

F E D E R A L
R E S E R V E



F I N A N C I A L
S E R V I C E S

2013 Federal Reserve Payments Study

Combined Exhibits (Summary and Detailed Overview)

December 2014

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Discussion outline

- **Highlights of findings**
- **Study background**
- **Major trends**
- **General-purpose cards**
- **Payment accounts**
- **Unauthorized third-party fraud payments**
- **Private-label cards**
- **Alternative payment initiation methods**
- **ACH payment type breakdown**
- **Consumer and business large-value funds transfers (Wires)**
- **Checks**
- **Cash withdrawals and deposits from depository institutions by channel**
- **Appendix**

- **Noncash payments in the United States are increasingly card-based**
- **Card payments increased more than check payments declined**
- **Credit card payments returned to growth**
- **Debit card payments continued to grow more than any other payment type**
- **Paper check writing persisted as a significant portion of noncash payments**
 - **Interbank processing and clearing of these checks was virtually all electronic**
 - **Remote deposit capture was growing: More than one in six checks were deposited by electronic images rather than paper**
- **ACH payments continued to grow**
 - **Reduction in checks converted to ACH dampened overall ACH growth**
 - **New types of ACH payments showed significant and continued growth**

- **Number and value of unauthorized third-party fraud payments were collected for**
 - **ACH debits and credits as well as checks**
 - **Various types of general-purpose credit and debit card transactions including ATM withdrawals**
- **Total fraud was \$6.4 billion from 32.3 million unauthorized transactions**
- **Cards had the highest total fraud (and the highest fraud rates)**
 - **Single-message debit fraud rates (including ATM) were significantly lower than dual-message**
 - **For dual-message debit and credit cards**
 - **Card-not-present fraud rates by number were more than three times card-present fraud rates**
 - **Card-not-present fraud rates by value were roughly the same as card-present fraud rates**

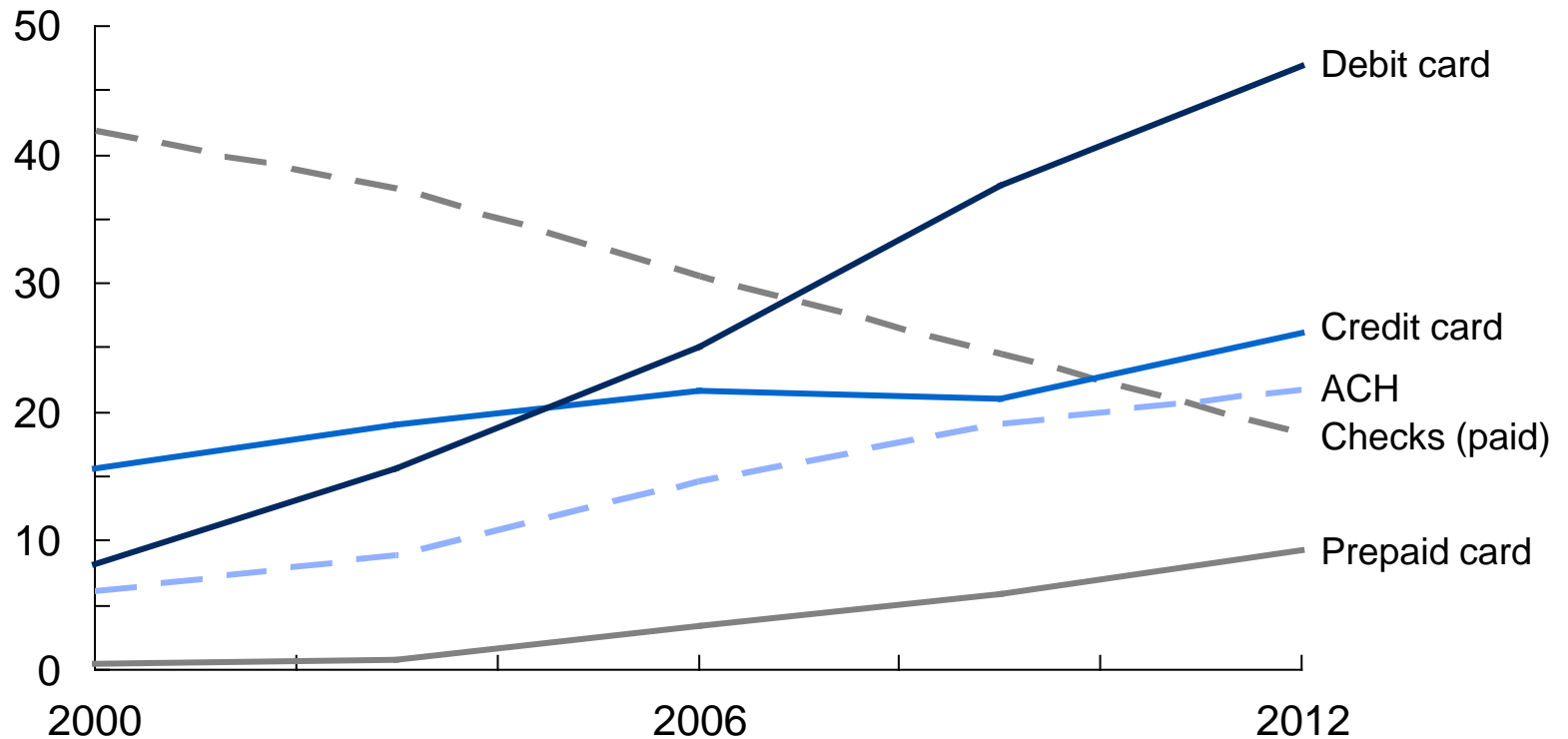
- **Similar to previous studies administered triennially since 2001**
- **Surveys expanded to collect additional information**
- **Summary report released in December 2013 included**
 - **Major (top-line) payment trends**
 - **New information on unauthorized third-party fraud payments**
- **Detailed report released in July 2014 included**
 - **Overview**
 - **Detailed chapters on each survey**
 - **Reports on findings and methodologies**
 - **Comprehensive tables of estimates**
 - **Survey instruments (online)**

The 2013 Study consisted of three survey efforts

- **Depository and Financial Institutions Payments Survey (DFIPS)**
 - **Check, ACH, wire transfer, debit & prepaid card, credit card, cash, alternative payment initiation methods, unauthorized third-party fraud**
- **Networks, Processors, and Issuers Payments Surveys (NPIPS)**
 - **15 different surveys**
 - **Cards**
 - **ACH**
 - **Alternative payment initiation methods**
- **Check Sample Survey (CSS)**
 - **11 large commercial banks**
 - **Included paid checks and deposited checks**
 - **Mostly from the Viewpointe Check Archive**

