

Interchange Fee Analysis

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Payment Processing

A peek at the basic of payment processing and which parties are involved.



Payment Processing

The online payment network is often called the Four Party Scheme(even though there's typically six parties involved).



The Cardholder

The customer is often called the cardholder. It can be either a private or a business.



The Online Shop

The online shop is also called merchant. It's the selling part and this is where the payment is going to end up after processing.



The Acquirer

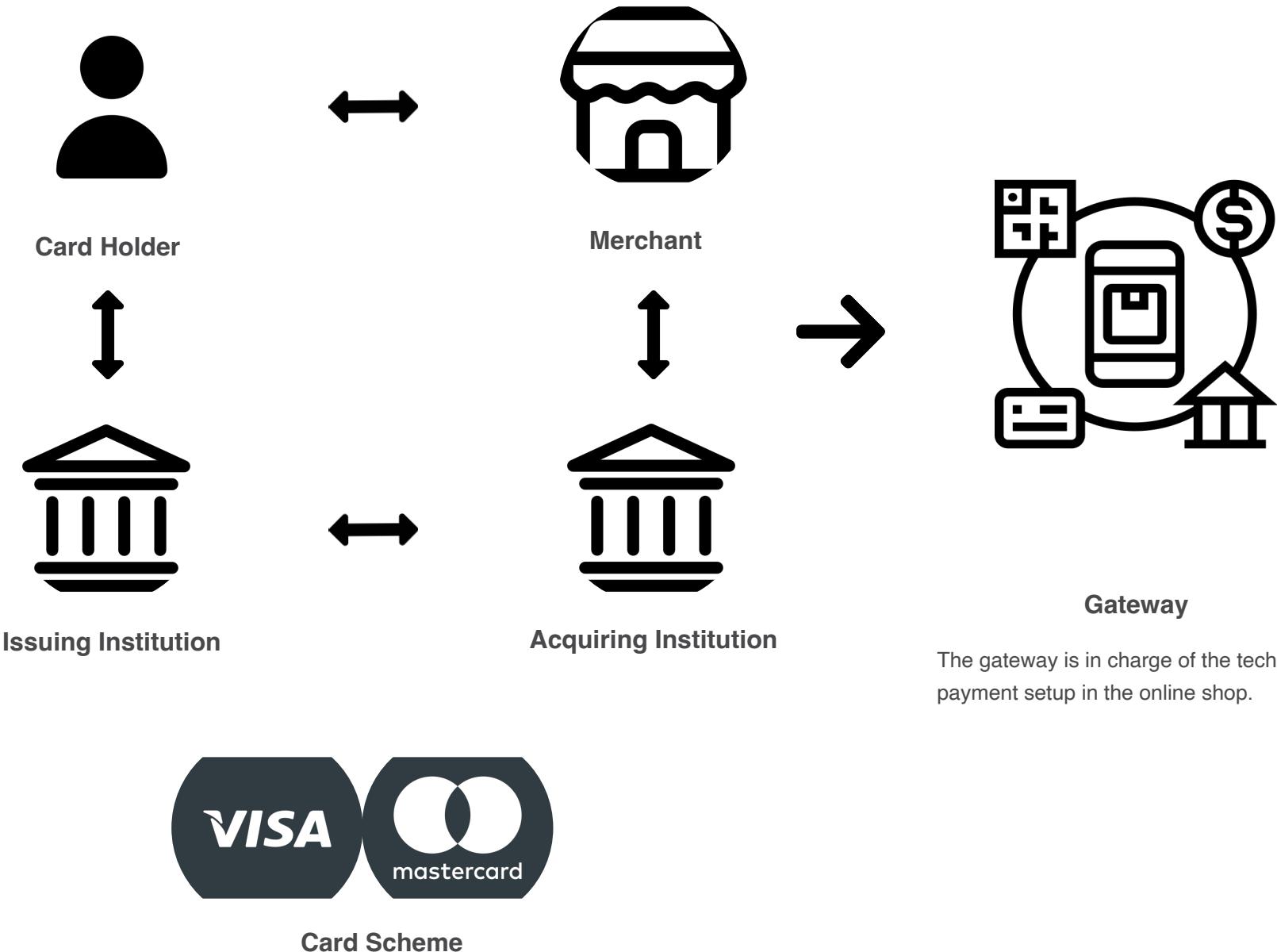
The acquirer is in charge of the processing of the payment and they make sure the money is transferred from the cardholder's bank account to the bank account of the online shop.



The Card-issuing bank

The payment card being used has been issued by the card-issuing bank.

