

Credit Card Swipe Fees and Routing Restrictions

October 8, 2024

Congressional Research Service

<https://crsreports.congress.gov>

R48216



Credit Card Swipe Fees and Routing Restrictions

R48216

October 8, 2024

Andrew P. Scott
Specialist in Financial
Economics

The basic structure of a credit payment involves a customer, the customer's bank (called the issuing bank), a card payment network, the merchant, the merchant's bank (called the acquiring bank), and possibly additional service providers that facilitate the flow of transaction data.

Banks and credit unions issue cards to consumers, and those financial institutions that issue credit cards belong to card networks. Card networks are associations that facilitate payments by connecting the issuing bank and acquiring bank. The four major credit card networks are Visa, Mastercard, American Express, and Discover. The vast majority and dollar value of credit card transactions are processed over these four networks. (There are also a number of smaller networks.)

Networks facilitate transactions under a business model referred to as either a "four-party system" or a "three-party system." Four-party systems consist of the cardholder, the merchant, the acquiring bank, and the issuing bank. In a four-party system, the network connects merchants to issuing banks. Three-party systems consist of the cardholder, the merchant, and the network provider, which serves as both the acquiring and the issuing bank. In a three-party system, the network processes and approves authorization requests.

Most merchants want to accept electronic payment cards (as opposed to just cash) due to their popularity among consumers. Further, merchants generally choose to accept cards that can be run on at least one of the most popular networks, such as the four listed above. In order to accept certain cards, the merchant needs to procure the hardware (e.g., a card reader) and software (e.g., payment app), which can be done from the networks, a third-party payment processor, or the merchant's bank. Merchants can choose which payment processors they want to use for certain payments. Further, the merchant can direct the processor to route different types of payments over different networks. Alternatively, the merchant may choose a service provider that makes these decisions on behalf of the merchant as a function of its pricing scheme. Ultimately, when a payment is made, the processor will send information to the acquiring bank, which will route the transaction over the chosen network to communicate with the issuing bank. Networks and processors facilitate the transfer of funds from the issuing bank to the acquiring bank. For this service, the merchant agrees to pay a fee called the merchant discount rate (MDR) for each transaction. This fee is paid to the merchant's bank and then split and passed along to the other market participants in the form of interchange fees, assessment fees, and payment processing fees. The MDR is typically around 1%-3% per transaction.

Merchant fees have been the subject of much debate in Congress since before the financial crisis of 2008. Debit card interchange practices were first regulated and fees were capped under provisions in the Dodd-Frank Act of 2010 (15 U.S.C. §1693o-2). Policymakers used two tools for regulating debit card interchange in that law: a price cap and transaction routing rules aimed at increasing competition among the four card networks.

The debate now focuses on whether and how credit card "swipe fees" should be regulated. Estimates vary, but recent data suggests that in 2022, swipe fees were around \$160 billion, with credit card transactions comprising the majority of fees paid. Recent proposals to regulate credit card swipe fees have aimed to lower fees through the routing rules similar to those applied to debit cards since 2010—specifically, removing transaction routing restrictions that create barriers to competition and prohibiting networks from requiring banks to issue cards that would run only on their networks.

Contents

Introduction	1
Retail Payment System Structure	1
Overview of Basic Market Structure.....	2
Card-Issuing Banks	2
Card Networks	4
Four-Party and Three-Party Systems	4
Merchant Service Providers (MSPs)	4
Acquiring Banks.....	5
The Payment Process	5
Authorization	6
Clearing.....	7
Settlement	8
Swipe Fees.....	8
Merchant Discount Rate.....	8
Interchange.....	9
Network Fees	10
Processing Fees.....	10
Fee Structures for Merchants	11
Blended Models, Flat Rate, Tiers, and Subscriptions	11
Interchange +/-.....	11
Policy Considerations for Congress	12
Should Credit Card Interchange Be Regulated?.....	12
Would Improving Routing Competition Affect Merchant Fees?	13
Asymmetric Information Between Merchants and Acquirers.....	14
How Might the Capital One and Discover Merger Impact Card Payments?	14

Figures

Figure 1. The Payments Ecosystem.....	2
Figure 2. Largest Acquiring Institutions.....	5
Figure 3. Payment Processing	6

Tables

Table 1. Noncash Transactions 2015-2021	1
Table 2. Selected Examples of Visa Interchange Rates for Credit Cards at Large Retailers.....	9
Table 3. Selected Examples of Mastercard Interchange Rates for Credit Cards at Large Retailers.....	9
Table 4. Ayden Fee Schedule for Major Cards	12

Contacts

Author Information.....	15
-------------------------	----

Introduction

Electronic payments are technical and complex, with a single transaction involving several financial institutions, networks, and technology service providers; considerable data; and a somewhat opaque process. The number of participants in a single transaction creates complicated market dynamics. Some argue that this complexity is compounded by market concentration among the networks that connect each of the participants, which can potentially lead to inefficient pricing, particularly with respect to the fees passed on to merchants. Further, there are information asymmetries between merchants and their service providers, which may reduce market efficiency. On the other hand, economies of scale among large networks and financial institutions may convey benefits to consumers and banks in the form of incentives and reduced search costs associated with settling transactions.

Merchant fees have been the subject of much debate in Congress, with legislation passed in 2010 to formally regulate the way debit card transactions are processed and to cap certain transaction fees for debit cards. The debate now focuses on whether credit card “swipe fees” should be regulated and, if so, how.¹ This report provides an overview of the technical mechanics of payment transactions and examines certain related policy issues. The first section provides details on the payment system market structure. The second section takes a more detailed look at the various components of swipe fees and how they are assessed. The third section examines policy issues that are relevant to the current debate on credit card swipe fees.

Retail Payment System Structure

Consumers have a number of choices to make payments. For example, they can use cash, credit or debit cards, prepaid cards, bill pay, mobile payment apps, or even cryptocurrency in certain circumstances. This report focuses on the use of credit cards.²

A credit card is a type of electronic payment card that is funded by credit (as opposed to a bank account, as is the case with debit cards) provided by the financial institution that issues the card. Credit card transactions are also processed over card networks. A consumer can pay \$100 in a store with a credit card, and at the end of the billing cycle, the bank will invoice the consumer for \$100. The consumer can pay all of the balance or finance the outstanding balance with interest. Thus, credit cards are a form of *revolving* credit.³ Credit cards are one of the most popular consumer payment tools today by dollar value of total transactions (see **Table 1**).

