



Payments Regulation in Asia

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Report Introduction

In collaboration with Amazon, CMSPI is pleased to present this paper on payments trends and regulations across four of the largest retail payments markets in the Asia Pacific region. The countries in scope are Japan, India, Singapore, and Australia. Across these countries, card payments represent between 15% and 40% of total retail payments, and this share has been growing in some countries by 3x in just five years. This report will examine the key trends around cost, consumer behavior, and regulation in each of the jurisdictions covered.

In almost all four countries, card fees, particularly interchange fees and scheme fees, have either risen, or been cited as an issue for merchants due to the high costs of acceptance.

In addition, when merchants sign card acceptance agreements with the card networks, they are bound by the rules of the card networks. These rules can include restrictions on merchant treatment of the card brand (i.e., prohibitions on card surcharging) as well as limitations on merchant choice of acceptance. For example, 'honor-all-cards' rules by the global networks may require debit-accepting merchants to accept credit cards, which can cost nearly twice as much as debit cards. Given the market share that the global card networks maintain, merchants are not always able to turn off acceptance of card networks without sacrificing potential sales and customer convenience. In addition, card-accepting merchants are exposed to the asymmetric treatment of interchange within the two-sided card market. As networks compete for issuance, the price of interchange is driven up, a phenomenon sometimes referred to as reverse or 'perverse' competition.¹

Citing rising fees, regulatory interventions have been taken by certain markets with the intention to alleviate rising fees and establish a more efficient payments market. This report examines merchant-focused regulatory interventions in two ways: competition and controls **within** the card market and competition **with** the card market through investment in local competitor payment methods.

Within the card market, regulators have enacted a variety of interventions, such as setting the maximum price of interchange, thus curtailing the effects of reverse competition; mandating competition on card payments through the use of co-badging; guaranteeing merchant rights to surcharging; and mandating pricing disclosure of interchange fees. The report examines the approach by each country to intervene on rising card costs and analyzes publicly available data associated with the costs of card acceptance.

Regulators have also invested in pay-by-bank infrastructure which offers an alternative route for digital payments. In some countries, usage of pay-by-bank solutions has grown dramatically, surpassing the share of cards for retail payments in-store and online. Typically, these solutions offer efficiencies above card rail offerings, such as faster settlement and greater interoperability, and are usually lower cost for processing than card payments. Digital wallets are also able to build on and integrate with pay-by-bank rails, offering consumers and merchants an alternative to card payments as well.

1

<https://constantinecannon.com/wp-content/uploads/2016/03/NYB104.pdf>

Competition within the card market, competition with the card market, and regulation protecting market competition and efficiencies are essential to a functioning payments system, and this report examines how these areas have applied to the countries in scope.

Payments Fees Definitions

For each card transaction, the merchant must typically pay three members of the supply chain:



A network fee, or scheme fee, is typically set and received by the network operator for that given transaction.



A processor fee, or acquirer fee, is typically set and received by the merchant's bank or acquiring bank, the party that helps facilitate the acceptance of card transactions.



An interchange fee, typically the largest of the three, is typically set by the network operator for that given transaction and received by the consumer's issuing bank. Interchange functions as an incentive for issuers to 'badge' a given network on a card. For example, if an issuer is launching a new credit card and requires a network operator for that card, and Network A prices interchange higher for a given card than Network B, then the issuer would receive a higher fee per transaction if badging Network A.

The sum of these three fees is what's commonly referred to as the Merchant Discount Rate (MDR) or the Merchant Service Charge (MSC).

Payment Method Definitions²

Account to Account: Electronic payments made directly from one party to another while bypassing card network rails. A2A payments are embedded in apps and online services such as Pix in Brazil, iDEAL in The Netherlands and BLIK in Poland.

Buy Now, Pay Later: BNPL service providers settle a payment with the merchant at the time of purchase while allowing consumers to pay for goods and services at a later date, typically in a finite set of installments and without interest if repaid within the agreed time.

Cash and Cash on Delivery: Cash is limited to physical cash or checks and excludes central bank digital currencies (CBDCs). Cash on Delivery is defined as goods ordered online and paid for with cash at the time of delivery.

Credit Card: Credit cards are issued by financial institutions affiliated with a global card brand network. Credit cards allow consumers to make purchases via an extension of credit from a financial institution.

² Given the basis of the payment method analysis is primarily based on 2017-2023 WorldPay Reports on Global Payments, all definitions can be sourced from the 2023 report unless otherwise specified.

Debit Card: Cards that facilitate purchases with funds directly debited from consumer accounts held at a financial institution. Debit cards are issued by financial institutions in affiliation with a global card brand network.

Digital Wallets: Visa defines three types of digital wallets.³ These are pass-through wallets⁴, stored value wallets, and staged digital wallets. Pass-through wallets are typically mobile phone-based solutions that allow customers to pay in-store or online, usually via a tokenized, digital version of their physical Visa product. Stored value digital wallets operate like prepaid cards, which the customer pre-loads with funds using a payment credential before being able to transact with sellers. Staged digital wallets can perform 'real-time load' transactions which allow the customer to make a transaction when there are not sufficient funds pre-loaded in the digital wallet account.

POS financing: Credit extended to consumers at the point of sale. This includes credit offered by retailers, financial institutions and third-party BNPL services such as Klarna, Afterpay and Affirm.

PostPay: Consumers order products online and pay for them in full later at an affiliated physical store or ATM.

Prepaid card: Cards issued by financial institutions that run scheme networks such as Visa and Mastercard and that are funded in advance. Prepaid cards can be funded once or reloaded, and they can be used to make purchases as easily as debit or credit cards.

PrePay: Services that allow consumers to make e-commerce purchases without a card account and without providing personal data. Services such as Paysafecard and Neosurf offer flexible payments via vouchers redeemable at participating merchants.

Others: Emerging and otherwise uncategorized e-com payment methods, like mobile carrier billing and central bank digital currencies.

3 <https://usa.visa.com/content/dam/VCOM/global/support-legal/documents/digital-wallet-guide-march-2023.pdf>

4 <https://usa.visa.com/content/dam/VCOM/global/support-legal/documents/digital-wallet-guide-march-2023.pdf>

Price Signaling, Competition Within the Card Market, Interchange Caps, and Pricing Transparency – Executive Summary

Merchant payment costs, as exhibited in the methodology section below, are complex and rising to the point where regulators are stepping in. To combat rising complexity and costs of acceptance, regulators and lawmakers must ensure that merchants have unfettered access to resources and tools that offer greater control over payment costs. These tools can come in the form of price signaling protections, co-badging requirements and routing rights, and transparency or disclosure standards. In addition, some governments have set price controls on the level of interchange.

Measuring Success of Regulatory Interventions

In this section of the report follows a review of the effectiveness of various government interventions to reduce merchant costs of acceptance or prevent merchants and consumers from incurring higher payments costs. This is done by examining regulatory interventions on price signaling, co-badging and routing, interchange caps, and pricing transparency by each country in scope and evaluating interventions against publicly available data on merchant payments costs.

Price Signaling

DEFINITION

Price signaling involves the conveyance of information about a company's pricing intentions to competitors, customers, or the broader market, either explicitly or implicitly, with the aim of influencing market behavior or expectations. For retail payments, price signaling can come in the form of a card surcharge (typically a percent-based fee levied on the customer's bill should the customer pay with a payment card) or cash discounting (typically a percent-based discount subtracted from the customer's bill should the customer pay with cash).

COUNTRY IMPLEMENTATION

Where national or local regulators do not intervene, the global network rules apply. For Visa and Mastercard, networks prohibit merchants from levying a fee on top of the transaction price unless applicable laws or regulations require that a merchant be permitted to impose a surcharge. Across the four countries reviewed, Australia is the only country in which surcharging has been regulated as a guaranteed right for merchants.

Despite the difficulties of surcharging, network prohibitions on cash-discounting are limited, however there are no regulatory guarantees in any of the countries surveyed that protect cash-discounting.

IMPACT ANALYSIS

In 2003, the RBA permitted merchants to surcharge at the cost of acceptance but must ensure that the surcharge is adjusted to be percentage-based or per item fee based on how the underlying costs are applied. Network rules in Australia have been adjusted to account for the national regulation, with Visa and Mastercard both requiring the surcharge to be reasonable and proportional to the cost of acceptance. In the years following the introduction of surcharging rights, there has been a

steady decline in the cost of acceptance for certain cards. While many factors influence this decline, surcharging allows merchants to apply persistent and consistent pressure on the card networks to reduce costs of acceptance.

In the 15-year period following implementation of interchange caps and surcharging laws, the cost of accepting American Express cards fell from above 2.5% to below 1.5%. This appears to be the effect of indirect downward pricing pressure as a result of the interchange caps as well as the prevalence of surcharging on American Express credit cards.

Based on the results of an Australia Competition & Consumer Commission survey, almost three out of four consumers would continue with the transaction if they "encountered a 'high' transaction fee and no fee free alternatives."⁵ However, nearly one in four would cancel the purchase, but this can vary by country and channel. For example, price sensitivity may be more prevalent in certain countries and industries.

KEY TAKEAWAYS

- **Limited Implementation by Regulators:** Only Australia, one country of the four in scope, has protected surcharging rights for merchants. In all other markets, global network prohibitions on surcharging apply. Despite those restrictions, some countries, such as Singapore, have seen surcharging occur in certain sectors.
- **Surcharging May Apply Downward Pressure on Uncapped Card Types:** As observed in Australia, American Express and Diners Club cards were exempt from the 2003 interchange caps, and yet have seen their total merchant fees steadily fall in the period 2003-2023. American Express rates have fallen from 2.51% in 2003 to 1.32% in 2023. While many factors influence this decline and controlling for myriad factors is empirically difficult, it's possible that surcharging has contributed to this decline.

Interchange Caps

DEFINITION

Interchange fees, the fee set by global card networks, paid by the merchants, and received by the issuing bank, is typically the largest portion of the MDR. To prevent rising interchange fees, central banks around the world have set caps on the price of interchange. These caps range from per item, to percent, to weighted-average limits.

COUNTRY IMPLEMENTATION

Across the countries surveyed, only Australia currently has interchange caps across credit and debit transactions. The table below presents current and former interchange caps by region:

| Country | Effective Date(s) of Current Cap | Credit | Debit | Exceptions |
|-----------|---|---|---|--|
| Australia | 2017, 2021 (updated debit) | 0.5% weighted avg (0.8% for individual txns) ⁶ | AUD 0.08 (~\$0.05) weighted avg. (\$0.10 or 0.2% for individual txns) ⁷ | Three Party Card Networks, International Cards |
| Singapore | No Debit or Credit Interchange Cap in Singapore | | | |
| India | 2018 | - | 0.9% (POS/online), 0.8% (QR code) ⁸ ; for SMBs 0.4% (POS/online), 0.3% (QR code) | Credit Cards, International Cards |
| Japan | 2019 (discontinued) | 3.25% | - | Debit Cards |

Table 1. Interchange Caps (Current and Discontinued) by Country

IMPACT ANALYSIS

Immediately following the enforcement of the 2003 interchange caps and surcharging protections in Australia, there was a sharp decline in Mastercard and Visa average cost of acceptance for Australian merchants. Between Q1 2003 and Q1 2004, the average Visa and Mastercard cost of acceptance fell from 1.45% to 1.08% (Figure 1).⁹

⁶ <https://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/conclusions-paper-may2016/interchange-fees-and-transparency-of-card-payments.html>

⁷ The RBA also established a sub-benchmark for the weighted average interchange cap of single-network debit cards (SNDCs) at AUD 0.08 to remove incentives for issuing these kinds of cards. [https://www.rba.gov.au/payments-and-infrastructure/review-of-retail-payments-regulation/conclusions-paper-202110.pdf](https://www.rba.gov.au/payments-and-infrastructure/review-of-retail-payments-regulation/conclusions-paper-202110/pdf/review-of-retail-payments-regulation-conclusions-paper-202110.pdf)

⁸ Small merchants have an annual turnover below Rs 20 lakh (~\$24k) <https://www.medianama.com/2017/12/223-rbi-md/>

⁹ <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

KEY TAKEAWAYS

- **Limited Implementation by Regulators:** Only Australia, one country of the four in scope, has active interchange caps for credit and debit transactions. While Japan had previously introduced an interchange cap of 3.25% on credit transactions, due to significant pushback from the credit card industry, lawmakers reversed their stance, allowing card companies the discretion to decide whether or not to uphold the cap.¹⁰ India's market has introduced interchange caps for debit and UPI-enabled transactions, but credit transactions remain uncapped.
- **Immediate Drop in Interchange Fees:** In Australia, the market with the most robust public reporting on card fees, there was a precipitous drop in the average total merchant fees for Visa and Mastercard credit and debit rates. From Q3 to Q4 2003, Visa and Mastercard total merchant fees fell from 1.44% to 1.18%, the largest single drop in average rates quarter-over-quarter. By Q1 2004, average Visa and Mastercard rates reached 1.08% (Figure 1).

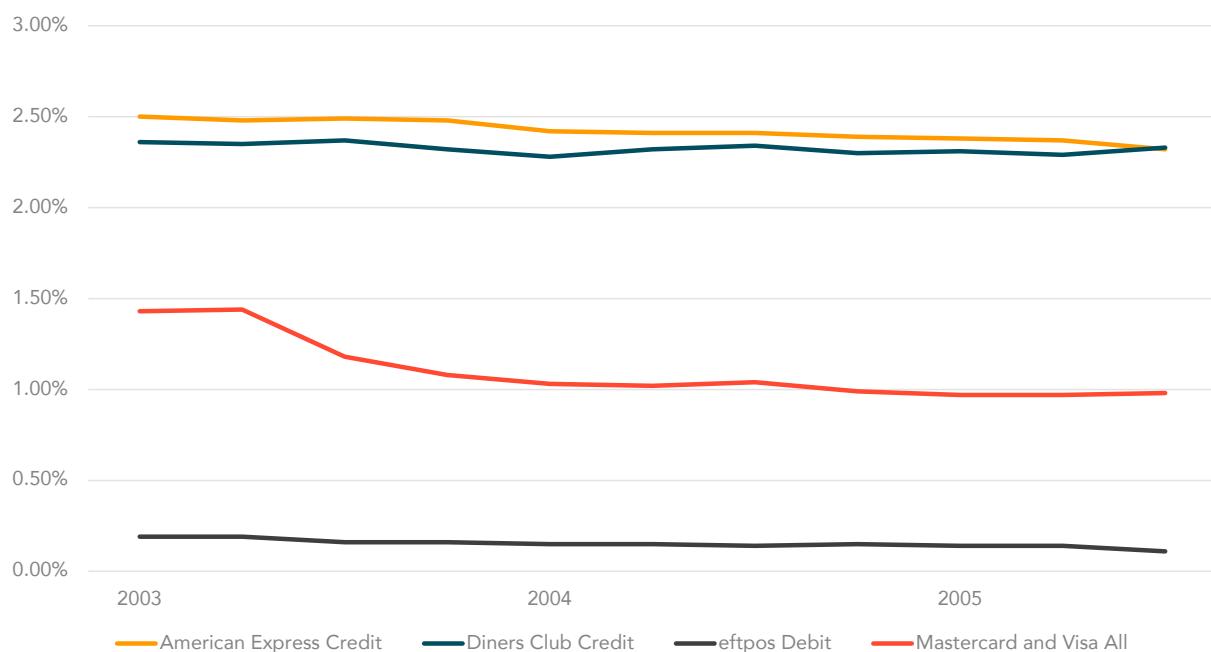


Figure 1. Australia Total Merchant Fees by Card Type (2003-2005)

Co-badging and Routing

DEFINITION

Co-badging refers to a single payment card that has at least two or more payment card networks enabled on it, allowing the card to be used for transactions across multiple payment networks. This is especially relevant in countries where there exists at least one local network for processing. Local networks are typically networks that operate domestically or regionally, whereas global networks are typically offered across a variety of regions. Examples of local card networks include eftpos in Australia and RuPay in India, while a global network would be considered Visa or Mastercard.

Merchants can take advantage of co-badging by routing transactions via competing networks. Co-badging and routing also offer merchants a strategic lever when establishing commercial deals with networks, providing the opportunity to reduce their payment costs and promote competition between card networks.

COUNTRY IMPLEMENTATION

Some countries, such as the United States, have mandated co-badging through central bank regulations, while regulators in Australia have established expectations or incentives for issuers to co-badge debit cards by setting higher interchange caps for co-badged cards. None of the other countries in scope have mandated or incentivized payment card co-badging. All countries in scope, however, operate at least one local debit network (Table 2).

| Country | Local Card Networks | Estimated Local Market Share |
|---|----------------------|------------------------------|
|  Australia | Eftpos | 20% |
|  India | RuPay | 14% |
|  Japan | Suica, Aeon, J-Debit | 4-10% |
|  Singapore | NETS | 17% |

Table 2. Domestic Debit Networks by Country and Market Share¹¹

IMPACT ANALYSIS

In Australia, the market with the strongest public reporting of merchant fees, rates for the domestic debit network eftpos are on average less than Visa and Mastercard debit merchant fees. By Q4 2023, average eftpos merchant fees were 35 basis points, 15 basis points lower than Visa and Mastercard's debit fees at that time. With unfettered access to domestic debit networks, CMSPI estimates approximately \$800 million of benefit annually for merchants.¹²

11 Euromonitor 2022

12 <https://cmspi.com/news/breaking-news-what-merchants-need-to-know-about-the-rbas-latest-payments-update/>

KEY TAKEAWAYS

- **Domestic Networks Exist Across All Markets:** Every market operates at least one domestic network. In Australia, the domestic debit network eftpos is on average 15 basis points cheaper per transaction than Visa and Mastercard debit.
- **Limited Regulation of Mandated Co-Badging:** Only Australia, one of four countries analyzed, regulates debit card co-badging by setting expectations for issuers and processors to facilitate least-cost routing. In addition, there is a higher interchange cap for dual-network badged cards than single-network badged cards, creating an incentive for issuers to ensure at least two networks are available on the card for routing.
- **Merchant Fees for Domestic Debit Transactions on Average Lower Than Global:** Over the period Q2 2020 to Q4 2023, Visa and Mastercard average total merchant fees ranged from 0.47-0.54%, while in this period eftpos rates ranged from 0.26-0.35%. In any given quarter between Q2 2020 and Q4 2023, the Visa and Mastercard total merchant fees were between 42-89% higher than eftpos rates. While co-badging may not directly contribute to the lower rates for domestic debit networks, a mandate for issuers to co-badge cards grants merchants access to lower cost networks.

Interchange and Network Fee Pricing Transparency

DEFINITION

Regulators may mandate that networks publish interchange or network fee pricing as these are typically multi-laterally set fees that impact both card issuers and card-accepting merchants.