Trends in noncash payments 2000-2012, by number and type of transaction

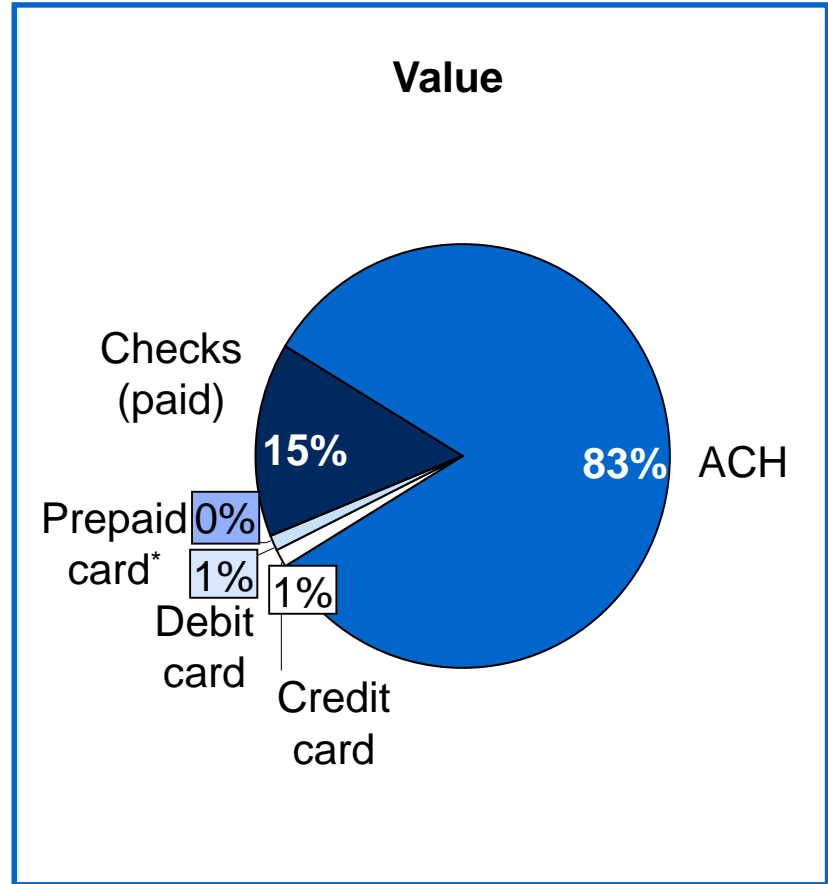
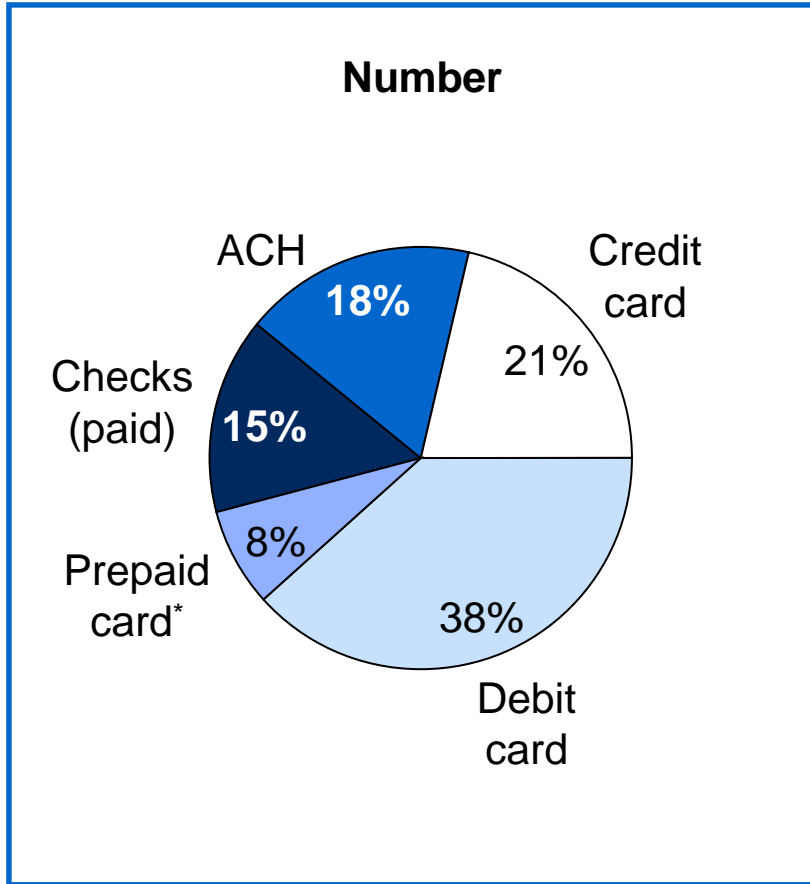
Billions



Credit, debit and prepaid card trends include general-purpose and private-label payments.

Card payments accounted for 67% of total noncash payments by number but approximately 2% by value

Distribution of noncash payments in 2012



Credit, debit and prepaid cards include general-purpose and private-label payments. Figures may not sum because of rounding.

* Prepaid cards include electronic benefits transfer (EBT) cards which are used to disburse funds for various government assistance programs.

Noncash payments by number has shifted away from checks to other forms of payment, particularly cards

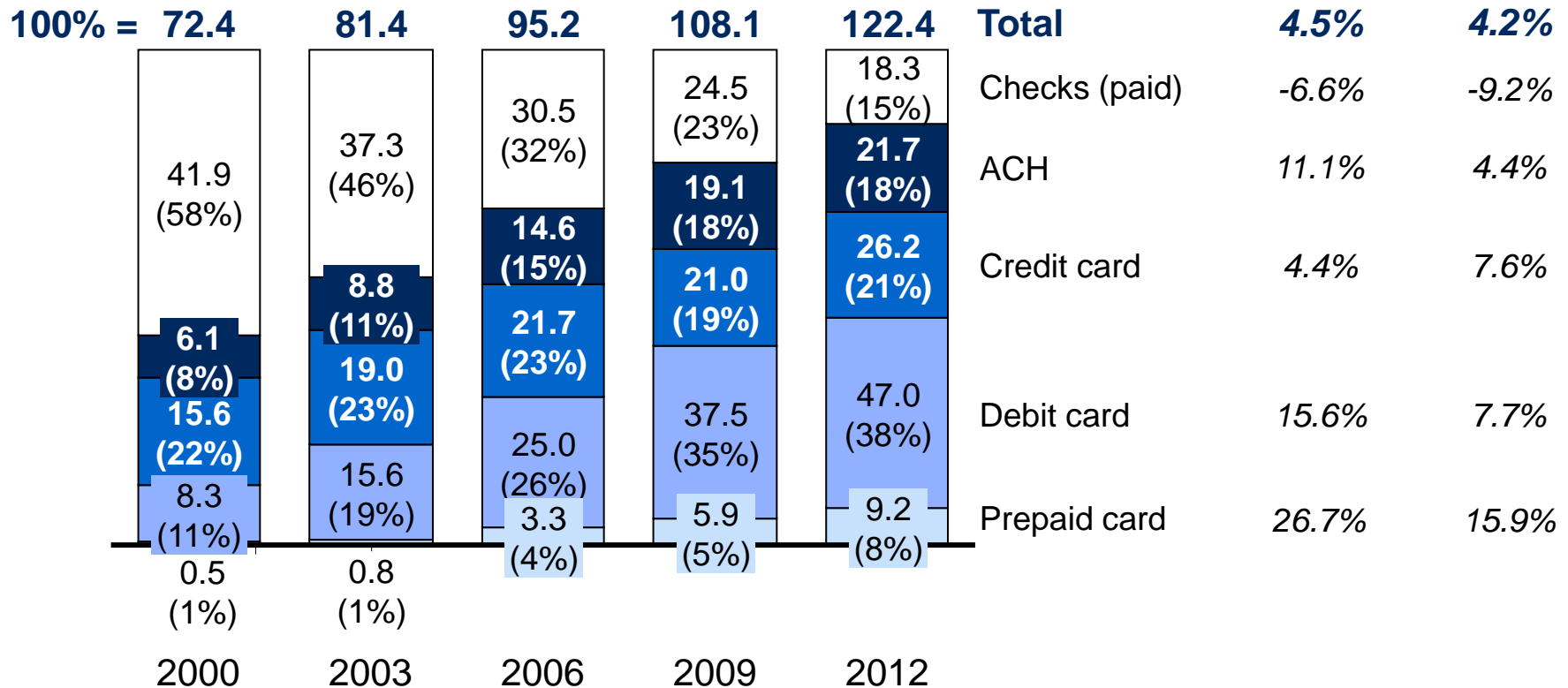
Major trends

Noncash payments, by number and type of transaction

Billions

CAGR*

2000-12 2009-12



Credit, debit and prepaid cards include general-purpose and private-label payments. Figures may not sum because of rounding. Prepaid card payments in 2000 and 2003 are displayed below the axis. * CAGR is compound annual growth rate.