Four Party Scheme



Payment Processing Pricing option

01

Blended Pricing

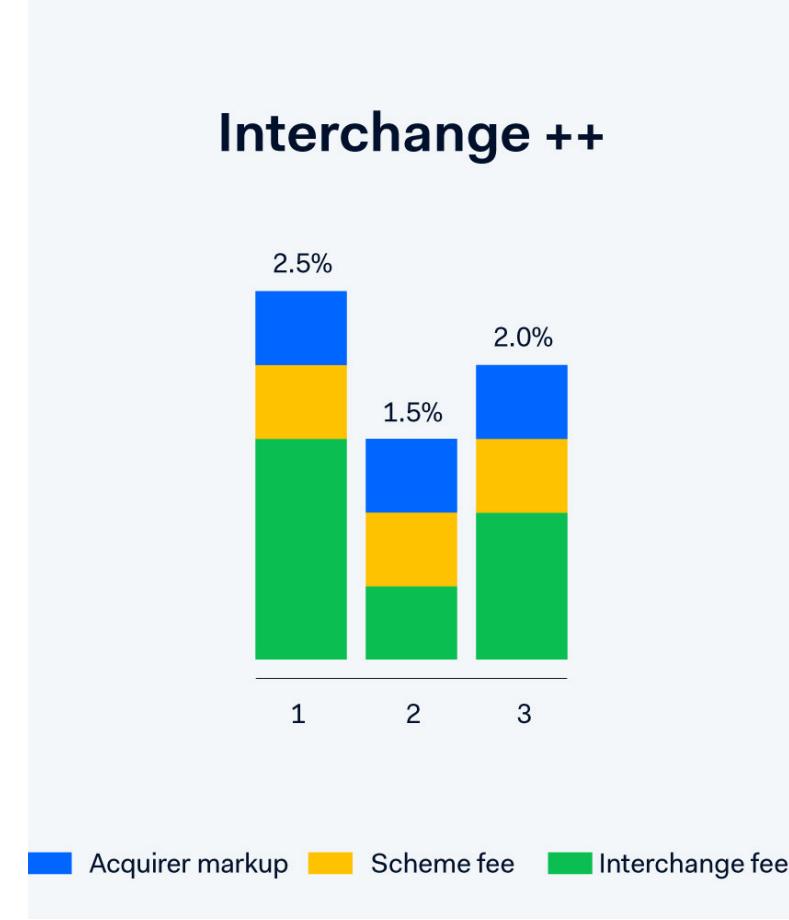
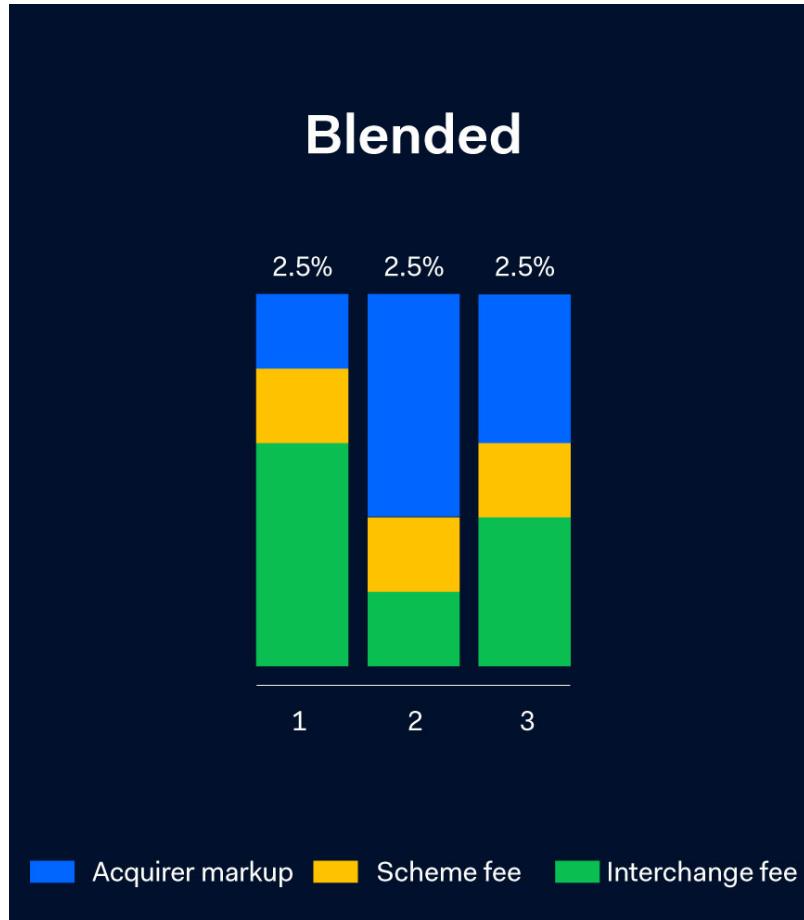
The blended model charges an average processing cost plus a fixed markup. You're charged the same markup for every transaction, and you can't see the split of the costs. This make it easy to understand, but intransparent.

02

Interchange ++ Pricing

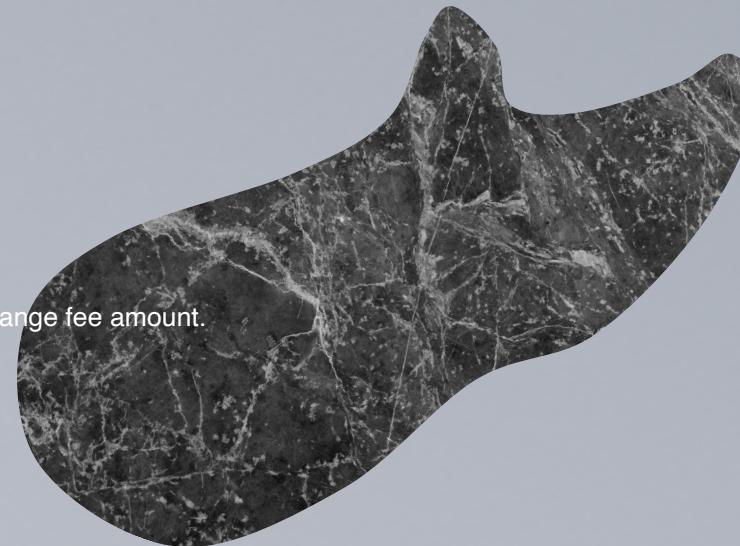
Interchange ++ show you a detailed breakdown of the three payment card costs, the acquirer markup, card scheme, and interchange fee. You only pay the interchange fee the card issuer actually charged you. As interchange fees vary depending on many factors, they can sometimes be lower than a fixed rate.



