. This will bring down one major capital cost component for Banks.

Such innovations are welcome as these would reduce costs to banks, merchants and customers.

9. Net-net, in order to ensure that all parties involved - Banks, Card Holders, Visa/MC, Merchants - see equitable returns in this business and continue to invest behind its growth, it is important that they all come together to arrive at how to lower infrastructure costs substantially so that transaction costs can be brought down and the benefit of that can be passed onto the card holder and merchant.
We agree. This is precisely the thrust of the report. Invest in growth through (i) making expensive payment modes like credit cards need based, (ii) encouraging debit cards usage through rationalization of the fee structure, and (iii) reduced per transaction cost to banks through increased volumes of debit card transactions.

D. <u>ICICI Bank</u>

1. The payments infrastructure in India is in the development stage and requires further investments for continued growth. Unlike a mature market as in developed countries, acceptance infrastructure in India is underpenetrated and new and emerging forms of payment require continued investments.
We agree. However, we need to rationalize the system by eliminating unrealistic costing which is currently a hindrance in wider acceptability of debit cards by merchants and card users.

2. Financial institutions have played a pivotal role in the establishment of electronic payment mechanisms. The card acquiring network is a key infrastructure for payments, however at present the acquiring business is running losses in most banks. There are better returns from debit and prepaid cards which serve to offset the losses in acquiring and are often ploughed back into investments in payments infrastructure and investments in new and emerging payment mechanisms.
The model suggested is to boost volumes in debit card transactions and thereby reducing losses, if any. Financial institutions need to take a more rationalistic approach in their endeavour to foster a basic service which is also an efficient and effective payment system in the country's retail sector. In our proposed model, the acquirers get largest share of the MDR pie. Furthermore, for issuers and acquirers, apart from the benefits of channel migration there is an indirect benefit of increased CASA balance due to POS activation. Intuitively so, debit card usage works as stimuli for the customers and once they are POS savvy, they tend to keep more balance in their CASA accounts. This holds more in low to middle size customers. This is an appealing benefit and a means to convince banks to promote usage of debit cards.

3. The recommendation to give merchants freedom to surcharge, with no-surcharge exclusively on no-frill debit cards needs to be examined further. Giving merchants the

freedom to surcharge can have undesired consequences that may kill cards as a product. Implementing a no-surcharge rule for one kind of product alone is not monitorable, therefore the practicality of implementing the recommendation should be examined. In case of the proposal for lower surcharge/MDR for debit cards, any reduction should be graded to ensure investments in payments can continue. Ultimately the payments industry may not get the required investments unless business is remunerative.

Possibility of surcharge on credit cards would kill only the unnecessary and unlimited credit which is expensive for the payment system but users are not able to internalise this fact. Once the payment system rationalizes and provides a more meaningful payment mode in the form of debit cards, it would lead to increased debit card transaction volumes and become a run-of-the-mill standard. Proper education on no-surcharge rule on debit cards can be brought about by mandatory displays at merchant establishments or customer education or otherwise. Moreover, one would not expect a tendency to break such merchant friendly rules where merchant acceptance of debit cards becomes more attractive. One needs to segregate the idea of business being remunerative and business being a necessity to reduce cost which, otherwise, a bank would incur in form of customers' branch / ATM visits. Furthermore, effective payment system of a country should attach less of remunerative business economics and more of breakeven economics.

4. On some of the specific recommendations in the report, the Bank's views are set out below:

- Some of the estimates of cost per transaction and average MDR as used in the note may be examined with more realistic industry data.
- Investments by financial institutions in marketing and promotions have played a key role in establishing card based payments and introducing new forms of cashless payments. Further support with initiatives from the regulator to promote awareness and education campaigns is a good suggestion.
- Government promotions such as tax benefits to merchants for card acceptance (as in Korea) are welcome.
- Make all debit card transactions at POS terminals pin based for higher security - ICICI Bank is working towards increasing pin based payments.

Government / RBI may like to take note of the bank's views.

E. <u>Bank of Baroda</u>

Conclusions from draft report followed by bank's comments / suggestions:

1. "Encourage the usage of no-frill debit cards and devise ways to bring in awareness on debit card usage among merchants and cardholders through financial education campaigns."

- Banks can run education campaigns or Govt. can do this through any popular media like Daily News Paper, TV.

2. "The MDR on all no-frill debit cards could be fixed as 0.2% per transaction with a cap of Rs. 20."

- Currently, while deciding MDR, banks do not differentiate between Credit Card and Debt Card transactions, as interchange payable is based on the BIN Category (i.e. Classic, Gold, Platinum etc). However, the debit BIN is identifiable and hence differentiation is possible technically and MDR can thus be differentiated.
- Certain Banks are charging variable MDR based on categories as above (i.e. Classic, Gold, Platinum etc.) and on-us / off-us type of the transactions.
- Fixed MDR scheme may be further smoothed considering the following categories

  on-us- Debit card Transaction

  off-us- Debit card Transaction

  In case of on-us transactions, the MDR may be further reduced as acquirer and Issuer are the same entity (Bank).