Even as checks continued to decline, the total number of noncash payments continued to grow

Major trends

Number and growth of noncash payments 2000-2012

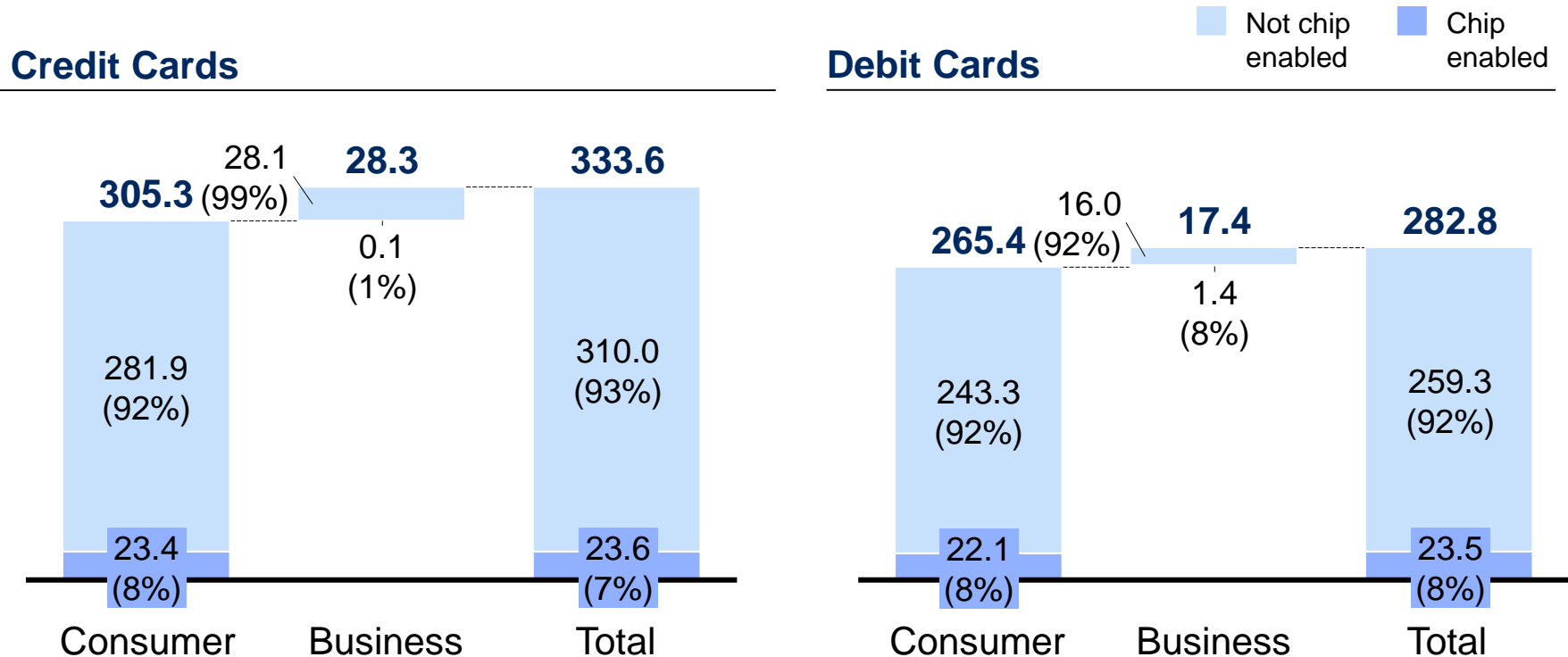
	2000	2003	2006	2009	2012	CAGR*	
						2000-12	2009-12
Total (billions)	72.4	81.4	95.2	108.1	122.4	4.5%	4.2%
General-purpose card	20.6	30.8	44.3	58.4	73.9	11.2%	8.2%
Credit	12.3	15.2	19.0	19.5	23.8	5.6%	6.8%
Debit	8.3	15.6	25.0	37.5	47.0	15.6%	7.7%
Prepaid**	0.0	0.0	0.3	1.3	3.1		33.9%
Private-label and EBT card	3.8	4.6	5.8	6.1	8.5	6.9%	11.6%
Credit	3.3	3.8	2.7	1.5	2.4	-2.6%	17.1%
Prepaid			1.9	2.7	3.6		10.8%
EBT	0.5	0.8	1.1	2.0	2.5	13.6%	8.1%
ACH	6.1	8.8	14.6	19.1	21.7	11.1%	4.4%
Checks (paid)	41.9	37.3	30.5	24.5	18.3	-6.6%	-9.2%

The number of ACH payments in 2012 was revised since the Summary Report. Electronic benefits transfer (EBT) cards are used to disburse funds for various government assistance programs. Figures may not sum because of rounding. * CAGR is compound annual growth rate. ** The number of general-purpose prepaid card transactions in 2000 and 2003 was negligible.

Microchips (chips) may help reduce card-present fraud: Penetration of chip-enabled cards reached 7-8 percent

General-purpose cards

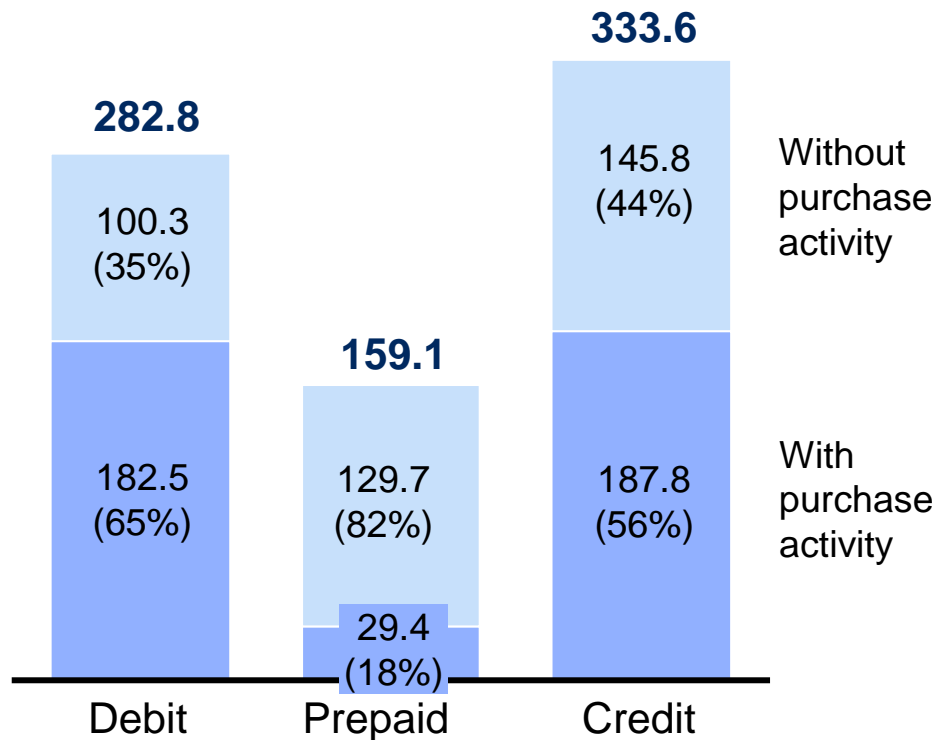
Number of general-purpose credit and debit cards in force in 2012, with or without microchips, by cardholder type



Cards in force are those that are issued, activated, and not expired. Figures may not sum because of rounding.

