Interchange determination: An assessment of the regulation of interchange in South African in light of international developments

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ABSTRACT

From a competition perspective the setting of interchange rates raises two key concerns. Firstly, that the setting of multilateral interchange rates by banks together may be collusive and lead to higher prices. Secondly, there is a concern that high interchange fees incentivize the use of higher cost payment options. This creates a preference for cards over less expensive options and could therefore be distortive. The Competition Commission Banking Enquiry, which took place between 2006-2008 raised several concerns related interchange setting within a South African context. In their final report the Enquiry Panel made several recommendations related to interchange setting and processes. This ultimately resulted in the South African Reserve Bank embarking on an interchange determination project, culminating in the publication of interchange rates for ATM, debit and credit cards in 2014.

During the intervening period, however, there have been various developments in the international literature and practice related to interchange, notably the introduction of regulation of debit card fees in the US, the EC settlements with Mastercard and Visa in relation to their interchange fees and greater research into the various effects of regulation of interchange fees in Australia. This paper seeks to firstly, to outline the developments and debates related to the regulation of interchange as reflected by the international literature and experiences and secondly, to assess the results of interchange determination project relative to the recommendations of the Enquiry panel and international experience.

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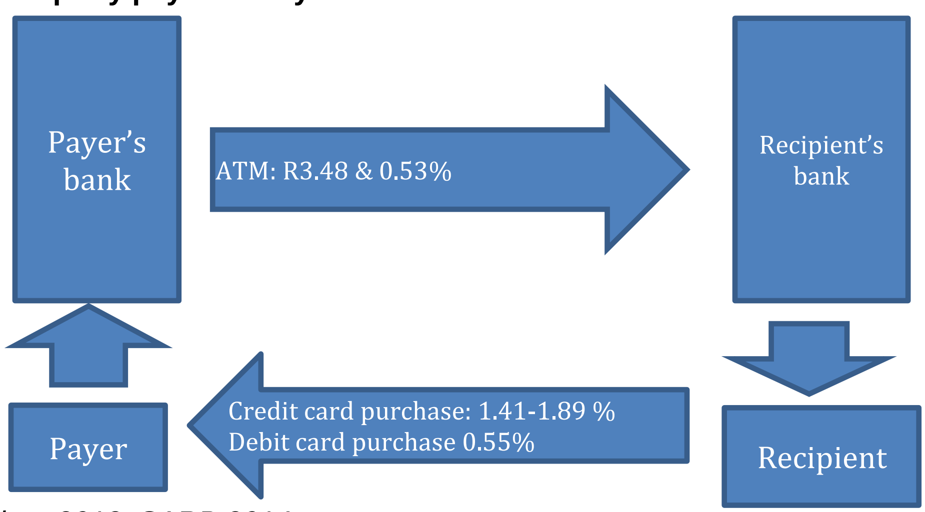
Outside of cash transactions, most payments made within South Africa utilise the services of one or more banks in order to transfer value from one party to another. Where the parties have different banks, each bank generally levies their customer for their services in affecting this transfer. This is generally referred to as interchange. More precisely, however, the South African Reserve Bank (SARB) defines interchange in the context of payment systems to be "*the process whereby banks, through their devices, systems and procedures, facilitate the acceptance, collection, exchange, clearance and settlement of payment instruments utilised by their customers within the National Payment System*" (SARB, 2012).

Interchange is used across various types of payment streams including automatic teller machine (ATM), debit and credit cards, and electronic fund transfers. Interchange has most commonly been analysed and discussed within the context of credit and debit card payments made through what is termed a four party payment model (the four parties being the customer, the customer's bank, the merchant, and the merchant's bank). In this model, if a consumer wishes to buy a product or service, they would present their credit card to the merchant, who swipes the card through a Point of Sale (POS) device provided by or connected to the merchant's bank. The merchant's bank then sends a message to the payer's bank to deduct that amount from the payer's account. The payer's bank then pays the amount requested less the interchange fee to the merchant's bank, which then deducts a further fee before depositing the funds into the merchant's account.

Interchange rates vary considerably between different payment streams. Furthermore, interchange does not always flow in the same direction: interchange flows from payers to receivers in the case of credit electronic fund transfers (EFTs) while interchange flows from receivers to payers in the case of payment card interchange

Figure 1: Four party payments system model



Source: Volker, 2013, SARB 2014

Interchange has been a subject of contention from a competition perspective for various reasons.