COUNTRY IMPLEMENTATION

Of the four countries in scope, both Australia and Japan have mandated card networks to publish interchange fees. Clause 6.1 of the RBA's Standards No. 1 and No. 2 of 2016 required card schemes in Australia to publish "Multilateral Interchange Fee rates or amounts." Pursuant to these clauses, global card schemes Visa¹³ and Mastercard¹⁴ publish interchange rates for domestic transactions made on credit, debit, and prepaid cards. In addition, in September 2022, Japan's Ministry of Economy, Trade, and Industry (METI), responsible for enhancing economic and industrial aims of the Japanese government, required the card networks to disclose interchange fees "in order to ensure fair competitive conditions among international brands in the credit card issuance market and raise the transparency of the credit card market as a whole."¹⁵

IMPACT ANALYSIS

The availability of country-level payments statistics varies significantly by country. In some countries, central banks will publish payments statistics through financial institution data collections or surveys. Where available, this data can be used by merchants to benchmark their own rates or to gauge their performance against a market average. In addition, while isolating the effects of price transparency from other determinants of price is empirically difficult, some examples of transparency in financial markets suggest transparency lowered prices. From a review of empirical research on price transparency, "most research suggests that when better price information is available prices for goods sold to consumers fall."¹⁶ Markets in intermediate goods, however, is more complicated, with price transparency on the one hand providing buyers and sellers important information about the true economic value of goods or services, on the other hand, "public prices may make collusion among sellers easier."¹⁷

KEY TAKEAWAYS

- **Limited Regulation of Mandated Transparency:** Of the four countries analyzed, only Australia and Japan have mandated interchange fee disclosures for Visa and Mastercard.
- **Pricing Transparency May Contribute to Market Efficiencies and Lower Costs:** Studies show that pricing transparency may contribute to lower prices for consumers. However, in intermediary markets such as payments, empirical studies show mixed results on the efficacy of pricing transparency to reduce costs.

13 <https://www.visa.com.au/about-visa/interchange.html>

14 <https://www.mastercard.com.au/en-au/business/overview/support/interchange.html>

15 https://www.meti.go.jp/english/press/2022/0914_002.html

16 <https://crsreports.congress.gov/product/pdf/RL/RL34101#:~:text=Despite%20these%20complications%2C%20greater%20price,efficient%20outcomes%20and%20lower%20prices.>

17 Ibid

Price Signaling, Competition Within the Card Market, and Interchange Caps – In-Depth

Price Signaling

Price signaling involves the conveyance of information about a company's pricing intentions to competitors, customers, or the broader market, either explicitly or implicitly, with the aim of influencing market behavior or expectations. For retail payments, price signaling can come in the form of a card surcharge (typically a percent-based fee levied on the customer's bill should the customer pay with a payment card) or cash discounting (typically a percent-based discount subtracted from the customer's bill should the customer pay with cash). The motivation for surcharging or cash discounting is to recoup costs of acceptance for card payments or to steer customers to lower cost payment methods. With a surcharge, the merchant intends to recoup card fees by levying a surcharge equivalent to the costs of acceptance. With a cash discount, the merchant intends to steer customers to cheaper payment methods, like cash. The effectiveness of price signaling varies depending on the context and the parties involved.

CARD SURCHARGING

Once a merchant signs a contract to accept card payments from a certain network, the merchant is regulated by the rules levied by the card networks, which can be quite complex and restrictive. Surcharging, the practice whereby a merchant adds a charge to a transaction based on the customer's chosen payment method (e.g., card and other payment methods), card type, or card network, is broadly prohibited by the card network rules, and, in markets where surcharging is permitted by national or local law, card network rules can complicate surcharging implementation. In addition, while default network rules typically restrict whether and how merchants can surcharge, some jurisdictions have mandated surcharging rights for merchants, overruling the default card network rules (Table 2).

| Country | Surcharging Rules |
|---|---|
|  Australia | Merchants are allowed to surcharge up to the cost of acceptance |
|  India | Network rules apply |
|  Japan | Network rules apply |
|  Singapore | Network rules apply, but local merchants, such as taxis, have been reported to apply a surcharge on card transactions ¹⁸ |

Table 3. Surcharging Rules by Country

In countries or locales where surcharging has been permitted by law, merchants are often required to be transparent about the surcharge. This means that customers must be clearly informed about the additional fee before they make the purchase.

There are broadly three types of surcharges: product-level, brand-level, and blanket surcharges (Table 3). Each has unique use cases and regulatory permissions and can depend heavily on how the country has regulated or guaranteed surcharging rights.

| Surcharge Type | Description | Pros | Cons | Jurisdictions permitting surcharge type |
|--|--|---|---|---|
| Product-level | A surcharge based on the network and card type. The level of the surcharge will vary depending on the network and the card proffered by the consumer | Full cost recoupment, as each card can be charged at the effective rate | Resource intensive to calculate average effective rate by card type | Australia New Zealand European Union Member States not extending PSD2 |
| Brand-level | A surcharge based solely on the network of the card. The level of surcharge will vary between networks, but all card types of that network will incur the same surcharge | Easier to calculate than product-level | Less effective than product-level at fully recouping costs Resource intensive to calculate average effective rate by brand | United States, if not accepting Amex and Discover Canada, if not accepting Amex and Discover |
| Blanket Surcharge | Surcharging of all card brands at the effective rate averaged across all card brands | Easier to calculate than rand-level surcharging | Less effective than product-level at fully recouping costs | United States, if accepting Amex and Discover Canada, if accepting Amex and Discover |
| Cash Discounting with Price Increases | Increasing overall costs by the average effective rate, but decreasing cash or non-card payments by the average effective rate across all types | Near global permissibility, given wide-spread regulatory acceptance | Requires increasing costs to ensure full cost recoupment | Near global acceptance |

Table 4. Description and Characterization of Types of Surcharges and Cash Discounts

CASH DISCOUNTING BY COUNTRIES

In lieu of a surcharge, some merchants may choose to offer the consumer a discount for using cash. This has not been widely regulated, and below follows an examination of regulatory interventions on this subject.

Australia – Card surcharging is legal in Australia, allowing for customers to use cash as a way to avoid card surcharges. The Australian Competition and Consumer Commission (ACCC) states that if the customer has no way of avoiding a card surcharge (i.e., the merchant does not accept cash), the business must properly display the cost of the card surcharge.¹⁹

Japan – Network rules apply in Japan. From an interview conducted with network representatives, providing discounts for cash payments may be in violation of JCB's member store terms and conditions while Visa's rules do not restrict member stores. However, network rules do not currently cover all use cases of discounting. For example, networks have indicated a case-by-case evaluation in the event a store provides alternative incentives for customers, such as additional store points when customers pay with cash.²⁰

Case Study: Surcharging in Australia

The RBA found that the 2003 payments reforms including surcharging and interchange cap had the desired effect on the payment landscape – consumers became more conscious of price signaling by avoiding surcharges when possible and the cost of card acceptance steadily decreased in the following years (Figure 1).²¹ In 2016 restrictions against 'no-surcharging' rules have been expanded to include other payment methods such as eftpos, American Express, Diners Club, UnionPay, and PayPal.²²

Immediately following the enforcement of the 2003 interchange caps, there was a sharp decline in Mastercard and Visa average cost of acceptance in Australia. Following implementation of interchange caps and surcharging laws, the cost of accepting American Express cards, exempt from the interchange regulations, also fell from above 2.5% to below 1.5% over a 15-year period. At this time, merchants had a greater incentive to dissuade the use of unregulated cards as a result of the interchange caps on Visa and Mastercard and had greater access to pricing controls with new surcharging rights for American Express credit cards.

The RBA is a strong proponent of a merchant's right to surcharge "for payments system efficiency and... to hold down the cost of goods and services to consumers generally."²³ However, since the percentage of merchants surcharging in Australia has increased, there have been concerns of excessive card surcharging. In response to these concerns, the RBA issued new surcharging and interchange standards for large and small merchants in 2016 and 2017, respectively. This new regulation defines the meaning of a "permitted cost of acceptance" and ensures cards will not be surcharged in excess of a merchant's cost of acceptance for that card system.²⁴ The central government has since banned the practice of excessive surcharging and provided the ACCC enforcement powers on this matter.

20 <https://topics.smt.docomo.ne.jp/article/otonanswer/life/otonanswer-162245?redirect=1>

21 <https://www.rba.gov.au/payments-and-infrastructure/review-of-retail-payments-regulation/pdf/review-of-retail-payments-regulation-issues-paper-nov-2019.pdf>

22 Ibid

23 <https://www.rba.gov.au/payments-and-infrastructure/review-of-retail-payments-regulation/pdf/review-of-retail-payments-regulation-issues-paper-nov-2019.pdf>

24 Ibid

Based on the ACCC rules, merchants interested in surcharging should ensure that surcharges are calculated to be percentage-based or per item, depending on how the underlying costs are applied, and not based on a blended cost of acceptance across networks. Notably, these federal rules do not apply to the taxi industry, which "remains the responsibility of state regulators," where the majority of Australian states have passed regulation limiting surcharges to 5%.²⁵ These regulations vary from state to state with federal rules taking precedence for non-exempt industries.

The RBA continues to consider how to improve the current surcharging regulatory standards and how to apply it to new emerging payment methods, specifically Buy-Now-Pay-Later (BNPL) methods, which encompassed around 14% of Australian ecommerce spend (See Australia Country Profile). After a two-year review, the bank has announced its intentions to extend the no-surcharge rule prohibition to BNPL providers like Afterpay and Zip.²⁶ Although strongly anticipated, BNPL regulations have been delayed until 2024 for drafting constraints.²⁷

25 <https://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/q-and-a/card-payments-regulation-qa-conclusions-paper.html#surcharging-consumers-q7>

26 <https://www.reuters.com/business/finance/australias-central-bank-tells-buy-now-pay-later-firms-drop-surcharge-ban-2021-10-22/>

27 <https://www.afr.com/companies/financial-services/bnpl-laws-delayed-until-new-year-amid-legislative-drafting-constraints-20231124-p5emmy>

Interchange Cap Regulation

Many governments and regulatory bodies worldwide have imposed interchange fee caps. Interchange fees are transaction fees paid indirectly by merchant through their acquirer to issuing banks. Although issuing banks receive interchange fees, the fees are set by four-party card networks who typically set the fees multilaterally, meaning the interchange fee categories and their associated rates usually apply across all card issuers. Interchange caps are often designed to address concerns about competition, transparency, and fairness with how interchange fees are set and collected. By limiting the maximum interchange fee, regulators seek to create a more level playing field for businesses.

Striking the right balance between fostering competition and ensuring the financial sustainability of the payment ecosystem is a complex challenge that regulators grapple with as they design and implement interchange fee regulations. There are often two methodologies for capping interchange: the cost methodology and the competition methodology. The competition methodology, or "tourist test" used by the European Commission, considers the level of interchange that makes a merchant indifferent between accepting payments by card and a competing method, typically cash. On the other hand, the cost methodology, employed in the U.S. and Australia, focuses on aligning interchange fees with the underlying cost incurred by issuers for processing a given transaction. While both methods are able to achieve significant savings, each has their own limitations and risks. For example, central banks implementing a cost-based interchange cap may rely on self-reported issuer data on card processing costs. In these cases, issuers may have an incentive to report or maintain higher costs of processing. In addition, a cost-based methodology will not ensure merchant costs of acceptance for prevailing payment methods are equal, which could lead merchants to engage in surcharging or cash-discounting, ultimately pushing higher costs to consumers.

With a competition-based approach, merchant costs of acceptance across payment methods may hold equal, but the predictability of future costs may change depending on the competing payment method used to set the interchange cap. For example, the cost of cash, typically charged on a fixed cost basis, may rise as cash spending declines. With a competition-based approach, the economics of a competing payment method may influence the level of the interchange cap. While neither methodology has proven more efficient, it's essential that regulators consider the limitations and risks unique to each methodology. The routine collection and monitoring of data is essential, and the development of mechanisms to adjust the cap are essential for ensuring long-term market efficiency.

Table 4 offers a review of the key interventions by country with respect to interchange caps.

| Country | Effective Date(s) of Current Cap | Credit | Debit | Exceptions |
|---|---|--|---|--|
|  Australia | 2017, 2021 (updated debit) | 0.5% weighted avg (0.8% for individual txns) ²⁸ | AUD 0.08 (~\$0.05) weighted avg. (\$0.10 or 0.2% for individual txns) ²⁹ | Three Party Card Networks, International Cards |
|  Singapore | No Debit or Credit Interchange Cap in Singapore | | | |
|  India | 2018 | - | 0.9% (POS/online), 0.8% (QR code) ³⁰ ; for SMBs 0.4% (POS/online), 0.3% (QR code) | Credit Cards, International Cards |
|  Japan | 2019 (discontinued) | 3.25% | - | Debit Cards |

Table 5. Interchange Caps (Current and Discontinued) by Country

28 <https://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/conclusions-paper-may2016/interchange-fees-and-transparency-of-card-payments.html>

29 The RBA also established a sub-benchmark for the weighted average interchange cap of single-network debit cards (SNDCs) at AUD 0.08 to remove incentives for issuing these kinds of cards. <https://www.rba.gov.au/payments-and-infrastructure/review-of-retail-payments-regulation/conclusions-paper-202110/pdf/review-of-retail-payments-regulation-conclusions-paper-202110.pdf>

30 Small merchants have an annual turnover below Rs 20 lakh (~\$24k) <https://www.medianama.com/2017/12/223-rbi-mdr/>

ACTIVE INTERCHANGE CAP DEVELOPMENTS IN 2023

India



In December 2021, the Reserve Bank of India (RBI) invited consultation feedback from stakeholders by October 2022 on a number of issues related to payment system charges, including proposal to introduce credit card interchange caps for the first time and to reintroduce charges for UPI, the nation's real-time system, which has operated under a zero-interchange framework since 2020.³¹ However, Finance ministry quickly issued a follow-up clarification stating its intention to maintain fee exemptions for UPI as it was "digital public good with immense convenience for the public and productivity gains for the economy".³² While the industry awaits further developments on credit interchange caps, fees have been introduced for UPI transactions performed in certain industries.

COUNTRIES WITH DISCONTINUED INTERCHANGE CAPS

Japan



Japan previously had a 3.25% interchange cap on credit card fees and a government-subsidized points program to offset the cost of the national sales tax increase from 8% to 10% in 2019.³³ Initially, the fee cap was intended to persist even after the conclusion of the points program in June 2020. However, due to significant pushback from the credit card industry, lawmakers reversed their stance, allowing card companies the discretion to decide whether or not to uphold the cap.³⁴

³¹ <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/DPSSDISCUSSIONPAPER5E016622B2D344A9F294D07234059AA.PDF>

³² <https://www.thebanker.com/India-s-digital-payments-market-looks-beyond-its-borders-1692889695>

³³ <https://asia.nikkei.com/Economy/High-credit-card-fees-threaten-Japan-s-push-to-go-cashless>

³⁴ Ibid

Co-badging Regulation

Card networks such as Visa, Mastercard, American Express, UnionPay, Discover, and JCB are payment networks that operate on an international scale and typically have an extensive network of merchants and financial institution partners around the globe. On the other hand, local card networks like RuPay in India and eftpos in Australia are payment networks that operate within a specific country or region, serving the payment needs of the local population.

Co-badging refers to a single payment card that has at least two or more unaffiliated payment card networks enabled on it, allowing the card to be used for transactions across multiple payment networks. Oftentimes, co-badged cards will have a global and local network badged. In countries that have co-badging and merchant-choice routing on these transactions, such as the United States and Australia, merchants are able to route transactions to the most cost-effective and efficient network, providing merchants the opportunity to reduce their payment costs and generate competition between card networks. Co-badging more than one network on cards also implies greater cost efficiencies, higher availability, and better uptime.

Table 5 illustrates the presence of local networks around the APAC region. While there may be functional variations aside from cost, such as no online functionality for some local networks or integration challenges between global networks and local digital wallets, these networks are motivated to enhance functionality to incentivize merchants and cardholder usage.

| Country | Local Card Networks | Local Market Share |
|---|----------------------|--------------------|
|  Australia | Eftpos | 20% |
|  India | RuPay | 14% |
|  Japan | Suica, Aeon, J-Debit | 4-10% |
|  Singapore | NETS | 17% |

Table 6. Domestic Debit Networks by Country and Market Share

Case Study: Australia Co-badging Mandate and Routing

Due to its mandate to promote competition and efficiency in the Australian payment system, the Reserve Bank of Australia (RBA) has stated that it "strongly supports the issuance of dual-network cards to consumers and the provision of least-cost routing functionality to merchants"³⁵ This initiative has been estimated to result in approximately \$800 million of benefit annually for merchants according to CMSPI.³⁶

Payments made through Australia's domestic debit card network, eftpos, typically incur the lowest expenses for merchants, averaging around 0.3% of the transaction value, according to RBA data. This cost has remained relatively stable over the past decade.³⁷ In contrast, the average merchant fees for both Mastercard and Visa debit card transactions are higher at 0.5%, showing a flat trendline from the introduction of Least Cost Routing (LCR) expectations in 2019, while credit fees steadily climbed from 2019 onward (Figure 2).³⁸

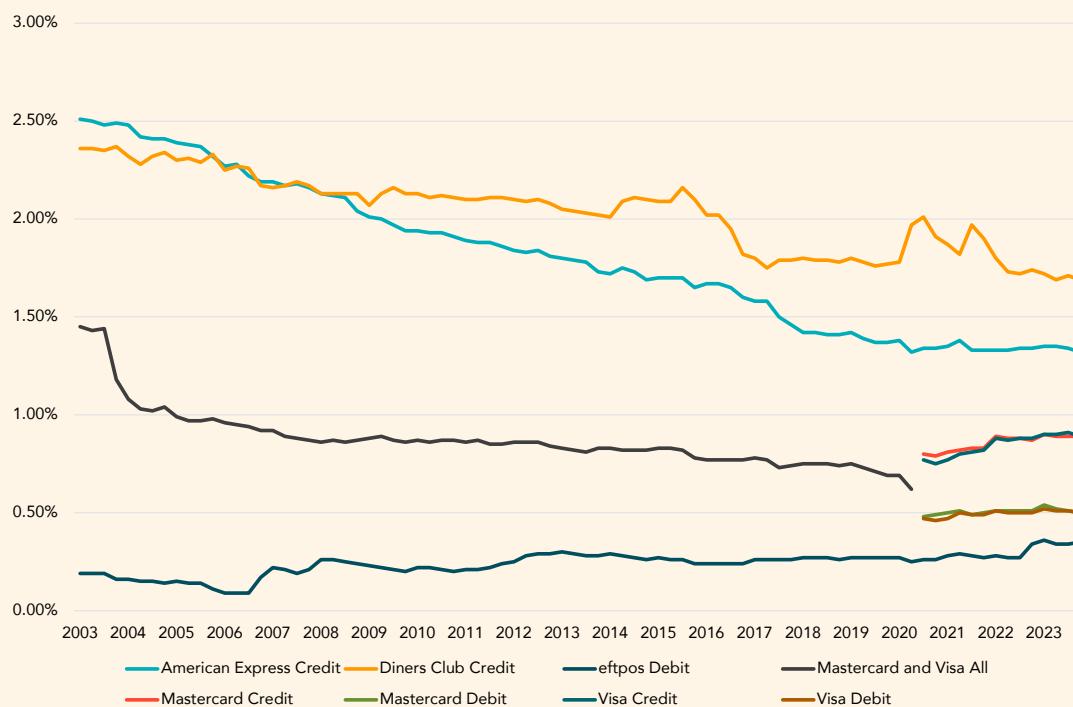


Figure 2. Total Australian Merchant Fee as a % of Transaction Values Acquired³⁹

35 <https://www.rba.gov.au/payments-and-infrastructure/debit-cards/least-cost-routing.html>

36 <https://cmspi.com/news/breaking-news-what-merchants-need-to-know-about-the-rbas-latest-payments-update/>

37 <https://www.rba.gov.au/publications/bulletin/2022/sep/the-cost-of-card-payments-for-merchants.html>

38 The RBA pushed for the issuance of co-badged cards prior to 2019.

39 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>.