Number of general-purpose cards in force in 2012, with or without purchase activity, by card type

Millions



- There were 775.4 million general-purpose cards in force
- Most cards in force were credit cards
- Debit cards had the highest share of active cards

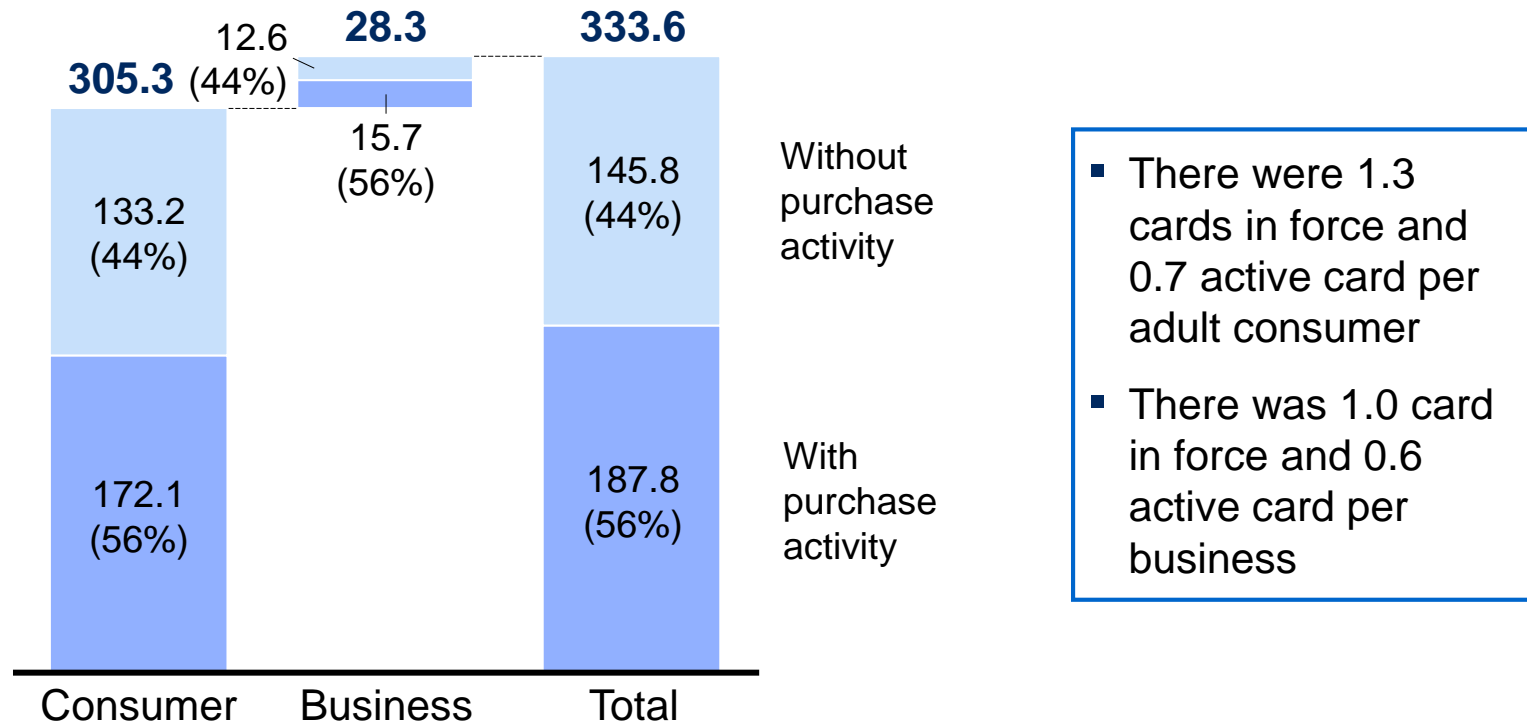
Cards in force are those that are issued, activated, and not expired, and cards with purchase activity (or active cards) are those used to make at least one purchase or bill payment in a month.

General-purpose credit cards: Consumer and business adoption and use

General-purpose cards

Number of general-purpose credit cards in force in 2012, with or without purchase activity, by cardholder type

Millions

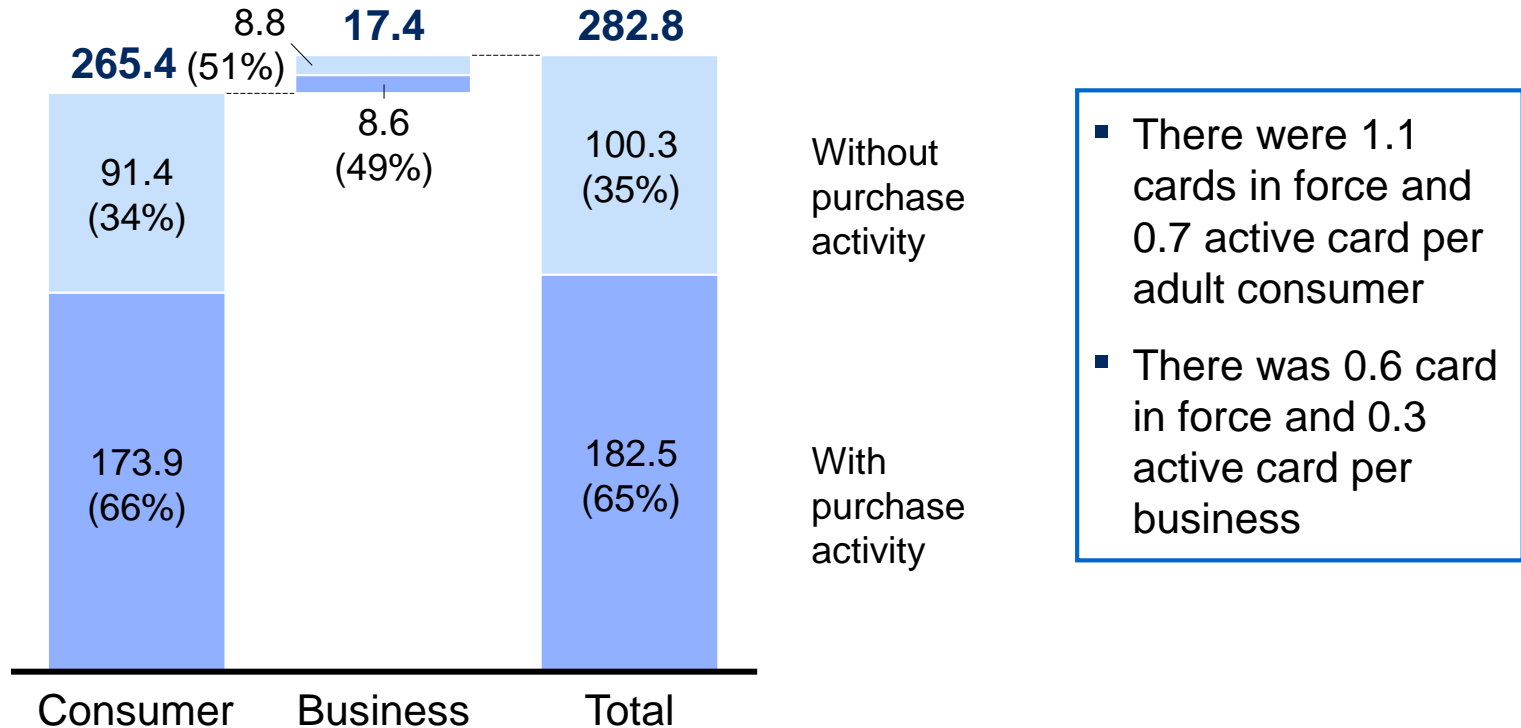


- There were 1.3 cards in force and 0.7 active card per adult consumer
- There was 1.0 card in force and 0.6 active card per business

Cards in force are those that are issued, activated, and not expired, and cards with purchase activity (or active card) are those used to make at least one purchase or bill payment in a month.