- Firstly, there are concerns that the setting of multilateral interchange rates by banks together **may be collusive and lead to higher prices**. This is particularly a concern if banks are incentivized to set fees at a profit-maximising level, beyond the level required to promote card usage. This is likely to be passed through to customers in the form of higher prices for customers using both cards and cash.
- Secondly, there is a concern that high interchange fees **incentivise use of higher cost payment options**. Interchange subsidises cardholders so they do not pay the marginal cost of card usage. This creates a preference for cards over less expensive options and could therefore be distortive.

During the Banking Enquiry the panel made various recommendations related to interchange for ATM and card services. This included the following:

1. That ATM carriage or interchange is removed and ATM networks move to a direct charging model ("DCM").
2. That all interchange rates should be set at the lowest level possible. This should be based on a "*new independent, objective and transparent regulatory process for interchange in payment card and payment streams*" (Banking Enquiry Report, pg 236). The process should be participatory, be independently assessed on the basis of audited data and be overseen by regulators with public disclosure of all interchange agreements. It would be based on the development of an interchange forum open to all stakeholders that would determine the optimal level of interchange for each stream by developing general criteria, and getting information on costing (through a third party costing study) and demand elasticities. Decisions would be made by consensus or by the chairperson with reasons provided. There would also be an appeal procedure.

After the Banking Enquiry concluded, various stakeholders including the National Treasury and SARB agreed on the importance of determining an interchange process. However, there was debate over the form that it should take. It was decided that instead of an interchange forum made up of stakeholders the SARB would facilitate and oversee a revision of interchange rates for all payment streams (supported by NT and CC). This process is currently being undertaken and between December 2013 and March 2014 the SARB published new interchange rates for both card-related streams (SARB, 2014) as well as ATM transactions (SARB, 2013).

The Banking Enquiry took place between 2006 and 2008. At that time the international experience in regulating interchange was somewhat limited. In the years between 2008 and 2014 there have been various developments internationally in terms of the regulation of interchange. This has resulted in varying experiences and allowed for greater breadth and depth of research on this topic. Two key developments that have stimulated much debate and research are the following:

1. *The regulation of debit card interchange by the Federal Reserve in the US:* In 2011 a legislative amendment[1] was made to direct the Federal Reserve Board to regulate debit card interchange so that it is "*reasonable and proportional to the*

[1] This is known as the Durbin amendment to the Dodd-Frank Act

cost incurred by the issuer". This regulation limits the maximum interchange rate that an issuer could get from merchants in a debit card transaction.

2. *The Mastercard and Visa decisions in the EU:* After scrutiny from competition perspective the European Commission reached settlements with Visa and Mastercard allowing multilateral interchange fees of 0.20% for debit cards and 0.30% for credit cards using the "tourist test" (discussed in more detail later).

These and other attempts to regulate interchange, including the Australian experience in regulating interchange since 2003 has led to an expanded range of literature and discussion on the topic. In particular, the literature has grown in the following two areas.

1. The first relates to the appropriate test for setting fees. In particular, the development of the ""tourist test" (also known as the "avoided cost" or "merchant indifference test"), discussions of the validity and relevance of these tests and empirical derivations of the fee that this test implies (ultimately used in the Mastercard settlement).
2. The second development has been increased testing of both the benefits and the unanticipated consequences of regulation in jurisdictions in which it has occurred. This has provided greater insight into the workings of interchange regulation in different contexts and its impact on card companies, prices and consumers.

This paper is structured as follows:

- Firstly, we provide a brief review of selected developments in the international literature relating to interchange determination subsequent to the banking enquiry.
- Secondly, we outline the SARBs interchange determination process.
- Finally, using this background we discuss the SARBs approach to interchange in light of both the Banking Enquiry and international developments.

This paper focuses on the debit and credit card payment streams.

1.1 Interchange in the context of international developments

There have been various developments related to interchange internationally since the Banking Enquiry. Interchange regulation has occurred both in the US and in the EU, the former as part of a regulatory process, and the latter as a result of competition concerns and settlement negotiations. In addition, as time has passed since the introduction of regulated prices in Australia, there has been increased opportunity to assess the consequences of that legislation. In terms of theory, a key area of discussion and debate has been on the appropriate methodology to use to determine interchange rates and has focused on the use of the "tourist test" as opposed to a cost-basis.

