



Toulouse  
School of  
Economics

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# **FIT IN Initiative**

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Policy paper

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A woman wearing a blue shawl with a red and white patterned border is sitting in front of a flower stall. She is looking directly at the camera with a neutral expression. The flower stall in the foreground is filled with a large pile of red and orange marigolds. The background is slightly blurred, showing a motorcycle and some other market items.

## **Charges in payment systems**

by Vatsala Shreeti

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Economics for the Common Good

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# Charges in payment systems

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**Vatsala Shreeti** is an economist working with the Innovation and Digital Economy team at the Bank for International Settlements. She is interested in Empirical Industrial Organisation and Digital Economics, with a focus on emerging markets. She is also affiliated with the Financial Inclusion through Interoperability Initiative (FIT IN Initiative) and work as a mentor with Women in Economics and Policy. She obtained a PhD in Economics from the Toulouse School of Economics (TSE) in July 2022.

**Building on insights from the economics literature, particularly on two-sided markets, and experiences from other jurisdictions, this policy paper sheds light on issues related to pricing of digital payment methods, in particular on debit cards and Unified Payments Interface (UPI) transactions. This policy paper was prepared by Vatsala Shreeti in collaboration with the FIT IN Initiative's team at TSE.<sup>1</sup> It echoes a discussion paper released by the Reserve Bank of India (RBI).<sup>2</sup>**

## Debit Cards

### *Should debit card transactions be charged as normal funds transfer transactions?*

Debit card transactions differ from normal fund transfers between banks as they involve the participation of card networks, payment gateways and payment aggregators. Additionally, pricing structure for debit cards need to be understood in a two-sided market framework, which allow for the consideration of cross-platform network effects that are particularly salient in the debit cards market. There doesn't seem to be a clear economic reason for the pricing structure of debit card transactions to be the same as that of bank transfers through NEFT or RTGS.

### *Should MDR for debit cards be uniform across merchants, irrespective of turnovers?*

Charging the same MDR for all types of merchants may disincentivize small merchants from accepting debit cards. Even other than the MDR, small merchants may face larger costs of installation and maintenance of digital payments systems, as well as digital book-keeping. More evidence is needed to determine the constraints that smaller merchants face in accepting debit cards and what the cut-off for the annual turnover should be to classify them as small merchants.

### *Should RBI regulate interchange for debit card transactions?*

Many jurisdictions have introduced regulations on interchange fees, especially for debit cards. The main rationale is that these interchange fees are passed on to merchants by acquirers in the form of higher MDRs, and that merchants feel obliged to accept card transactions because they do not want to lose business.

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By putting a cap on interchange fees, the regulator may eliminate this distortion. The cap is usually set by using the “Tourist Test” (Rochet and Tirole JEEA 2011).<sup>3</sup> Drawing from the economic theory of two-sided markets and the setting of interchange fees, it is possible that the market determined interchange fee does not coincide with the one that is socially optimal. As card schemes typically compete to get more and more issuing banks on board, they might be inclined to offer high interchange fees.<sup>4</sup> This implies higher merchant fees, which may be passed through to consumers in the form of higher retail prices. If merchants do not or are not allowed to price discriminate on the means of payment, higher retail prices imply that cash users subsidize card users.

A related market failure that may arise in this market when left unregulated is that merchants internalize consumers’ benefits when deciding to accept cards (Rochet and Tirole, 2002).<sup>5</sup> A direct consequence of this is that merchants might accept cards even when their benefits are lower than the MDR that they pay. This might lead to a distortion away from the socially optimal interchange fee (Rysman and Wright, 2014).<sup>6</sup>

In general, in case the regulator wants to intervene in the market, any potential benefits of this intervention should outweigh the costs of intervening. The costs of intervening not only include the administrative costs, but also the potential costs arising from setting the wrong interchange fee or cap, as well as any costs arising from the impact of the intervention on future investment and innovation (Rysman and Wright, 2014).<sup>7</sup> Even if interchange fees are regulated, the level that they should be set at (or the level of a regulatory cap) is not immediately obvious according to economic theory. It depends on whether the regulator seeks to maximize consumer surplus or total welfare, and whether issuers or acquirers have positive margins on each transaction. Additionally, capping interchange fees can also lead to increase in consumer fees or an increase in acquirers’ margins. Recent empirical evidence from the US shows that following the regulation to cap interchange fees, banks increased monthly fees and minimum balance requirements (Manuszak and Wozniak, 2017).<sup>8</sup> Thus, while interchange fee caps may reduce the cost of acceptance of cards for merchants, some of the benefits may be offset by higher fees for consumers. The overall impact on card usage then becomes an empirical question.