Number of debit cards in force in 2012, with or without purchase activity, by cardholder type

Millions

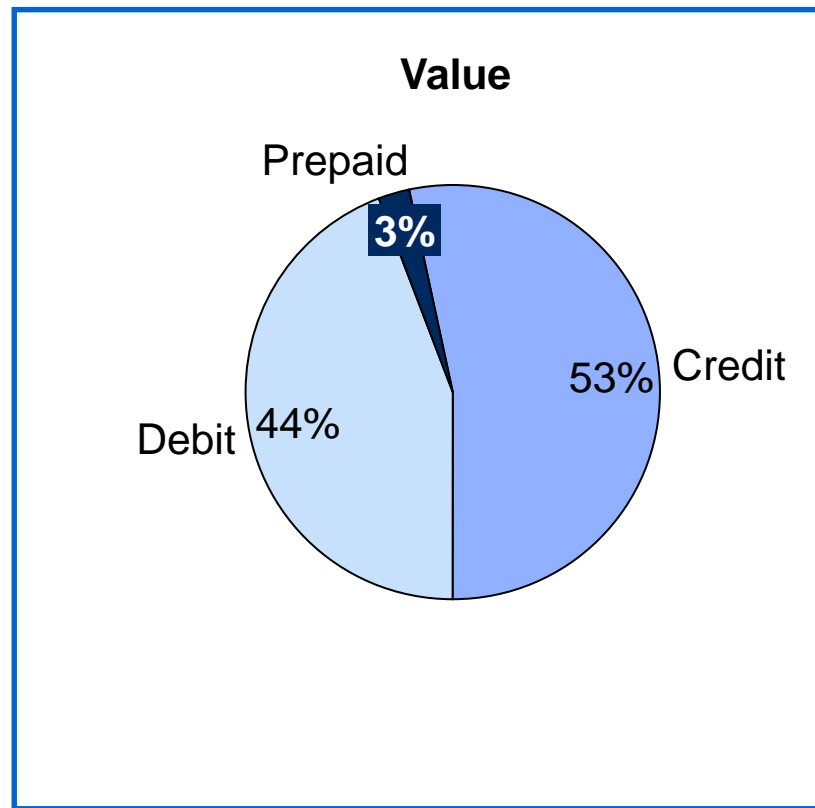
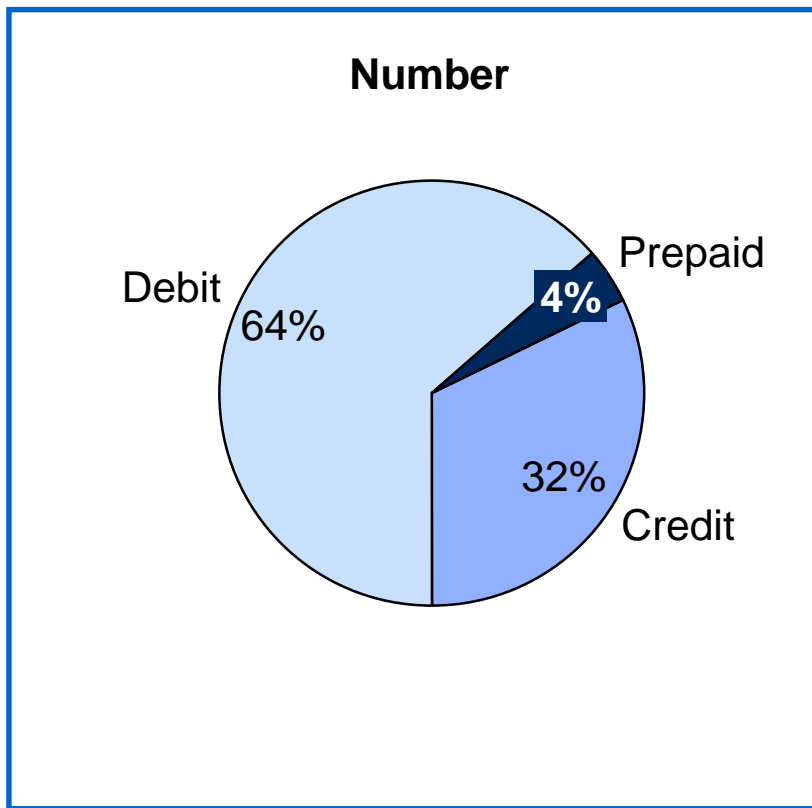


- There were 1.1 cards in force and 0.7 active card per adult consumer
- There was 0.6 card in force and 0.3 active card per business

Cards in force are those that are issued, activated, and not expired, and cards with purchase activity (or active card) are those used to make at least one purchase or bill payment in a month. Figures may not sum because of rounding.

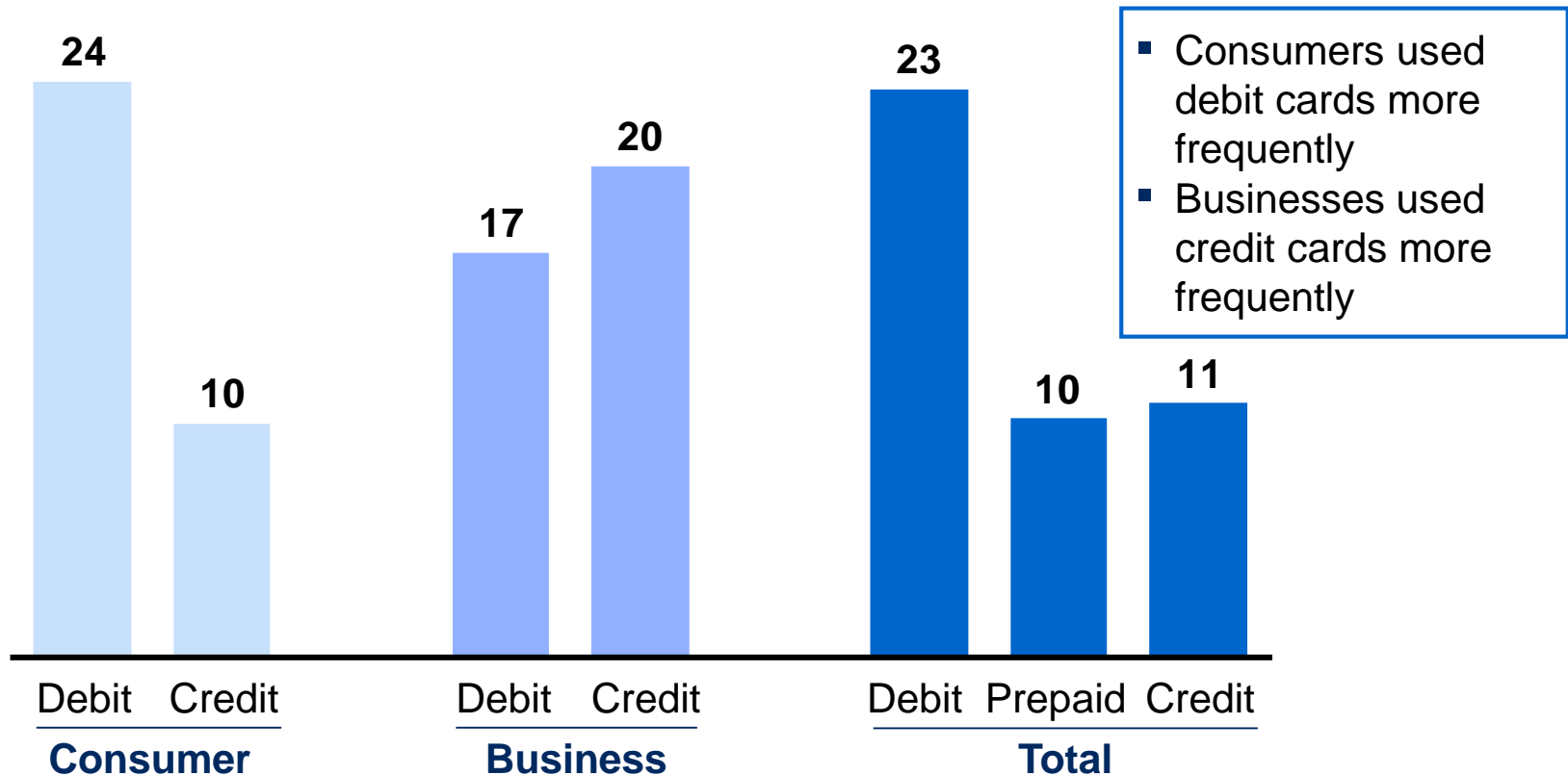
General-purpose cards: Debit card payments were the largest by number, while credit card payments were the largest by value