Table 1. Noncash Transactions 2015-2021

Number of Transactions and Value of Transactions

Transaction	2015 #	2015 \$	2018 #	2018 \$	2021 #	2021 \$
Debit	67.8 billion	\$2.47 trillion	86.4 billion	\$3.10 trillion	106.0 billion	\$4.55 trillion
Credit	33.7 billion	\$3.05 trillion	44.7 billion	\$4.47 trillion	51.1 billion	\$4.88 trillion

¹ *Swipe fees* refers to the fees that merchants pay to payment processors, banks, and card networks for facilitating transactions.

² This report will reference debit cards for comparison. For more on debit cards and debit card interchange, see CRS Report R41913, *Regulation of Debit Interchange Fees*, by Darryl E. Getter.

³ Revolving credit allows a consumer to repeatedly borrow up to a certain limit. This differs from installment credit, which is a typical form of credit and includes examples such as a mortgage or auto loan, where a consumer borrows a specific amount at a single time and pays it down on a set schedule.

Source: Federal Reserve, *The Federal Reserve Payments Study: 2022*, <https://www.federalreserve.gov/paymentsystems/fr-payments-study.htm>.

Overview of Basic Market Structure

The basic structure of a card payment involves a customer, the customer's bank (called the issuing bank), a card payment network, the merchant, the merchant's bank (called the acquiring bank), and possibly additional service providers that facilitate the flow of transaction data. Nearly all major commercial banks (e.g., JPMorgan Chase, Bank of America, Citigroup, Wells Fargo) and many smaller banks, or "community" banks, regularly play the role of issuing and/or acquiring bank (depending on their relationship with a particular consumer or merchant). Visa, Mastercard, Discover, and American Express (the latter two of which are also banks) operate the largest and more well-known card networks, while other smaller, lesser-known networks maintain smaller market shares. Some service providers are well-known companies, such as the payment processors PayPal and Square. Other small and large service providers in the market are less well known (see **Figure 1**).

Figure 1. The Payments Ecosystem
Examples of Companies That Facilitate Payments

ACQUIRERS & PROCESSORS	adyen	CHASE Paymentech	EV	fiserv.	intuit	NCR	PayPal	WELLS FARGO
	Bank of America	Elavon	FIS	globalpayments	North American Bancorp	Paysafe	Square	Worldline
PAYMENT NETWORKS	ACI	DISCOVER	JCB	mastercard	pulse	STAR	The Clearing House	VISA
	AMERICAN EXPRESS	Interac	Maestro	Nacha	ripple	SWIFT	UnionPay	VOCALINK
ISSUERS	AMERICAN EXPRESS	The Bancorp	Capital One	citi	Goldman Sachs	MARQETA	USAA	WELLS FARGO
	Bank of America	BARCLAYS	CHASE	DISCOVER	green dot	synchrony	usbank	wex
GATEWAYS & FACILITATORS	adyen	BlueSnap	FIS	globalpayments	MERCHANT	payroc	shopify	stripe
	Authorize.Net	Braintree	fiserv.	lightspeed	PayPal	Shift4	Square	SYNCAPAY
ISOs, MSPS, ISVS, & VARS	ALIAN	CORNERSTONE	EVERLINK	Merchant One	Paywire	signature	TouchSuite	VizyPay
	CAYAN	CreditCard Processing	Fidelity	North American	PIVOTAL	The Transaction Group	UNITED MERCHANT SERVICES	versapay.

Source: Kiosk Industry, "Credit Card Reader Kiosk—The Wallet Ecosystem and Payment Processors," <https://kioskindustry.org/credit-card-readers-the-wallet-ecosystem/>.

Notes: Acquirers and processors are the banks and payment service providers that provide services to merchants. Payment networks are the infrastructure over which payment information is conveyed. Issuers are consumers' bank or credit card companies. Gateways and facilitators are technology companies that enable transactions such as online payments. ISOs, MSPS, ISVS, and VARS are service providers that facilitate specific technological processes associated with payments.

Card-Issuing Banks

Before a transaction can take place, a bank or credit union must issue a payment card to a consumer. The financial institutions that issue cards belong to card networks. A bank that is a member of the Visa network would issue a Visa card, for example. Issuers can belong to multiple

card networks, however, and they generally issue cards specific to particular networks in accordance with their membership agreements. Chase, American Express, Citi, Capital One, Bank of America, Discover, U.S. Bank, and Wells Fargo are some of the biggest card issuers.⁴

Technical Specification of Cards

Payment cards contain a significant amount of information. For example, a card has a magnetic strip on the back that contains some information that is processed when swiped at the point-of-sale (POS) terminal. With modern payment cards (referred to as EMV cards), the card also includes a chip⁵ that can be inserted into the terminal (as opposed to just a magnetic strip), and this chip possesses more information that facilitates the transaction. More recently, cards possess technology that enables tapping the card to a terminal as well. Two pieces of data that are particularly important to transactions are the application identifiers (AIDs) and bank identification numbers (BINs).

When a bank issues a card, the chip is encoded with an AID, which allows payment system participants to know exactly what kind of card is being used. The merchant can work with the payment processor to use the AID to determine routing instructions (e.g., if Visa debit, then use network A; if Mastercard credit, then use network B, etc.).

Debit cards typically have two types of AIDs:⁶

1. A Global AID, which permits a transaction to run only on the network on the front of the card.
2. A Common AID, which allows transactions to run on any network enabled on the card. The merchant or the merchant's bank (on behalf of the merchant) can choose the network it wants to use.

Given this, merchants generally want to program their POS terminals to use Common AIDs so as to have some choice over the networks they run transactions over. Credit cards may have only the Global type of AID.