It is generally agreed that interchange rates set privately are not likely to reflect the optimal rates. The theoretical literature notes a host of factors that determine the optimal interchange fee. These include the following (Evans 2011, Prager et al 2009):

- elasticities of cardholders,
- network effects between merchants and customers,
- transaction costs
- marginal costs
- competition in the issuing and acquiring side and
- price distortions in competing systems

However, it is generally agreed accepted that in most instances this data is difficult to come by, and estimation methods that incorporate the various facets have not been developed. As such, setting an optimal or appropriate interchange rate is extremely complex.

This complexity has led some economists to recommend that interchange is not regulated at all, as it is not possible to determine a correct price (Evans 2011). However, there are two key types of methodologies that have been applied in different jurisdictions.

A) A cost-based regulation of interchange (as used in Australia and the US)
B) The tourist test (used in the EU)

Cost-based regulation

Cost based regulation has been used in Australia for both credit and debit cards and in the US in the regulation of debit cards:

- **The regulation of debit card interchange by the Federal Reserve in the US:** In 2011 an amendment was made[2] to direct the Federal Reserve Board ("the Fed") to regulate debit card interchange so that it is "*reasonable and proportional to the cost incurred by the issuer*". This regulation limits the maximum interchange rate that an issuer could get from merchants in a debit card transaction. The legislation therefore specifies regulation solely on the basis of cost. The fees are set based on the Fed's evaluation of the costs associated with debit card fees. It explicitly specifies the incremental cost of processing, clearance and settlement. It furthermore allows for additional costs not specified and makes allowance for the consideration of various fraud and security factors. It exempts small issuers, government administered payment programmes and prepaid cards. The fee ultimately published as a result of this process is a fixed fee for processing costs (set at 21c), and an ad-valorem adjustment for potential fraud losses and fraud prevention costs (1c). The regulatory framework provided in the Durbin amendment has been criticized on the grounds that it was rushed through and contrary research published by economists at the Fed who state that there is no justification for cost-based regulation of interchange (Evans 2011, Prager et al 2009). This is discussed later.
- **Reforms by the RBA:** The Reserve Bank of Australia introduced a number of reforms to their credit card market in 2003, a key reform being the reduction of interchange rates. This was done on a cost basis with a cap on the weighted average interchange fee. Card companies still have flexibility to set different interchange rates for different types of transactions as long as the weighted average falls within the cap.

The use of a cost-based methodology in these jurisdictions has generated substantial controversy. On the one hand, it is argued that from a theoretical perspective there is no evidence that a cost based measure would be an optimal or even second best form of regulation (Prager et al, 2009). Furthermore, it is argued that this regulation results in various unanticipated consequences.

Empirical work suggests that the reforms resulted in the following:

[2] This is known as the Durbin amendment to the Dodd-Frank Act

1. *Changes to circumvent the regulations were made.*
    - Card issuers made changes to product offerings and pricing. This include reducing reward points and benefits to cardholders and increasing card fees. Wang (2012) quotes US studies that suggest that a large proportion of debit card issuers either did or plan to discontinue rewards plans. In addition, in the US one survey showed that non-interest checking account fees increased by 25% and the minimum balance for free-checking services rose by 23% due to factors including the interchange regulations. There is some evidence that Australian banks also increased fees to customers and reduced rewards following the reduction in interchange (Evans, 2011).
    - Since card companies had differential interchange prices for standard and premium cards it also resulted in banks upgrading customers or otherwise encouraging the use of premium cards with higher interchange fees.
2. *In the US merchants were affected asymmetrically*.
   Interchange fees rose for smaller ticket merchants who had previously benefited from a discounted interchange fee to encourage card acceptance for small ticket items. However, post-regulation this changed so that all transactions were subject to the the maximum capped amount. This resulted in small ticket merchants raising prices, encouraging alternative means of payment or dropping card payments. However, this is specific to the structure of the regulated fee (a fixed fee rather than an ad valorem). (Wang, 2012)
3. *A redistribution of interchange revenue from issuers to merchants.* This has been supported by empirical work which suggests limited evidence of past-through in some contexts. For example, some literature argues that the reforms made consumers in Australia worse off since there was little evidence of a pass-through, and that pass-through was unlikely in any instance given the concentrated nature of retail in Australia. The argument made is that the reforms led to increased card fees and reduced rewards for consumers, and that merchants kept a windfall from the reduced interchange rates (Evans, 2011).

Concerns have also been raised that a cost-based regulation, in setting a level that is too low, reduces incentives for innovation (Evans, 2011).