3. "The no-surcharge rule to be applied strictly to no-frill debit cards."

- May be considered to waive surcharge for all Debit Cards to encourage increased Debit Card usage. At present also there is no surcharge except for MCC like Railway, Fuel, etc.

4. "Make all debit card transactions at POS pin-based."

- This is a good move for security and may be made compulsory by regulators.

5. "Cash withdrawal at POS should be considered as an item of purchase."

- RBI needs to examine thoroughly the costs involved before implementing it since merchants need to be lured into the system by acquirers by offering "% share" or advances etc. Merchants do not see this as profitable otherwise to receive settlement for Cash on POS transactions at T+1.

6. "Merchants to be given freedom to surcharge on credit cards."

- It is better for RBI to decide a slab based surcharge system after proper study of different combinations of transactions. It is also better to make surcharge a part of charge slip amount, as an informative item and this should not be considered for settlement.

F. <u>IBA</u>

1. The report brings out a rational case for promoting usage of debit cards at POS terminals. The report has brought out the value, which use of, debit card can add to the financial system.

2. The report has referred to the RBI Advisory on issuing photo cards. It is felt that affixing photo on the debit card could be recommended as an additional security feature. The photo id could facilitate doing away with PIN based authentication by the card holders for vary low value transaction at POS. This could encourage greater use of debit cards at retail shops. Also SMS alerts for transaction above ₹ 1,000 could also be recommended to protect the cardholders.
The suggestions are worth pursuing.

3. From the banks' point of view one concern could be on how measures to popularize debit cards would affect their existing credit card business.
The report implicitly indicates that the recommendations would allow a transition from the expensive and thrusted credit card system to a need based debit card system which is optimal for the economy and beneficial to the end users (merchants and consumers). It is time that the artificial tilt that has been in existence for the benefit of the providers (banks and switch providers) at the cost of the users gives way to a rationalized system.

G. NPCI

1. For card payment system to grow, it is essential that there is win-win situation and creation of value for all the stakeholders. Your report has provided valuable inputs and suggestions which further needs to be deliberated with key stakeholders in an appropriate forum before any view can be taken.
The report now has few inputs from the spectrum of stakeholders. Key stakeholders among them are the users of the payment system (merchants and consumers), providers of the payment system (banks and switchers). As mentioned earlier, debit cards as business proposition for POS usage brings in significant gains for the banking industry since it helps in reducing branch visits of bank account holders (merchants and consumers alike) for cash deposits and withdrawals and less dependence on ATM usage. Both the latter means of payment vehicles (branch visits and ATM usage) are relatively more expensive for the banks. Moving from such expensive payment vehicles to debit card at POS gives banks a means for cutting costs and increasing efficiency leading to increased profits. Alongside, such an innovative development in the payment system leads to increased convenience, security, accountability and financial inclusion for our countrymen. Furthermore, with advancement of time, debit cards are now looked as nothing but electronic cheques. Transactions through paper cheques is still one of the basic mandatory payment modes in use and one does not attach much business economics to it. The same should apply with more vigour for electronic cheques.

H. Retailers Association of India

1. The report is of great importance since efforts have been taken to get a 360 degree view of the situation by looking at various stake holders including the consumers, the retailers (merchants), the card issuer, the acquirer, the card companies and the Reserve Bank of India.

2. The report is of significance since the conclusions drawn are leading towards some key action points that could be instrumental in changing the card payment system optimally.

3. Merchants in India are often working on thin profit margins and the incidence of Merchant Discount Rates (MDR) on their profitability is high since a 'no surcharge to customer' rule exists for both credit and debit cards.

4. One of the key pointers in the report about the MDR on debit cards and their systemic impact is of great relevance. When customers pay through debit cards, and thereby are paying through their bank accounts in what could be the cheapest modes of money transfer, there still exists a high cost factor- thanks to the existing high MDR on debit cards that fails to be justifiable.

5. As more debit cards get used, the need for hard cash in the system comes down and this could result into systemic cost savings and also higher statutory compliance.

6. The report's solution to currency management is also an object lesson in currency distribution management. When merchants deposit cash with banks and the banks disburse the same through ATMs, there are considerable distribution expenses. Allowing merchants to disburse cash to customers who are also their buyers is a good approach to avoid some of the expenditure. Also this saves un-used float, currency transfer risks etc. especially during peak business periods for merchants.

7. The recommendation to encourage usage of no-frill debit cards and allowing surcharge on credit cards has the potential of bringing in the much needed revolution in card based Payment system in India.

J. Other Organizations

Axis Bank and MasterCard to whom the draft report was sent had indicated that they would not be providing comments. Few of the other organizations from whom the responses are still awaited are HSBC, Citibank, HDFC Bank, BCSBI, NASSCOM, Visa and RBI.