Payment cards typically have 13-19 digits printed on them. This string of numbers contains information for payment processors, networks, and banks that facilitate transactions. For example, card numbers follow the ISO/IEC 7812-1:2017 standard, which "specifies a numbering system for the identification of card issuers, the format of the issuer identification number (IIN) [also referred to as the BIN] and the primary account number (PAN)."⁷ Under this standard, the first number is known as the *Major Industry Identifier* (MII). American Express cards generally begin with 3, Visa cards have 4 as the first number, Mastercard has 5 first, and Discover has the number 6 first.⁸

The MII and the next set of numbers is crucial, as it identifies the issuing bank. As of 2022, BINs include the first six to eight digits, with the industry generally moving to eight-digit BINs in response to the widespread usage of card payments.⁹ A BIN is critical in enabling the merchant's POS system to understand which issuing bank to connect to. The American Bankers Association, a private industry association, is the official registration authority for U.S. BINs.¹⁰

⁴ One way to measure size of card issuers is by purchase volume. For example, see Ben Luthi, "8 Biggest U.S. Credit Card Companies This Year," *U.S. News and World Report*, February 21, 2024, <https://money.usnews.com/credit-cards/articles/biggest-us-credit-card-companies-this-year>.

⁵ Chip cards, or EMV cards, are the standard today in U.S. payments. Though the technology was introduced in the United States in the mid-2010s, it has been widely used globally for several decades. EMV stands for Europay, Mastercard, and Visa—the three companies that created the standard.

⁶ First Data, "Pinless Transaction Clarifications," April 2017, https://merchants.fiserv.com/content/dam/s7/firstdata/us/en/article_listing/PINlessGuidelines.pdf.

⁷ International Organization for Standardization, "Identification cards," January 2017, updated 2022, <https://www.iso.org/standard/70484.html>.

⁸ John Kiernan, "What Is a Credit Card Number? The Meaning of Each Digit," WalletHub, July 6, 2023, <https://wallethub.com/edu/cc/what-is-a-credit-card-number/44066>.

⁹ According to Deloitte, "after April 2022, Visa will only issue 8-digit BINs. Mastercard will issue 8-digit BINs after April 2022, but has not set a date for discontinuing issuance of 6-digit BINs. Mastercard has also announced that by 2022, issuers will need to enable account ranges, and acquirers should be ready to operate on 8-digit BINs and 11-digit account ranges. Other major networks, including American Express, Diners Club/Discover, and China Union Pay, have not announced timelines for adopting the new 8-digit BIN." See Deloitte, "Preparing for 8-Digit BINs," <https://www2.deloitte.com/us/en/pages/consulting/articles/8-digit-bin-expansion.html>.

¹⁰ American Bankers Association, "ISO/IEC 7812 Issuer Identification Numbers," <https://www.aba.com/about-us/our-story/issuer-identification-numbers>.

Card Networks

As mentioned earlier, credit cards are processed over networks. Card networks are associations that facilitate payments by connecting issuing banks and acquiring banks. The four major credit card networks are Visa, Mastercard, American Express, and Discover. The vast majority and dollar value of transactions are processed over these four networks. (There are also a number of smaller networks; see **Figure 1.**)

An issuing bank will join a card association in order to issue cards that can be processed over the network run by the association.¹¹ As mentioned above, a bank may choose to join the Visa card association so that it can issue cards that will be processed over Visa’s network. Card issuers consider a number of factors in choosing associations, such as consumer demand for particular cards, the interchange fees they can earn by processing cards over certain networks (discussed in more detail below in “Interchange”) and the terms they can negotiate with the associations.

The networks also work with merchants to install the hardware and software necessary to process payments on their network rails. For example, Visa and Mastercard have lists of licensed payment providers¹² (discussed below, in “Merchant Service Providers (MSPs)”) that will work with merchants to set up POS terminals to read payment cards. Further, merchants can download applications that facilitate payments over mobile devices.

Four-Party and Three-Party Systems

Certain networks, including Mastercard and Visa, facilitate transactions under a business model referred to as a *four-party system*, consisting of (1) the cardholder, (2) the merchant, (3) the issuing bank, and (4) the acquiring bank.¹³ In a four-party system, the network acts as an intermediary that connects merchants to issuers. American Express and Discover operate *three-party systems* that consist of (1) the cardholder, (2) the merchant, and (3) the network provider. In a three-party system, the network provider itself is the acquiring bank and the issuing bank.

Merchant Service Providers (MSPs)

Before a transaction occurs, a merchant must make several decisions about how it will take payment, including which cards it will accept. Most merchants want to accept electronic payment cards (as opposed to just cash) due to their popularity among consumers. Further, merchants generally choose to accept cards that can be run on at least one of the most popular networks, such as Visa, Mastercard, Discover, or American Express.

In order to accept certain cards, the merchant needs to procure the hardware (e.g., a card reader), software (e.g., payment app), and services necessary to use a certain payment network.

Broadly speaking, when the merchant is making these types of decisions, it is selecting which *merchant services* it wishes to purchase. Merchant services comprise a range of activities and products that facilitate a payment, from physical hardware and software enabling payment processing to the management and authentication of transaction data. Depending on the merchant’s business model, various merchant services will be more appealing. For example, a

¹¹ This generally applies to four-party systems—discussed in “Four-Party and Three-Party Systems”—where the issuing bank is not affiliated with the network.

¹² The list of providers for Visa can be found at <https://usa.visa.com/supporting-info/merchant-payment-providers.html>, and the list of providers for Mastercard can be found at <https://www.mastercard.us/en-us/business/overview/start-accepting/payment-facilitators.html>.

¹³ For more, see CRS Report R41913, *Regulation of Debit Interchange Fees*, by Darryl E. Getter.

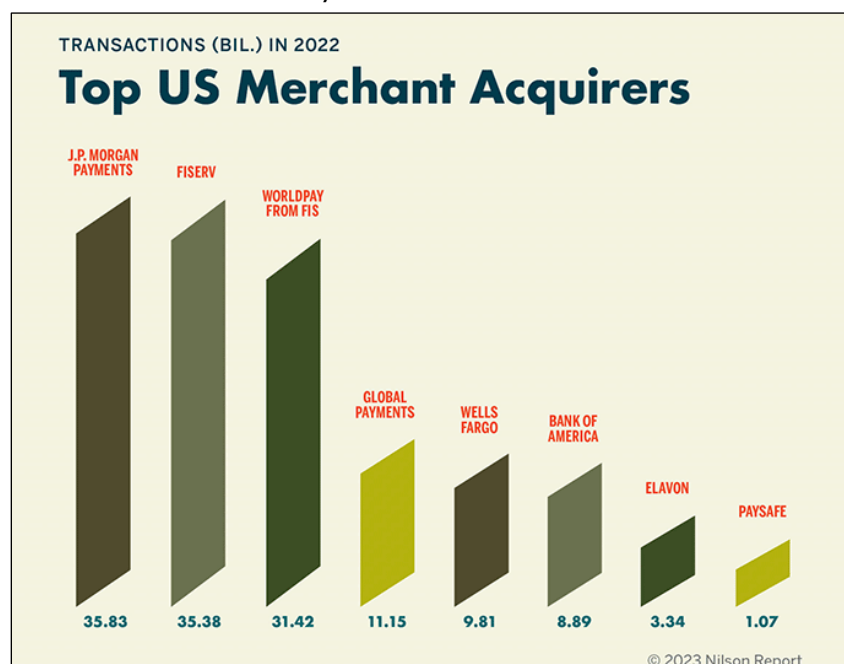
company may need to accept online payments or want to accept a variety of cards. The business may prioritize convenience over price or vice versa. A merchant service provider (MSP) will typically charge a fee (such as a flat fee per transaction or a scaled fee depending on transaction value) for its services, which is discussed in more detail in the “Swipe Fees.” MSPs also vary in their business models. For example, some firms may focus on providing technology solutions for accepting various payments. Some MSPs also offer ancillary nonpayment services, such as payroll management or other accounting services.