At the same time, arguments made in support of such cost-based regulation of interchange were also made, and include the following:
1. That it improves transparency and implementation is straightforward.
2. That merchant service fees decline. This addresses the core concern that prices are too high.
    - That the decline in prices could increase merchant acceptance of cards. The importance of this depends on the extent to which cards are accepted.
    - That the decrease in fees reduces the merchant cost base and may be passed through to customers. The extent of pass-through is a function of the competitiveness of the retail environment.
3. That while card fees may rise this provides better price signals and therefore incentivizes use of more cost effective payment methods.

A review by the RBA in 2008 concluded that their key objectives were met which was increased transparency, improved competition (by removing restrictions on merchants and liberalizing access) and more appropriate price signals.

As such, evidence from Australia and the US supports the theory that lower interchange rates (using a cost basis) provide better signals for customers. However, there is controversy as to whether the reforms led to reduced consumer surplus to the benefit of retailers.

The alternative methodology that has been used internationally is the "tourist test", also known as the "merchant indifference test" and the "avoided cost test".

The tourist test was proposed by Rochet and Tirole in 2007. They show that under certain conditions an interchange fee may exceed the optimal level. If it is too high, a merchant who accepts card payments may turn down the card payment of a non-repeat customer (the tourist) who has both cards and cash in order to reduce operating costs. However, from a societal point of view it would have been better if this customer had used his card. They therefore propose a benchmark for regulatory intervention that requires that the fee does not increase the merchant's net operating cost relative to cash acceptance. It is therefore an interchange level that renders merchants indifferent between different means of payment and therefore internalizes externalities. Literature has shown that the tourist test is allocatively identical to perfect surcharging by merchants.

Much of the literature supports the conclusion that a regulated interchange fees should not lie below the level set by the "tourist test", which has been termed a "conservative regulatory benchmark" (Rochet and Wright 2010). It should be at least equal to the difference between the merchant's benefit from card usage and the acquiring costs. However, this may be too low if:

1. It does not reflect profit and therefore has a long-run impact on entry, innovation and end-user welfare
2. It does not reflect negative social externalities of other uses of payment (eg. cash preference due to tax evasion)

However, there are complexities in setting this rate too. For example, there are suggestions that the correct alternative may not always be cash. Rochet and Wright, for example note that for credit cards the cap on the level of interchange should be the cost of providing store credit rather than the cost of cash.

In 2007 the EC ruled that Mastercard's multilateral interchange fee (MIF) violated competition policy. Subsequently, the EC DG Comp provided a list of criteria, which needed to be met in order for a multilateral interchange fee to fulfill exemption criteria. These were to demonstrate:

1. empirical proof that the MIF creates efficiencies that outweigh the restriction of competition
2. consumers get a fair share of those benefits
3. there are no less restrictive means of achieving the efficiencies and
4. competition is not eliminated altogether.

This would be assessed by the Commission who would ascertain that that the "concrete model" underlying a multilateral interchange fee is based on realistic assumptions, is plausibly implemented through an objectively verifiable methodology and that it yields the objective efficiencies on the market claimed by the parties. They also state that the methodology underlying the interchange fee should be transparent to the final users of a scheme (EC Memo/07/590).

Mastercard ultimately responded to the regulations by choosing to set its interchange rates based on the “tourist test” or the merchants cost of accepting a card against their cost of accepting cash. This was based on studies by the central banks of Belgium, the Netherlands and Sweden. It resulted in the European Commission approving settlements with Visa and Mastercard that allowed interchange fees of 0.20% for debit cards and 0.30% for credit cards for cross-border interchange fees.

However, the tourist test too has its critics and the EC themselves state that the tourist test has limited applicability noting the following:

1. That while a MIF at appropriate levels makes the use of efficient payment instruments more attractive to consumers other (less-restrictive) mechanisms may do so as well in some markets. They provide the example of merchants themselves incentivizing the use of less costly payment instruments by applying rebates to those means of payment. In this case it is stated that a MIF may not be indispensible, as direct incentives given by merchants may internalise network externalities between merchants and users of payment instruments more directly.
2. That when payment cards reach universal usage in a market without MIF, the need to have interchange to promote the issuing of cards (in terms of network effects) would vanish.
3. That there must be a reasonable channel through which interchange fees can promote the use of cards. For example, they note that reward programmes for debit cards typically do not exist and that cardholding is already widespread (but not complete). Therefore, the DG Competition does not consider that possible future increases of the 'tourist test' estimation for debit cards would necessarily justify an increase in the debit card MIF, unless payment card associations can ensure that the banks receiving such a higher MIF have installed appropriate cash-back programs for debit cards that could directly incentivise a wider use of debit cards on a per-transaction basis.