Distribution of general-purpose card payments in 2012



General-purpose cards: Consumer and business payment frequency in a month per active card

Number of payments in a month per active general-purpose card in 2012, by cardholder and card type

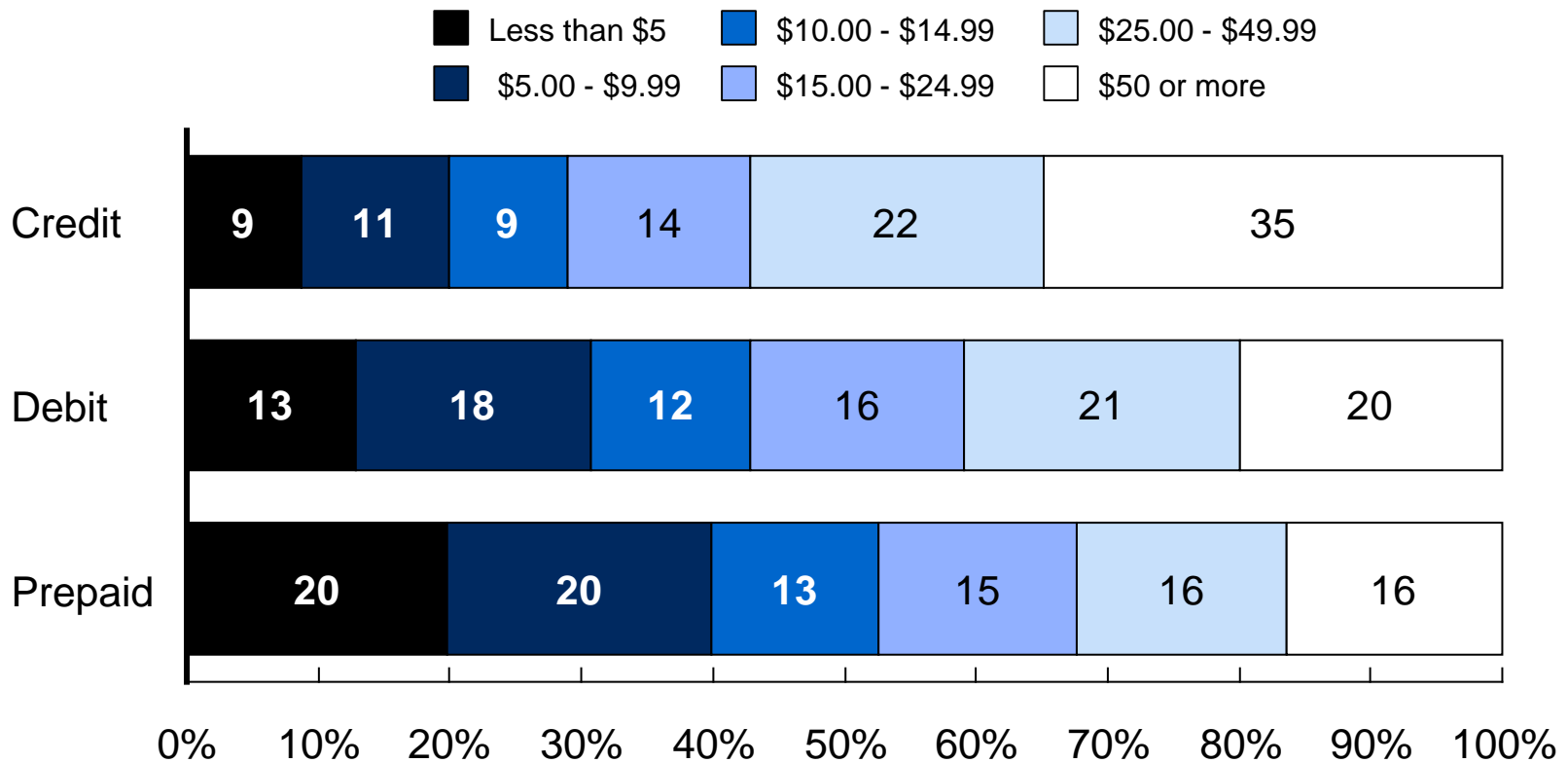


Information about the allocation between business and consumer for general-purpose prepaid cards is not available. Active cards are those used to make at least one purchase or bill payment in a month.

General-purpose card payment values were distributed differently for each card type

General-purpose cards

Relative frequency of transaction value ranges in 2012, by general-purpose card type
Percent