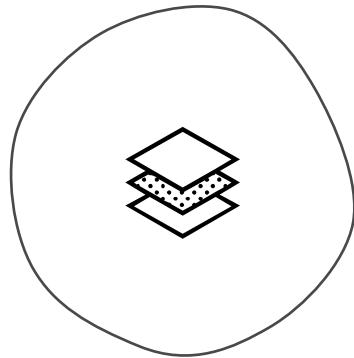


Interchange Fee

A peek at the factors influence interchange fee amount.

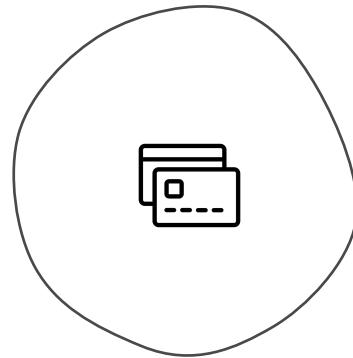


Factors Influence Interchange Fee



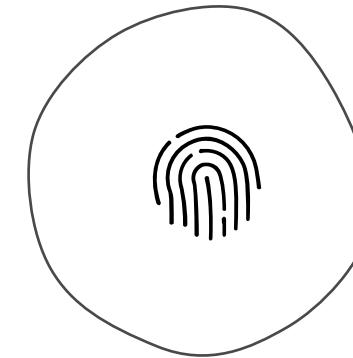
Card Scheme

Different card schemes charge different interchange rates.



Credit Card vs Debit Card

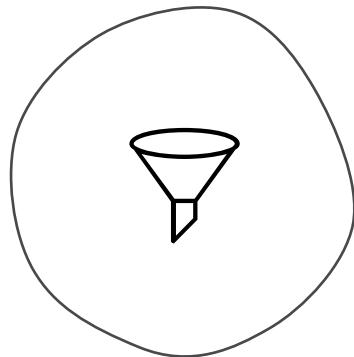
Credit and deferred debit cards have higher interchange fee than debit and prepaid cards.



Card Present

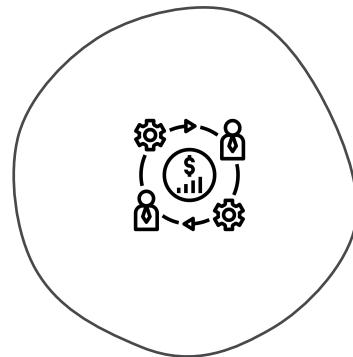
Card present transactions have lower interchange fees than card-not-present transactions.

Factors Influence Interchange Fee



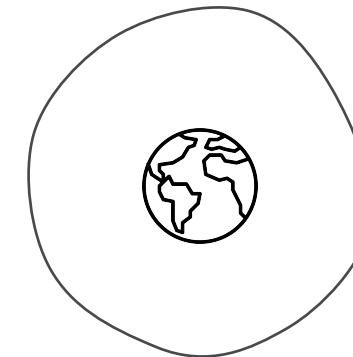
Merchant category code

Your assigned MCC can affect your interchange fees.



Consumer vs Commercial

Commercial cards charge higher interchange fees than those issued to an individual.



Transaction Regionality

Domestic transactions are generally cheaper than cross-border transactions.

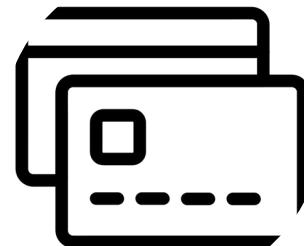
Interchange fees

**Merchant**

Acquiring Markup

**Acquiring Bank**

Charged by the acquirer for acquiring the funds from your shopper

**Card Scheme**

Card Scheme fees

**Issuing Bank**

Interchange fee

Charged by the cardholder's bank



Analysis

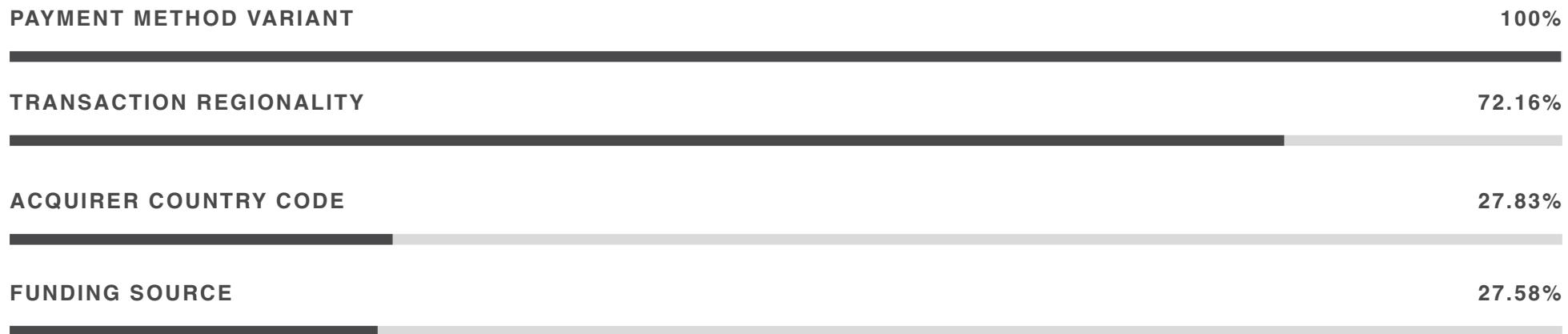
A peek at the factors that are most related to fee rate based on the data provided.



