2020 Debit Issuer Study

Card-not-present debit use climbs sharply amid changing consumer behaviors

15 YEARS DEBIT ISSUER STUDY

pulse®
A DISCOVER COMPANY

"Basically, any merchant category that is $15 and under is ripe to replace cash with plastic because of contactless."

National Bank

"We see big growth in month-over-month active cards for mobile wallets. Apple Pay is the largest in terms of number of transactions. This is the case even though we have more Android users than Apple."

Regional Bank

"We have a healthy mix of simple P2P transfers and transactions for Uber, Lyft and other businesses."

Credit Union

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Overview

For the past 15 years, PULSE has commissioned the definitive study of the debit market, the annual Debit Issuer Study. The 2020 Study was conducted in February through mid-March, 2020. As such, the metrics reflect 2019 data, and thus a pre-COVID-19 business-as-usual operating environment.

The COVID-19 pandemic is an extraordinary event – a crisis of global proportions unlike any in the past century. It has significantly impacted the global economy and, with it, the U.S. debit market. Debit transaction volume plummeted 25 to 30% in mid-March as shelter-in-place rules went into effect and businesses closed. Volumes have since rebounded to a large extent, and a number of market trends highlighted in this year's Study results are expected to accelerate as a result of the pandemic. These trends include the migration of card-present transactions to card-not-present environments, greater adoption and use of contactless cards and mobile wallets, and an increase in the volume and complexity of disputes and fraud.

This report addresses the key findings from the *2020 Debit Issuer Study*. A special companion report by Oliver Wyman focuses on COVID-19's impact on the debit market. This report, as well as pandemic debit trend data for the PULSE® network, is available on the PULSE Pandemic Response Resource Hub.

Key Findings

COVID-19 creates an uncertain future

The COVID-19 pandemic has had a limited impact on debit, due to consumers making fewer but larger purchases. But issuers are uncertain about how soon – and how rapidly – the global, economy will recover. It's anticipated, however, that the pandemic will accelerate trends identified by the study; namely, e-commerce growth and issuance of contactless debit cards.

Debit use continues to grow…

Debit experienced another strong year in 2019. Issuers' core debit performance metrics continued to improve, with year-over-year increases in penetration, active rate and usage. Every year for the past five years, active cardholders have made one additional debit transaction per month, on average. In 2019, these cardholders performed 25.5 transactions per month, excluding ATM activity.[1] Industry-wide, an estimated 77.4 billion debit transactions were made in 2019, up 6.5% over the prior year.

…but is a tale of two channels

Unpacking the data reveals that debit is a tale of two channels, with card-not-present (CNP) transactions serving as the primary driver of growth, while card-present (CP) transactions declined on a per-card basis. Fueled by digital commerce, bill payments and account-to-account (A2A) funds transfers,[2] CNP transactions now constitute 27% of all debit transactions and are growing approximately 10

1 *Includes purchases, bill payments and debit-based funds transfers.*

2 *A2A transactions include: person-to-person transfers where debit cards are used in apps such as Venmo and Zelle; business-to-consumer "credit push" transactions, which are used to pay gig-economy workers and for other payouts; and consumer-to-business purchases and payments utilizing debit, such as through PayPal.*

times faster than CP transactions. This already rapid growth has accelerated amid the COVID-19 pandemic as a result of changing consumer behaviors – behaviors that are likely to have staying power even after the pandemic passes.

Debit interchange accounts for 25% of exempt issuers' non-interest income

Debit interchange is a significant driver of economics, both at the demand deposit account (DDA) level and for an issuer's non-interest fee income. Issuers subject to Regulation II's interchange restriction received an average blended interchange rate of 23.6¢ per point-of-sale (POS) transaction, while issuers not subject to the restriction realized an average rate of 40.3¢ per transaction (with business debit cards generating significantly higher returns at 28.1¢ for regulated and 147.6¢ for exempt issuers). A typical regulated issuer receives $74 per consumer card annually from debit, whereas an average exempt issuer earns $116. On an aggregate basis, debit interchange is a material driver for exempt issuers, generating approximately 25% of their total non-interest income.

Fraud remains a challenge

Issuers cited fraud as their greatest challenge, as in the past several years. They experienced $4.2 billion in gross fraud claims in 2019 and ultimately incurred over $1 billion in net losses on POS debit and ATM transactions. However, not all transaction types are created equal in terms of fraud patterns. PIN POS transactions are the most secure, accounting for 38% of POS activity but only 5% of gross fraud cases in 2019.

2020 is the year of contactless

Issuers cited offering contactless debit cards as their top priority for 2020. Encouraged by growing merchant acceptance and a desire to deliver a better customer experience and to keep up with competition, two in three issuers will be issuing contactless debit cards by year-end 2020. The number of contactless cards in the market will continue to grow, with issuers planning to have 36% of all full-function (PIN and signature-capable) debit cards contactless-enabled by year-end, and a projected 87% of cards by the end of 2022.

Funds transfers are growing rapidly

Account-to-Account (A2A) debit payments have emerged as the fastest growing category of debit. A2A transactions doubled year-over-year, representing 40% of the industry's total debit transaction growth. An estimated 2.4 billion A2A transactions were processed using debit network rails in 2019, as debit evolved from a purchase capability to also include real-time money movement.