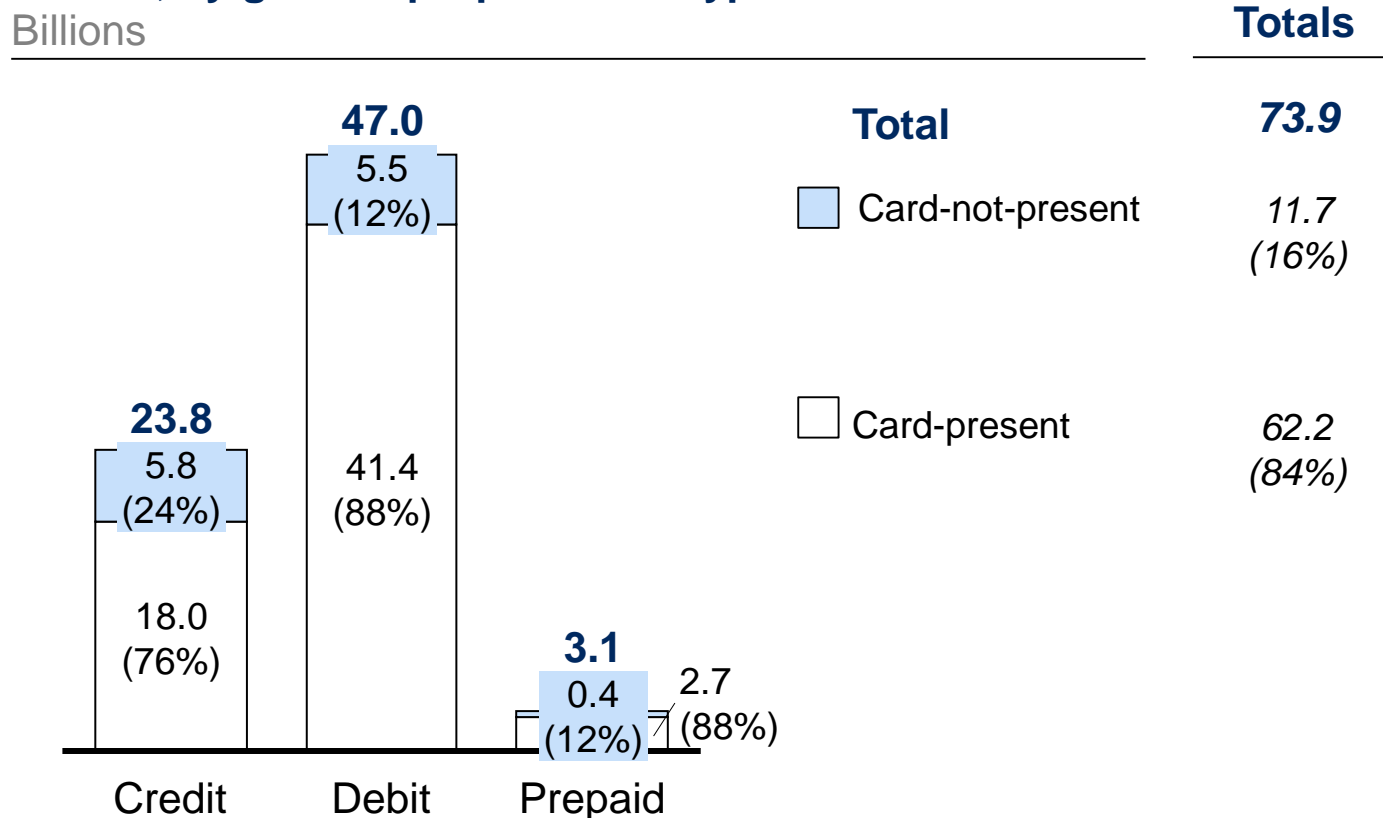


Percentage distribution is within each card type.

Debit cards dominated card-present payments; credit cards had slightly more card-not-present payments

General-purpose cards

Number of card-present and card-not-present payments in 2012, by general-purpose card type



Figures may not sum because of rounding.

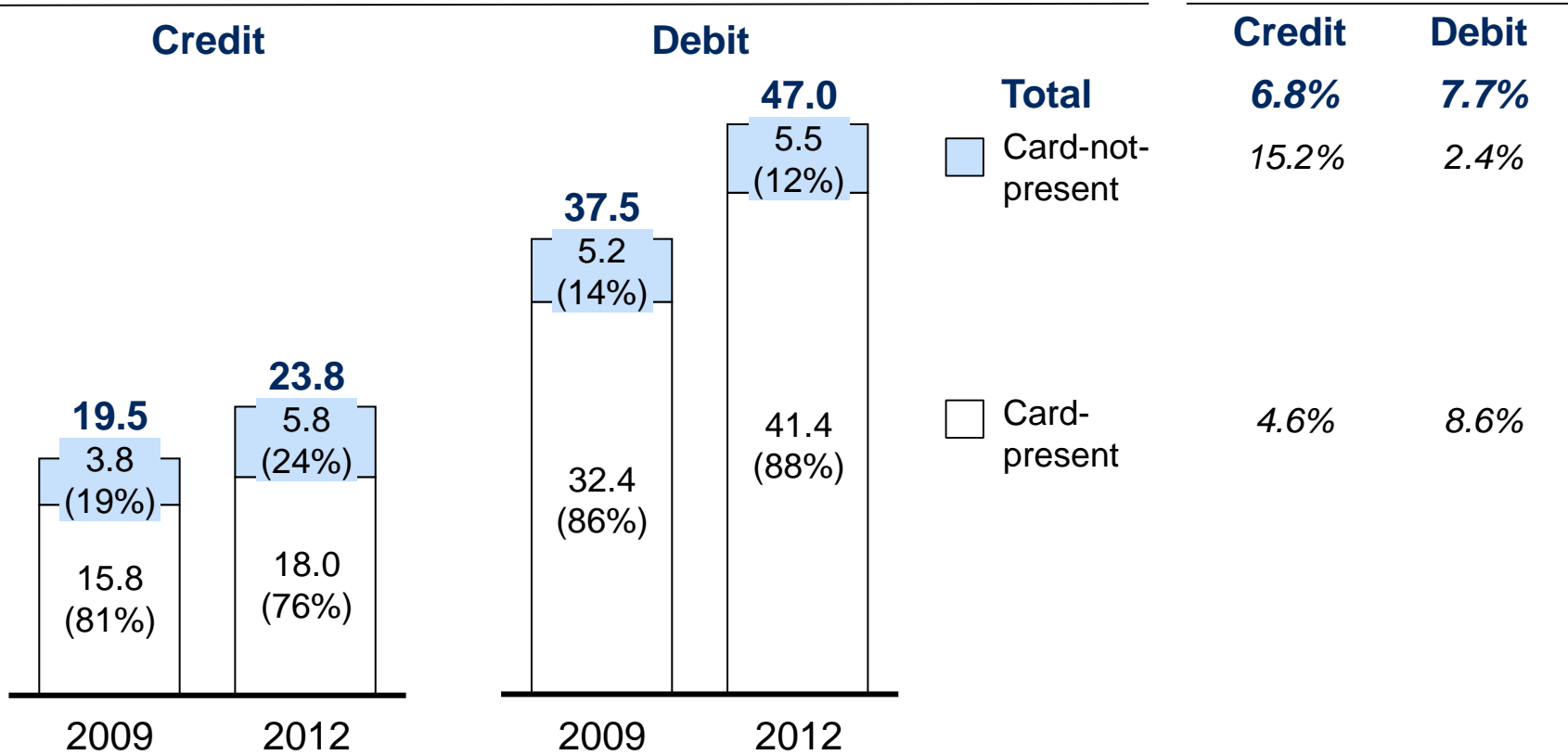
Most of the increase in card-not-present payments was in general-purpose credit cards

General-purpose cards

Number of card-present and card-not-present payments, by general-purpose card type

Billions

CAGR*
2009-12



Card-present and card-not-present data for general-purpose prepaid cards were not measured for 2009. Figures may not sum because of rounding. * CAGR is compound annual growth rate.