The RBA expects issuers to promote LCR by enabling dual-network debit cards (DNDCs) and acquirers to provide access to LCR-enabled merchant accounts. The bank has set expectations for all payment facilitators and gateways to offer in-store contactless and online routing in 2023. It is worth noting that the RBA's expectations are not regulations, although the RBA has stated that it will implement regulation if expectations are not met. In addition, it's important to note that the RBA does not mandate issuers to offer DNDCs but has incentivized DNDC issuance by offering a higher cap for DNDC cards than single-network debit cards (SNDCs).

| Channel | Debit Transaction Type | 2021 | 2022 | 2023 | 2024 |
|-----------|------------------------|------|------|------|------|
| In-Store | Inserted card | ✗ | ✗ | ✗ | ✗ |
| In-Store | Contactless Card | ✓ | ✓ | ✓ | ✓ |
| In-Store | Mobile Wallet | ✗ | ✗ | ✗ | ✓ |
| Ecommerce | | ✗ | ✓ | ✓ | ✓ |

Table 7 RBA LCR Expectations

In August 2022, the RBA introduced an additional policy measure pertaining to least-cost routing. Recognizing the continual growth in mobile wallet transactions and acknowledging the benefits for competition and efficiency in the payments system, the RBA now expects the industry to develop LCR functionality for mobile-wallet transactions. This decision follows recent indications that implementing least-cost routing for mobile-wallet transactions is more feasible and cost-effective than the RBA previously anticipated. After further consultation with the industry, the RBA, in November 2022, expressed the view that it is both feasible and desirable for the industry to deliver LCR functionality for mobile wallet transactions by the end of 2024.⁴⁰

While the prospects of implementing LCR in Australia are promising, there remains a considerable gap between expectations and the current state of availability and enablement by providers and merchants. In the RBA's June 2024 review of LCR enablement and availability, only 70% of merchants had LCR enabled for card-present transactions.⁴¹ Although LCR online was expected by end of 2022, the majority of providers in June 2023 had zero enablement and availability, and only half of providers in June 2024 had enabled online LCR for merchants.

In August 2023, the RBA communicated expectations to providers to make faster progress on enabling LCR for merchants, noting that the bank will explore formal regulatory requirements to enable LCR if providers don't make substantial progress by June 2024. In addition, the RBA reiterated its expectation that providers make LCR widely available for online transactions and noted that it expects faster progress on enabling LCR for merchants.

40 <https://www.rba.gov.au/media-releases/2022/mr-22-39.html>

41 <https://www.rba.gov.au/payments-and-infrastructure/debit-cards/least-cost-routing/update-on-implementation.html>

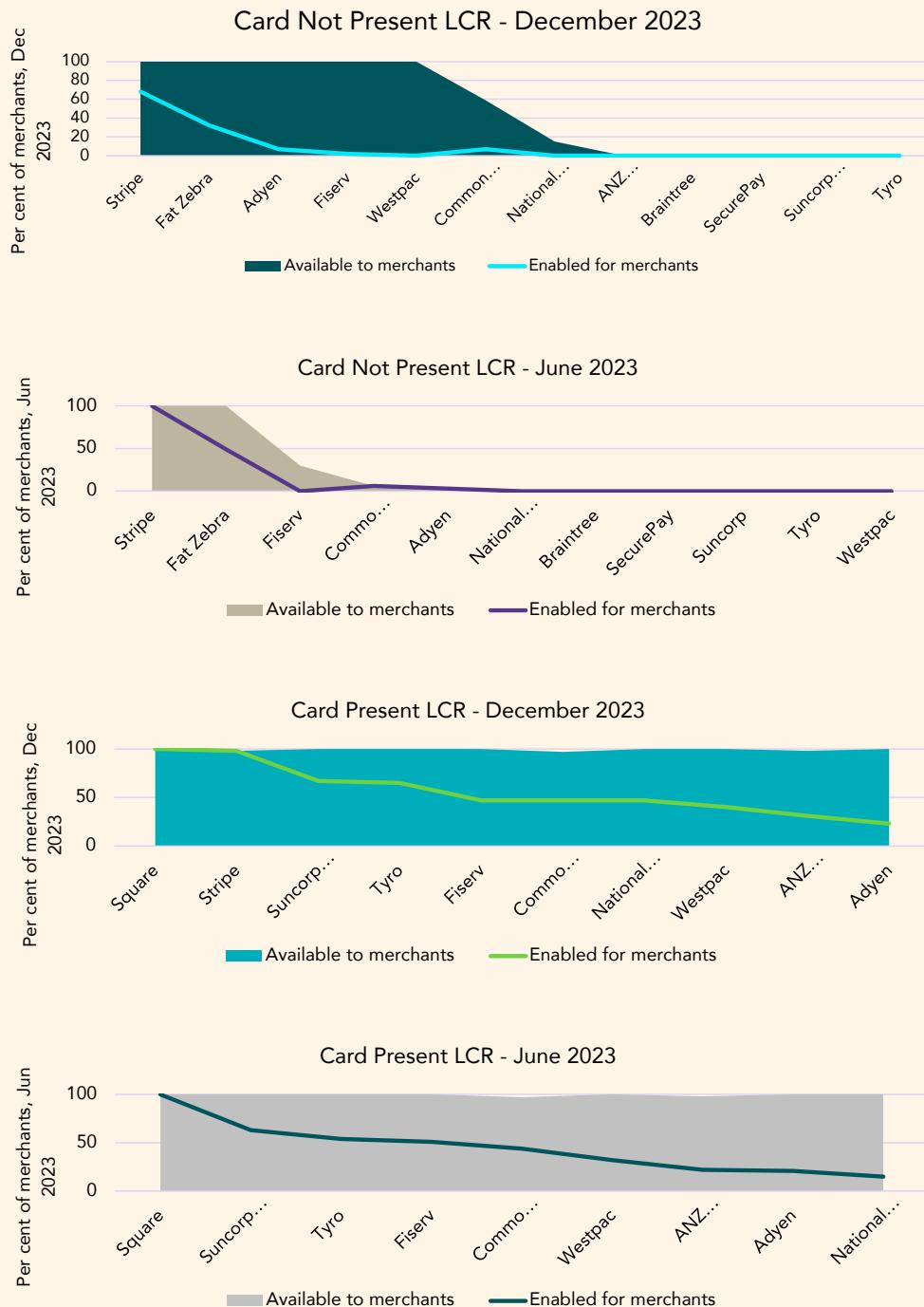


Figure 3. LCR Availability v. Enablement for Merchants⁴²

42 <https://www.rba.gov.au/payments-and-infrastructure/debit-cards/least-cost-routing/update-on-implementation.html>

Methodology and Country Profiles

Executive Summary

In this section, each country will be described by its payments mix over time, split between ecommerce and POS transactions. What follows is a review of available payment card cost disclosures, either voluntary or regulated, and an analysis of publicly available country-level cost data. Here's an overview of the report's key findings:

AUSTRALIA:

- **Payments Mix:** As a result of explosive growth of card payments in the period 2010-2020, Australia has become one of the most developed card markets in the world, with over 70% of online transactions and 80% of POS payments taking place on card or digital wallet. Contactless payments, wherein the consumer taps their card against a POS terminal, rose 5x between 2016-2019, and now is one of the most popular methods of transacting in-store card payments. By 2022, digital wallets were the most popular payment method for ecommerce transactions, representing 31% of spending. It's important to note, however, that a significant share of digital wallet spending may in fact represent card spending, as some of the most popular digital wallets in Australia utilize digital cards as the underlying payment method. According to Visa, these card types are typically referred to as pass-through wallets, and the payments mix analysis does not separate these payments from staged or stored-value wallets.⁴³
- **Public Resources for Cost Analysis:** The Reserve Bank of Australia has published monthly and quarterly statistics on cost of card payments by network since 2002. These metrics include total volume of spending by card type, network type, and channel. The bank publishes this data monthly and provides average card fees by card type, network type, channel, and geography. In addition, Visa and Mastercard publish interchange rates, pursuant to the RBA's 2016 requirements on interchange transparency.
- **Price Trends:** Following the enforcement of the 2003 interchange caps and surcharging rights, Visa and Mastercard cost of acceptance for Australian merchant fell from 1.45% to 1.08% in just one year. While American Express was exempt from the interchange caps, American Express fees have steadily fallen from 2.51% in Q1 2003 to 1.32% in Q4 2023. By Q2 2020, when the RBA began to report on Visa and Mastercard debit and credit fees separately, the average merchant fee for those networks was 0.62%, less than half the Q1 2003 value. Over the period Q3 2020 to Q4 2023, Visa and Mastercard credit rates had the highest increase, rising by 0.09% and 0.12% respectively. In that same period, eftpos merchant fees also increased by 0.09%, with average Eftpos merchant fees sitting at 0.35% by Q4 2023. In part, these increases can be explained by the introduction of new eftpos rates in 2022 for mobile transactions and higher spend in CNP channels, which typically cost more than in-store transactions and card not present transactions.

INDIA:

- **Payments Mix:** Previously a cash-dominant economy, India's economy has undergone rapid shifts in its payments mix as the result of the government's launch of Unified Payments Interface (UPI), an interbank solution that facilitates payments. Between 2017 and 2022, digital wallets, powered by UPI's infrastructure, nearly doubled in share of online spending from 26% to 50%. As of 2022, digital wallets were also the most popular payment method for POS transactions, representing 35% of spending. Most notably, cash's share of POS spending plummeted alongside the growth of UPI's rise, with cash representing just 27% of spending, down 45 percentage points from 2017.
- **Public Resources for Cost Analysis:** The Reserve Bank of India (RBI) publishes monthly reporting of transaction statistics of various payment methods by channel since 2021. While Merchant Discount Rates for debit were capped for POS and QR-based transactions in 2018, and National Payment Corporation of India (NPCI) introduced interchange rates for UPI transactions in 2023, neither average interchange nor MDR by payment method are published regularly by the RBI.
- **Price Trends:** While the RBI does not publish regular interchange statistics on average cost, the RBI has capped debit card interchange fees for a number of transaction types.⁴⁴ In 2018, the RBA capped POS and QR-based debit transactions between 0.3-0.9% of transactions for both card present and card not present transactions, with varying rates for small businesses. In addition, India's UPI, which previously operated at zero cost and featured subsidies from the RBI to payments players for facilitating acceptance, saw interchange fees introduced by operator NPCI in 2023. The fees range from 0.5-1.1% but do not cover all transaction types, meaning some transactions will still operate cost-free.⁴⁵

44 There are two merchant categories to which debit interchange caps apply: small merchants (turnover up to 20 lakh) and other merchants (turnover above 20 lakh). For physical PoS infrastructure (including online card transactions) the MDR must not exceed 0.4% for small merchants and 0.9% for other merchants. These rates are capped at ₹200 and ₹1000 per transaction, respectively. For QR code-based card acceptance structure, the MDR must not exceed 0.3% for small merchants and 0.8% for other merchants. These rates are also capped at ₹200 and ₹1000 per transaction, respectively.

45 By April 2023, NPCI had in fact announced that UPI transactions would attract a series of interchange fees depending on the industry. The fees for UPI-based PPI transactions are characterized below:

- 1.1% interchange fee for high-ticket (Rs 2,000)
- 0.5% interchange fee for fuel transactions
- 0.7% interchange fee for telecom, utilities, post office, education, and agriculture transactions
- 0.9% interchange fee for supermarket
- 1% interchange fee for mutual fund, government, insurance, and railways

JAPAN:

- **Payments Mix:** Cash is still one of the most dominant payment methods in Japan. In fact, Japan is reported to be only one of three countries where cash remained the dominant payment method in 2022. The role of cash, however, has been slowly changing. Driven by the government's "Cashless Vision"⁴⁶ and the COVID-19 pandemic, cash's share of POS spending fell from nearly 70% in 2018 to slightly over 51% in 2022. In parallel, credit card spending and digital wallets have been on the rise. Interestingly, Japan's reported debit card spending has consistently remained below 10% of total spending, indicating lower value transactions are typically paid with cash or credit cards.
- **Public Resources for Cost Analysis:** Japan's Fair Trade Commission (JFTC) has published two surveys on the cost of card acceptance, one held in 2019 and the other 2020-2021. Both surveys found that none of the five international card brands surveyed published standard interchange fee rates for Japan.
- **Price Trends:** Based on the 2019 and 2020-2021 JFTC surveys, the average merchant MDR fell from 3.2% in 2019 to 2.70% in 2021. The reduction could be due to the provisioning of grants by the Ministry of Trade and Industry (METI) to cover the cost of purchasing or leasing POS terminals. The report also found that merchants that negotiate or compare network rates are more likely to see lower costs, with non-negotiated rates sitting at 2.89% and negotiated rates sitting at 2.51%. The benefits of network negotiation pervade all merchant sizes, with 10 to 50 basis point differentials when comparing negotiated vs. non-negotiated rates across all merchant sizes.

SINGAPORE:

- **Payments Mix:** Singapore has seen significant changes in its payments mix between 2017 and 2022, largely in response to the Monetary Authority of Singapore's (MAS) Payment Services Bill of 2018. Since the bill's introduction there's been significant churn in the payments mix of Singapore, with digital wallet's share of ecommerce spending tripling from 10% in 2017 to over 30% in 2022. In parallel, the volume of cash spending dropped, as cash's share of POS spending fell from 40% in 2019 to below 20% in 2022. The growth of wallets and decline in cash also coincides with the rapid adoption and use of FAST, Singapore's interbank settlement system, which had more than doubled in volume between August 2020 and September 2021.
- **Public Resources for Cost Analysis:** Only one bank in Singapore, Development Bank of Singapore (DBS), has published MDRs for Visa, Mastercard, JCB, and Union Pay transactions for retail and service-based merchants. From a cost specific standpoint, DBS, a nationally-owned bank, reported MDRs for Visa, Mastercard, JCB, and Union Pay transactions for retail merchants and service-based merchants at 2.5% and 3.0% respectively. The ecommerce rate for both retail and service-based merchants was 3.0%.⁴⁷

46 Facilitated subsidies to small retailers for accepting cashless payments. Subsidies were meant to compensate for the cost of reward card points. A cap of 3.25% on processing fees was also implemented. ([link](#))

47 <https://www.dbs.com.sg/iwov-resources/forms/sgsme/en/day-to-day/accounts/business-account/merchant-services-pricing.pdf>

- **Price Trends:** There's insufficient data on the average MDR for Singaporean merchants for pricing trend analysis to be performed. Individual articles have published the older rates including 2.5% MDR for retail merchants at POS and 3% MDR for service-based merchants at POS as well as the 3% uniform ecommerce rates.

Each country profile will cover the following elements:

PAYMENTS MIX BY COUNTRY

The payments mix of each country will be shaped by demographic, market, and regulatory trends. The mix of payments for a given country will also factor into the total costs each merchant pays to accept payments. On average, for example, a merchant whose payments mix is mostly comprised of credit card spending will pay more than a merchant with primarily debit card customers. This section reviews in-store and online spending patterns by country and presents each country's payments mix alongside regulatory interventions shifting customer spend.

PUBLIC RESOURCES FOR COST ANALYSIS

Card Fees Paid by Country

Utilizing the sources above, the following data can be extracted. The analysis below highlights trends in publicly available costs, covering, where published, costs by payment method, channel, and network by country.

Competition With the Card Market

Some central banks have developed sophisticated interbank payments solutions which, in some cases, have exhibited explosive growth, particularly in countries with low card payment penetration. In countries with higher-levels of card penetration, these solutions have failed to replicate the high growth seen in low card-penetration markets. Below also follows a review of some private and public sector interventions aimed at generating competition with card payments for each country in scope.

Australia

PAYMENTS MIX

Australia is one of the most developed payments markets globally, with over 70% of online spending taking place on a card or digital wallet (Figure 5), and over 80% of POS AUD spending taking place with a card or wallet (Figure 6).

In terms of absolute figures, card transactions have experienced meteoric increases since the early 2000s, largely driven by growth of debit cards (Figures 7 and 8). From 2010-2020, the number of debit transactions exploded, growing at an average compound annual growth rate (CAGR) of 12%, more than double the credit CAGR over that period. As of 2023, debit cards represented the highest number and value of transactions, representing 75% of all card transactions.

Debit cards grew significantly from 2013-2016, driven in particular by a 14-percentage point increase in their share of in-store payments below \$20, becoming the most popular payment method for all but the lowest-value transactions (transactions valued at \$10 or less). In this period, the use of debit card was especially popular among young Australians, with the ratio of debit to credit payments made by consumers under 30 doubling.⁴⁸

By 2019, the vast majority of Australians had a payment card, with 99% of consumers reporting owning at least one debit or credit card, and 50% of consumers reporting having both. Alongside the significant growth of in-store card payments between 2016-2019 was the rise of contactless payments which has facilitated growth of card market share for low-value transactions. By 2019, card payments represented the majority of transactions across all payment values, including transactions valued at \$10 or less.⁴⁹ This growth followed a 5x increase in the use of contactless transactions, which grew to represent 50% of in-store credit and debit card transactions.⁵⁰

Since 2019, card payments have continued to grow despite significant decreases in 2020 as a result of the COVID-19 pandemic. In addition, particular to the COVID era and to Australia is the rise of Buy Now, Pay Later (BNPL) payments. Designed as an interest-free installment solution, BNPL offers consumers the option to split a transaction into equal installments to be paid over a period of time. BNPL exhibited huge growth in a very short period of time as consumers, particularly those under 40, were attracted to the interest-free installment solution: from 2018-2019, BNPL went from zero to eight percent of ecommerce spending.⁵¹ By 2022, BNPL represented 14% of ecommerce spending – over one in eight dollars spent on a BNPL solution.

48 <https://www.rba.gov.au/publications/rdp/2017/pdf/rdp2017-04.pdf>

49 <https://www.rba.gov.au/publications/rdp/2020/pdf/rdp2020-06.pdf>

50 Ibid

51 <https://www.businesswire.com/news/home/20240228622294/en/Australia-Buy-Now-Pay-Later-Report-2024-BNPL-Firms-are-Forging-Strategic-Alliances-to-Provide-Targeted-Offers-to-Shoppers-at-Check-out---ResearchAndMarkets.com#:~:text=The%20report%20from%20the%20Reserve,leading%20up%20to%20November%202023.>

Another recent trend is the growth of digital wallets⁵², which as of 2022, represented 12% of in-store spending and 31% of ecommerce spending, making it the most popular payment method for online spending.⁵³ With that in mind, it's important to note two of the most popular digital wallets in Australia (Apple Pay and Google Wallet⁵⁴) typically utilize card infrastructure to process and settle transactions. For example, in its 2019 report on Consumer Payment Behavior, the Reserve Bank of Australia defined mobile wallets as "an application on mobile devices like smartphones that stores card details and allows in-person payments to be made by using the near field communication (NFC) functionality of the mobile device by tapping the device on or near a compatible terminal."⁵⁵ In addition, the RBA explains in a research discussion paper that "'card payments' in this paper generally refer to transactions where respondents reported that they directly used a physical (plastic) debit or credit card or a card stored in a mobile wallet."⁵⁶ As WorldPay data (Figures 5 and 6) segment digital wallets from card payments, it is anticipated that a significant share of digital wallet spending is card spending.