Factors related to Interchange fee

Based on the data provided, interchange fee rate ranges from 0 to 0.06. Average fee rate is 0.01. Most cases (6.5 k of 8.1k) have a fee rate between 0 and 0.02. Transaction Regionality best differentiates the highest (top 10%) and the lowest (bottom 10%) fee rate cases. The three most related factors are Payment Method Variant, Transaction Regionality, and Acquire Country Code.

There are fourteen cases that might be outlier, with fee rate greater than or equal to 0.03.



Payment Method Variant



0.02

High

When Payment Method Variant is
mccommercialcredit,
visacommericalsuperpremiumcredit, or
visacorporatedebit, then the 133 cases have
predicted interchange fee rate of 0.02.



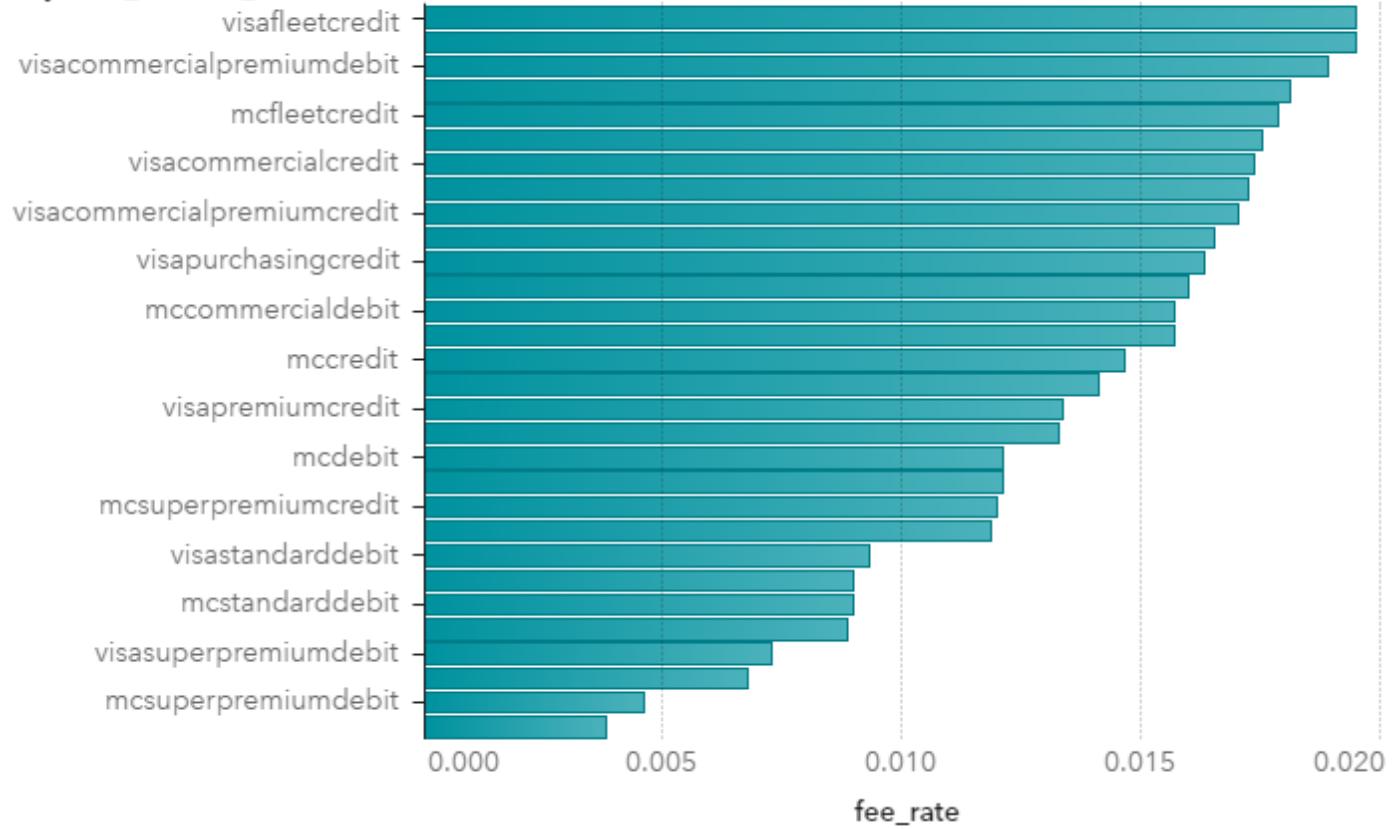
0.00

Low

When Payment Method Variant is electron,
mcsuperpremiumdebit, or
visasuperpremiumdebit, then there are
cases have a predicted interchange fee rate
of 0.

What is the relationship between fee_rate and Payment_Method_Variant?