**In the Indian case, in recent years, digitalisation of payments has been a priority for public policy. Digital payments are often viewed as having characteristics of public goods, especially in emerging markets.**

### ***Should RBI deregulate MDR for debit card transactions and let stakeholders decide on the optimum level of MDR and interchange fee?***

An important question is whether the regulation should bear on interchange fees or on directly on MDRs. The regulation of interchange fees is justified by the fact that the payment card industry is a two-sided market, which implies that market competition does not typically lead to efficient allocation of resources. Regulating MDRs directly can be justified when the acquiring market is not competitive, so that changes in interchange fees are not properly reflected into changes in MDRs.

It is also very important to note that a market failure may not be the only reason why the regulator wants to intervene. In the Indian case, in recent years, digitalisation of payments has been a priority for public policy. Digital payments are often viewed as having characteristics of public goods, especially in emerging markets. In fact, the government of India recently emphasized that it views digital payments through UPI as a public good.<sup>9</sup> It is not clear if the same applies to debit cards, especially in the presence of a cheaper alternative like UPI.

### ***Should MDR for debit cards be a percentage of the transaction value or should it be a fixed amount irrespective of the transaction value?***

MDR in the form of a fixed fee independent of the transaction value implies that merchants would pay relatively higher fees for small value transactions. This would discourage merchants from accepting small value payments by debit card. Additionally, this may favour larger merchants who i) may process more large value transactions than small value, ii) can afford to accept small value transactions with higher fees.

### ***Among the two options (waiving/reducing MDR or giving incentives to cardholders), which is more effective for increasing use of digital payments?***

This is an empirical question. To understand whether merchant or consumer incentives work better, we would need to observe/estimate merchant and consumer price elasticities. This would require a large but important data collection exercise to gather information on consumer fees, consumer rewards programs, merchant fees, transaction values and merchant turnovers.

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## Unified Payments Interface (UPI)

### *In the context of zero MDR for UPI transactions, would subsidizing costs be a more effective alternative?*

The MDR for all UPI transactions is set at 0 by regulation since January 2020. The motivation behind this regulation was to encourage digital payments, implicitly based on the view that digital payments have a public good nature. The annual government budget allocates funds to incentivize banks and payment service providers (PSP) to expand their UPI business. However, stakeholders suggest that these funds are not sufficient to cover their operational costs.<sup>10</sup> The payments council of India reported that in January 2022, the payments industry expected a loss of Rs 5500 crores due to the MDR being set at 0. Moreover, banks and PSPs also argue that revenue from their payments services is important for future innovation. In other jurisdictions, which have similar products (take for example, Pix in Brazil), while the consumers are not charged on any transactions, banks are allowed to charge merchants a fee for accepting transactions. Thus, there is an economic case to be made for letting banks set non-zero MDR.

In practice, however, since most of the transactions carried out by UPI are low value, if the MDR is increased from 0, it may induce many small merchants to stop accepting UPI payments. The extent of this would depend on how elastic merchants are on average to changes in MDR, as well as how the ease of cash availability. If most consumers hold cash irrespective of whether or not they use UPI, small merchants will not lose sales by not accepting UPI payments. Even if merchants still benefit from accepting UPI transactions (net of the MDR), there is an additional behavioral concern. Since zero MDR is now the benchmark, merchants may already be anchored to it and reluctant to accept an increase in fees even in case of net benefit.<sup>11</sup> One way to address this might be to have a tiered fee structure, with exemptions for small merchants or small value transactions.