Apple Pay pulls away from the other "Pays"

Purchases using mobile wallets linked to debit cards totaled 1.3 billion transactions in 2019, with Apple Pay pulling away from Google Pay and Samsung Pay, and posting 100% year-over-year growth. Apple Pay outperformed its wallet peers across cardholder enrollment, active rate and usage.

About the Study

The Debit Issuer Study – commissioned by PULSE and conducted by Oliver Wyman – tracks the state of the industry, identifies emerging themes and opportunities, and provides performance benchmarks. This year's Study is based on primary research with 55 financial institutions that manage approximately 157 million debit cards, representing about 42% of all U.S. debit transactions. The sample spans national banks, regional banks, community banks and credit unions (Figure 1). Issuers are also segmented into Regulated and Exempt categories based on their status with regard to Regulation II interchange restrictions. Given the Study's size – and the distribution of financial institutions by segment, geography and network participation – the sample is sufficiently broad and balanced to be reflective of the debit industry.

Figure 1 *Composition of 2020 Study sample*

Segment ($ assets)	Number of FIs
National Banks (≥$100 Bn)	14
Regional Banks (≥$10 Bn - <100 Bn)	15
Community Banks ($500 MM - <10 Bn)	17
Credit Unions	9
Total	**55**

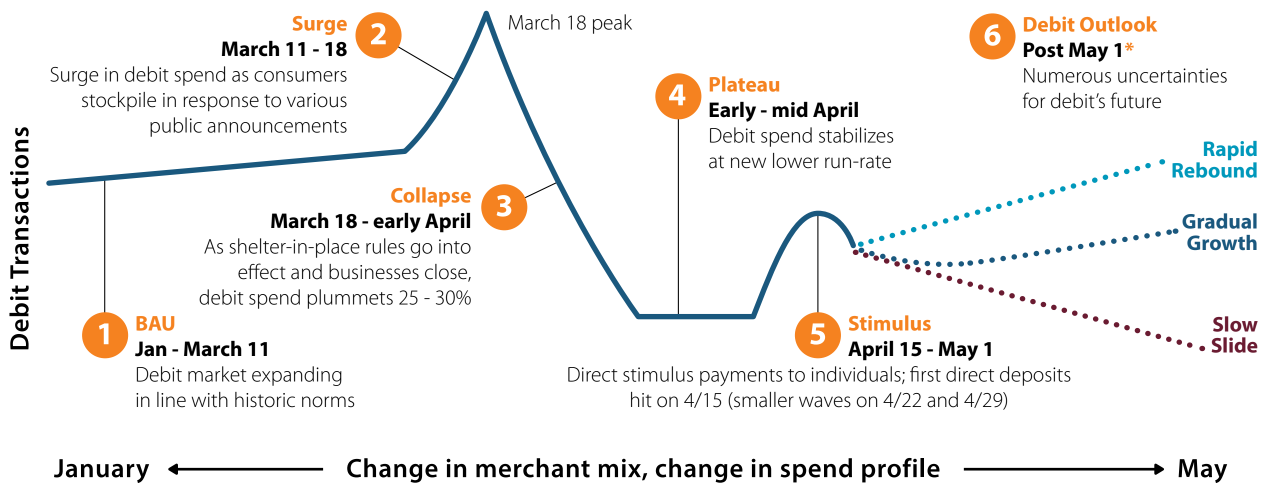
Segment	Number of FIs
Regulated	31
Exempt	24
Total	**55**

COVID-19 Creates Uncertainty

COVID-19 has uprooted almost every aspect of everyday life, including banking, retail sales and payments. Beginning in mid-March 2020, the pandemic has significantly impacted the U.S. debit market, causing material changes in transaction activity.

Spending initially surged as consumers stockpiled on staples and other goods. Subsequently, transactions plummeted by 25 to 30% as shelter-in-place rules went into effect and businesses closed. Volumes then largely recovered, supported by the fiscal stimulus and actions by various states to reopen certain sectors of their economies (Figure 2).

Figure 2 *COVID-19 impact on debit transactions, 2020*



** Future outlook as of completion of data gathering for Oliver Wyman COVID-19 report.*

The pandemic is transforming all aspects of the debit business, contributing to a number of first- and second-order effects.

> **First-order effects** include growth in certain merchant categories (e.g., grocery, warehouse clubs, etc.) and a decline in others (e.g., QSR/restaurants, travel, etc.). Issuers have also experienced an accelerated migration from CP to CNP, driven by a surge in e-commerce as stores close and consumers look to shop from the safety of their homes.
>
> **Second-order effects** include changes in card use – consumers are making fewer but larger purchases; the average ticket for debit increased by 12 to 14% in April. Additionally, COVID-19 has led to lower card issuance: with branches closed, the rate at which financial institutions can acquire new cardholders – and issue new debit cards – has been severely curtailed.

Ultimately, these first- and second-order effects could impact issuers' overall debit economics.

Debit KPIs

Key performance indicators (KPIs) for debit issuers continued to improve in 2019, with year-over-year increases across penetration, active rate and usage. At an aggregate level combining both consumer and business debit cards, penetration increased from 78.1% in 2018 to 79.5% in 2019, and the average active rate increased from 67.1% to 68.2%. On average, cardholders performed 25.5 transactions per active debit card per month in 2019, excluding ATM activity, reflecting an increase in usage of about one monthly transaction every year since 2015 (when 21.9 monthly transactions per active card were performed). A typical debit card is now used for about $12,400 in annual spend, with an average ticket size of $40.50 (Figure 3).