Payment_Method_Variant



Transaction Regionality

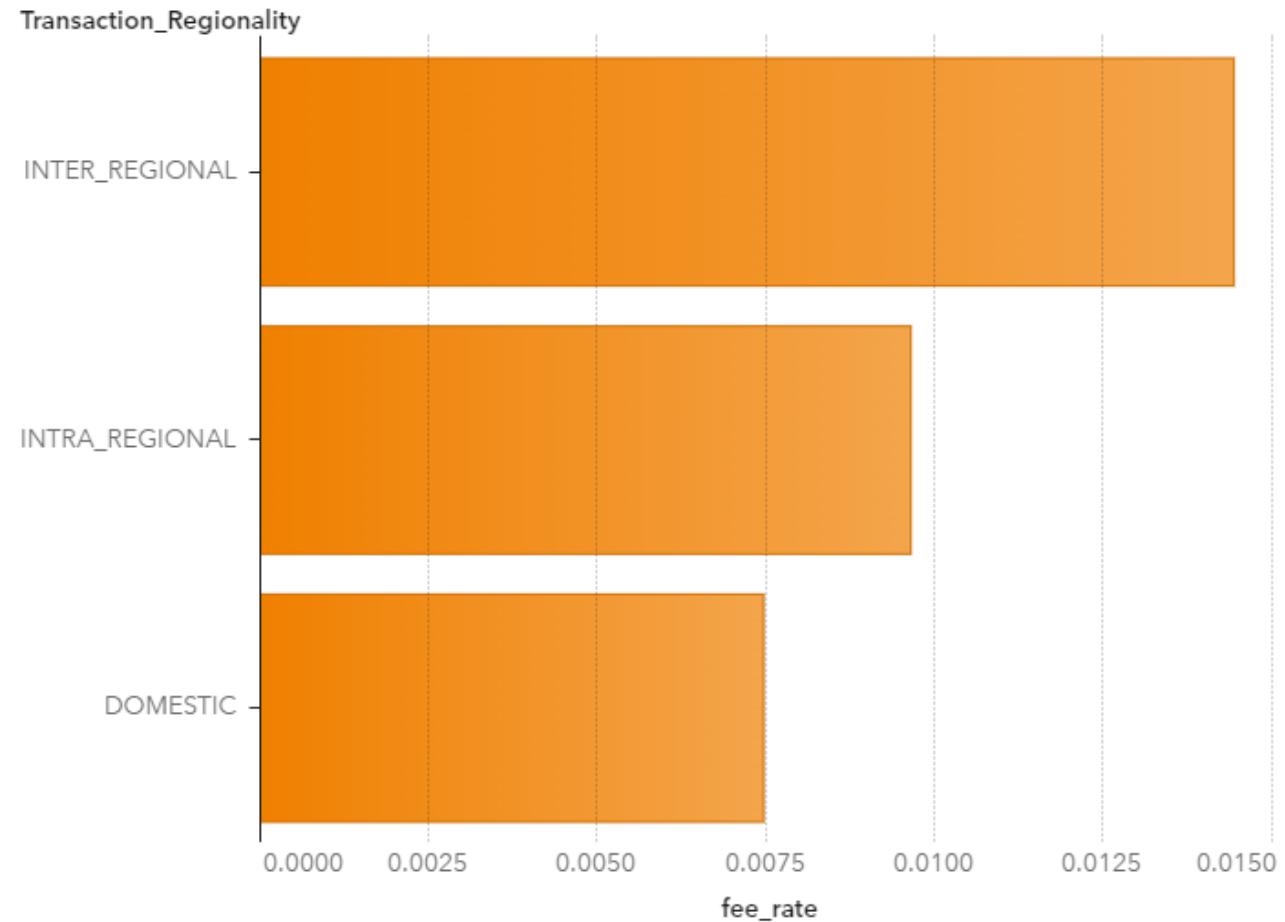
When Transaction Regionality is INTER_REGIONAL, the average of fee rate is a high value. When Transaction Regionality is INTRA_REGIONAL or DOMESTIC, the average of fee rate is a low value.

The most common value is INTER_REGIONAL



0.015
INTER REGIONAL

What is the relationship between fee_rate and Transaction_Regionality?



Acquirer Country Code

When Acquirer Country Code is HK or SG, the average of fee rate is a high value. When Acquire Country is NL,AU or GB, the average of fee rate is a low value. The most common Acquirer Country Code value is NL.