Appendix F

Addendum

1. Based on latest data, the following tables provide quarterly movements and analysis in the credit and debit card payments.

Credit Card Payments						
Quarter / Period	Average Number of Valid Cards (Lakh)	Number of Transactions (Lakh)	Average Number of Transactions per Card	Amount of Transactions (Rs. Crore)	Average Amount per Transaction (Rs.)	Average Amount of Transactions per Card (Rs.)
April-June 09	237.55	558.5	2.35	14,611.66	2616	6151
July-Sept. 09	218.38	590.04	2.70	14,721.14	2495	6741
Oct.-Dec. 09	208.68	603.65	2.89	16,430.63	2722	7874
Jan.-Mar. 10	196.28	589.72	3.00	17,118.39	2903	8721
April-June 10	190.85	609.74	3.19	16,947.87	2780	8880
July-Sept. 10	187 (projected)	-				

Debit Card Payments						
Quarter / Period	Average Number of Valid Cards (Lakh)	Number of Transactions (Lakh)	Average Number of Transactions per Card	Amount of Transactions (Rs. Crore)	Average Amount per Transaction (Rs.)	Average Amount of Transactions per Card (Rs.)
April-June 09	1433.25	373.48	0.26	5,480.62	1467	382
July-Sept. 09	1551.25	427.07	0.28	6,545.26	1533	422
Oct.-Dec. 09	1,664.02	439.93	0.26	7,262.95	1651	436
Jan.-Mar. 10	1,780.26	461.23	0.26	7,129.28	1546	400
April-June 10	1,883.17	507.23	0.27	8,064.51	1590	428
July-Sept. 10	1977 (projected)	-				

Source: Based on RBI Bulletin August 2010

2. It is observed that over the last five quarters there had been a steady relative increase in usage of credit cards over debit cards. During April-June 2009, on an average for every debit card swipe, there had been 9.0 credit card swipes. For consecutive quarters this increased to 9.8, 10.9, 11.6 and 11.9. For the period July-Sept. 2010, it is projected that on an average for every debit card swipe, there would be over 12 credit card swipes.

3. Of the near 2 crore credit cards, about 50% are dormant (not being used). Similarly, about 80% of the near 20 crore debit cards could be dormant for its use at POS. Thus, keeping aside dormant cards, effectively on an average there are about 25 credit card swipes per card annually and there are about 5 debit card swipes per card annually.

4. In India around 80% to 90% of the credit card usage leads to payment of balances within due date. Of the 10% to 20% card users who really avail credit beyond the due date, about 25% do not pay at all and become lost assets for the issuers. With annual credit card transactions being of the order of ₹ 60,000 crore, it implies that on an average real credit creation on credit cards is of ₹ 9,000 crore. Of this, the lost assets for the issuers amount to about ₹ 2,250 crore. As against this the interest earned at the rate of 40% p.a. from those who

really avail credit and finally pay off the full balances is of the order ₹ 2,700. Thus, the issuers are just about balancing out from the credit card users.

5. Technologically it is feasible to switch to pin-based debit cards from signature-based debit cards without issuing new debit cards. In UK, most credit cards have already transited to 'chip and pin' based credit cards from signature-based credit cards. This had been primarily due to credit card industry's higher expenses on fraudulent transactions than the cost of switching to 'chip and pin' cards and chip readable EDC machines. On the other hand, in USA, until recently, the cost incurred by the industry on fraudulent transactions had been less relative to that of the cost of transiting to 'chip and pin' credit cards. The industry need for 'chip and pin' credit cards depends on its capacity to absorb expenses on frauds vis-à-vis cost to transit to 'chip and pin'. In USA and India, banks are working on the business feasibility of the transition and are introducing 'chip and pin' credit cards on a pilot basis. However, with the recent Dodd-Frank Wall Street Reform and Consumer Protection Act, US banks may relook at their strategies. Similarly, going by the present report, for India, it is more important to encourage need based use of credit cards for availing real credit. Thus, the costs for transition to such 'chip and pin' should be borne by those credit card users who actually avail credit.

6. Presently, when a debit card is handed at POS to purchase a television having a displayed price of, say ₹ 10,000, one may encounter a situation where the merchant may demand a surcharge of ₹ 150, which is not demanded in case of cash payments. One may also encounter situations where the merchant has already absorbed this surcharge in its price and offers a ₹ 150 discount on payment received through cash. In both cases, the debit cardholder is prompted to move away from cashless payment to cash based payments. The pricing structure makes the debit cards disproportionately expensive not only for the consumer but for the economy as a whole by large cash dependence. The present surcharging structure of debit cards is a disincentive for small and medium merchants, who have less pricing power due to their low volumes, to transit to card based payments. Since the system is created exclusively by the providers, the other players, i.e. users, are dictated upon. The payment system regulator may like to look into this anomaly.