1.2 The SARB Interchange Determination Project

Based on the recommendations of the Banking Enquiry, which called for a new objective and transparent regulatory process to set card interchange, the Competition Commission, the National Treasury and the SARB decided that interchange rates would need to be reassessed. The SARB was tasked with overseeing a process to independently determine interchange rates, subsequently named the interchange determination project (IDP). The project had two phases.

The first was a review of interchange rates in all payment streams. The second phase was a project to evaluate and determine the costs of providing payment services in a particular payment stream and determining an appropriate interchange rate for the industry. The second phase of the IDP was undertaken by KPMG under the oversight of the SARB. The project thus far has centered on two payment streams, ATM and card-related streams. This resulted in the determination of ATM interchange fees in December 2013 and the publication of the results of the card phase, encompassing traditional cards (debit, credit and hybrid), self-service devices, over the counter transactions and cash-back at point-of-sale, in March 2014.

The summary published by the SARB on 20 March 2014 states that, based on interaction with various stakeholders and investigative research, it was ultimately decided that a cost-based methodology would be used. The guiding principle used in the analysis was "*the safety and efficiency of the National Payment System"*. (SARB Media release, 20 March 2014)

The final rate published by the SARB is described as being based on the true cost of interchange. In addition, the SARB concluded that the current definitions and structure were dated and did not cater for what is termed "*elements of growth, innovation and security*".

One of the decisions taken was to increase the number of tiers to allow for different incentive structures. The project team also looked at additional topics including whether specific interchange rates were required for fuel, government and low-value payments, and to clarify card-related issues such as definitions.

The costing methodology used was as follows:

1. The minimum costs incurred were used.
2. Only costs that were beneficial to cardholder and merchant were included.
3. Standardised costs for reducing risk in the card payment system were used.

In addition factors such as access to financial services, stability, innovation, and concerns over safety features were considered.

In terms of definition and structure there were two key changes:

1. Hybrid and debit cards were collapsed into one category. This was based on their similarity in both function and cost.
2. The tiers for interchange rates were increased from 3 levels to 12 levels. The applicable tier is determined as follows:
    a. Card classification: Is the card a debit or credit card? The base rate is based on the general costs of debit or credit card.
    b. Nature of transaction and associated risks: Is the card present at purchase or not? A margin is added based on the risk of a card being present or absent.
    c. Security behaviour incentives: Is the card issuer, acquirer, or both 3D secure or EMV compliant? This provides an additional margin to drive adoption of safer systems namely EMV and 3D secure compliance which have anti-fraud security.

The resulting rates are as follows:

	Debit card before	Debit card after	Credit card before	Credit card after
Card-present purchase (issuer and acquirer EMV compliant)	0.55%	0,44%	1.71%	1,48%
Card-present purchase (only the issuer is EMV compliant)	0.55%	0,52%	1.71%	1,55%
Card-present purchase (only the acquirer is EMV compliant)	0.55%	0,36%	1.71%	1,41%
Card-not-present purchase (issuer and acquirer is 3D Secure compliant)	0.55%	0,48%	1.71%	1,73%
Card-not-present purchase (only the issuer is 3D Secure compliant)	0.55%	0,53%	1.71%	1,89%
Card-not-present purchase (only the acquirer is 3D Secure compliant)	0.55%	0,43%	1.71%	1,57%

Source: Volker, 2013, SARB, 2014

In addition, an interchange rate of R1.11 for cash-back at point-of-sale was applied.

The SARB has noted that it will monitor interchange on an annual basis to assess whether there is the need for change based on cost trends and innovations and to evaluate the qualitative incentives embedded in the rates.

1.3 Assessment of the SARB determined rates in light of international precedent

The methodology used in South Africa by the SARB is a cost basis. This is in line with the methodology used in the US and Australia. While it is not in line with theoretical developments, which focus on a tourist test or perfect surcharging, the benefits of a cost-based interchange rate include ease of implementability, transparency and a reduction in costs.

While there is limited publicly available information on the considerations behind the methodology chosen, and the detail of the methodology used, some observations can be made regarding the interchange rates published by the SARB.

Firstly, the interchanged rates published appear to be high in relation to other regulated interchange fees.

Given the variation in the way interchange is set internationally, making direct inter-country comparisons is difficult. However, the table below provides a comparison with some of the regulated interchange rates internationally. It becomes apparent that the rates in South Africa are relatively high compared to other regulated fees.