To understand whether costs should be subsidized instead, there is an urgent need to gather data on consumer and merchant behavior, and on costs faced by banks and PSPs. This would help obtain tangible evidence to inform policy.

### *If charges are introduced, should they be administered by RBI or be market determined?*

Economic ideas on whether fees should be regulated by the RBI or market determined follow the same principles as the setting of the debit card interchange fee discussed previously. In fact, for any regulation concerning the setting of fees (for UPI, debit or credit cards), it is important to note the interdependencies between these substitutable forms of payments. The fees for one instrument are likely to affect all others and the uptake of all digital payment instruments are likely to be affected ultimately by consumers' preferences for using cash. Unfortunately, there is not much evidence (theoretical or empirical) to shed light on the optimal fee structure when these interdependencies between payment instruments are taken into account. Lastly, for the particular case of UPI, any discussion on fee setting will depend on the extent to which it is viewed as a public good.

## SUMMING UP

As digital payments become increasingly important to achieve goals of financial inclusion, issues related to their pricing are at the forefront of public discussions.

The economic literature on two-sided markets can be useful to inform pricing policies, though there is a need to simultaneously gather more data to provide empirical evidence for the theoretical insights.

Any regulation on pricing, especially in the context of emerging economies, would need to strike a balance between expanding access to digital payments and ensuring that service providers have sufficient incentives to innovate.

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1. These are the author's personal views and do not reflect the views of BIS. The author thanks Claude Crampes and Jean-Charles Rochet for very useful comments.
  2. [Discussion Paper on Charges in Payment Systems](#) (Available for public comments up to October 3, 2022). Reserve Bank of India, Department of Payment and Settlement Systems Central Office, Mumbai.
  3. Rochet, J.C. and Tirole, J., 2011. Must-take cards: Merchant discounts and avoided costs. *Journal of the European Economic Association*, 9(3), pp.462-495.
  4. [Antitrust: Regulation on Interchange Fees](#) (europa.eu)
  5. Rochet, J.C. and Tirole, J., 2002. Cooperation among competitors: Some economics of payment card associations. *Rand Journal of economics*, pp.549-570.
  6. Rysman, M. and Wright, J., 2014. The economics of payment cards. *Review of Network Economics*, 13(3), pp.303-353.
  7. Ibid.
  8. Manuszak, M.D. and Wozniak, K., 2017. The impact of price controls in two-sided markets: Evidence from us debit card interchange fee regulation.
  9. [Upi: Finance Ministry refutes plans to levy charges on UPI transactions - The Economic Times](#) (indiatimes.com)
  10. <https://www.financialexpress.com/industry/banking-finance/who-should-bear-the-cost-of-upi/2654749/>
  11. Furnham, A. and Boo, H.C., 2011. A literature review of the anchoring effect. *The journal of socio-economics*, 40(1), pp.35-42.



## About the FIT IN Initiative

In November 2020, the Toulouse School of Economics launched the Financial Inclusion Through INteroperability Initiative to catalyze new research to constructively influence the design and regulation of interoperable digital financial services systems in low- and middle-income countries.

The main objective of this four-year research initiative is to better understand the implications of alternative competition and regulatory policies and ultimately inform policies to expand the scope, improve the quality and reduce the cost of digital payment systems for impoverished users.

The FIT IN Initiative receives support from the **Bill & Melinda Gates Foundation's** Financial Services for the Poor program.

For more information: [www.tse-fr.eu/groups/FIT-IN-Initiative](http://www.tse-fr.eu/groups/FIT-IN-Initiative) / [fitininitiative@tse-fr.eu](mailto:fitininitiative@tse-fr.eu)





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*Publication codirector:* Milo Bianchi

*Editorial contributions:* Vatsala Shreeti, Milo Bianchi, Claude Crampes, Jean-Charles Rochet

*Photos:* StudioTchiz, Unsplash

*Cover photo:* Photo by Evgeny Nelmin on Unsplash

**Toulouse School of Economics**

1, Esplanade de l'Université  
31080 Toulouse Cedex 06  
FRANCE

Tel: +33 5 67 73 27 68

[www.tse-fr.eu](http://www.tse-fr.eu)