Figure 3 *Change in Debit KPIs, 2018-19 (aggregate consumer and business portfolio)*

	Penetration	Active Rate	Usage	Card brand % of Transactions	Average Ticket Size	Annual Spend per Active Card
2019	79.5%	68.2%	25.5	64.1%	$40.50	$12,407
% change	1.4%	1.1%	3.1%	-0.1%	1.9%	6.2%
2018	78.1%	67.1%	24.8	64.2%	$39.70	$11,684

Penetration, Active Rate, Usage: Measures debit card prevalence and frequency of use; transaction volume is the main revenue driver for regulated issuers post-Reg II

Card brand % of Transactions, Average Ticket Size, Annual Spend per Active Card: Measures spend and transaction type on debit cards, which remain important metrics for exempt issuers

KPI Definitions

Penetration is the percentage of an issuer's checking account base that can be accessed by a debit/ATM card. Penetration only measures whether at least one card is tied to an account; multiple debit cards tied to a joint account do not influence the metric.

Active Rate is the number of issued cards that are consistently used by cardholders. The active rate is defined in multiple ways by issuers, based on the transaction type and time frame. The most commonly used definition measures cards used for any transaction within the past 30 days.

Usage is monthly transactions per active card, including purchases, bill payments and A2A money transfers.

Card Brand Percentage of Transactions is the ratio of card brand transactions to total POS transactions, and is also referred to as "transaction mix." The change in terminology to "card brand" and "EFT" reflects the increasing convergence between the historic labels of "signature" and "PIN" that were used previously in the Debit Issuer Study and the expanding capabilities of EFT networks.

Average Ticket Size is the ratio of transaction dollar volume to number of transactions. The ticket size shown here is the blended average of card brand and EFT transactions.

Annual Spend per Active Card is the average annual gross dollar volume for an active card.

"Best-in-class" issuers – defined as those in the top quartile for a given KPI – significantly outperformed those in the lower quartiles in both penetration and active rate. In penetration (Figure 4), issuers in the top quartile achieved an average penetration of 88% in 2019, compared to 64% for the bottom quartile. In active rate (Figure 5), top-performing issuers achieved an average of 78%, compared to 56% for the bottom quartile. A quartile analysis is not provided for usage rates because the difference in performance by quartile was not significant.

Figure 4

*Overall penetration (consumer and business) by quartile, 2019**

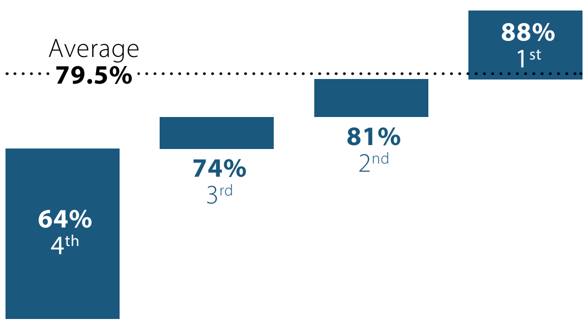
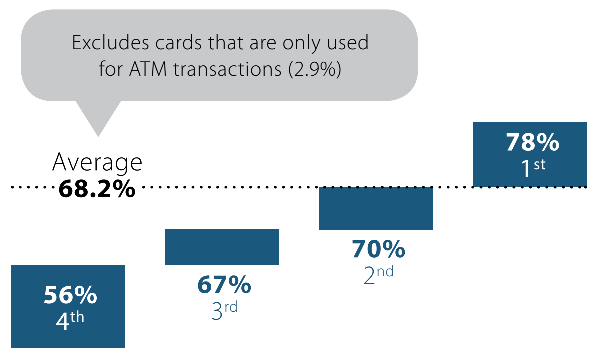


Figure 5

*Active Rate (based on POS activity) by quartile, 2019**

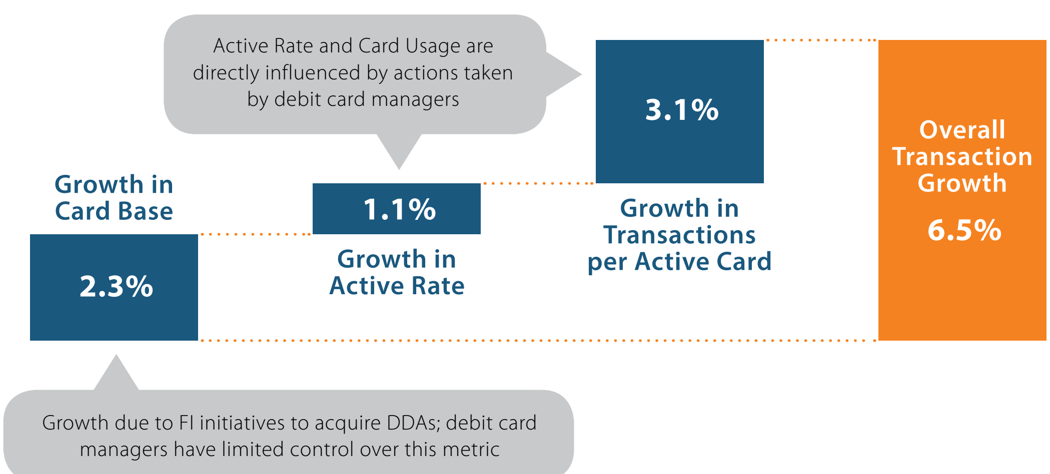


** The value shown for each bar represents the median within the 2019 quartile*

At a portfolio level, business and consumer cards exhibit different behavior – business cards represent only 8% of all debit cards and have higher average ticket size and spend, whereas prevalence and frequency of use are higher for consumer cards. Therefore, these portfolios warrant tailored approaches from financial institutions.