Acquiring Banks

Acquiring banks (the merchant’s bank) facilitate payment card transactions on behalf of merchants. To accept card payments, a merchant will generally set up an account with a bank to receive funds from the cardholder’s issuing bank.¹⁴ Many banks also have merchant services offerings, where they can serve as a merchant’s bank and also the MSP. Otherwise, banks can work with MSPs to facilitate payments.

The top acquiring banks and MSPs are shown in **Figure 2**.

Figure 2. Largest Acquiring Institutions
By Transaction Volume



Source: Nilson Report, “Issue 1238,” <https://nilsonreport.com/newsletters/1238/>.

The Payment Process

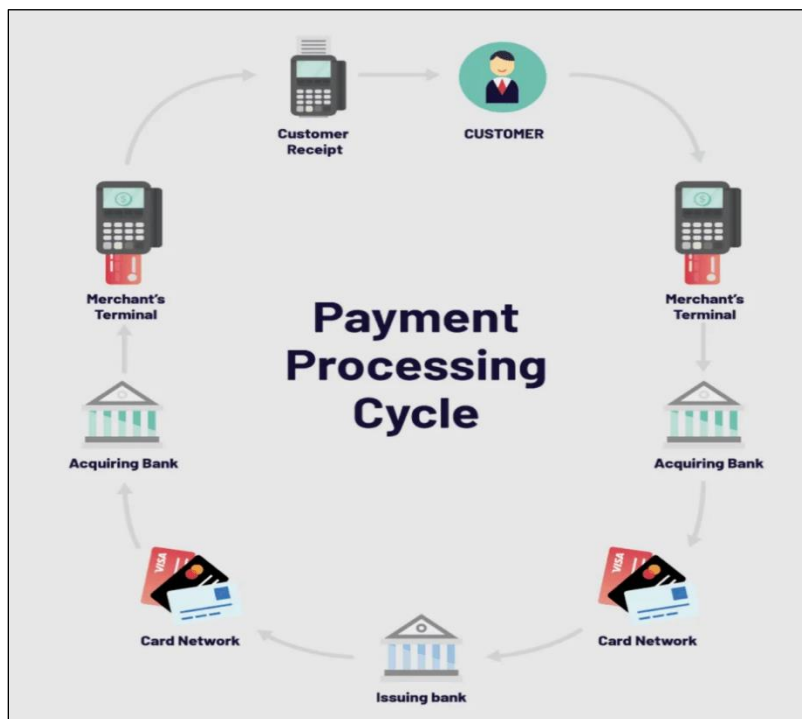
To understand how these transactions are completed, it is helpful to consider a consumer using either a credit or a debit card at a retail store. The following section will use a simple consumer transaction to explain two related processes: the flow of information that facilitates a transaction

¹⁴ Alternatively, merchants can also process card transactions through digital wallet transactions. For more on digital wallets, see CRS In Focus IF12079, *Digital Wallets and Selected Policy Issues*, by Paul Tierno and Andrew P. Scott.

and the flow of money that settles the transaction. The payment process has three main phases: authorization (which includes routing), clearing, and settlement. This report focuses largely on the authorization and settlement phase, which comprise retail payments. Clearing is largely a wholesale payments function that is beyond the scope of this report.

To make a payment, a consumer typically swipes or inserts the card into a POS terminal, though consumers can also tap or wave certain cards that have such capabilities.¹⁵ The card swipe, insertion, tap, or wave is processed on a card reader. Thus, the cardholder provides his or her card information to the business, and the business's POS system (or an online *payment gateway* for online transactions) captures the transaction details and securely transmits this information to the card processor, which forwards the transaction data to the acquiring bank and on to the appropriate card network, which then routes the authorization request to the issuing bank. The issuing bank verifies the cardholder's account, checking for sufficient funds and any potential fraud or security issues. (Figure 3 illustrates a simplified payment cycle for one transaction.¹⁶)

Figure 3. Payment Processing



Source: Matt Rej. "How to Lower Credit Card Processing Fees (2024)," Merchant Cost Consulting, January 2, 2024, <https://merchantcostconsulting.com/lower-credit-card-processing-fees/the-complete-guide-to-lowering-credit-card-merchant-fees/>.

Authorization

The card reader sends a signal to the issuing bank to seek *authorization* for transfer of funds. Authorization is a process by which the merchant's bank communicates with the issuer's bank

¹⁵ Alternatively, consumers can use digital wallets such as Apple Pay or Google Pay to access their card information. In this case, the communication of card information is the same, but the consumer's hardware holding the information is different.

¹⁶ Another type of very common transaction is a card-not-present transaction, which is processed over the phone or online. In this case, the merchant's online payment portal receives the consumer's card information.

(via the card network) to determine whether the transaction should be approved or declined.¹⁷ An approved authorization indicates that the account has enough funds available to cover the transaction. If the transaction is approved, the business completes the sale and provides the goods or services to the customer. From their perspective, the transaction is complete, but the payment actually still needs to be cleared and settled before funds are moved from the consumer's account to the merchant's account.