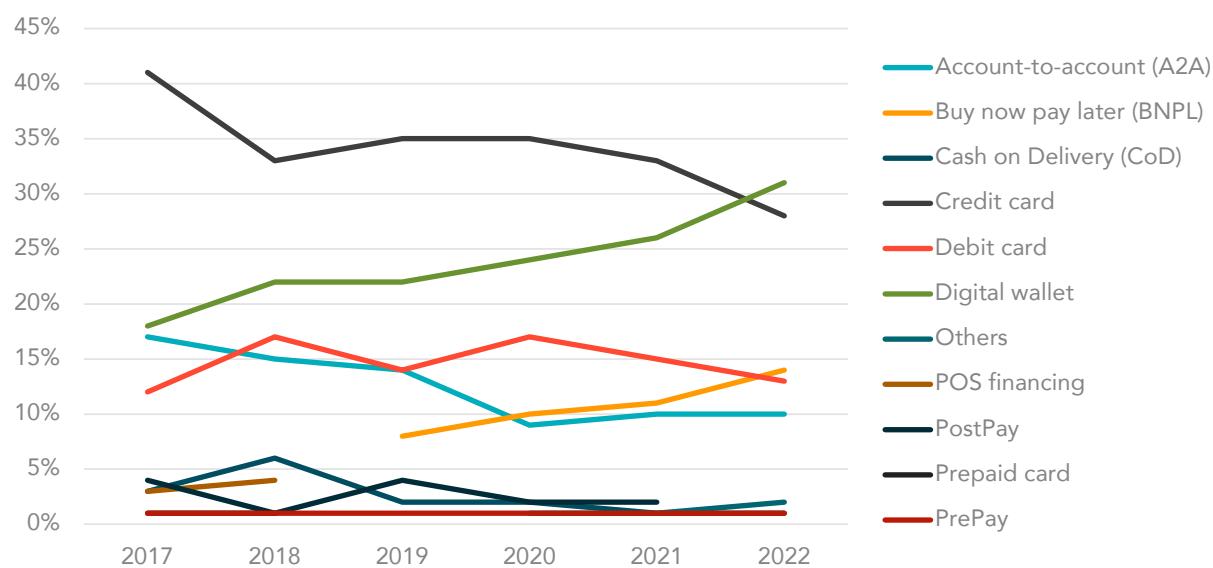


Figure 5. Australia Ecommerce Payments Mix (2017-2022)⁵⁷

⁵² Inclusive of pass-through, stored value, and staged digital wallets (See report introduction for definitions)

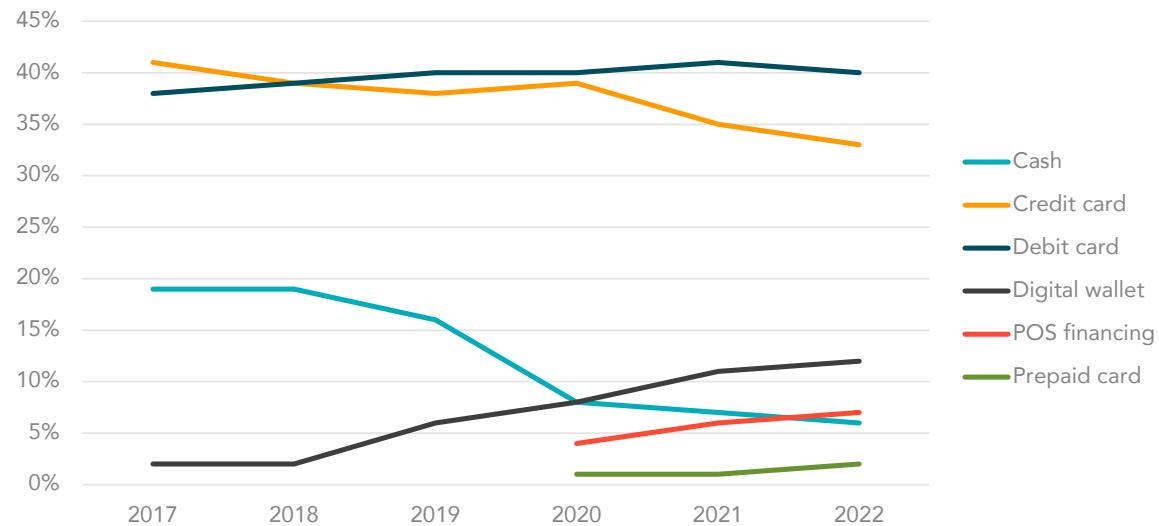
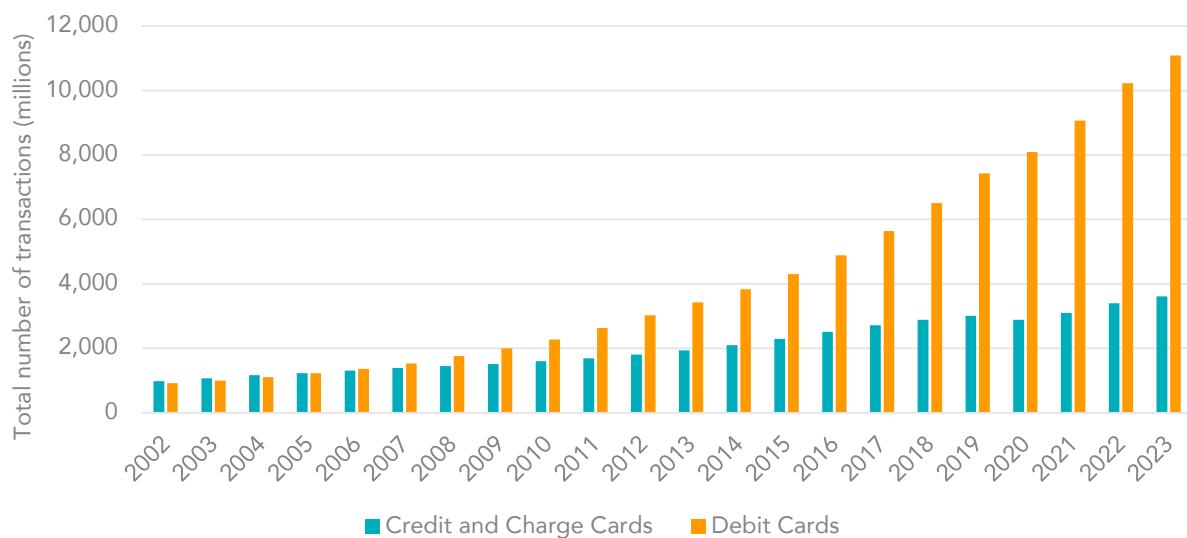
⁵³ WorldPay-FIS Global Payments Report (2023)

⁵⁴ WorldPay-FIS Global Payments Report (2023)

⁵⁵ <https://www.rba.gov.au/publications/rdp/2020/pdf/rdp2020-06.pdf>

⁵⁶ Ibid

⁵⁷ WorldPay-FIS Global Payments Report (2018-2023)


 Figure 6. Australia POS Payments Mix (2017-2022)⁵⁸

 Figure 7. Total Number of Transactions by Card Type - Australia (2002-2023)⁵⁹

58 WorldPay-FIS Global Payments Report (2018-2023)

 59 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

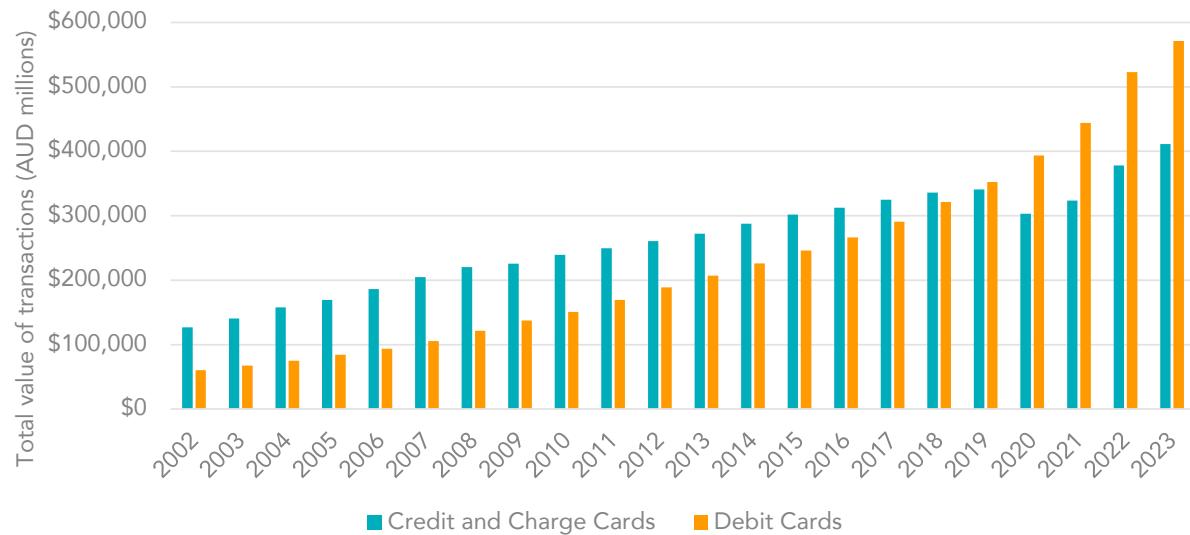


Figure 8. Total Value of Transactions - Australia (2002-2023)⁶⁰

PUBLIC REPORTING OF CARD FEES

Reserve Bank of Australia Payments Statistics

The Reserve Bank of Australia has published monthly and quarterly statistics on Australian payment systems from its Retail Payment Statistics collection since 2002. The statistics cover credit and debit card systems, the direct entry system, the ATM system, and check payments. Financial institutions and payment service providers report the data every month to the RBA. The data allows the bank to monitor payments activity and informs the Bank's policy advice to the Payments Systems Board, the party within the RBA responsible for "promoting efficiency and competition in Australia's payments system and contributing to the overall stability of the financial system."⁶¹ The bank makes available selected aggregates of the detailed data in the RPS collection.

Since the bank began collecting this data in 2002, the Bank's performed one major project to update the RPS collection. In 2019, the bank expanded its collection to include expanded metrics such as total card volume and spending to segment international and domestic transactions, in-person and remote transactions, and personal and commercial credit card transactions. The bank determined that by publishing and updating the reporting, the reports "can provide greater insights into the changing payments mix and support research by policymakers, the private sector and the wider community."⁶²

60 Ibid

61 <https://www.rba.gov.au/publications/bulletin/2019/mar/pdf/new-payments-insights-from-the-updated-retail-payments-statistics-collection.pdf>

62 <https://www.rba.gov.au/publications/bulletin/2019/mar/pdf/new-payments-insights-from-the-updated-retail-payments-statistics-collection.pdf>

The reporting is some of the most granular around the globe, as no other jurisdictions publish average card fees at this level of detail, but there are still benchmarks absent from the RBA's reporting. For example, the RBA does not split out interchange and network fees from their merchant service charge reporting and only provides blended credit market share volumes for Visa and Mastercard.

Visa and Mastercard Interchange Rates

Clause 6.1 of the RBA's Standards No. 1 and No. 2 of 2016 required card schemes in Australia to publish "Multilateral Interchange Fee rates or amounts." Pursuant to these clauses, global card schemes Visa⁶³ and Mastercard⁶⁴ publish interchange rates for domestic transactions made on credit, debit, and prepaid cards.

Following the RBA's 2019-2021 review, the weighted-average debit interchange caps supplemented by the introduction of a 'sub-benchmark' for single-network debit cards, which only allow for payments to be processed through one debit network, such that the weighted-average interchange fee on these cards for a given scheme must not exceed 8 cents. As a result, Visa and Mastercard's published interchange rates for debit are split by single- and dual-network card types as the RBA interchange caps were revised in 2021 to incentivize issuance of dual-network debit cards, promoting greater merchant access to debit routing.

ANALYSIS OF PUBLICLY AVAILABLE CARD FEES

Immediately following the enforcement of the 2003 interchange caps and surcharging, there was a sharp decline in Mastercard and Visa average cost of acceptance for Australian merchants. Between Q1 2003 and Q1 2004, the average Visa and Mastercard cost of acceptance fell from 1.45% to 1.08% (Figure 9).⁶⁵ The interventions from 2003 limited merchants exposure to rising costs through a price cap and allowed merchants to apply persistent and consistent pressure on the card networks through the use of a surcharge.⁶⁶ While American Express was exempt from credit card interchange caps as their fees are set bilaterally and unilaterally, unlike Visa and Mastercard which set interchange rates for cards issued by their banking partners, American Express fees have steadily fallen from their high of 2.51% in Q1 2003 to 1.32% in Q4 2023.⁶⁷ In contrast, while Visa and Mastercard blended MSC experienced consistent declines from Q1 2003 to Q2 2020, when credit and debit rates were split in 2020, a different trend emerged.

63 <https://www.visa.com.au/about-visa/interchange.html>

64 <https://www.mastercard.com.au/en-au/business/overview/support/interchange.html>

65 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

66 <https://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/q-and-a/card-payments-regulation-qa-conclusions-paper.html#surcharging-general-q1>

67 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

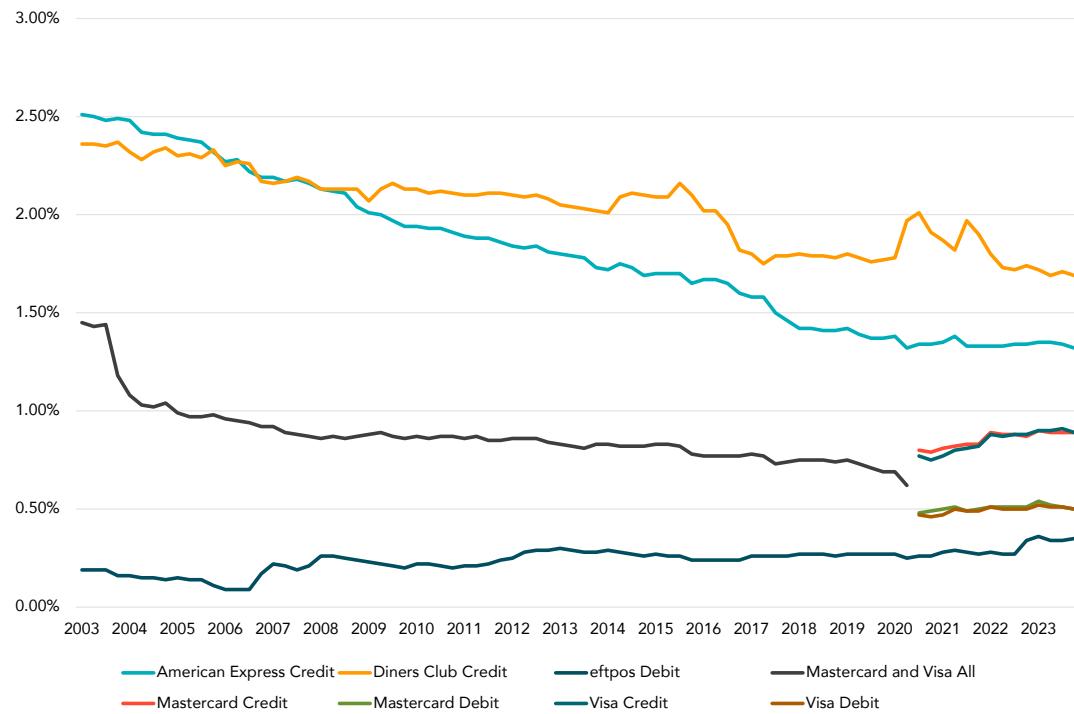


Figure 9. Average Merchant Fees in Australia by Network and Card Type (2003-2023)⁶⁸

By Q2 2020, when the RBA began to report on Visa and Mastercard debit and credit fees separately, the average merchant fee for those networks was 0.62%, less than half the Q1 2003 value. Over the period Q3 2020 to Q4 2023, Visa and Mastercard credit rates had some of the highest increase, rising by 0.09% and 0.12% respectively (Figure 10). In that same period, eftpos merchant fees also increased by 0.09%, with average eftpos merchant fees sitting at 0.35% by Q4 2023. In part, these increases can be explained by the introduction of new market rates for eftpos in 2022 for mobile transactions and higher spend in CNP channels, which typically cost more and grow faster than in-store transactions (Figure 12).⁶⁹

68 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

69 <https://cmspi.com/aus/en/could-eftpos-bring-competition-to-online-routing-in-australia/>

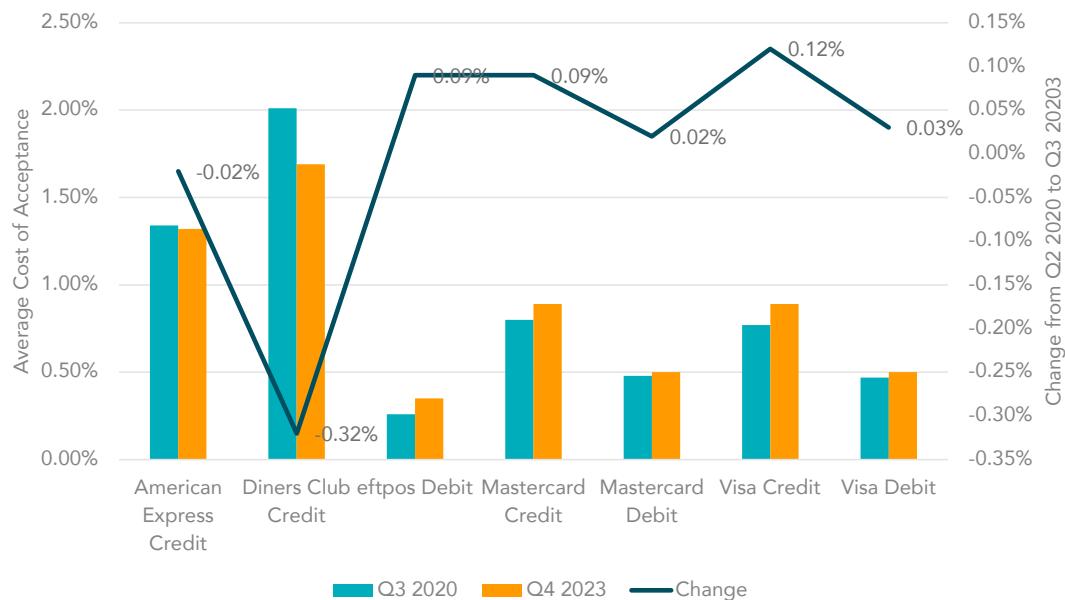


Figure 10. Average Merchant Fees and Period-on-Period Change by Card Network and Card Type (Q2 2020 – Q4 2023)⁷⁰

From Q3 2020 to Q4 2023, the cost of online transactions has consistently increased across networks given the limited options to route transactions to competing debit networks. The only exception to the rising costs is Diners Club, which increased in-store costs while decreasing online costs.