Total debit transactions for the industry grew by 6.5% in 2019 (Figure 6). This was mostly driven by greater per-card usage (transactions per active card grew by 3.1% year-over-year), with the remainder of the growth coming from increases in the active rate and card base, which grew by 1.1% and 2.3%, respectively.

Figure 6 *Debit card transaction growth sources, 2019*



Transaction Mix

Issuers are continuing to shift their focus away from the historic labels of "signature" and "PIN" debit, and are instead more interested in tracking the vector of use: card-present (CP) versus card-not-present (CNP) transactions. This is because there is a clear – and growing – divide between CP and CNP debit activity.

As cardholders' day-to-day lives are becoming increasingly digital, this directly impacts how they pay. As a result, CNP transactions were the primary driver of debit card growth in 2019, increasing 21.3% year-over-year – roughly 10 times faster than the growth rate of CP transactions (Figure 7).

With the closure of more than 93,000 retail locations[3] in 2019 and the increase in cardholder preference for online purchases, CP debit transactions declined year-over-year by 1.1% on a per-card basis to 18.6 monthly transactions in 2019 (Figure 8). However, this decline in per-card usage was offset by 2.3% growth in issuers' overall card base and 1.1% growth in the average active rate, contributing to an overall growth in CP transactions of 2.3%. As a result of these factors, CNP transactions accounted for 27% of all debit transactions and 40% of debit dollar volume in 2019. These percentages are expected to rise further in 2020 as a result of the pandemic.

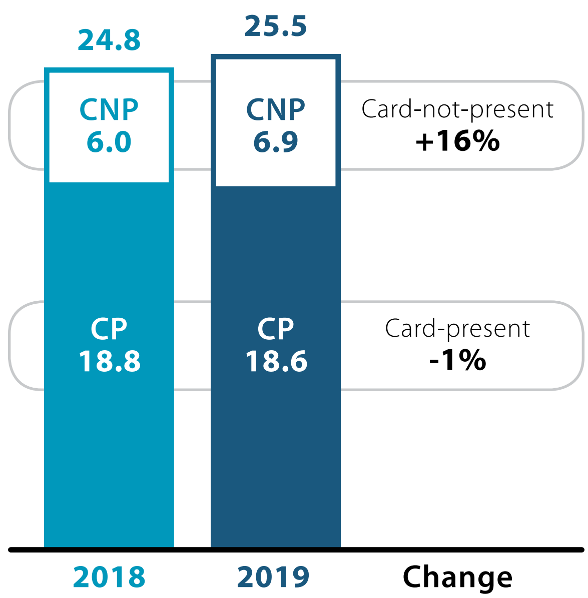
Figure 7

Card-present vs. card-not-present KPIs, 2019

	Card-present (CP)	Card-not-present (CNP)
Monthly transactions per active card	18.6	6.9
Transaction mix	73%	27%
Transaction growth rate (2018-2019)	2.3%	21.3%
Average ticket size	$34.10	$61.48
Annual spend per active card	$7,611	$5,091
Volume mix	60%	40%

Figure 8

Card-present vs. card-not-present usage, 2018-2019



3 *"25,000 stores are predicted to close in 2020,"* CNBC.com, June 9, 2020.