Interchange fees	Credit card	Debit card
South Africa	1.41-1.89%	0.36-0.53%
US	Not regulated- standard rate approximately 2.70%+10c	0.05% + 0.21c
Australia	0.5% weighted average	12c
Europe (Mastercard)	0.30%	0.20%

To some extent variation across countries is expected. Differing transaction volumes and systems mean different average costs. In addition, even from a regulator perspective difference in policy focus is likely to lead to different incentive systems. Countries that are trying to encourage movement from debit to credit cards, or to incentivise payment by cards rather than cash are likely to structure their fees differently. Nonetheless, the credit card stream in particular appears to attract a fairly high interchange rate at more than three times that of Australia, and more than four times that of the EU.

Secondly, the policy focus appears to lean heavily towards security of the NPS with <u>no explicit focus on consumers</u>. The key reason behind interchange is to balance the requirements of acquirers and issuers within a two sided market. As such, in determining a regulated interchange fee it is necessary to weigh up the need for merchant acceptance against consumer subsidy required to promote card usage. The relative weights vary depending on the context. In some jurisdictions such as Australia policy explicitly focuses on improving signals to encourage customers to use cheaper payment options and this results in an interchange fee that reduces consumer subsidies and decreases merchant fees. In other scenarios (particularly in the early days of card usage) consumer subsidy was promoted to encourage card usage and enhance the network effects. While security features and fraud prevention always form a part of the cost base in regulated systems, to our knowledge it is rarely a key policy focus. In South Africa, the interchange determination project appears to have not clearly defined its policy objective in terms of consumer and merchant costs. It is not clear whether the SARB is promoting card diffusion, incentivising wider merchant acceptance or trying to balance both. However, the focus is clearly on security of payment systems. This can be seen clearly by the fact that higher interchange rates are provided for those that are utilising 3D and EMV systems to incentivise migration to the more secure systems. While these systems may have different costs, this may also be contrary to a cost-based approach, as more secure systems would entail less risk and therefore should be associated with lower fraud costs. The incentivisation of more secure system was discussed with respect to EMV cards as early as 2007 when they were being introduced to the market (Banking Enquiry Report, Pg 270). However, it is not clear for how long such incentives would be required. In addition, it is not clear whether the benefits of such incentivisation outweigh the effects that the higher interchange fees associated could have on consumers and merchants. We would argue that the interchange fee should be set with regard for security, but with a far stronger focus on consumer effects and an explicit link between the policy objectives regarding consumers and the methodology used to set the interchange rate.

Thirdly, the interchange rates set appear to promote credit card use.

The interchange rates published by the SARB have an interchange rate for credit cards that is more than one basis point higher than that provided for debit cards. Credit cards generally have a higher interchange fee than debit cards for two reasons. Firstly, there are greater risks associated with payment by credit and secondly, credit cards usually have reward schemes to incentivise card usage. In South Africa it can be argued that interchange rates can be used to encourage payment card diffusion. Payment cards are preferable to cash for various reasons. It is safer, allows for entry into the formal economy and allows banks to understand consumer behaviour better. Payment cards should therefore be encouraged. However, there is greater debate as to whether credit cards or debit cards should be incentivized. It is not clear whether the SARB has included the cost of rewards to incentivise credit card usage or not in their estimation of the cost of interchange. Ultimately, the fact that credit cards attract a higher interchange rate is likely to incentivise issuance of credit over debit cards.

Conclusion

While the SARB has provided information on the broad methodology used to determine interchange rates, there is insufficient clarity over the broad regulatory objectives that underpin the determination of interchange rates and the prioritisation thereof. Clear objectives are essential to developing, understanding and assessing the regulatory methodology and as such should be explicit. For example, it is not clear whether the SARB is prioritising a more transparent framework, lower rates for consumers, encouraging greater payment card diffusion or merchant acceptance, or utilising the interchange rate as a mechanism for improving payment security. Understanding the prioritisation in terms of objectives is important to be able to fully assess whether the interchange methodology and rates published are suitable to the needs of South Africa. Absent this information it is difficult to fully assess the interchange methodology and structure. From the information available it appears that the SARB has chosen a payment methodology that is consistent with easy implementation, improved transparency and clearer price signals. However, the structure appears to incentivise security rather than focusing on consumers, which may distort price signals. In addition, it appears that credit card issuance is being incentivised in relation to debit cards, which is a policy outcome that could raise debate. Finally, the level of the interchange rates published is high relative to those determined internationally. While there may be sound reasons behind this it does raise concerns over whether it incorporates the cost of customer reward schemes (and subsequently, whether it should include such costs) and whether it brings down costs sufficiently.

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