Network Routing

Merchants can choose which payment processors (their banks or other MSPs) they want to use for the payment process, and generally, they can direct the processors to route authorizations for different types of payments over different networks. Alternatively, the merchant may choose a service provider that makes the decision on which network to use for authorization as a function of its pricing scheme (see “Fee Structures for Merchants” below). Further, processors may work only with certain banks and card networks. Ultimately, when a payment is initiated, the processor will send the information necessary for authorization to the acquiring bank via a network, and the acquiring bank will route the transaction over its chosen network to communicate with the issuing bank.

While the merchant can choose the MSP it works with and customize the payment routing instructions to some extent, there are still limitations imposed by the networks on payment terminal technologies that encourage payments to be routed on certain networks. Generally, a POS terminal can support cardholder selection (the customer can choose how to process a transaction) or “special application selection logic,” whereby the merchant sets up a particular set of routing instructions. The terminal can also support neither of these options, instead simply prioritizing a given network.¹⁸ So in effect, the merchant has options as to where to exclusively route through particular types of transactions.¹⁹ However, if the merchant does not establish a special application selection logic, and in almost every other payments scenario, the transaction is likely to pass through a Visa-affiliated network.

Clearing

Clearing is an intermediate step between authorization and settlement (when the funds are actually transferred between accounts). The processor forwards the transaction details (e.g., payment amount and account numbers of transaction participants) to the respective card network, which coordinates with the issuing bank to transfer the funds to the acquiring bank. Once the settlement terms are finalized, the transaction clears. Clearing is largely a logistical step aimed at facilitating efficient settlement and, broadly, does not generate much policy attention or debate.

¹⁷ Office of the Comptroller of the Currency, *Comptroller's Handbook*, “Payment Systems,” October 2021, p. 16, <https://www.occ.gov/publications-and-resources/publications/comptrollers-handbook/files/payment-sys-funds-transfer-activities/pub-ch-payment-systems.pdf>.

¹⁸ Visa, “VSDC Contact and Contactless: U.S. Acquirer Implementation Guide,” June 2020, pp. 16-19, <https://technologypartner.visa.com/Download.aspx?id=574>.

¹⁹ Merchant Advisory Group, “Routing Basics,” <https://www.knowyourpayments.com/routing-basics/>.

Settlement

Generally, after clearing, the settlement phase of the transaction is initiated.²⁰ It is completed when the issuing bank sends the funds to merchant's bank.²¹ Together, the clearing and settling process usually takes one to three business days.

It should be noted that it does not necessarily take one to three business days for funds to be deposited in the merchant's account. Generally, when a transaction is authorized, the merchant's bank places money from the sale in the merchant's account (minus fees, discussed later), which in effect is an extension of short-term credit to the merchant. The merchant's bank is paid back by the issuing bank in the settlement process. In certain scenarios—particularly where the acquirer or processor feels there is a risk of excessive “chargebacks” (i.e., disputes over charges)²²—the acquirer will typically hold a portion of the merchant's funds in a reserve account to insure against potential losses from a merchant-customer dispute and disburse funds after the dispute time frame has passed.

Swipe Fees

Credit and debit card transactions involve a set of fees typically paid by the merchant to the merchant's bank, the issuing bank, and the service providers facilitating the transaction. While the merchant pays these fees directly, the merchant may be able to pass the cost indirectly to the consumer through higher prices if market characteristics allow. For example, if the merchant is in a highly competitive market and consumers are very sensitive to price differences in that market, according to economic theory, the merchant would not be able to pass on much of the price difference without losing customers. Conversely, in a less competitive market for a good, the merchant would likely have greater ability to pass on the costs. Estimates vary, but recent data suggests that in 2022, “swipe fees” were around \$160 billion, with credit card transactions comprising the majority of fees paid.²³ The next section provides details on the fees that merchants pay to have their payments processed.

Merchant Discount Rate

As discussed, networks and processors facilitate the transfer of funds from the consumer's bank to the merchant's bank. For this service, the merchant agrees to pay a “swipe fee” called the merchant discount rate (MDR) for each transaction. This fee is paid to the merchant's bank and then further split among the issuing bank and other service providers in the form of interchange fees, assessment fees, and payment processing fees, as described below. The MDR is typically around 1%-3% of the total amount of the transaction (though it may be structured either as a percentage of the total sale or a fixed amount plus a percentage of the sale), depending on the

²⁰ In certain circumstances, the merchant may delay settlement. For example, a hotel may delay settlement until the customer completes the stay. However, the main focus of this report is POS and e-commerce retail transactions.

²¹ Often the fund transfers from issuing banks to merchant banks are batched and processed as Automated Clearing House transactions, which is not the focus of this report. For an example of how this process works, see The Clearing House, “About ACH,” <https://www.theclearinghouse.org/payment-systems/ach>.

²² A chargeback is a form of dispute where a customer files a complaint with his or her bank about a merchant's failure to provide a good or service. The issuing bank can conduct an investigation and find on behalf of the customer or merchant. If the merchant is at fault, the issuing bank will recoup the funds from the merchant's bank, and the merchant's bank will charge the merchant for the reversal of the payment.

²³ Dylan Jeon, “10 Things to Know About Swipe Fees,” National Retail Federation, July 7, 2023, <https://nrf.com/blog/10-things-know-about-swipe-fees>; Katherine Haan, “States Where Businesses Are Impacted Most by Swipe Fees,” *Forbes Advisor*, September 5, 2023, <https://www.forbes.com/advisor/business/swipe-fees-report/>.

specific services the merchant is buying and the characteristics of the merchant's sales. Thus, if a consumer pays \$100 for a product and the MDR is 3%, the merchant would receive \$97, and \$3 would be split among the merchant's bank, the issuing bank, and the service providers.

But from the merchant's perspective, the MDR is the total fee and represents the cost of accepting cards. The following sections provide detail on the components of the MDR.

Interchange

The interchange fee is paid to the consumer's bank and represents the largest share of the MDR. It is paid to cover the costs of the consumer's bank associated with approving and handling the transaction and assuming the risk for any bad debt associated with the payment. While the fee goes to the consumer's bank, its level is set by the card network. The networks set these prices to attract issuing banks to their networks—the higher the interchange fee, the more likely a bank will choose to issue cards that use that network. They historically adjust interchange fees semi-annually.²⁴

Interchange fees vary based on the type of card used and whether the card is swiped, keyed in, or processed remotely. In addition, the interchange rate assigned to a specific transaction reflects a combination of factors, including the merchant's volume of sales using the network, the merchant's category code,²⁵ the type of card used, the security of the transaction (e.g., signature or PIN; card present or online purchase), and the type of card used (e.g., rewards card, debit card). The fee is typically a percentage of the transaction plus a fixed amount. For credit card interchange, Visa and Mastercard prices for large retail store transactions with various consumer credit card products are listed below in **Table 2** and **Table 3**.