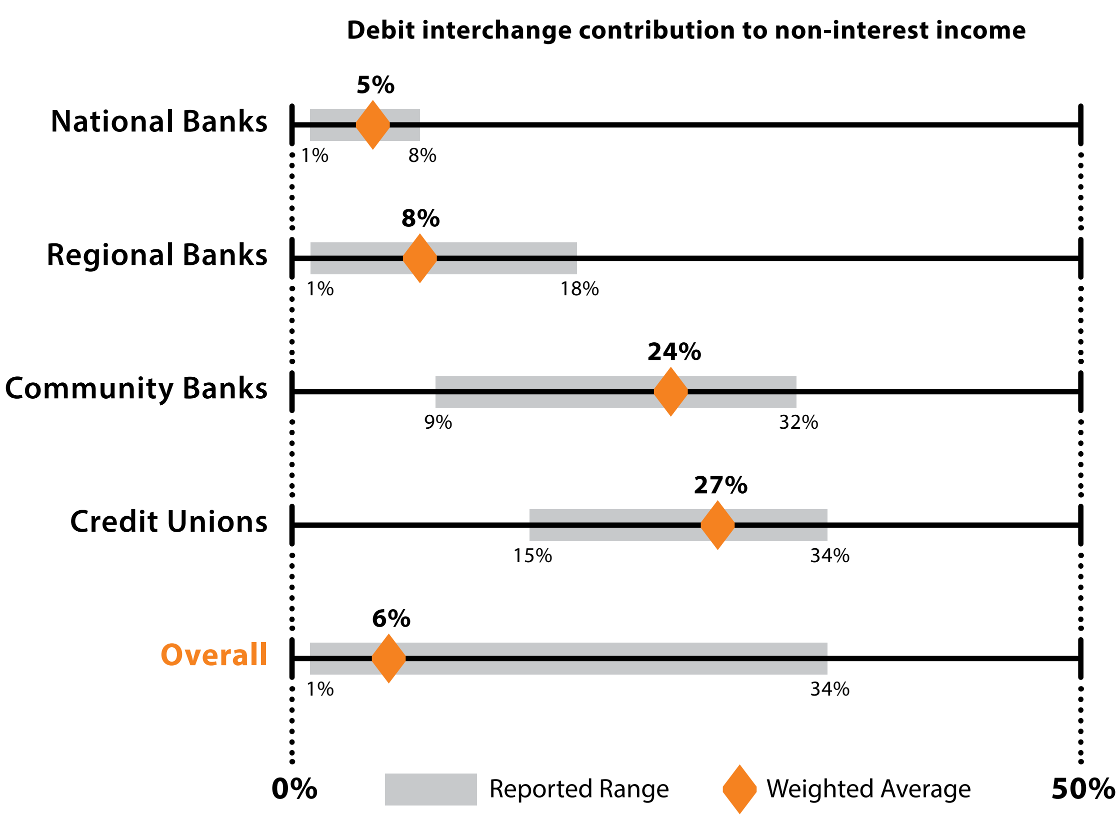
Economics

Debit interchange is a key driver of both DDA revenue and overall non-interest income for issuers. For regulated issuers (those with ≥$10 billion in assets), the key metric that drives debit revenue is the number of transactions; for smaller issuers that are exempt from Reg II's interchange cap (those with <$10 billion in assets), debit revenue is more heavily influenced by total debit spend due to higher average interchange rates.

Exempt issuers receive higher interchange rates on a per-transaction basis. Their overall blended average interchange rate is 40.3¢, whereas regulated issuers receive 23.6¢ per transaction on average. For exempt issuers, the interchange rate also varies dramatically between consumer and business cards, receiving an average interchange of 35.5¢ and $1.48 respectively.

Due to these differences in interchange rates, exempt issuers receive gross revenue of $116 per active debit card per year, whereas regulated issuers receive $74 per active card. Interchange revenue subsequently impacts debit's overall contribution to an issuer's non-interest fee income. On an aggregate basis, debit interchange represents a material source of revenue for issuers, accounting for 6% of non-interest income for regulated issuers and about 25% for exempt issuers (Figure 9).

Figure 9 *Importance of debit interchange revenue, 2019*



Debit Fraud

Fraud is an ongoing challenge for debit issuers. In 2019, issuers faced $4.2 billion in gross (attempted) fraud and ultimately incurred losses of over $1 billion on debit and ATM transactions.

Fraud patterns vary significantly based on how a debit card is used – for example, CP versus CNP, and with or without cardholder verification. Also impacting these patterns is the fraud lifecycle flow. Factors such as the decline rate, dispute denial rate and chargeback efficiency vary for different transaction categories.

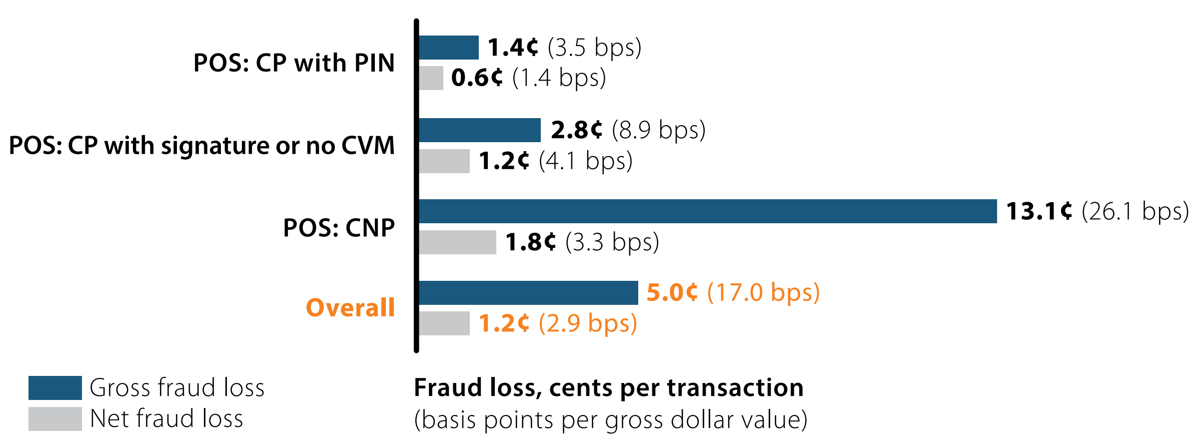
CP with PIN transactions are the most secure, accounting for 38% of POS transactions but only 5% of gross fraud cases. CNP transactions are the least secure, accounting for 27% of debit transactions but 70% of gross fraud cases. Although these claims may not necessarily translate to a high dollar value of net fraud losses for issuers, they still require substantial time and resources to process and decision appropriately. Hence, CNP transactions, which have the highest incidence of gross fraud claims per million POS transactions (1,803), represent a major operational cost for issuers.

When looking at denied claims, CP with PIN transactions have significantly higher denial rates from issuers (37%) than CP without PIN and CNP transactions (21% each). Because cardholders have to physically enter a PIN to authenticate a transaction, they have a lower likelihood of proving PIN compromises and hence face a higher rate of denials from issuers.

In terms of chargeback efficiency, chargeback rights are the most favorable to issuers on CNP transactions. Merchants have a higher liability for CNP transactions based on current network rules. As a result, issuers recover a greater percentage of losses from merchants on these transactions (51%). Conversely, PIN fraud significantly limits an issuer's chargeback rights (16% recovery).