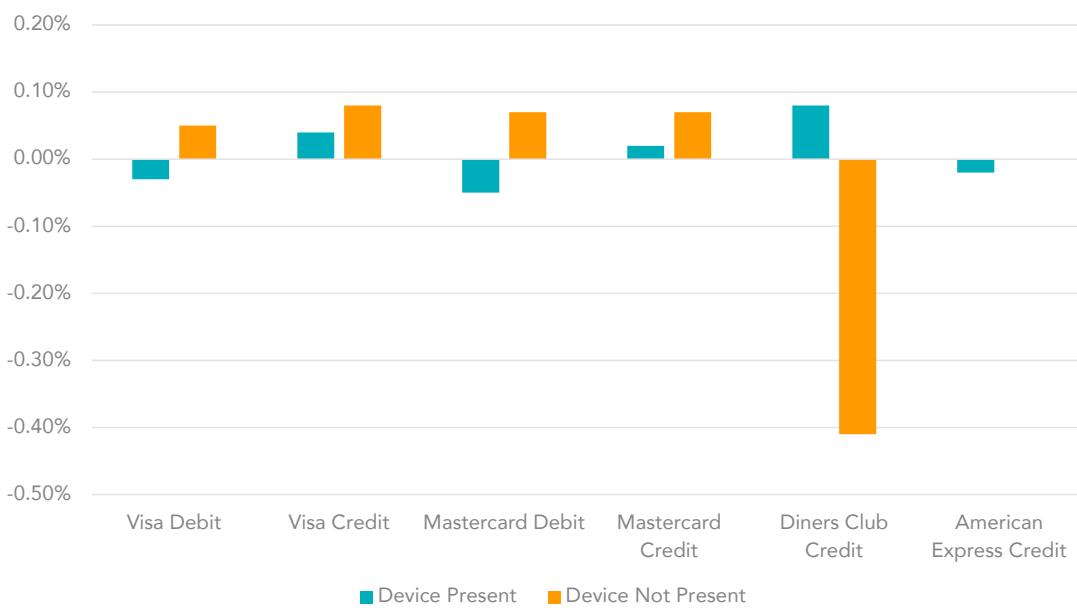


Figure 11. Domestic Interchange Change by Card Type and Network (Q3 2020 vs. Q4 2023)⁷¹

70 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

71 <https://www.rba.gov.au/payments-and-infrastructure/resources/payments-data.html>

The RBA reports that mobile transactions have more than tripled in-store since 2019, with around a third of all contactless payments made by mobile device, yet the fees on mobile debit are more than double the typical cost of a tap or insert transaction (Figure 12).

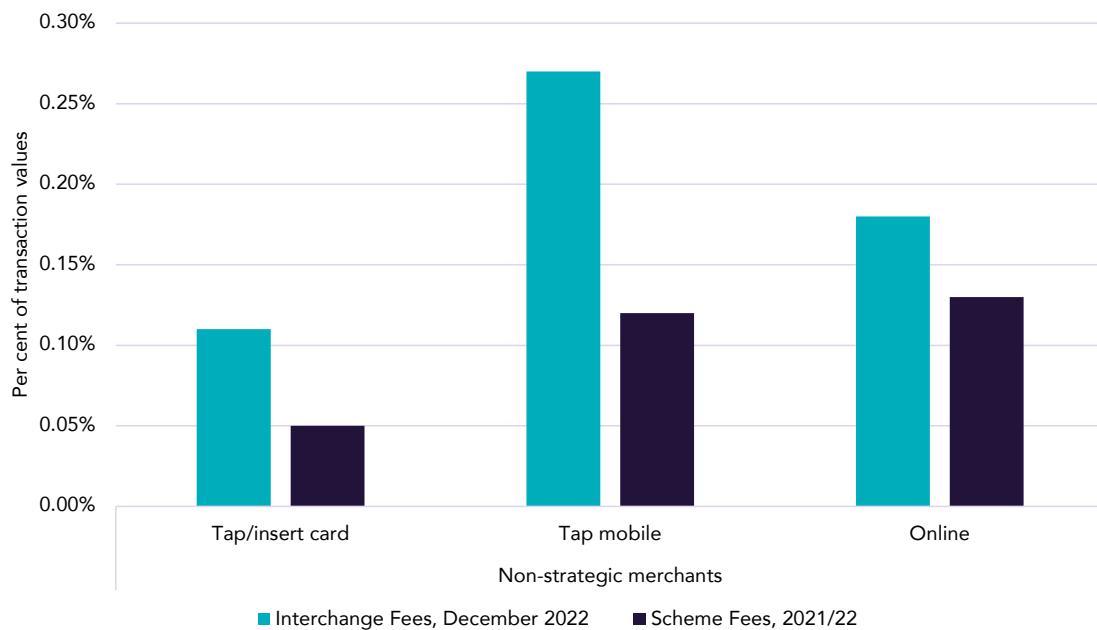


Figure 12. Average Merchant Fees by Presentation Method (2021-2022)

In addition, while Australia has interchange caps for the majority of all interchange fees, both credit and debit, the lack of fee restrictions on non-interchange fees like scheme fees still erode cost controls made with caps. The RBA estimates Australian merchants paid around \$1.9 billion in net scheme fees from 2022 to 2023, up 43% from 2021 to 2022. This figure excludes issuer and acquirer rebates, with issuers receiving “generous rebates” on scheme fees and most of the burden of scheme fees falling on acquirers, “which then gets passed on as higher costs for merchants.”⁷²

The RBA’s announcement in 2022 of Least Cost Routing expectations for digital wallets comes as a timely tool for merchants to manage their costs in the modern day. The fact that these routing rights are not yet guaranteed for merchants explains some of the differentials presented in Figures 11 and 12. CMSPI estimates that almost \$250 million of the \$800 million in LCR savings could come from mobile wallets, and this share is only expected to grow with digital mobile routing enablement.⁷³

⁷² <https://www.rba.gov.au/speeches/2024/sp-so-2024-06-18.html>

⁷³ <https://cmspi.com/news/breaking-news-what-merchants-need-to-know-about-the-rbas-latest-payments-up-date/>

APM Case Study: PayTo and NPP

THE USE OF NPP

Aside from least cost routing, the RBA has quoted the National Payments Platform (NPP) under its current strategic priorities "to promote competitive, cost-effective and accessible electronic payments".⁷⁴ NPP is Australia's real-time, open-source payments system developed in response to a 2012 Reserve Bank of Australia (RBA) Inquiry by the Payments Systems Board.

NPP IS COMPOSED OF 3 KEY PILLARS:

- The NPP platform, a distributed switch of individual 'Payment Access Gateways' that route and exchange financial messages between each other.
- The Fast Settlement Service, a solution provided by the RBA which enables every payment made on the platform to be settled in real-time in central bank funds between each financial institution's exchange settlement account.
- Business services, which are designed to meet different payment needs of users. This includes solutions like PayTo, covered below.

In 2022, the wholesale cost of NPP was estimated to be around \$0.061 per transaction.⁷⁵ However, this is the price for the participating financial institution, rather than the price for retailers accepting NPP transactions. As the retail price will vary depending on the merchant's commercial arrangement with their processor, there are no public reports or data on average NPP costs of acceptance.

That being said, NPPA indicates that NPP is designed to be a cost-effective and innovative solution for retailers to lower costs of acceptance. The RBA has emphasized the need for the payment service to be provided at the lowest resource cost to the system, with businesses leveraging the NPP benefiting from the true cost of service acceptance. The NPP cost is also expected to shrink as the volume grows.⁷⁶ This year, around 30% of account-to-account transfers have been migrated to NPP.

A significant step of the NPP has been the introduction of the consumer-friendly addressing system, PayID, which allows A2A bank transfers to be addressed using mobile numbers, email address, or Australian Business Number (ABN). Consumer uptake of PayID has been slower than expected, with the highest share being consumers under the age of 50.

74 <https://www.rba.gov.au/speeches/2023/sp-gov-2023-12-12.html>

75 <https://fst.net.au/financial-services-news/rba-holds-out-on-mandating-npp-for-all-bank-accounts-for-now/#:~:text=For%20financial%20year%202022%2C%20NPP,is%20around%20%240.061%20per%20transaction.>

76 <https://www.rba.gov.au/speeches/2023/sp-gov-2023-12-12.html>

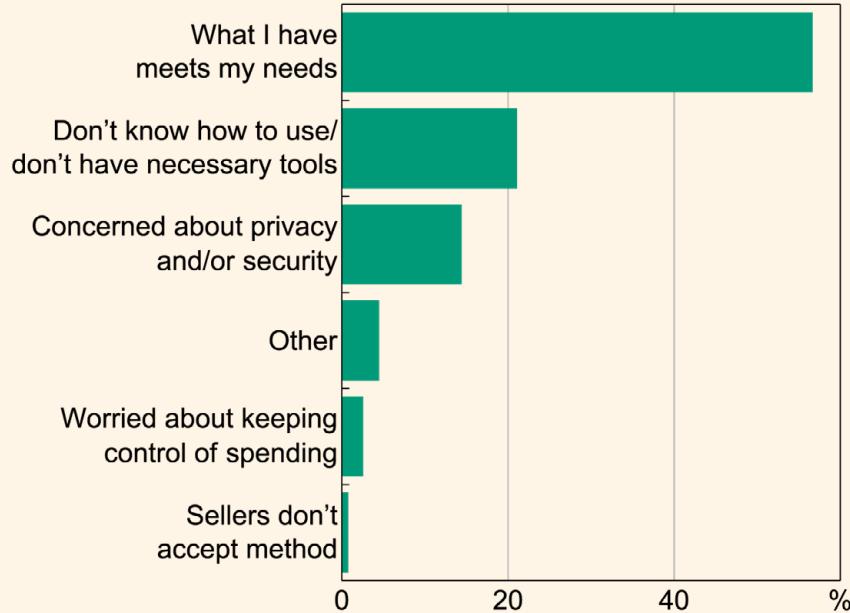


Figure 13. Reasons for Not Using PayID, % of respondents aware but not used in the past 12 months.⁷⁷

There is still a litany of challenges to achieve NPP's growth vision, including the staggered compliance of payment service providers from the official timelines and the lack of consumer awareness. The NPP also saw an average of more than 20 hours of downtime per service provider in 2023, making it the "least reliable" retail payments service according to the RBA Governor Michele Bullock.⁷⁸

PAYTO GROWTH AND ADOPTION

PayTo, the NPP's service to facilitate direct entry payments, provides direct debit-like functionality, allowing consumers to transact and initiate fast payments from their bank accounts. The system is an alternative to the current direct debit system and can be used for in-person or online transactions.

With market introduction in July 2022, consumer uptake has directly depended on bank enablement of the service for their customer accounts. All four major banks missed the initial deadline of June 30, 2022, and three of the four missed the subsequent April 2023 deadline for adoption.⁷⁹⁸⁰ Despite these delays, there's been notable progress from suppliers, merchants, and financial institutions in integrating with PayTo. For example, in May 2023, Woolworths' payments division Wpay commissioned payments services company Zepto

77 <https://www.rba.gov.au/publications/rdp/2023/pdf/rdp2023-08.pdf>

78 <https://fst.net.au/financial-services-news/rba-holds-out-on-mandating-npp-for-all-bank-accounts-for-now/>

79 <https://www.afr.com/companies/financial-services/banks-promise-to-meet-rba-s-delayed-payto-deadline-20230220-p5clxu>

80 <https://www.afr.com/companies/financial-services/banks-will-miss-major-deadline-for-real-time-payment-system-up-grade-20220314-p5a4dy>

to work with it on the development of a PayTo service, facilitating account-to-account payments.⁸¹ In addition, in December 2023, ANZ unveiled a PayTo service for Biller, allowing businesses to submit a request to debit to their customers through digital banking platforms for one-off or recurring transactions.⁸²

Limited data is publicly available on total PayTo volumes in Australia today, making PayTo adoption analysis difficult.

81 <https://www.bankingday.com/woolies-to-adopt-payto>

82 <https://itbrief.com.au/story/anz-bank-introduces-proprietary-payto-service-for-billers-in-australia>

India

PAYMENTS MIX

India pushed to formalize its economy in 2016 from a predominately cash based and regionally managed system. At the time, India was dealing with severe tax collection issues, counterfeiting of currencies, and a large informal economy.⁸³ To address this, the Indian government called for demonetization and removed all 500 and 1000 denominations of the rupee.⁸⁴ These were the two largest denominations and accounted for nearly 86% of the currency in circulation.⁸⁵ In tandem, that same year India provided nearly all households with a bank account, and the Unified Payments Interface (UPI), a digital payments platform, was launched.⁸⁶

UPI is an interbank system that facilitates instant peer-to-peer and business-to-consumer transactions and provides the infrastructure on which dozens of digital wallets operate.⁸⁷ UPI facilitates peer-to-peer, interbank, bill pay, and retail transactions between merchants and consumers.⁸⁸ UPI also allows for digital wallet use on the app from international providers such as Amazon Pay and Google Pay as well as domestic participants such as Paytm and PhonePe.⁸⁹ The growth of UPI utilization has led to material changes in the payments mix of India for both ecommerce and at the point-of-sale.

Between 2017 and 2022 there have been major shifts in both point-of-sale (POS) and ecommerce payments' mixes. Of the payment methods shared across both POS and ecommerce transactions, digital wallets saw the largest increase in share of ecommerce transaction value when comparing 2017 to 2022. This can be attributed to the realization of the Indian government's goal of digitization of its economy to a more cashless society.⁹⁰ For example, by 2022, digital wallets captured most of the cash volume from POS transactions (Figure 15), growing to be the most popular POS payment method.

While alternative payment methods (APMs) have grown into the largest payment method for POS transactions, this has mainly come at the expense of cash usage and even still,

83 <https://www.rbi.org.in/commonperson/english/scripts/FAQs.aspx?Id=1923>

84 <https://www.economist.com/finance-and-economics/2024/01/15/how-strong-is-indias-economy-under-narendra-modi>

85 Ibid

86 Ibid

87 <https://www.npci.org.in/what-we-do/upi/product-overview>

88 Ibid

89 https://www.business-standard.com/economy/news/how-are-upi-wallets-different-from-upi-all-that-you-need-to-know-123050400877_1.html

90 https://www.economist.com/special-report/2018/05/04/indias-digital-platforms?utm_medium=cpc_adword.pd&utm_source=google&ppccampaignID=17210591673&ppcadID=&utm_campaign=a.22brand_pmax-&utm_content=conversion.direct-response.anonymous&gad_source=1&gclid=EA1alQobChMli-i566alhAMVh8_CBB03kgOdEAMYASAAEgJZBfD_BwE&gclsrc=aw.ds

cash remains the second most used POS method. As a share of total POS spending, cash declined 45 percentage points, credit and debit card increased 8%, and digital wallet increased 28% from 2017-2022, this most likely can be attributed to the proliferation of UPI facilitating card, QR-code, and account-based payments.

From an ecommerce standpoint, digital wallets nearly doubled as a share of spending from 26% to 50% between 2017 and 2022 (Figure 14). This dramatic shift could prove to be a case study for the application and continued support of government intervention. The growth of UPI and other digital platforms has provided more transparency in the flow of money than previously provided by cash usage.

Bank transfer declined 4% while cash-on-delivery dropped 14% between 2017-2022. The general trend of cash use declining in India could be contributing to cash-on-delivery spend dropping. Credit card use declined 5% while debit card usage remained stable. The other notable development is the emergence of Buy Now, Pay Later (BNPL) accounting for 4% of ecommerce spend. This could be attributed to BNPL platforms being a more accessible line of credit than traditional credit cards that usually require credit histories and formal collateral that may not be widespread considering India's prior cash dependence.

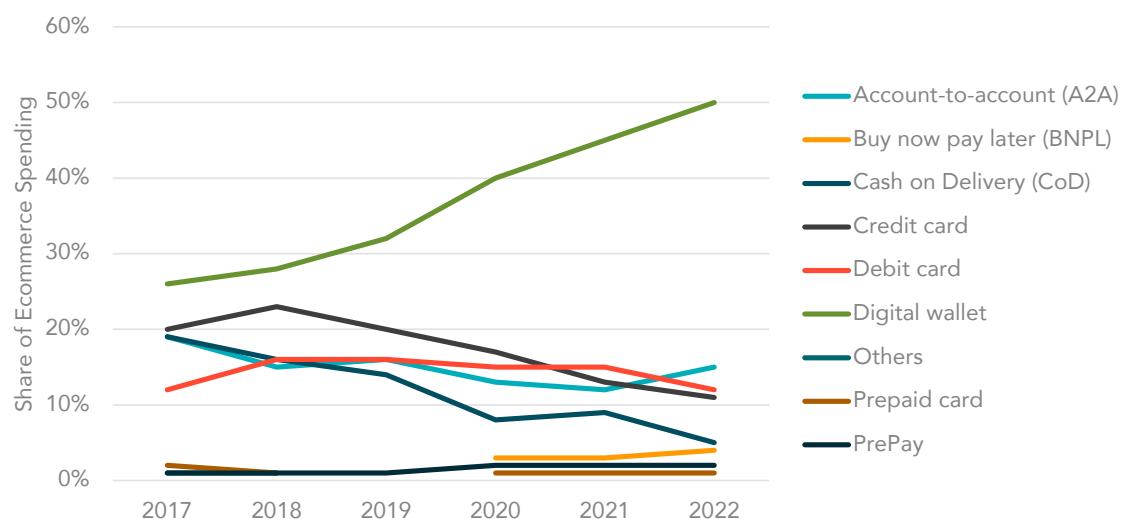


Figure 14. India Ecommerce Payments Mix (2017-2022)⁹¹

⁹¹ WorldPay-FIS Global Payments Report (2018-2023). For 2019, due to an absence of WorldPay reporting for this period, CMSPI estimated the payment method splits by generating average growth rates of the surrounding years.

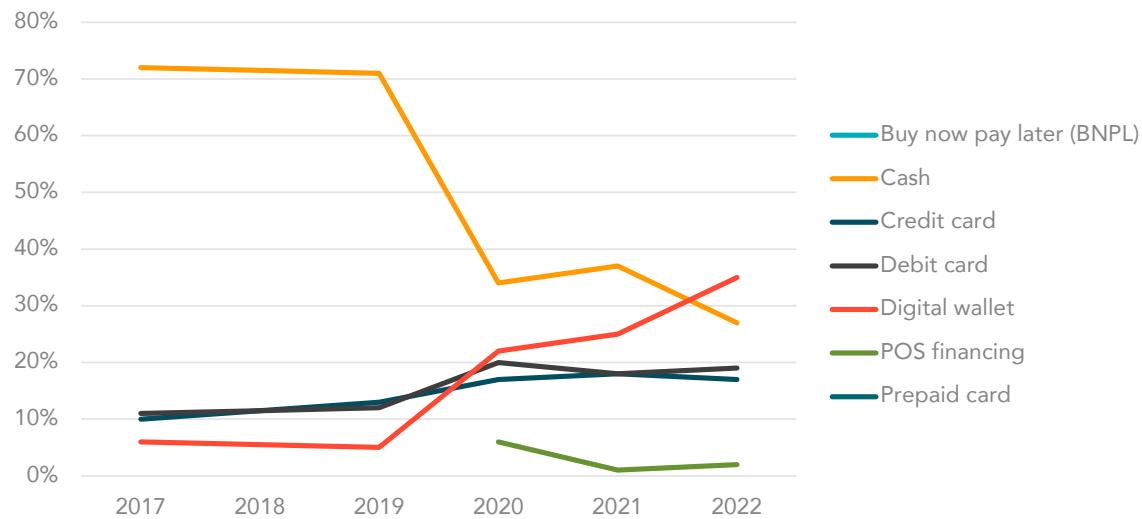


Figure 15. India POS Payments Mix (2017-2022)⁹²

PUBLIC REPORTING OF CARD FEES

Reserve Bank of India – Annual Volume and MDR Statistics

The RBI provides extensive monthly data for overall market trends of various payment systems operating in India. In addition, monthly reporting of volume and number of transactions of various payment systems, channels, and infrastructures goes back to June 2021.⁹³ While the Merchant Discount Rate (MDR) for debit POS and QR-based were capped in 2018⁹⁴, the RBI does not regularly publish average interchange or MDR statistics. In January 2020, the RBI implemented a “zero charges” regime for operating UPI in line with the Payment and Settlement Systems Act of 2007, which noted “no bank or system provider shall impose, whether directly or indirectly, any charge upon a person making or receiving a payment by using the prescribed electronic modes of payment.”⁹⁵

In 2023, however, the National Payments Corporation of India (NPCI) mandated an interchange fee for the use of digital wallets or other prepaid forms of payment on the UPI platform for certain transaction types.⁹⁶ An RBI-mandated MDR for credit is currently

⁹² WorldPay-FIS Global Payments Report (2018-2023). For 2019, due to an absence of WorldPay reporting for this period, CMSPI estimated the payment method splits by generating average growth rates of the surrounding years.