0.016

HK

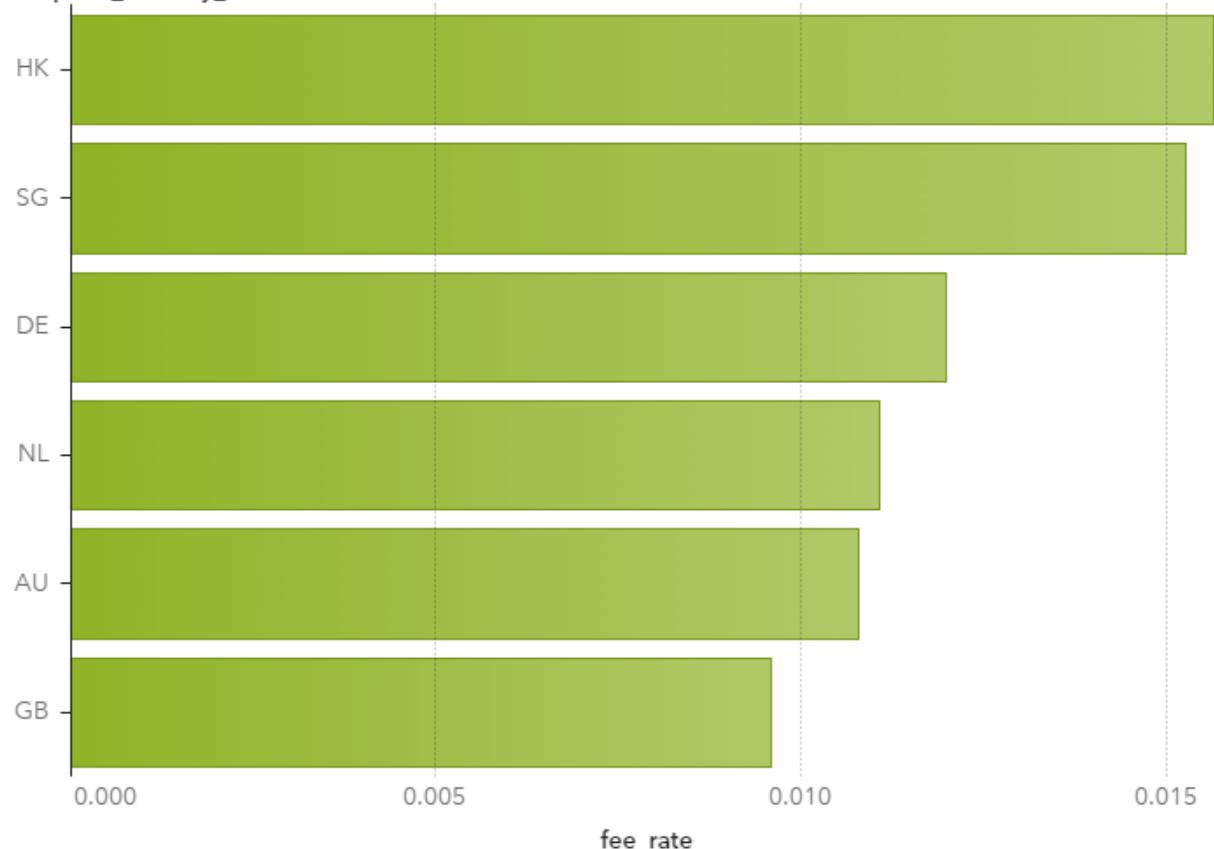


0.015

SG

What is the relationship between fee_rate and Acquirer_Country_Code?

Acquirer_Country_Code



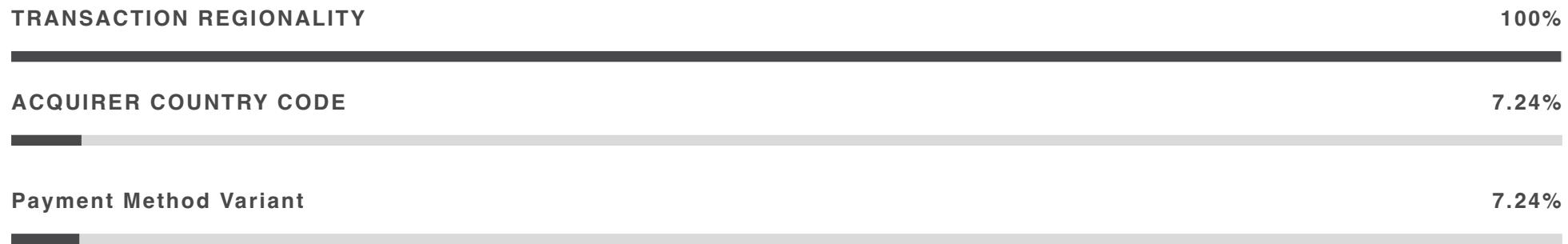
Some countries have an interchange fee cap regulation, such as Australia, and European countries. However, there is no government intervention to regulate the fee in the US credit card.



Factors related to Scheme fee

Scheme fee rate ranges from 0 to 0.03. Average fee rate is 0.01. Most cases (6.5 k of 8.1k) have a fee rate between 0 and 0.02. Transaction Regionality best differentiates the highest (top 10%) and the lowest (bottom 10%) fee rate cases. The three most related factors are Transaction Regionality, Acquire Country Code, and Payment Method Variant.

There are 170 cases that might be outlier, with fee rate greater than or equal to 0.02.



Determine Fee Rate in Singapore

Based on the data provided, we determine the INTER_REGIONAL transaction scheme fee rate as 1%,

DOMESTIC transaction scheme fee rate as 0.1%.

However, the interchange fee rate vary depending on the different factors. We choose the two most related factors, Payment Method Variant and Transaction Regionality, as our main decision factors to determine interchange fee rate. The average interchange fee rate is 1.5%.

1.5%

Interchange Fee Rate

1%

Scheme Fee Rate



Interchange Fee Rate

Payment_Method_Variant	Transaction_Regionality	Fee_Rate
visacommercialcredit	DOMESTIC	1.57%
visacommercialcredit	INTER_REGIONAL	1.95%
visacommercialcredit	INTRA_REGIONAL	1.95%
visacommercialdebit	INTER_REGIONAL	1.95%
visacommercialdebit	INTRA_REGIONAL	1.95%
visacommercialpremiumcredit	DOMESTIC	1.59%
visacommercialpremiumcredit	INTRA_REGIONAL	1.95%
visacommercialpremiumdebit	DOMESTIC	1.76%
visacommercialpremiumdebit	INTRA_REGIONAL	1.95%
visacommercialsuperpremiumcredit	INTRA_REGIONAL	1.97%
visacorporatecredit	DOMESTIC	1.57%
visacorporatecredit	INTER_REGIONAL	1.95%
visacorporatecredit	INTRA_REGIONAL	1.95%
visacorporatedebit	INTRA_REGIONAL	1.95%
visapremiumcredit	DOMESTIC	1.63%
visapremiumcredit	INTER_REGIONAL	1.80%
visapremiumcredit	INTRA_REGIONAL	1.87%
visapremiumdebit	DOMESTIC	1.46%
visapremiumdebit	INTER_REGIONAL	1.77%
visapremiumdebit	INTRA_REGIONAL	1.82%
visapurchasingcredit	DOMESTIC	1.80%
visastandardcredit	DOMESTIC	1.52%
visastandardcredit	INTER_REGIONAL	1.66%
visastandardcredit	INTRA_REGIONAL	1.42%
visastandarddebit	DOMESTIC	1.40%
visastandarddebit	INTER_REGIONAL	1.51%
visastandarddebit	INTRA_REGIONAL	1.34%
visasuperpremiumcredit	DOMESTIC	1.96%
visasuperpremiumcredit	INTER_REGIONAL	1.84%
visasuperpremiumcredit	INTRA_REGIONAL	1.96%
visasuperpremiumdebit	DOMESTIC	1.97%
visasuperpremiumdebit	INTER_REGIONAL	1.85%