The type of transaction also has a significant impact on the average net loss rate experienced by issuers. CP without PIN and CNP transactions generally do not include cardholder authentication, and hence have higher net loss rates of 1.2¢ and 1.8¢ per transaction, respectively. CP with PIN transactions, on the other hand, benefit from enhanced security due to PIN authentication, leading to the lower average net loss rate of 0.6¢ per transaction (Figure 10).

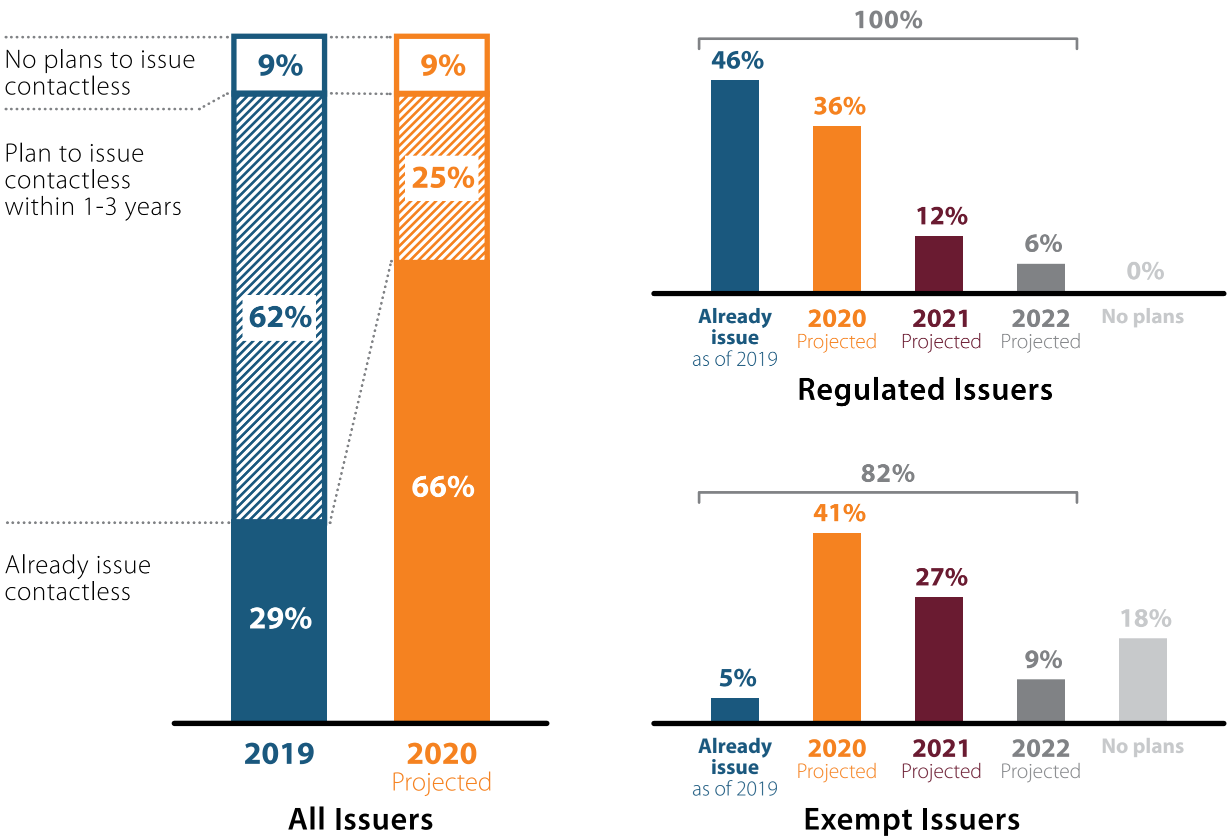
Figure 10 *Gross vs. net fraud losses by transaction type, 2019*



Contactless

2020 is the year of contactless: issuers cited offering contactless (also known as dual-interface or tap-and-go) debit cards as their top priority. About one-third of issuers were issuing contactless debit cards to at least some cardholders by the end of 2019. By year-end 2020, two-thirds of issuers will be issuing contactless debit cards (Figure 11). Regulated issuers plan to adopt contactless at a faster pace than exempt issuers, with eight in 10 regulated issuers expected to issue contactless by year-end 2020 as compared to roughly half of exempt issuers.