⁹³ <https://www.rbi.org.in/Scripts/PSIUserView.aspx>

⁹⁴ <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11183&Mode=0>

⁹⁵ <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21082>

⁹⁶ https://www.business-standard.com/economy/news/how-are-upi-wallets-different-from-upi-all-that-you-need-to-know-123050400877_1.html

being considered, but no timelines have been confirmed.⁹⁷ So far, the RBI has not directly reported interchange statistics on any channel.

ANALYSIS OF PUBLICLY AVAILABLE CARD FEES

The growth of digital payments in India has provided competition to card markets in India. India's UPI offers account-to-account services such as bank transfers and bill pay on its platform that were previously mandated to operate at zero charge by the RBI.⁹⁸ Recently, this mandate has been changed to introduce interchange fees on retail transactions in April of 2023. A 1.1% fee will be levied for transactions above 2000 rupees.⁹⁹ The NPCI also announced stratified interchange rates for fuel (0.5%), telecom, public utilities, and agriculture (0.7%), and supermarket transactions (0.9%).¹⁰⁰ A separate interchange fee or mutual fund, government, insurance, and railway transactions of 1% was announced as well.¹⁰¹ These interchange fees do not apply to account-to-account or peer-to-peer transactions.¹⁰² The NPCI referenced research from the Reserve Bank of Australia and the World Bank was considered in the formulation of these fees.

Moreover, UPI allows digital wallet functions that can be used with both card and QR-codes to initiate retail transactions. For card, digital wallet, and QR-code transactions carried out on the UPI platform, third-party participants can charge an MDR.¹⁰³

Card payments also have published maximum rates set by the RBI. Debit transactions using a QR-code have an MDR cap of 0.8% of transaction value, introduced by the RBI in 2018, with a separate 0.3% for small merchants.¹⁰⁴ Similarly, debit card merchant discount rates for POS transactions were capped at 0.9% of transactions for both card present and card-not-present transactions that same year with a small merchant cap of 0.4%.¹⁰⁵

The RBI has shared that it has a goal to promote debit acceptance. Previously in 2012, merchant discount rates for debit card transactions were capped at 0.75% for small transactions (under 2000 rupees) and a 1% MDR for larger transactions (above 2000 rupees) effective until December 31st, 2016.¹⁰⁶ Subsequently, a lower MDR of 0.25% for transactions up to 1000 rupees and a 0.5% cap for transactions between 1000 and 2000

97 https://www.business-standard.com/economy/news/how-are-upi-wallets-different-from-upi-all-that-you-need-to-know-123050400877_1.html

98 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21082>

99 <https://www.businesstoday.in/industry/banks/story/upi-payments-which-transactions-will-attract-npcis-11-interchange-fee-check-details-here-375271-2023-03-29>

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104 <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11183&Mode=0>

105 *ibid*

106 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21082>

rupees was enacted for 1 year between January 1st and December 31st, 2017.¹⁰⁷ These rates were then replaced with small merchant and large merchant rates currently in place.

The available options for digital payment methods at lower costs has driven down the MDRs of credit card transactions in India to around 1.1% to remain competitive as a payment method with a potential credit card MDR cap being considered by the RBI.^{108 109}

Finally, the Indian Government has budgeted 15 billion rupees in 2021-2022 fiscal year towards reimbursement of charges for RuPay debit cards and UPI transactions.¹¹⁰ Similar financial support has been announced for the 2022-2023 fiscal year.¹¹¹ Moreover, the Indian government issued a statement announcing reimbursement of charges to banks for all debit card, BHIM UPI, and Aadhaar Pay transaction up to 2000 rupees during calendar years 2018 and 2019 to ensure merchants were not mischarged for accepting small value payments.¹¹²

107 Ibid

108 <https://www.paymeindia.in/blog/understanding-interchange-fees-and-their-impact-on-users-and-economy/#what-are-interchange-fees>

109 <https://www.paymeindia.in/blog/understanding-interchange-fees-and-their-impact-on-users-and-economy/#what-are-interchange-fees>

110 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21082#7>

111 Ibid

112 Ibid

APM Case Study: India – UPI and Other Wallet-Based APMs

Launched in 2016 by National Payment Corporation of India (NPCI), Unified Payments Interface (UPI) is an instant payment infrastructure which facilitates a variety of transaction types, including peer-to-peer and retail transactions.¹¹³ Since launch, UPI has grown to become the most popular method of payment for consumers. For example, while card payments are reported to have accounted for 7.8 billion transactions in 2023¹¹⁴, UPI reported 12.3 billion transactions in just January 2024 (Figure 16).¹¹⁵ In FY 2023, up to \$1.7 trillion in transactions were performed with UPI.¹¹⁶



Figure 16. Number of Banks Integrated with UPI and Monthly Volume of UPI¹¹⁷

UPI is a system that essentially facilitates bank-to-bank transactions/transfers. On top of the UPI architecture, there are applications which are consumer facing. These apps can be built by banks or by third parties application providers (TPAPs). In any case, when the consumer uses these apps, they are making payments or transfers directly from their bank to the recipient's bank.

A wallet on the other hand operates more like a prepaid instrument. Consumers can use other payment instruments to load the wallet with value. Any wallet-based transaction is a wallet-to-wallet transaction. Prior to interoperability interventions covered below, consumers could only transfer funds within wallets. For example, a PhonePe wallet consumer could only transfer funds to another consumer with a PhonePe Wallet. What made these two systems more confusing is that one provider could offer both a UPI solution and a wallet solution.

113 <https://www.npci.org.in/what-we-do/upi/product-overview>

114 Euromonitor, Financial Cards and Payments in India (February 2024)

115 <https://www.npci.org.in/what-we-do/upi/product-statistics>

116 <https://www.livemint.com/money/personal-finance/unified-payments-interface-why-made-in-india-upi-is-becoming-a-global-favourite-11698047714911.html>

117 <https://www.npci.org.in/what-we-do/upi/product-statistics>

When the UPI was introduced, wallets became less relevant (Figure 17). One of the main drivers of this trend was that wallets did not provide much in the way of interoperability while the UPI did. In addition, the Reserve Bank of India (RBI) also introduced caps on wallet market share to protect consumers and merchants by preventing the emergence of a dominant player.

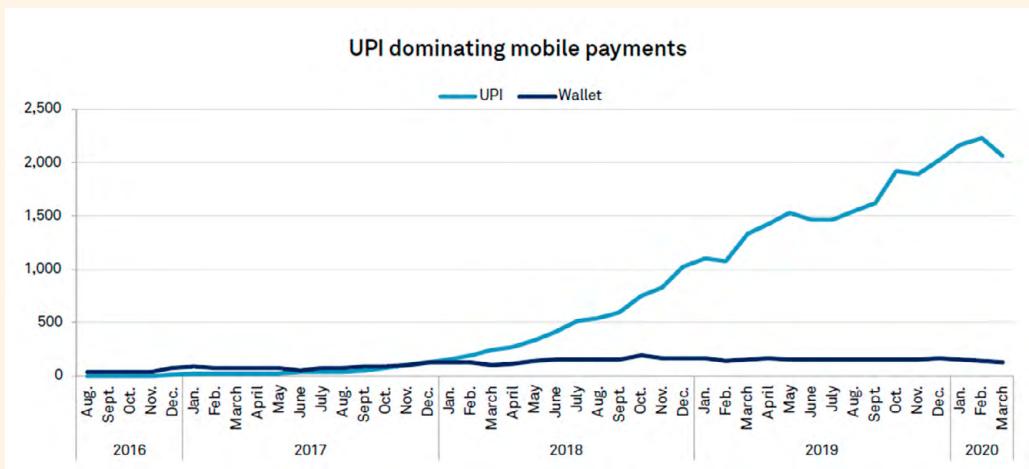


Figure 17. Number of Transactions Processed on UPI or Digital Wallets (2016-2020)¹¹⁸

In a May 2021 circular, the RBI announced several changes relevant to bank and non-bank Prepaid Payment Instruments (PPIs) (both cards and wallets). While addressing issues of account limits and cash withdrawals, the circular also introduced guidelines for inter-wallet interoperability.

The circular mandated issuers of PPIs to give consumers full interoperability through authorised card networks for PPIs in the form of cards and UPI for PPIs in the form of electronic wallets. This would only be required in instances where full know-your-customer was completed. In the wallet space, this would effectively allow consumers using a wallet like PhonePe to transfer funds directly to a consumer using a different wallet. The interoperability mandate also stretches to the acceptance of these instruments which would effectively mean any wallet would have to support acceptance at any merchant location where any UPI wallet is accepted. By March 2022, interoperability between wallet providers was mandated.

In November 2020, the NPCI put forward a circular¹¹⁹ announcing all TPAPs operating in the UPI ecosystem must limit their market share of overall volume of transactions processed through UPI during the preceding 3 months rolling to 30%. In March 2021, the NPCI produced a standard operating procedure, clarifying that the mechanism which will predominantly be used to regulate breaches of the market share cap will be new customer onboarding with no intention of impacting the transactions of consumers already on-boarded.¹²⁰ What is also important to note here is that there are no caps on payee TPAP but only on the payer TPAP. In other words,

¹¹⁸ 2020 India Mobile Payments Market Report, S&P Global Market Intelligence

¹¹⁹ NPCI/UPI/OC-97/2020-21

¹²⁰ NPCI/UPI/SOP-01/2020-21

when calculating the caps, if a consumer uses a UPI app to transfer funds to another consumer, that volume will be considered as part of the transaction volume of the payer's TPAP not the recipient's TPAP.

The standard also outlined certain market share thresholds during which TPAPs are notified and/or are required to act:

- **Level 1** – when the TPAP reaches a market share of between 25%-27%, it will receive an alert via email or letter.
- **Level 2** – When a TPAP reaches a market share of between 27.1% - 30%, the second alert will be sent to the TPAP and the TPAP must provide evidence of actions taken to comply with the cap.
- **Level 3** – The TPAP and PSP Bank must stop the on-boarding of new customers and provide undertakings to comply with the caps. The NPCI may offer an exemption to the on-boarding ban to ensure smooth user on-boarding implementation. This exemption can last up to a period of 6 months and considered on a case-by-case basis. During the exemption period, the TPAP must adopt new customer on-boarding in a moderated manner which is defined as allowing up to 50% of the total customer on-boarding requests of the preceding 3 months.

From a view of financial inclusion, the growth of digital wallets in India, fueled by the accessibility and interoperability of UPI, has served to promote financial inclusion, convenience, and speed to transacting. In particular, one of the benefits for consumers of UPI-enabled digital wallets is the convenience of performing payments using only their mobile phones, allowing the 11% of the unbanked Indian population to perform digital transactions.¹²¹ The launch of Aadhaar digital IDs, launched in 2012 and currently boasting 90% penetration of India's population¹²², coupled with the accessibility of digital wallets using UPI, has allowed previously unbanked consumers to now register for a variety of digital wallets which allow them to make digital transactions.

For merchants, the UPI system has proven to be an opportunity to reach new customers and lower costs of acceptance. Upon launch, UPI operated under a zero MDR regime. According to NPCI, the low cost of acceptance was one of the "primary reasons why the penetration of credit cards or other digital payment methods is low in India."¹²³ In fact, for the FY 2021-2022, the Government of India had budgeted ~₹1,500 crore toward the reimbursement of charges for RuPay, India's domestic debit network, and UPI. Similar financial support was also announced for FY 2022-2023.¹²⁴ This subsidy has endured since 2017, when the government announced reimbursements to banks for all debit card, UPI, and Aadhaar Pay transactions up to ₹2,000/- during 2018 and 2019 in order to ensure merchants are not charged for accepting small value payments.

121 <https://www.ebanx.com/en/resources/payments-explained/unified-payments-interface-upi/>

122 <https://www.forbes.com/sites/tylerroush/2023/11/02/what-is-aadhaar-indias-id-system-sam-altman-is-reportedly-modeling-his-eye-scanning-crypto-project-worldcoin-after/?sh=6a14a3932dad>

123 <https://www.npci.org.in/PDF/npci/media-coverage/August-2022-The-Economic-Times-CanUPI-Win-The-Credit-Card-Game.pdf>

124 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21082>

As of 2022, however, the zero-MDR regime was challenged as banks and government UPI operators sought compensation for developing and operating the UPI ecosystem. In August 2022, the RBI released a discussion paper on regulating various payment system-related charges, including imposition of MDR on UPI transactions. The central bank questioned that if UPI transactions were to be charged, should it be determined by the regulator or market forces.¹²⁵

By April 2023, NPCI announced that UPI transactions would attract a series of interchange fees depending on the industry. The fees for UPI-based PPI transactions are characterized below:

- 1.1% interchange fee for high-ticket (Rs 2,000)¹²⁶
- 0.5% interchange fee for fuel transactions
- 0.7% interchange fee for telecom, utilities, post office, education, and agriculture transactions
- 0.9% interchange fee for supermarket
- 1% interchange fee for mutual fund, government, insurance, and railways

These fees are paid by the merchant and received by the customer's bank. These fees will apply to all retail transactions within each but exempts bank account to bank account transactions on UPI and transactions below the cap for unlisted industries. The fee will apply to transactions performed on apps such as Paytm, PhonePe, Amazon Pay, Freecharge, etc. The NPCI clarified that the interchange fee is aligned with the recommendations from the World Bank to set UPI interchange at 1.15%.¹²⁷

With the introduction of interchange fees for UPI usage, the cost of acceptance for UPI is less competitive against debit and credit transactions. However, with credit uncapped and debit caps applying to all transactions, while UPI interchange fees apply only to a subset, it's anticipated that UPI's growth will not slow.

125 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21082>

126 <https://www.businessstoday.in/industry/banks/story/upi-payments-which-transactions-will-attract-npcis-11-interchange-fee-check-details-here-375271-2023-03-29>

127 <https://www.businessstoday.in/industry/banks/story/upi-payments-which-transactions-will-attract-npcis-11-interchange-fee-check-details-here-375271-2023-03-29>

Japan

PAYMENTS MIX

In vanishingly fewer countries, cash is the dominant payment method. Japan, among a small group of countries such as Indonesia and India, is still a cash dominant economy, with 51% of POS spending made with cash in 2023.¹²⁸ In fact, according to the 2023 Global Payments Report, WorldPay reported Japan to be only one of three countries where cash remained the dominant payment method. In Japan, this attachment to cash is, in part, attributed to Japan's aging population, with nearly 29% of the population aged 65 or older in 2021.¹²⁹ The Ministry of Economy, Trade, and Industry (METI) released a Cashless Vision in 2018 with aims of increasing cashless payments to 40% by 2025, in time for the 2025 Osaka World Expo.¹³⁰ This included the government announcing in 2022 the ability for companies to pay employee salaries via digital wallets and a 2019 program to rebate businesses 5% of the collected consumption tax for cashless payments.¹³¹

In the immediate aftermath of some of the early government initiatives, from 2018 to 2019, the share of in-store spending made with a credit card rose from 26% to 31%, making it the fastest growing payment method over that period. In addition, cash spending fell by nearly the same amount, falling from 68% of in-store spending to 64% (Figure 19).¹³² As many POS transactions are made with cash, debit's share of spending has remained below 5%. Cash in ecommerce channels is falling as well, with cash-on-delivery falling to just 2% of ecommerce spending in 2022 and PostPay, a cash-oriented ecommerce payment method, falling from 20% of ecommerce spending in 2017 to 6% in 2022. In parallel, the share of ecommerce spending on digital wallets grew six-fold, from 3% in 2018 to 18% by 2022.

Driven in part by the government's Cashless Vision initiative and the COVID-19 pandemic shift to online, by 2022, credit cards represented the primary payment method for ecommerce payments and were second to cash for in-store payments.¹³³ Consumers point to the convenience, security, and rewards associated with credit card spending as their primary appeal. Merchant acceptance of credit card payments is also driving consumer demand for credit card use.

While Japan's digital wallet penetration (inclusive of pass-through, stored value, and staged digital wallets) lags its regional counterparts, such as South Korea, Singapore, and the Philippines, the digital wallet share of ecommerce spending more than

128 WorldPay-FIS Global Payments Report (2023)

129 <https://www.stat.go.jp/english/data/handbook/c0117.html>

130 <https://flow.db.com/cash-management/japan-joins-the-journey-to-a-cashless-society>

131 <https://www.thebanker.com/Japan-seeks-to-shake-off-cash-1627897177>

132 WorldPay-FIS Global Payments Report (2018-2023)

133 WorldPay-FIS Global Payments Report (2023)

doubled from 2018 to 2019 (Figure 18).¹³⁴ That growth continued throughout the COVID-19 pandemic and, by 2022, digital wallets represented nearly one in five dollars spent online.¹³⁵ While digital wallet growth in ecommerce appeared rapid but consistent after 2018, digital wallets in the POS environment grew at a sharp clip, rising from just 1% of POS spending in 2020 to 10% by 2022.¹³⁶ By some estimates, Japan digital wallet adoption has grown by 20% in just one quarter of 2022, with Japanese consumers showing preference for Fintech wallets, defined as wallets native to a specific geographical area.¹³⁷

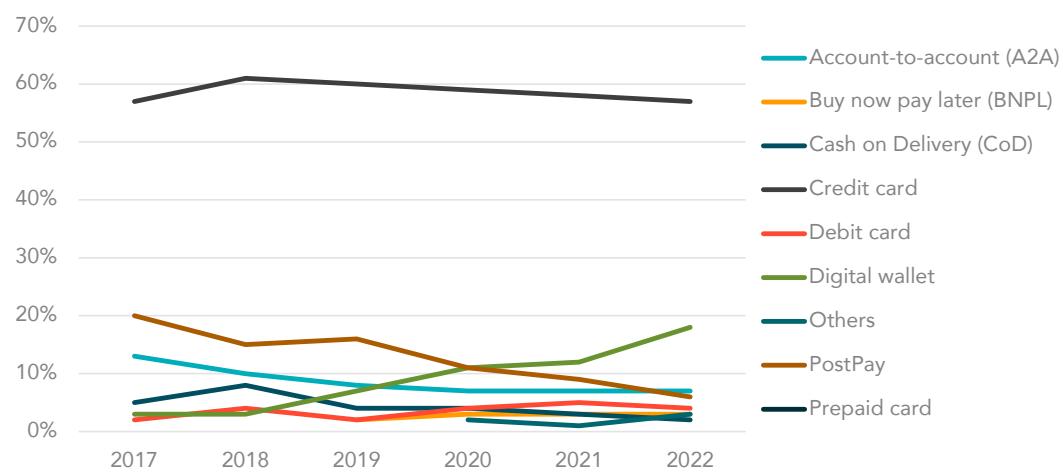


Figure 18. Japan Ecommerce Payments Mix (2017-2022)¹³⁸

134 Ibid

135 Ibid

136 Ibid

137 <https://www.pymnts.com/wp-content/uploads/2022/12/PYMNTS-How-The-World-Does-Digital-December-2022.pdf>

138 WorldPay-FIS Global Payments Report (2018-2023)

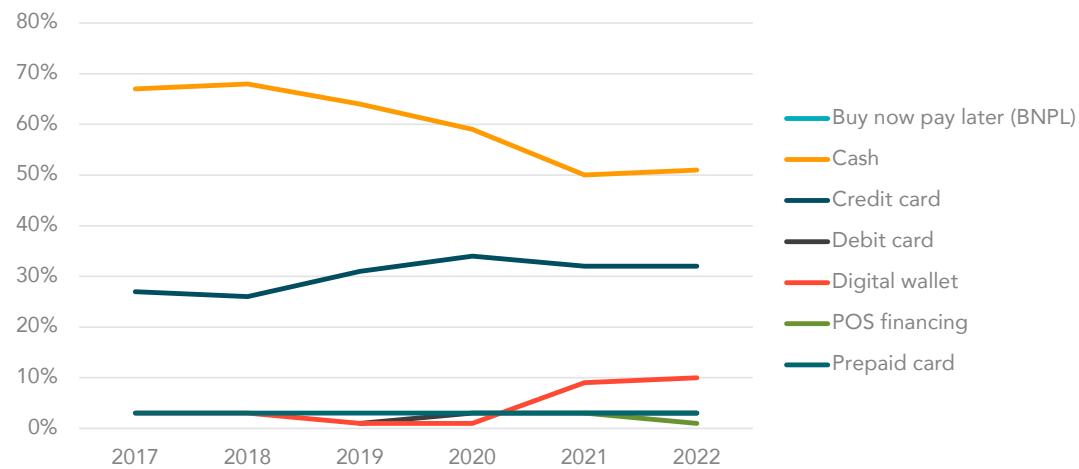


Figure 19. Japan POS Payments Mix (2017-2022)¹³⁹

PUBLIC REPORTING OF CARD FEES

Japan Fair Trade Commission (JFTC) – Credit Card Transactions Survey

The Fair Trade Commission is Japan's competition regulator, responsible for regulating economic competition and enforcing the Antimonopoly Act.