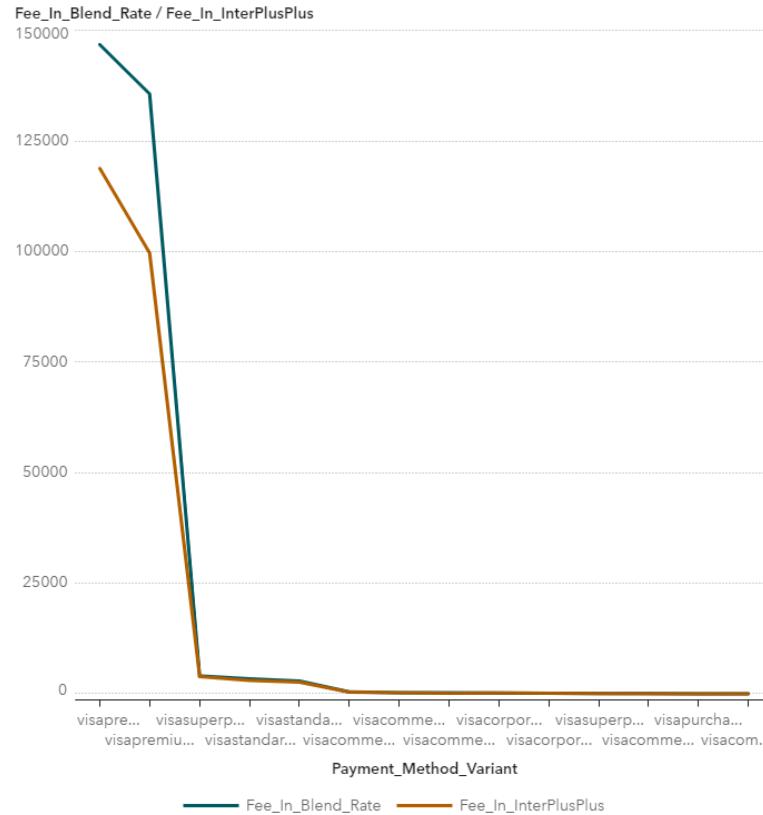


Payment_Method_Variant	Transaction_Regionality	Fee_Rate
mccommercialcredit	DOMESTIC	1.13%
mccommercialcredit	INTER_REGIONAL	1.95%
mccommercialcredit	INTRA_REGIONAL	1.57%
mccommercialdebit	DOMESTIC	1.58%
mccommercialdebit	INTER_REGIONAL	1.95%
mccommercialdebit	INTRA_REGIONAL	1.68%
mccorporatecredit	INTRA_REGIONAL	1.55%
mccredit	DOMESTIC	1.35%
mccredit	INTER_REGIONAL	1.90%
mccredit	INTRA_REGIONAL	1.46%
mcdebit	DOMESTIC	0.93%
mcdebit	INTER_REGIONAL	1.43%
mcdebit	INTRA_REGIONAL	1.17%
mcfleetcredit	INTER_REGIONAL	1.95%
mcpremiumcredit	DOMESTIC	1.10%
mcpremiumcredit	INTER_REGIONAL	1.69%
mcpremiumcredit	INTRA_REGIONAL	1.39%
mcpremiumdebit	INTER_REGIONAL	1.85%
mcpurchasingcredit	DOMESTIC	1.80%
mcpurchasingcredit	INTRA_REGIONAL	0.95%
mcstandardcredit	DOMESTIC	0.87%
mcstandardcredit	INTER_REGIONAL	1.35%
mcstandardcredit	INTRA_REGIONAL	1.12%
mcstandarddebit	DOMESTIC	1.12%
mcstandarddebit	INTER_REGIONAL	1.52%
mcstandarddebit	INTRA_REGIONAL	1.23%
mcsuperpremiumcredit	DOMESTIC	1.36%
mcsuperpremiumcredit	INTER_REGIONAL	1.83%
mcsuperpremiumcredit	INTRA_REGIONAL	1.46%
mcsuperpremiumdebit	DOMESTIC	1.65%