Figure 11 *Plans for contactless debit issuance, 2019-22*



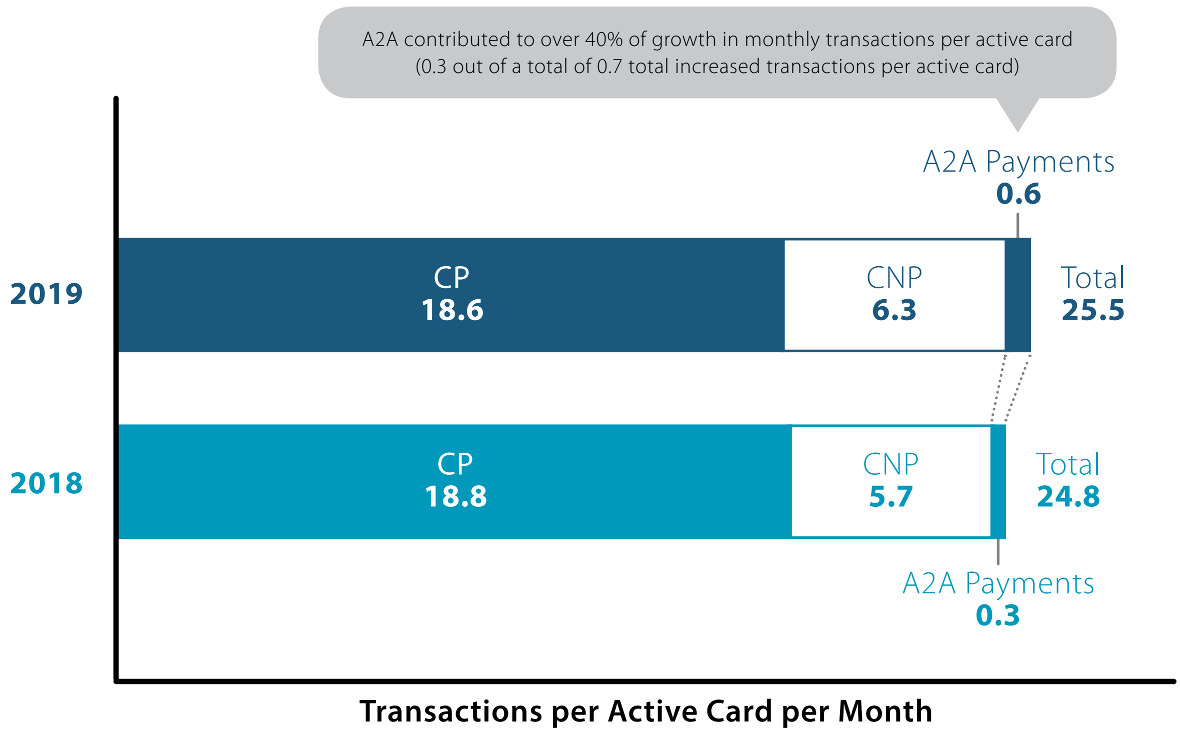
As of year-end 2019, 11% of all full-function debit cards were contactless-enabled. Most issuers plan to introduce contactless based on natural reissuance cycles (i.e., upon expiration of existing cards and reissuance for lost, stolen or damaged cards), as well as for new cardholders. As a result, penetration of contactless cards is projected to reach 36% by year-end 2020, and 87% by year-end 2022.

For contactless cards, 2.3% of transactions were tap-and-go in 2019. Based on the current card mix of 11% contactless cards (with the rest being EMV chip), tap-and-go transactions accounted for an estimated 0.3% of all U.S. debit transactions industry-wide. These tap-and-go transactions were driven by three low-ticket merchant categories in which many cash transactions are being replaced by card payments, thus generating incremental transaction volume: quick-service restaurants, vending machines and transit. With contactless viewed as a “safer” payment method in light of COVID-19, the adoption of contactless cards is likely to accelerate, and tap-and-go transactions will increase.

Account-to-Account Payments

Account-to-account (A2A) payments encompass person-to-person transfers, business-to-consumer "credit push" transactions, and other payments utilizing debit, such as through PayPal. These transactions represent the fastest-growing category of debit. A2A transactions doubled year-over-year in 2019, representing 40% of the debit industry's total growth. On a per-card basis, 0.6 monthly A2A transactions were performed last year, up from 0.3 monthly transactions in 2018 (Figure 12).

Figure 12 *Breakdown of monthly debit transactions by type, 2018-19*



This growth reflects the expanding range of ways in which funds are moved and disbursed (Figure 13). An increasing number of consumers are funding payment wallets such as PayPal, Venmo and Zelle. These transactions are referred to as Account Funding Transactions (AFTs). In addition, an increasing number of disbursements are being "pushed" to consumers' debit cards. Examples include insurance payouts and payments to gig-economy workers (e.g., Uber and Lyft drivers). These are referred to as Original Credit Transactions (OCTs) or Account Credit Transactions (ACTs). At an industry level, approximately 1.2 billion AFTs and 1.2 billion OCTs were performed using debit cards in 2019.

Figure 13 *Major archetypes of A2A use cases*

A2A Payment Solution	**Money Transfer** Solutions targeted at individuals for splitting bills and payments to friends and family, among others	**On-Demand Economy** Solutions targeted at small businesses and individuals in the on-demand economy for wages and other pay-outs	**Digital Wallets** Solutions with stored-value capability that can be used for both purchase and A2A payments
Key Use Cases	**P2P**	**B2C**	**B2C, P2P, C2B**
Type of A2A Transaction	**AFT** (for senders) **OCT** (for receivers)	**Predominantly OCTs**	**AFT** (funding wallets, purchases) **OCT** (merchant refunds)
Transaction Type	Sending and receiving money	Sending and receiving money	Funding wallet sending and receiving money, purchases and refunds
Examples	Zelle Pay Cash venmo Square Cash	lyft Uber Square Cash	PayPal 支付宝 ALIPAY

A2A's rapid growth has introduced some "teething" challenges for issuers unaccustomed to these transactions. On the reporting front, the flow for OCTs is the reverse of a standard POS purchase transaction, leading to a wide variance in how issuers reflect A2A payments in their overall transaction activity data. In terms of economics, A2A transactions have lower interchange rates than purchase transactions, reducing issuers' blended average interchange rate. From a risk-management perspective, some networks are mandating that their issuers introduce a new daily limit for AFTs, separate from their standard DDA limits, thereby increasing issuers' overall risk exposure to fraudulent transactions.