In 2017 and 2018, the Japanese government approved long-term strategies addressing a variety of key commitments, including "Realizing 'Society 5.0'" which aims to "advance innovation through the fourth industrial revolution."¹⁴⁰ One element of the strategy is to "promote cashless economy."¹⁴¹ In 2018, the Ministry of Economy, Trade, and Industry built on that principle and formulated the "Cashless Vision" which aims to increase cashless transactions to 40% by 2025.¹⁴² In 2021, the "Growth Strategy Action Plan," a cabinet decision made in 2021, indicated that high credit card merchant fees was one of the challenges to expanding cashless payments in Japan, specifically citing interchange as one of the highest merchant fees, representing 70% of the total cost.¹⁴³

With this context, the JFTC has conducted two surveys of market participants on the subject of credit card transactions. The first survey conducted in 2019 and the second survey from 2020-2021 (published in 2022) both sought to monitor competition trends in the market and identify trade practices in the credit card market are "likely to be problematic under the AMA and competition policy."¹⁴⁴

The 2019 JFTC credit card market survey covered the size of the card market, anonymous payment network operator market shares, trends in consumer card usage, trends in merchant card contracts, and competition and contract analysis between network operators and credit card companies (i.e. acquirers, processors, and financial institutions).

The 2022 JFTC credit card market survey covered a similar set of questions to the 2019 survey.

Consistent with the 2019 findings, the 2022 JFTC survey found that none of the five international card brands surveyed published standard interchange fee rates for Japan, citing the risks of disclosing "confidential business information."¹⁴⁵ This claim stands in contrast to the more than 60 countries in which standard interchange fee rates for one or more of the international brands are disclosed.¹⁴⁶ The report found that disclosure of standard interchange fee rates

140 <https://www.mofa.go.jp/files/000272312.pdf>

141 <https://www.mofa.go.jp/files/000272312.pdf>

142 <https://www.weforum.org/agenda/2022/09/japan-cashless-society-digital-salary-payment/#:~:text=In%202018%2C%20the%20Ministry%20of,possibly%2080%25%20in%20the%20future.>

143 <https://www.whitecase.com/insight-alert/jftc-market-study-report-credit-card-transactions-suggests-standard-interchange-fee>

144 <https://www.jftc.go.jp/en/pressreleases/yearly-2019/March/SurveyonCreditCardMarketReport.pdf>

145 Pg. 84, JFTC 2022 Credit Card Market Survey

146 <https://www.whitecase.com/insight-alert/jftc-market-study-report-credit-card-transactions-suggests-standard-interchange-fee>

for multilateral interchange fees is expected to facilitate merchant negotiations with their acquirers and competition among acquirers in the "merchant management market for credit cards as well as non-credit card payment methods."¹⁴⁷

In September 2022, Ministry of Economy, Trade, and Industry (METI), responsible for enhancing economic and industrial aims of the Japanese government, required the card networks to disclose interchange fees "in order to ensure fair competitive conditions among international brands in the credit card issuance market and raise the transparency of the credit card market as a whole."¹⁴⁸

Japan Ministry of Economy, Trade and Industry Disclosure of Interchange Rates

In compliance with the September 2022 disclosure requirements, METI maintains links to card network interchange rate tables for Visa¹⁴⁹, Mastercard¹⁵⁰, and UnionPay.¹⁵¹ The rate tables cover only interchange fees for credit card transactions and do not report on debit cards.

ANALYSIS OF PUBLICLY AVAILABLE CARD FEES

There are three primary sources for cost analysis and benchmarking in Japan. The first is disclosed interchange tables by the networks, and the other two are JFTC's 2019 and 2022 reports on the credit card market. These reports feature reporting on average merchant fees by merchant size and negotiation type. As of 2019, the average merchant discount rate was 3.2%, but there was significant variation across two factors: merchant size and whether the merchant "conducted bidding or compared estimates when signing a merchant contract" (Figures 20 and 21).¹⁵²

147 Ibid

148 https://www.meti.go.jp/english/press/2022/0914_002.html

149 <https://www.visa.co.jp/about-visa/interchange-fees.html>

150 https://www.mastercard.co.jp/content/dam/public/mastercardcom/jp/ja/documents/interchange_master-card_creditcard.pdf

151 <https://www.unionpayintl.com/en/IRF/pdf/Japan%20IRF.pdf>

152 <https://www.jftc.go.jp/en/pressreleases/yearly-2019/March/SurveyonCreditCardMarketReport.pdf>

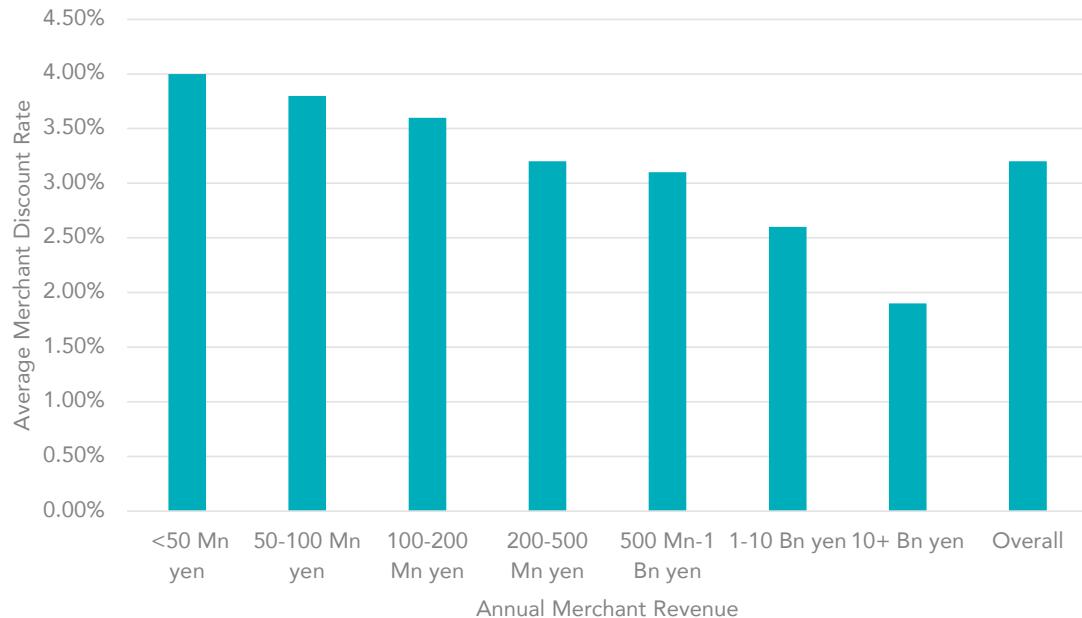


Figure 20. Average Merchant Discount Rate by Merchant Annual Revenue (2019)

As demonstrated in Figure 20, the lowest revenue merchant survey respondents from the survey (of which there were 89), paid more than double the average rate of the largest revenue merchant respondents and nearly one-third more than the overall market average. In fact, the report found that there was a "statistically significant negative relationship between annual sales and merchant discount rates (the merchant discount rates were lower at the merchants with higher annual sales than at the merchants with lower ones)." ¹⁵³ In addition, merchants who conducted a competitive bidding process or simultaneously evaluated multiple card acceptance offers tended to report lower costs of acceptance than those that had not. According to the survey data, the average MDR for a merchant conducting bidding or evaluating multiple bids was 2.80%, while a merchant who had not done so paid an average 3.40%, 60 basis points higher (Figure 21). This dynamic is present across all merchant sizes, indicating that access to and utilization of competing benchmarks is useful for all merchants to reduce their costs of acceptance.

¹⁵³

<https://www.jftc.go.jp/en/pressreleases/yearly-2019/March/SurveyonCreditCardMarketReport.pdf>

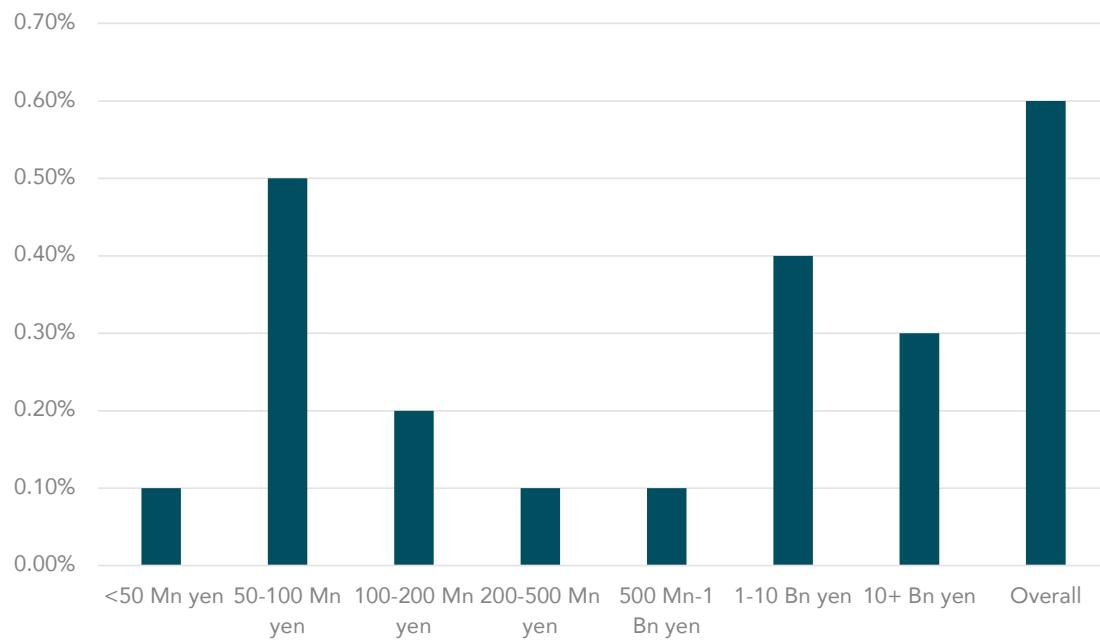


Figure 21. Average Difference Between Merchants Not Conducting Network Bidding vs. Those Conducting Network Bidding by Merchant Size (2019)¹⁵⁴

While Japan previously had a 3.25% interchange cap on credit card fees and a government-subsidized points program to offset the cost of the national sales tax increase from 8% to 10% in 2019¹⁵⁵, due to significant pushback from the credit card industry, lawmakers reversed their stance, allowing card companies the discretion to decide whether or not to uphold the cap.¹⁵⁶

As no interchange cap or co-badging mandates currently exist in Japan, the card networks are unfettered in their ability to price merchant fees. According to merchant findings from the 2019 survey, “until several years ago, there were negotiations for lowering the merchant discount fees. However, it appears that the merchant discount fees have been reduced to the limit and there have been no such negotiations in the past few years.”¹⁵⁷

In the 2022 survey, reporting indicates costs have come down significantly, with overall merchant commissions falling to 2.70% (Figure 22).¹⁵⁸ This reduction of cost may be attributed to changes in Japan’s payments policy since 2019. In particular, as part of its goals to achieve 40% cashless payments by 2025, the Ministry of Trade and Industry (METI) has been providing government grants to cover the cost of purchasing or leasing

¹⁵⁴ <https://www.jftc.go.jp/en/pressreleases/yearly-2019/March/SurveyonCreditCardMarketReport.pdf>

¹⁵⁵ <https://asia.nikkei.com/Economy/High-credit-card-fees-threaten-Japan-s-push-to-go-cashless>

¹⁵⁶ Ibid

¹⁵⁷ <https://www.jftc.go.jp/en/pressreleases/yearly-2019/March/SurveyonCreditCardMarketReport.pdf>

¹⁵⁸ <https://www.jftc.go.jp/houdou/pressrelease/2022/apr/220408.html>

POS terminals compatible with cashless payments and to mitigate the initial investment for merchants, particularly small businesses.

While costs are going down on average, similar market dynamics endured, such as small merchants burdening higher costs and negotiation driving lower costs. Negotiated vs. non-negotiated differentials persisted, with negotiated fees sitting at an average 2.51% and non-negotiated fees sitting at 2.89%, a 38 basis point differential. Similarly, the smallest merchants paid an average MDR of 3.58%, more than double the largest merchants and nearly one third higher than the market average (Figure 22).¹⁵⁹

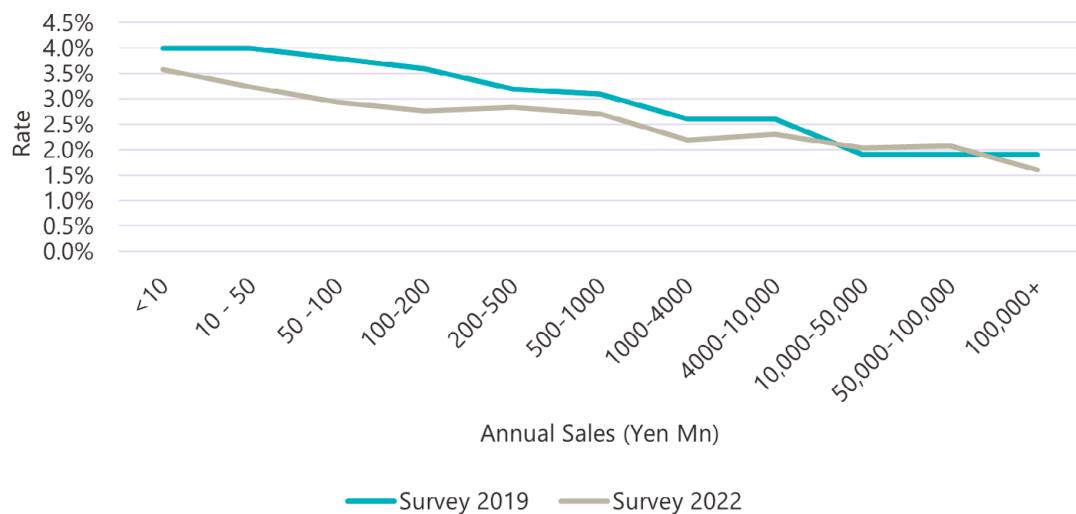


Figure 22. Average MDR by Merchant Annual Sales (2019 vs. 2022)

Since the 2022 report's publication, JFTC and METI have continued to take on additional initiatives to improve the cost of payments for merchants. The JFTC found that there could be more adequate steps taken to promote fee negotiations between merchants and acquirers and competition among acquirers and networks.

The JFTC splits the networks in the following categories:

- Category 1: International networks that are not responsible for card issuance and managing member stores, i.e., Visa, UnionPay, Mastercard.
- Category 2: International networks that are responsible for card issuance, i.e., American Express, JCB, and Diners.
- House Card: Cards without international branding

¹⁵⁹ Ibid

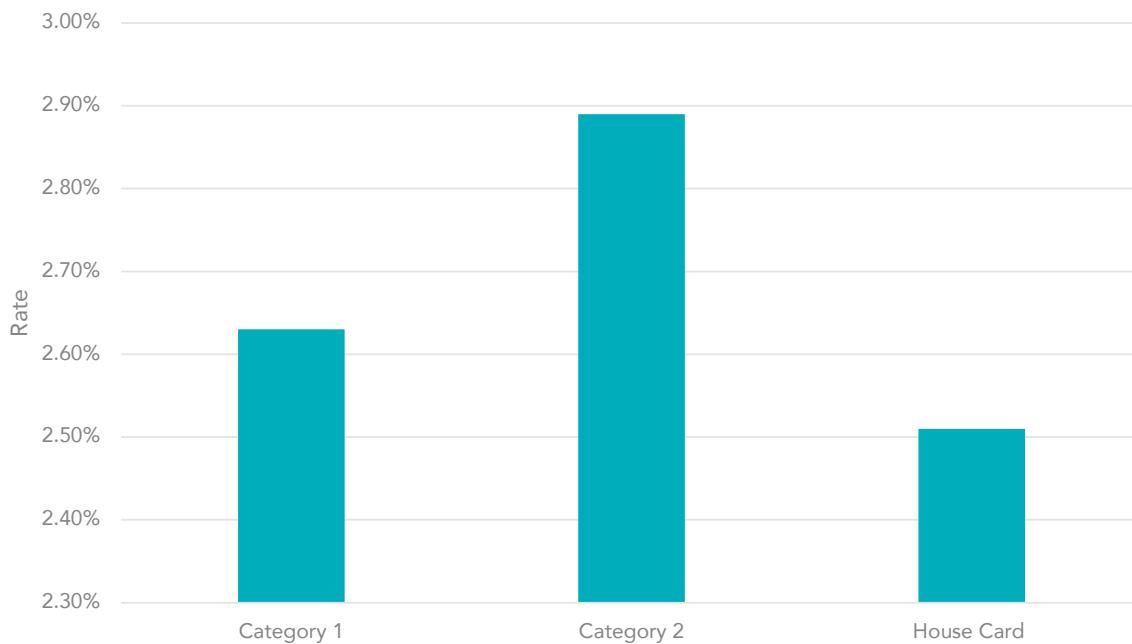


Figure 23 Average Merchant Commission from 2020-2021

The cost of merchant fees between these categories varies significantly in order of least to most expensive: House Cards (2.51%), Category 1 (2.63%), and Category 2 (2.89%). Interestingly, merchants fed back that some international brands even increased fees shortly after the first report was published in 2019.

To combat some of these areas on fee increases and lack of merchant transparency, progress since the 2022 report is displayed below and covered in the section on Public Resources on Cost Analysis:^{160 161}



Figure 24 JFTC & METI Ongoing Reforms

¹⁶⁰ https://www.meti.go.jp/english/press/2022/1130_003.html

¹⁶¹ https://www.meti.go.jp/english/press/2023/0601_002.html

These areas of progress are extremely valuable for merchant cost transparency. However, there are currently no co-badging rules and routing rights for Japanese merchants to leverage with the networks. About 80% of merchant clients reported that they were highly dependent on international brands for their transactions. Without co-badging and routing rights, merchants have little control over which network via which to send the transaction, resulting in lower cost-savings and reduced efficiencies.