Table 2. Selected Examples of Visa Interchange Rates for Credit Cards at Large Retailers

As of October 14, 2023

Retailer Volume Minimum	Visa Infinite Spend Qualified	Visa Infinite Spend Not Qualified	Visa Signature Preferred	Visa Signature	Traditional Rewards	All Other Products
\$8.21 Billion	2.3% + \$0.1	1.9% + \$0.1	2.1% + \$0.1	1.65% + \$0.1	1.43% + \$0.1	1.43% + \$0.1
\$4.39 Billion	2.3% + \$0.1	1.9% + \$0.1	2.1% + \$0.1	1.65% + \$0.1	1.47% + \$0.1	1.47% + \$0.1
\$995 Million	2.3% + \$0.1	1.9% + \$0.1	2.1% + \$0.1	1.65% + \$0.1	1.51% + \$0.1	1.51% + \$0.1

Source: Visa, "Visa USA Consumer Credit Interchange Reimbursement Fees," October 14, 2023, p. 7, <https://usa.visa.com/content/dam/VCOM/download/merchants/visa-usa-interchange-reimbursement-fees.pdf>.

Table 3. Selected Examples of Mastercard Interchange Rates for Credit Cards at Large Retailers

As of April 14, 2023

Retailer Volume Minimum	Core	Enhanced Value	World	World High Value	World Elite
\$1.8 Billion	1.43% + \$0.1	1.43% + \$0.1	1.53% + \$0.1	2.05% + \$0.1	2.05% + \$0.1

²⁴ Interchange is not paid to the network. Rather, it is passed from the merchant to the issuer's bank.

²⁵ Merchant category codes are used to identify the type of business line that a merchant operates.

Retailer Volume Minimum	Core	Enhanced Value	World	World High Value	World Elite
\$1.25 Billion	1.48% + \$0.1	1.48% + \$0.1	1.58% + \$0.1	2.1% + \$0.1	2.1% + \$0.1
\$750 Million	1.55% + \$0.1	1.55% + \$0.1	1.65% + \$0.1	2.15% + \$0.1	2.15% + \$0.1

Source: Mastercard, "Mastercard 2023-2024 U.S. Region Interchange Programs and Rates," <https://www.mastercard.us/content/dam/public/mastercardcom/na/us/en/documents/merchant-rates-2023-2024.pdf>.

While the fee structure is complicated, some broad generalizations can be made. Credit cards generally have higher interchange fees than debit cards do. Card-not-present (CNP) transactions, which typically occur online, have a slightly higher interchange fee as the risk of fraud is generally higher than for card-present transactions. Merchant Category Codes, which networks and processors use to determine the industries in which merchants operate, can also affect the interchange rate. Domestic transactions tend to carry lower fees than do transactions where the issuing bank's country differs from the merchant's. Reward cards tend to carry higher fees due to the costs generally attributed to paying for the rewards.²⁶

Search Costs and Interchange

Networks set interchange rates to attract issuers to their networks. In other words, interchange reflects the value of membership to the network. Networks want more issuers because ultimately the more money that is processed on their rails, the more revenue from network fees (discussed in the next section) and ancillary services they can generate. However, interchange also reflects the value of search cost savings to the merchant and merchant's bank. As noted above, when the merchant makes a sale, the merchant's bank extends a form of credit to the merchant and waits to be reimbursed by the consumer's bank.

It is therefore valuable to both the merchant and the merchant's bank to have a convenient and reliable way to interact with myriad cardholders and their banks. If communicating with issuing banks were more difficult, acquirers would potentially charge higher fees to compensate for the added costs or be less willing to extend credit to merchants until payment is reimbursed.

Network Fees

A smaller portion of the MDR goes to the network. This is sometimes referred to as a card brand, network access, or brand usage fee. Typically, this is a relatively small fee, around 0.1%-0.2% of a transaction, but markups can be added depending on the location of the consumer and merchant banks, the currency used, or other variables. For example, a network may charge a base assessment fee of 0.14% per transaction.

Processing Fees

The remaining amount of the MDR is paid to the payment processor, which accepts the card payment and sends the transaction to the payment network either through a physical card reader or an online payment gateway. Fee structures vary from per-transaction fees to flat service fees,

²⁶ Reward costs are not particularly easy to calculate, and they are negotiated in private contracts. Further, it is difficult to discern who ultimately pays for rewards, as fees from issuers are passed to merchants, and merchants could raise prices but may also choose to keep prices flat and lose profit margin to keep consumer demand up. Other consumers may also subsidize rewards by financing their outstanding balances with interest.

and unlike the interchange and assessment fees over which merchants have little or no opportunity to negotiate, processing fees are often negotiated between merchants and service providers. Although a small portion of the MDR, payment processing fees are a significant source of revenue for processing companies. For example, Fidelity National Information Services, one of the largest tech firms that provides payment solutions for banks and merchants, reported \$14.5 billion in revenue last year, of which \$5.0 billion came from transaction and processing services for banks, and \$4.7 billion came from transaction and processing services for merchants.²⁷ In addition to the main processing fee, other companies may add markups for services such as authentication, tokenization, payment gateway services, or hardware rentals.

Fee Structures for Merchants

Merchants ultimately pay the fees noted above as they are passed through the payment process to them. This total of fees is bundled into the effective MDR. The way fees are conveyed to the merchant impacts how a merchant might make payment processing choices. As noted above, a merchant will work with an MSP to process payments. That MSP can be the merchant bank or a service provider associated with the bank. The way fees are paid can be structured in a number of ways, described below.

Blended Models, Flat Rate, Tiers, and Subscriptions

In a blended pricing model, the MDR is set at a flat base fee plus a fixed percentage markup per transaction regardless of what the actual interchange fee on each individual transaction is. As noted earlier, interchange varies based on the card used and the nature of the transaction (CNP, rewards, etc.). Blended models provide merchants simplicity and predictability, as they know exactly what they will be charged for each transaction. At the same time, they may end up paying higher fees if the average processing fee charged exceeds what they would have paid if they paid the actual interchange fee per transaction. Other similar pricing schemes may include flat rates plus a markup or subscriptions that charge periodic costs for certain tiers of processing volume.