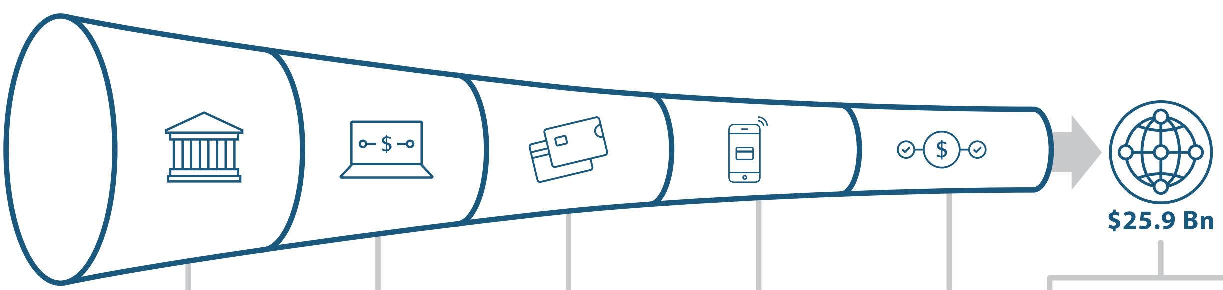
Mobile Payments

Mobile wallet payments using debit cards totaled 1.3 billion transactions in 2019, with Apple Pay pulling away from the other "Pays" (Google and Samsung Pay) and posting 100% growth. Apple Pay outperformed peers across key performance metrics, experiencing significant year-over-year increases in cardholder enrollment, active rate and usage. Apple remains the most popular mobile wallet option with cardholder enrollment of 17.5%, growing by about 30% in 2019, while Samsung and Google were relatively flat year-over-year.

Apple Pay's growth in active rate and usage can be attributed to two factors. First, in 2019 Apple began routing in-app purchases completed through iTunes via Apple Pay. Second, merchant penetration of NFC-enabled terminals[4] has increased, benefiting Apple Pay more because of its higher enrollment rate.

Driven by these factors, Apple Pay's active rate nearly doubled year-over-year. Two in five Apple Pay cardholders performed at least one debit purchase using their mobile wallets in 2019. Similarly, Apple Pay overtook Samsung Pay in terms of usage, growing 54% year-over-year on a per-card basis. The typical Apple Pay user performs 1.7 purchases per month, the highest rate among the "Pays" (Figure 14).

Figure 14 *Mobile payment transactions funnel, 2019*



	Issuer Participation Percent of issuers enabling debit cards enrollment into mobile wallets	**Cardholder Enrollment** Percent of full-function consumer debit cards enrolled into mobile wallets	**Active Rate** Percent of enrolled cards that use the mobile wallet at least once during the year	**Usage** Number of transactions per enrolled card each month	**Ticket Size** Average ticket size of each transaction	**Mobile Wallet Market Size** Number and dollar amount of annual mobile wallet transactions
Apple Pay	98%	17.5%	40%	1.7	$20	≈1.1 Bn
Samsung Pay	91%	1.7%	23%	1.6	$17	≈0.1 Bn
G Pay	85%	1.2%	22%	1.4	$16	≈0.1 Bn

Issuers generally believe the growing adoption of contactless cards will have a positive effect on mobile wallet adoption and usage. Increased merchant acceptance of NFC and consumer familiarity with tap-and-go behavior serve as key driving forces for future wallet use.

4 *NFC, or near-field communication, is the technology that enables payment terminals to receive signals (i.e., accept transactions) from both mobile phones and payment cards enabled with a contactless payment chip.*

Looking Ahead

The *2020 Debit Issuer Study* paints a positive picture of the debit industry, with continuing strong expansion in 2019 resulting from growth in consumer use of e-commerce and A2A transactions. But the COVID-19 pandemic continues to loom large in the U.S. at the time of publication of this white paper (July 2020). While this creates uncertainty for issuers' overall business, consumers' continued preference for debit has thus far given the payments covered in this study a level of resilience amid the economic downturn.

The next installment of the Debit Issuer Study will reveal just how big an impact the pandemic had on debit payments in 2020. Until that time, the PULSE Pandemic Response Resource Hub offers the latest news and information on current debit trends.

About PULSE & Oliver Wyman

PULSE

As part of its ongoing commitment to industry thought leadership, PULSE commissioned the *2020 Debit Issuer Study* and this report, but is not involved in the execution of the survey.

PULSE, a Discover Financial Services (NYSE: DFS) company, is one of the nation's leading debit/ATM networks. Financial institutions, merchants, processors and ATM deployers across the United States and around the world depend on PULSE's comprehensive suite of products and services and its commitment to providing exceptional client service, flexibility, security and superior economics. PULSE also is a resource for debit education, research and knowledge drawn from nearly four decades of industry experience. For more information, visit www.pulsenetwork.com.

Oliver Wyman

The *2020 Debit Issuer Study* was conducted by Oliver Wyman, a global leader in management consulting. With offices in 60 cities across 29 countries, Oliver Wyman combines deep industry knowledge with specialized expertise in strategy, operations, risk management and organization transformation. The firm's 5,000 professionals help clients optimize their business, improve their operations and risk profile, and accelerate their organizational performance to seize the most attractive opportunities. For more information, visit www.oliverwyman.com.

15 YEARS DEBIT ISSUER STUDY

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