Cost comparison

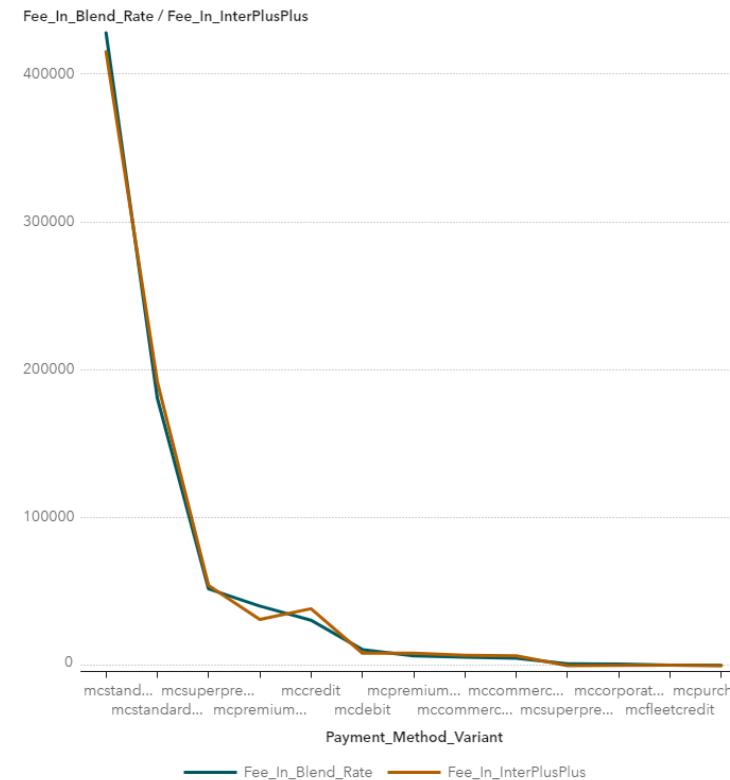
Blend Rate vs InterPlusPlus by Visa



Visa

Cost comparison between CoffeBucks current blend rate and Adyen's interchange++ price proposal.

Blend Rate vs InterPlusPlus by Mastercard



Mastercard

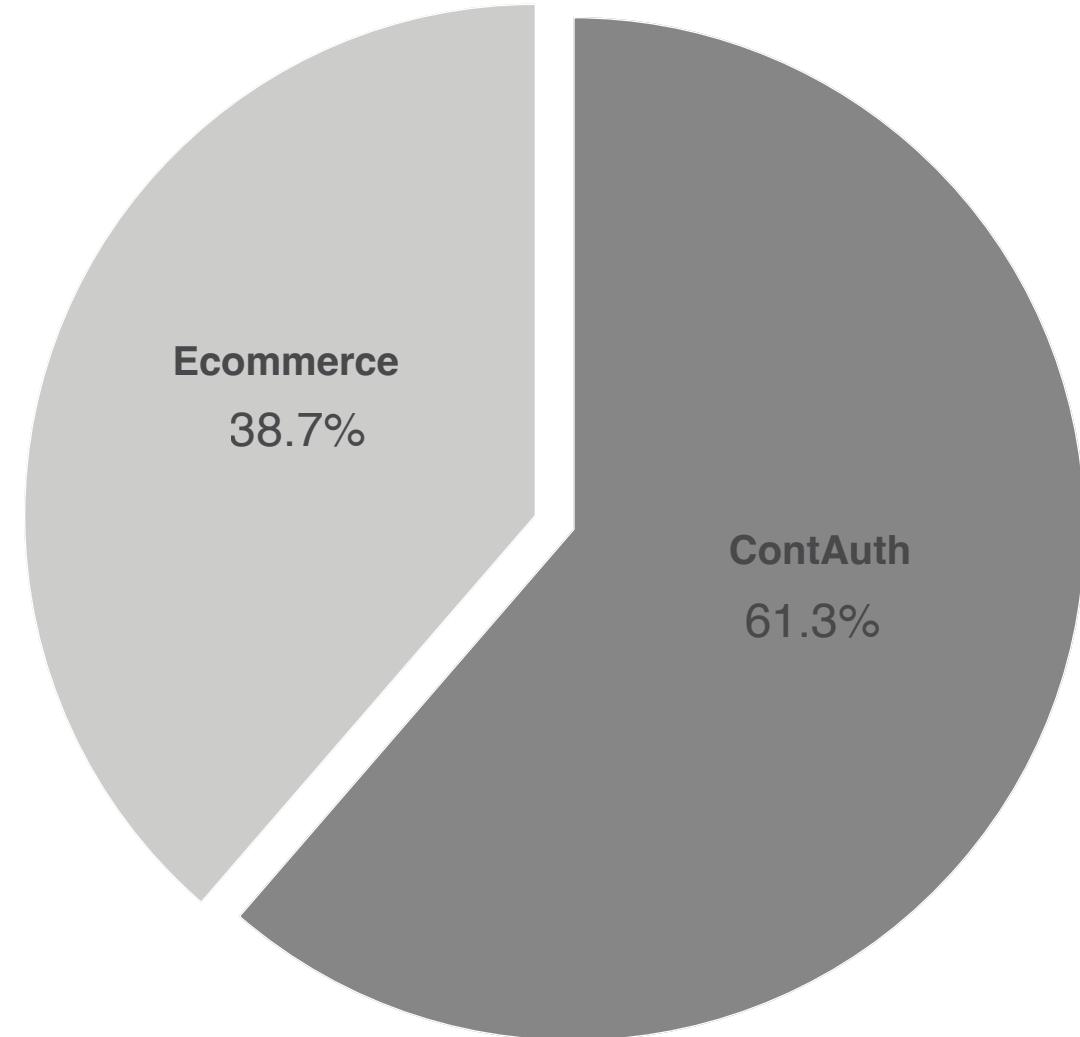
Cost comparison between CoffeBucks current blend rate and Adyen's interchange++ price proposal.

Current Business Structure

The merchant CoffeeBuck has two business lines.

Customers can make one-off transactions or they can choose a monthly subscription for a fixed amount.

Based on the data provided by the merchant, we can see that ContAuth takes up the core of its payment volume.



How to minimise cost

- 1.** When the transaction type(Shopper Interaction) is ContAuth, it identifies a recurring transaction. Using ContAuth, merchant's revenues are more predictable, customer lifetime values tend to be higher, and acquiring new customers is easier. Besides, ContAuth takes up the core of merchant's payment volume, so we can give customer a lower interchange fee, from 1.5% to 1.2%, which can largely minimise their cost and incentive CoffeeBuck to promote its subscription business.

- 2.** There are 3% of the transactions that are large transactions, with a transaction volume greater than 50, giving large transactions an interchange fee rate discount would help customer minimise their cost

Thank You!