For example, commonly known payment processors PayPal and Square charge a flat fee for U.S. currency transactions plus a fixed percentage processing fees for credit and debit transactions. PayPal charges \$0.49 + 2.99% for U.S. dollar credit and debit transactions.²⁸ Square charges \$0.10 + 2.6% per POS retail card transaction.²⁹

Interchange +/++

A popular pricing scheme is the “interchange +” model, where the merchant is charged the variable interchange fee plus a fixed amount markup. Merchants may also pay “interchange ++”, where the merchant is charged the interchange fee plus the network fee and markup. Typically interchange +/++ models provide merchants greater transparency in how transaction fees are broken down and provide an opportunity for merchants to save depending on the types of transactions they accept, as they are charged the interchange that is passed through to them. Helcim and Ayden are two examples of payment processors that use interchange +/++ for card networks with interchange and flat rate plus markups for networks that do not. (See Ayden’s pricing structure in **Table 4**.)

²⁷ Fidelity National Information Services, “Annual Report 2022,” p. 66, <https://www.investor.fisglobal.com/static-files/d2b415d9-f169-46a5-b0e5-a6457278ec08>.

²⁸ PayPal’s fee schedule can be found at <https://www.paypal.com/us/webapps/mpp/merchant-fees>.

²⁹ Squares’ fee schedule can be found at <https://squareup.com/us/en/pricing#rates>.

Table 4. Ayden Fee Schedule for Major Cards

Card Network	Fee Type	Pricing
American Express	Flat Rate + Markup	3.3% + \$0.23
Discover	Flat Rate + Markup	3.95% + \$0.13
Mastercard	Interchange ++	Interchange + \$0.13
Visa	Interchange ++	Interchange + \$0.13

Interchange rates vary widely depending on the card and the characteristics of the payment. Thus, the pricing model a merchant will choose depends on the merchant's preferences for simplicity, costs savings, control over the pricing scheme, and convenience of ancillary services that are bundled.

Policy Considerations for Congress

One of the main policy considerations about electronic payments is whether the fees associated with transactions are too high.

A good or service being priced higher than desirable for one particular group or another—whether producers, wholesalers, retailers, or consumers—is not itself a policy problem per se. In markets with adequate competition, according to economic theory, prices will find an equilibrium at an efficient level that fairly reflect the cost of providing the good or service offered. However, in industries with high market concentration, the small number of suppliers may be able to exercise market power to set higher-than-competitive prices, creating market inefficiency and unfair distributional outcomes.

Congress has long debated whether electronic payment markets, specifically the interchange fees that network providers set, are the result of a lack of competition that necessitates a policy intervention. To date, a law has been passed to regulate debit interchange. Meanwhile, legislation introduced in the 118th Congress would incentivize competition in the credit card market through changing the authorization routing process with the intent of lowering interchange fees. As Congress examines this issue, it may consider a number of policy questions. The following sections highlight some considerations for Congress in this debate.

Should Credit Card Interchange Be Regulated?

Credit card fees have been a long-standing subject of debate, including in the 118th Congress. Merchants argue that card network operators use market power to charge higher-than-competitive fees, and thus competition could lead to more efficient outcomes for retailers and consumers. The banking industry argues that participants are in tight competition and that fees closely reflect the costs of providing fast, reliable, and secure transactions. However, networks use routing restrictions on transactions—a feature of contracts between the networks and banks and merchants—to limit competition in the market. While payment cards possess the technological capacity to run on multiple networks, the membership agreements for Visa and Mastercard generally prevent card issuers from routing transactions over competing networks. Further, the networks restrict merchants' ability to process cards over competing networks. This barrier to competition is a potential source of pricing inefficiency, as monopoly forces could drive up prices.

Prior interchange regulation in the debit market significantly reduced debit interchange fees, and that is in part due to the price caps mandated by Section 1075 of the Dodd-Frank Wall Street

Reform and Consumer Protection Act (P.L. 111-203) and implemented through Regulation II (a rulemaking promulgated by the Federal Reserve on debit card interchange).

Would Improving Routing Competition Affect Merchant Fees?

Recent proposals for regulating credit card interchange³⁰ are aimed at lowering the fees through removing barriers to competition in the way a transaction is routed. By prohibiting banks and card networks from restricting the network over which a transaction is processed, card networks could not require banks to issue cards that would run only on their networks. (This is similar to the prohibitions on routing restrictions found in Regulation II.)

Economic theory suggests that competition puts downward pressure on prices, as retailers could opt for cheaper options, incentivizing banks to issue cards enabled for those networks, ultimately compelling networks to consider lower interchange fees to keep demand. Merchants are generally proponents of this type of regulation, as they would benefit from paying lower transaction fees. Networks and generally most banks are opposed to measures that might lower those fees.

In a market where retailers increasingly need to accept card payments, networks use interchange prices to incentivize banks to issue their cards, and they use routing restrictions to compel merchants to route transactions through their networks. As noted above, there are four major credit card networks, and Visa and Mastercard have around three quarters of the market share.³¹ Merchants want to accept the cards consumers have. Banks want to issue cards that consumers want. Consumers want cards that merchants accept. This circular demand structure creates a market whereby barriers to entry for new competitors are arguably high, the networks can gain market power and potentially set higher prices, and merchants have limited options to choose competing networks on the basis of price. The National Retail Federation suggests that increased competition in credit card routing would save merchants and customers an estimated \$15 billion per year.³²

In practice, merchants face a number of decisions in addition to interchange rates that ultimately drive the partnerships they choose for accepting cards, thus making reality more complicated than theory. Further, recall that the MDR is the rate paid by the merchant—ultimately, this is the fee that merchants are concerned about. Interchange is the biggest component of MDR, so it is possible that interchange regulation or competition would reduce interchange costs to merchants and the net MDR would decrease. Given that the MDR comprises a number of other fees, merchants would benefit only if the reduction in interchange costs exceeds a subsequent rise in costs of assessments.

Further, simply enabling an alternative network does not ensure that other networks are used. For example, if Visa issues a card that results in a merchant effectively paying an interchange fee of 2%, the merchant may consider using an alternative network that charges a lower fee. To do so, it would need to work with its bank and processing company to reconfigure its POS terminal. (See the section below.) While doing so could lower the merchant interchange costs, it could also create new costs to the merchant (e.g., fees charged by the processor to provide additional services or through a change in the pricing scheme), thus potentially keeping the effective MDR

³⁰ For example, the Credit Card Competition Act of 2023 (S. 1838/H.R. 3881) was introduced in the 118th Congress.