The report addresses the threat of contactless payments to merchants as international card brands require the mandatory acceptance of contactless payment methods and the installment of compatible terminals. Most of the local issuer acquiring partners quoted in the report express harsh concerns against this ruling, with one business estimating an annual cost increase of several billion yen (in the USD millions) annually which they will "have no choice but to pass on to merchant fees".

The report also evaluates the network rule bans on merchant "price steering". JFTC highlights its concern that the prohibition of steering clauses limits a merchant's negotiation levers and may be in conflict with Japan's Antimonopoly Act. It mentions the following concerns about making steering possible for Japanese merchants.

1. Not many merchants wanted to utilize payment steering. If steering was possible, over 60% of merchant respondents stated they would not promote consumers to use payment methods with lower fees.
2. Steering prohibitions may protect cardholders' preference of payment method. Depending on the transaction size, 60-70% of cardholders stated that, if requested, they would use an alternative payment method, while 30-40% said they would stop shopping at that store all together if it was not essential.

The positive impacts of merchant fee reduction from 2019 to 2022 and the JFTC and METI's reforms on transparency could be offset by the lack of merchant protections and tools on hand for driving competition between networks, given the absence of co-badging mandates in Japan.

APM Case Study: Digital Wallets

In recent years, Japan has witnessed a significant shift in its payment landscape, moving from a traditionally cash-based society towards more modern, cashless payment solutions. Despite its reputation for technological innovation, Japan's adoption of digital wallets has lagged behind some of its APAC counterparts, notably China.

However, the landscape is rapidly changing, with digital wallets gaining popularity among Japanese consumers and merchants alike. In 2022, digital wallets made notable progress in the Japanese market, particularly in the e-commerce sector, where their share of transaction value jumped from 12% in 2021 to 18%. At the point of sale (POS), digital wallet usage saw a more modest increase from 9% to 10% over the same period. This growth reflects a broader trend towards cashless payments, driven by consumer demand for convenience and efficiency in transactions.

Market Growth and Consumer Behavior: The Fortumo & Boku 2021 Mobile Wallets Report highlights that mobile wallet transactions in Japan are expected to more than double from 7.2 billion transactions per year in 2020 to 14.6 billion by 2025, with the transaction value forecasted to increase from \$189 billion in 2020 to \$337 billion in 2025.¹⁶² This indicates a rapidly growing acceptance and usage of mobile wallets among Japanese consumers. Additionally, Japanese consumers, on average, use 2.2 wallets, showcasing a high level of engagement with mobile wallets for purchases, particularly among the 35–44-year-old demographic.¹⁶³

Historically, Japan has been a predominantly cash-based society, with many small shops and restaurants only accepting cash payments. Recognizing the need to modernize its payment infrastructure ahead of the 2020 Olympics, the Japanese government announced a plan in late 2018 to incentivize cashless payments. Consumers paying with cashless services were offered a cashback of up to 5 percent, accelerating the adoption of cashless payment technologies.¹⁶⁴

The push to cashless payments has led to a proliferation of mobile payment services in Japan. Consumers now find themselves with an array of options, with over 15 different apps available for use in convenience stores alone. These include LINE Pay, PayPay, Rakuten Pay, and many others, collectively nicknamed "nantoka-pay" (whatever-pay) by users.¹⁶⁵

162 https://wp-boku-2020.s3.eu-west-2.amazonaws.com/media/2021/09/18175330/2021-Mobile-Wallets-Report.pdf?utm_campaign=Mobile+Wallets+Report+2021+Download&utm_medium=email&utm_source=autopilot

163 Ibid

164 <https://ctmfile.com/story/real-time-payments-pioneer-japan-shaking-off-cash-by-embracing-digital-payments#:~:text=Under%20the%20programme%2C%20citizens%20who,cashless%20payments%20in%20the%20country>

165 <https://medium.com/swlh/japans-mobile-payment-arms-race-575544d67522>

Despite the convenience offered by Near Field Communication (NFC) technologies, which have been in use since the early 2000s for transportation payments, many of the new cashless payment services rely on QR codes. This method requires users to open an app and scan a code to complete transactions, a process that some find cumbersome compared to the simplicity of NFC taps. The reliance on QR codes has presented an uphill battle for new services trying to provide a seamless user experience and compete with established NFC payment methods that are favored for their convenience.

Government Initiatives and Security Concerns: Government efforts to promote cashless payments and the challenges faced by new QR code services are crucial aspects of this transition. As a result of the 2018 push to build a cash-free society, the government developed a unique QR code system that was compatible with 11 QR codes upon release.¹⁶⁶ Known as JPQR, the solution is aimed at accelerating the promotion of mobile payments in Japan by creating a unified and standardized QR code, with merchants applying for a JPQR code online.¹⁶⁷ In addition, the Japanese government is discussing international expansion of JPQR that will link the current domestic solution to global payment providers this year. This move would represent a continuation of a 2022 agreement between five ASEAN member states (Singapore, Thailand, Malaysia, Indonesia and the Philippines) to create unified QR code payment systems.¹⁶⁸

Above QR code standardization, to overcome consumer reluctance and stimulate adoption, several mobile payment services have launched aggressive marketing campaigns. PayPay, for example, launched a significant campaign offering a 20% cashback on all payments, with some lucky users receiving 100% back. This campaign was so successful that the allocated 10-billion-yen budget was exhausted in just 10 days, dramatically increasing the service's user base.

In response to rising competition for customer retention, leading mobile payment services LINE Pay and Merpay formed the Mobile Payment Alliance, aiming to increase adoption by simplifying implementation for stores and offering more integrated services. The alliance, now joined by NTT Docomo, aims to leverage the widespread use of LINE's chat app and Mercari's auction platform to gain a competitive edge.

Despite these efforts, the future of mobile payments in Japan remains uncertain. Consumer hesitation towards QR code-based apps persists, and the industry is yet to find the perfect formula for widespread adoption. The focus for mobile payment providers is now on innovation, aiming to win over consumers with secure, seamless, and convenient payment solutions.

¹⁶⁶ <https://m.unionpayintl.com/en/mediaCenter/newsCenter/companyNews/6449.shtml>

¹⁶⁷ Ibid

¹⁶⁸ <https://www.techinasia.com/japan-integrate-qr-payment-southeast-asia-2025>

Japan's cashless payments journey, underscored by the growing adoption of digital wallets, reflects a dynamic interplay between technological innovation, government initiatives, market competition, and consumer behavior. Despite the challenges, including security concerns and the need for more seamless user experiences, the market is poised for significant growth, driven by consumer demand for convenience and efficiency in transactions.

Singapore

PAYMENTS MIX

Singapore's payments landscape encompasses a variety of digital tools for consumers. In 2016, the Monetary Authority of Singapore (MAS) described "An Electronic Payments Society" at a conference on fintech and financial inclusion.¹⁶⁹ This was a part of a broader national initiative to make Singapore a Smart Nation.¹⁷⁰ To bring about this electronic payment's society, the MAS focuses on four key elements; continuous innovation, increasing consumer confidence, maximizing payments productivity, and financial inclusion. They laid out a plan that called for streamlining regulation, creating a payments council, focusing on interoperability of infrastructure, and pervasive digitization.¹⁷¹ This led to increased QR-code development both domestically and cross-border through settlement linkages.

In line with the MAS's priorities, the streamlined regulation was realized in 2018 with the Payment Services Bill. This regulatory framework consisted of two parallel regimes, one regime that allowed the MAS to regulate and designate participants in the payment supply chain and one regime to issue single licenses to participants that covered diverse product offerings as opposed to individual licenses per product type.¹⁷² The goal of this legislation was to remove barriers to the development of new payment technologies from current license holders and new participants alike. Between 2017 and 2022, the data shows significant shifts in both the point-of-sale (POS) and ecommerce sectors that reflect the MAS's initiative to promote digital and mobile payment platforms. In ecommerce, digital wallets have increased 22% while credit card spending dropped 25% to just 42% (Figure 25). Debit cards also experience huge growth, nearly tripling its share of spending from 4% in 2017 to 11% by 2022.

For POS transactions, digital wallet's share of spending grew fivefold between 2017 and 2022, growing from just 4% in 2017 to nearly 20% in 2022 (Figure 26). This was mostly at the expense of cash which declined 21 percentage points between 2017 and 2022, reflecting the policy initiated by the MAS to increase electronic payments. Credit card's share of POS spending grew about six percentage points and debit declined about two percentage points, evidencing a shift from cash to card and from card to digital payments for in-store transactions. Singapore's quick response code (SGQR) standards were introduced in 2018 and has further facilitated the use of card and bank accounts at POS.¹⁷³ These standards were used to develop a single quick response (QR) code that combined multiple QR codes from different payment schemes.¹⁷⁴ These codes allow consumers to pick their preferred scheme, scan the code, and initiate the

169 <https://www.mas.gov.sg/news/speeches/2016/an-electronic-payments-society>

170 Ibid

171 Ibid

172 <https://www.mas.gov.sg/news/media-releases/2018/new-regulatory-framework-to-enhance-payment-services-in-singapore>

173 <https://www.smartnation.gov.sg/initiatives/strategic-national-projects/e-payments/>

174 Ibid

payment on a mobile device.¹⁷⁵ This is especially significant considering that merchants traditionally needed several POS terminals to accept various card types. The need for and proliferation of POS terminals with ubiquitous card acceptance capabilities was a major element of MAS's strategy. The growth of QR-code usage to facilitate card and account-based payments has alleviated some of the pressure on merchants to upgrade their POS hardware.

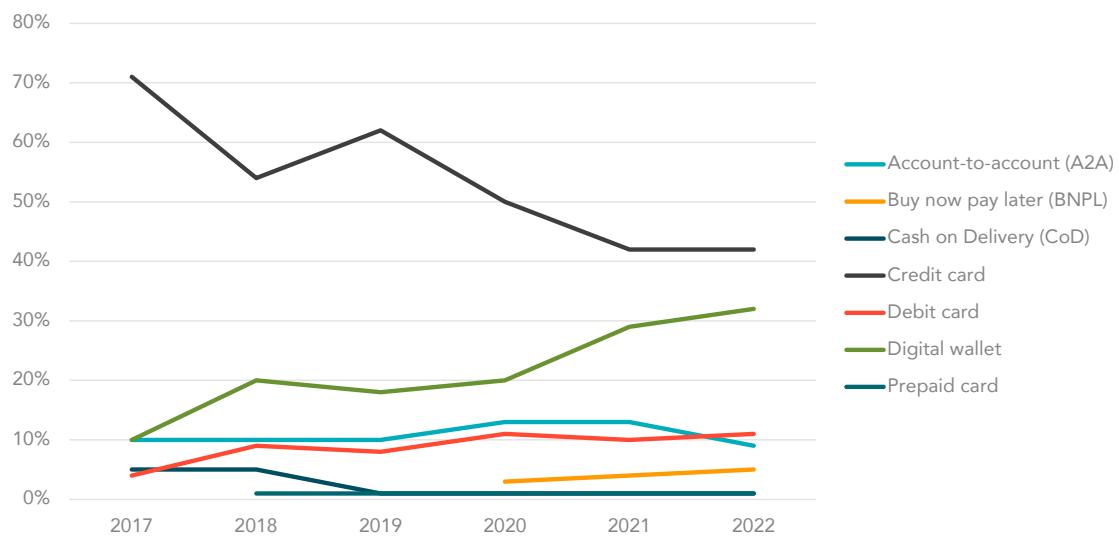


Figure 25. Singapore Ecommerce Payments Mix¹⁷⁶

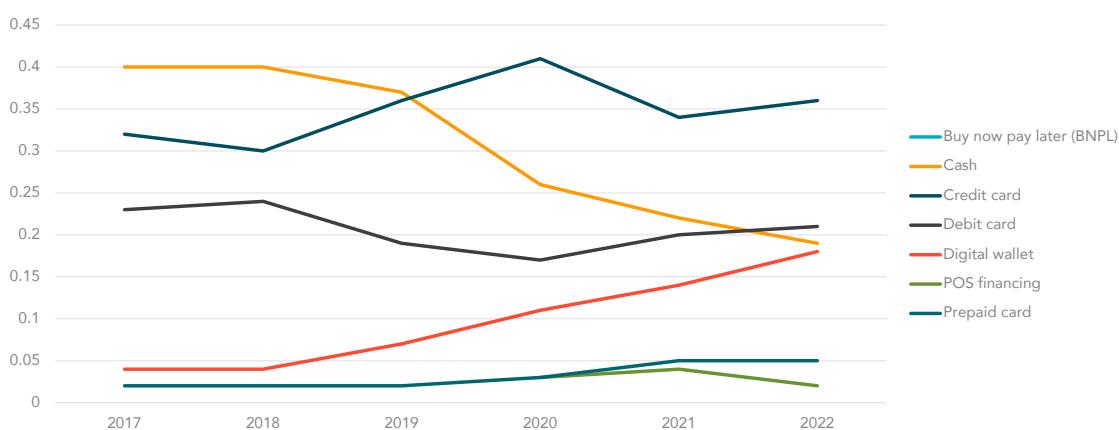


Figure 26. Singapore POS Payments Mix (2017-2022)¹⁷⁷

¹⁷⁵ Ibid

¹⁷⁶ WorldPay-FIS Global Payments Report (2018-2023)

¹⁷⁷ WorldPay-FIS Global Payments Report (2018-2023)

PUBLIC REPORTING OF CARD FEES

Costs of various payment rails in Singapore are not widely reported. The MAS provides semi-annual retail payment statistics in 6-month intervals.¹⁷⁸ These statistics include ACH system reporting, Card-Present and Card-Not-Present, E-money, and ATM volume and transaction counts as well as average transaction size.¹⁷⁹ From a cost specific standpoint, DBS, a nationally owned bank reported merchant discount rates (MDR) for Visa, Mastercard, JCB, and Union Pay transactions for retail merchants and service-based merchants at 2.5% and 3.0% respectively. The ecommerce rate for both retail and service-based merchants was 3.0%¹⁸⁰ in 2017. NETS, the local scheme for QR codes, has reported a transaction fee of .08%. Outside of informal, ad hoc commentary from MAS, there is little public cost reporting for various payment systems within Singapore.¹⁸¹

ANALYSIS OF PUBLICLY AVAILABLE CARD FEES

To gauge card fees paid in Singapore would require more up to date MDR data considering the fast developments of the payments landscape of Singapore. While the local debit and QR operator NETS has in the past provided pricing data, that data is no longer available. Individual articles have published the older rates including 2.5% MDR for retail merchants at POS and 3% MDR for service-based merchants at POS as well as the 3% uniform ecommerce rates. Former Managing Director Menon has stated achievements of the Fast and Secure Transfer (FAST) and PayNow platforms operating at zero cost to consumers and businesses to move money in real time .¹⁸²

¹⁷⁸ <https://www.mas.gov.sg/statistics/payment-statistics/semi-annual-retail-payment-statistics>

¹⁷⁹ <https://www.mas.gov.sg/statistics/payment-statistics/semi-annual-retail-payment-statistics>

¹⁸⁰ <https://www.dbs.com.sg/iwov-resources/forms/sgsme/en/day-to-day/accounts/business-account/merchant-services-pricing.pdf>

¹⁸¹ <https://wise.com/sg/blog/credit-card-merchant-fees-singapore>

¹⁸² <https://www.mas.gov.sg/news/speeches/2023/shaping-the-financial-ecosystem-of-the-future>

APM Case Study: PayNow and Instant Payments

PayNow, launched in 2017 for participating banks, enables retail customers of participating banks and non-bank financial institutions to transfer funds and perform domestic retail transactions. Built on the infrastructure of Fast and Secure Transfers (FAST), PayNow operates on a 24/7 settlement basis and is operating across 21 banks and 5 'major payment institutions', which include Xfers, an e-money issuers, and Singtel Dash, a mobile wallet provider.¹⁸³ In 2018, the Association of Banks in Singapore (ABS), the organization operating the PayNow system, launched PayNow Corporate, which allowed corporate customers of participating banks to send business-to-business transactions using the PayNow system.¹⁸⁴

To spur adoption PayNow, ABS announced an incentive scheme in 2020 which aimed to drive more customer and small business adoption under the "Carry on with PayNow" campaign, launched in partnership with the nine PayNow participating banks. As a part of the scheme, all individuals using PayNow were able to win \$100 each week for 10 weeks when they make a PayNow transfer to businesses. For small businesses that sign up for PayNow, the first 20,000 to sign up between April to July 2020 received a cash incentive of \$25, and those that receive more than 10 payments via PayNow in that period would receive an incentive up to \$50.

In August 2020, PayNow transactions valued S\$3 billion per month. By September 2021, PayNow transactions reached S\$7 billion in a month and had 6 million registrants. The growth was driven in part by the government incentives and the cross-border links built between PayNow and PromptPay, Thailand's real-time payment system.¹⁸⁵

¹⁸³ <https://abs.org.sg/consumer-banking/pay-now#:~:text=PayNow%20Corporate%20enables%20Entities%20to,other%20entities%20when%20transferring%20funds>.

¹⁸⁴ https://abs.org.sg/docs/library/paynow-pressrelease_20170710.pdf

¹⁸⁵ <https://abs.org.sg/docs/library/e-payments-journey-infographics.pdf>

Merchant Pass-Through to Consumers

Typically, in competitive industries, characterized by those with low profit margins, cost reductions may be passed on to the end users in the form of lower prices. In general retail, which averages a 3% profit margin¹⁸⁶, cost reductions may be passed to consumers. Two independent studies indicate that consumers receive over 70% of the cost reductions incurred by merchants.

In 2020, the European Commission released a report on the efficacy of the implementation of the Interchange Fee Reduction act of 2015 which capped debit and credit interchange at 0.2% and 0.3%, respectively. The report, performed by Ernst & Young¹⁸⁷, aggregated estimates of cost pass-through from over 25 studies (covering 20 EU member states) to estimate the extent to which a reduction in direct costs in the food retail sector was passed on to consumers. The final estimate of merchant to consumer pass-through was 72%, implying that a reduction in cost faced by a particular merchant of \$1 would result in a reduction of \$0.72 in the price of the goods sold by the merchant.

The report, however, acknowledged that interchange costs are indirect costs incurred by the merchant while the estimates of merchant to consumer pass-through are based on reductions in direct costs (e.g. cost of input prices). It is therefore possible that merchants would not pass indirect costs in the same manner as direct costs, making the estimate of merchant pass-through biased. However, given that estimating the actual impact on pricing as a result of interchange fee reduction would require granular pricing data, the pass-through rates estimated from direct cost decreases have been used as a proxy.

Furthermore, a 2013 study by researcher Robert Shapiro used a similar merchant to consumer pass-through rate of 69% to estimate the proportion of interchange savings passed on to consumers.¹⁸⁸ The estimate was taken from a study that analyzed 23,147 cases of cost reductions for over 1,000 retail grocery and drug stores in more than 30 states in the U.S. The Shapiro study also focused on direct cost reductions and so the same caveat applies. However, what these two studies can illustrate is that the extent of pass-through is estimated to be broadly similar in both the U.S. and Europe.

Therefore, assuming that there is not a significant bias in the use of direct cost decreases to estimate pass-through, merchants are estimated to have passed on 71% of interchange savings to consumers.

¹⁸⁶ https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/margin.html

¹⁸⁷ <https://op.europa.eu/en/publication-detail/-/publication/79f1072d-d6c2-11ea-adf7-01aa75ed71a1>

¹⁸⁸ https://www.sonecon.com/docs/studies/Report_on_Interchange_Fees-RShapiro-October_2013.pdf