³¹ Different metrics, such as outstanding balance or purchase volume, can be used to measure market share. For example, see Adam McCann, “Market Share by Credit Card Network,” WalletHub, August 13, 2024, <https://wallethub.com/edu/cc/market-share-by-credit-card-network/25531>.

³² Meghan Cruz, “Consumers Don’t Want to Pay the Price for Swipe Fees,” National Retail Federation, August 3, 2023, <https://nrf.com/blog/consumers-dont-want-pay-price-swipe-fees>.

relatively stable. Additionally, a merchant may choose a processor for its ancillary services or choose a pricing structure (such as a blended or flat rate model) that is not influenced as much by interchange fluctuations. CRS cannot predict what outcome such a policy change would have, but these examples highlight that a range of outcomes are possible.

Asymmetric Information Between Merchants and Acquirers

Greater competition could drive down prices if merchants respond to new opportunities to lower their costs. But there is the possibility that merchants are not fully aware of all their various options in the payment process and the price structures that would result in the lowest possible costs. For example, while merchants have the ability to dictate the routing instructions for card processing, there are asymmetries between the information possessed by the acquirers and the information possessed by the merchants. Merchants may choose simplified pricing models, be unaware of their technical capacities, or set up payment terminals that do not minimize their fee rates.

First Data—a merchant services company that, after acquisition from Fiserv in 2019,³³ owns the STAR and Accel debit networks—noted that, with respect to debit transactions, there are several default configurations among processing hardware that may direct transactions to the networks affiliated with the issuing banks.³⁴

Implementation of Regulation II has addressed some of these issues. However, they provide an illustration of the technical challenges merchants may face in processing credit cards. If similar routing requirements were in place for credit networks, similar scenarios could potentially arise with credit card payments if the networks create global and common credit AIDs. Thus, a disclosure regime for acquirers or a financial literacy component for merchants may impact merchant costs in a manner similar to interchange regulation on issuers and routing restriction bans on networks.

How Might the Capital One and Discover Merger Impact Card Payments?

In February 2024, Capital One announced a merger deal with Discover. Capital One is a national bank, and it is the ninth-largest depository institution in the country (\$476 billion in assets) and has the 11th-largest bank holding company by consolidated assets. It is also one of the largest issuers of Visa- and Mastercard-branded credit cards. Discover is a state-chartered bank and is the 27th-largest depository, with \$149 billion in assets. It has the 33rd-largest holding company.

³³ For more on the Fiserv and its networks, see Fiserv, “Payment Networks,” <https://www.fiserv.com/en/solutions/card-services/payment-networks.html>.

³⁴ First Data, “Pinless Transaction Clarifications,” April 2017, https://merchants.fiserv.com/content/dam/s7/firstdata/us/en/article_listing/PINlessGuidelines.pdf. In the first configuration, the POS terminal gives the consumer two AID options when using a Visa debit card: “Visa Debit” and “US Debit.” The cardholder may not know what an AID is or that by selecting “Visa Debit” it takes the merchant’s option for routing away. First Data argues that the consumer is more likely to choose “Visa Debit” as Visa is a brand name consumers recognize. (The Federal Reserve clarified in 2016 that a network cannot require that the merchant allow the cardholder to select the network and still comply with Regulation II’s network competition requirements. See Q4 in the Fed’s FAQ on interchange regulation at <https://www.federalreserve.gov/paymentsystems/regii-faqs.htm>. In the second configuration, the terminal is programmed to prioritize the Global AID over the Common AID. For example, as of October 2023, Visa’s Product and Service Rules (4.1.19.51—Application Identifier Priority) states, “A Visa-owned Application Identifier must always be the highest priority Application Identifier.” The third configuration is that the terminal gives the consumer the choice to process the transaction as credit or debit but assigns the Global AID to credit and Common AID to debit.

Discover also operates one of the four largest card payment networks in the country and is a major issuer of payment cards.

According to Capital One's regulatory filings, it was the third-largest issuer of Visa and Mastercard payment cards. Capital One credit card users purchased around \$587 billion in transaction value in 2022. Discover credit card holders purchased around \$224 billion, with an additional \$550 billion run through Discover proprietary and affiliated debit card networks.

Combined, the merger would result in an institution with over \$600 billion in assets and over \$480 billion in deposits making it the sixth-largest bank in the country. Additionally, it would combine two of the five largest card issuers and one of the largest card networks into one institution, resulting in a retail card issuer with over \$1 trillion in annual transaction volume.

Given that it could take several months for regulatory approval, there is some uncertainty around how this merger could materialize and impact retail payments. Capital One could keep its card issuance and network acquisition separate, but if it chooses to integrate these operations, the impacts could vary. For example:

- Capital One could use its existing card issuance customer base and the newly acquired network technology from Discover to create a new network that competes with Visa and Mastercard while allowing Capital One to serve both the customer and merchant in a retail transaction. It is unclear whether this would create adequate competition in retail payments to drive prices (i.e., swipe fees) down or lead to further concentration of market power.
- Regulation II caps permissible fees associated with debit transactions of large banks using a four-party structure but not those using a three-party structure. Currently, while Capital One does not have a large debit card business, its debit issuance is currently covered under Regulation II. This merger could incentivize Capital One to develop more transaction accounts so it can capitalize on debit interchange pricing advantages by using the three-party infrastructure from Discover debit networks, which would not be covered by Regulation II.

Author Information

Andrew P. Scott
Specialist in Financial Economics

Disclaimer

This document was prepared by the Congressional Research Service (CRS). CRS serves as nonpartisan shared staff to congressional committees and Members of Congress. It operates solely at the behest of and under the direction of Congress. Information in a CRS Report should not be relied upon for purposes other than public understanding of information that has been provided by CRS to Members of Congress in connection with CRS's institutional role. CRS Reports, as a work of the United States Government, are not subject to copyright protection in the United States. Any CRS Report may be reproduced and distributed in its entirety without permission from CRS. However, as a CRS Report may include copyrighted images or material from a third party, you may need to obtain the permission of the copyright holder if you wish to copy or otherwise use copyrighted material.