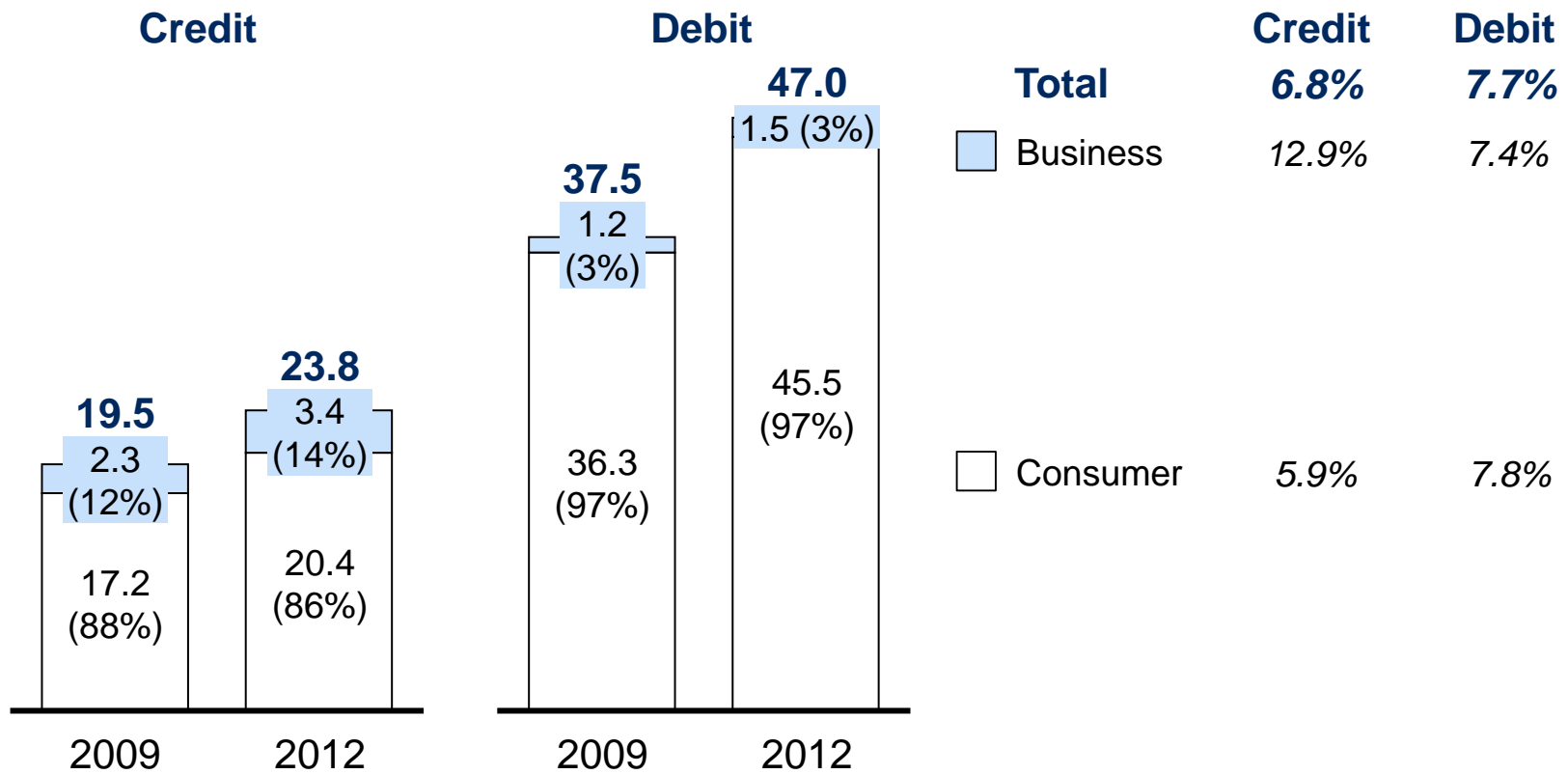
Business payments increased at a faster rate than consumer payments for both general-purpose credit and debit cards

General-purpose cards

Number of business and consumer payments, by general-purpose card type

Billions

CAGR*
2009-12



Business and consumer data for general-purpose prepaid cards were not measured for 2009 and 2012.

* CAGR is compound annual growth rate.

Over the long run, both single-message (PIN) and dual-message (signature) transactions grew; more recently dual-message grew relatively faster

General-purpose cards

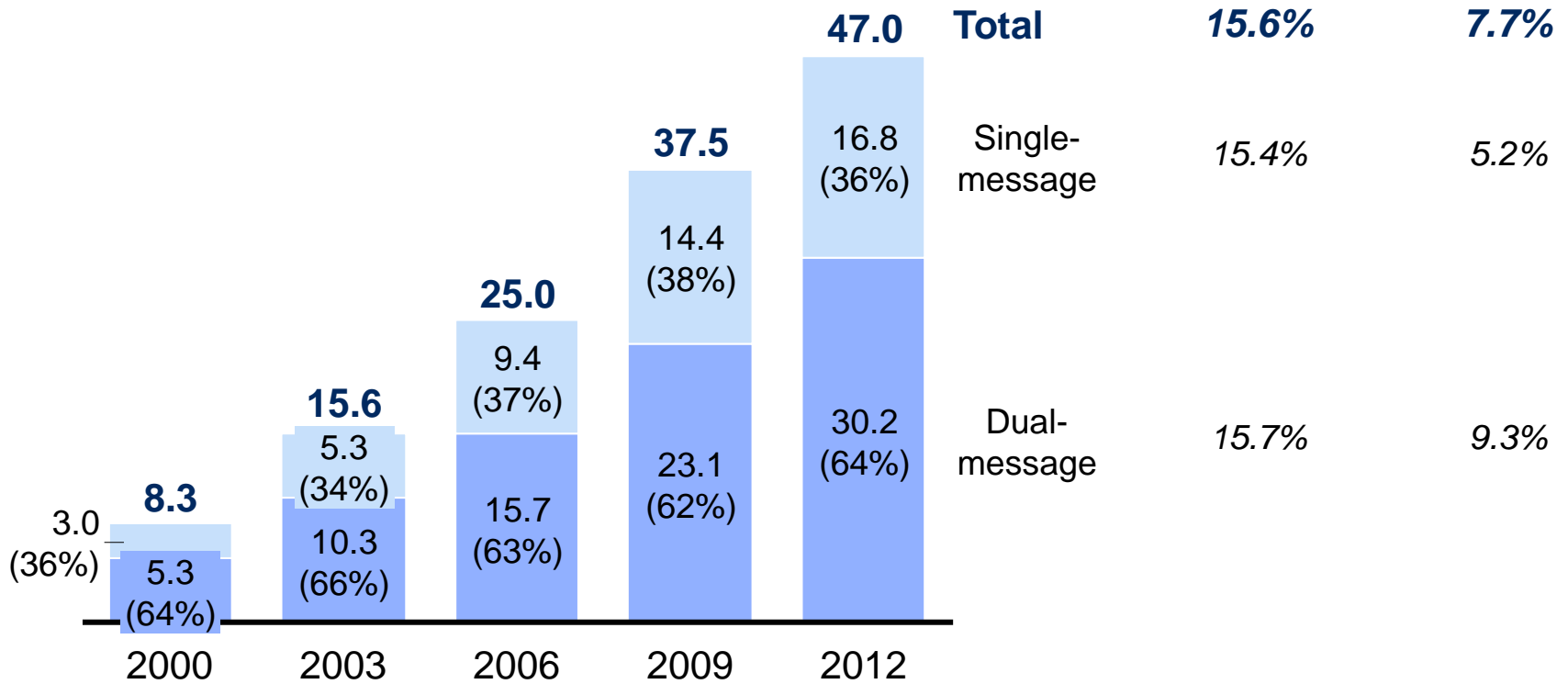
Number of debit card payments, by network type

Billions

CAGR*

2003-12

2009-12



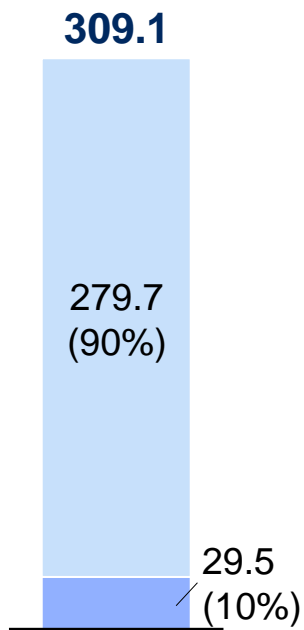
Single-message networks were traditionally called PIN networks because most single-message transactions require a PIN as part of the transaction. Dual-message networks were traditionally called signature networks because many dual-message transactions require a signature as part of the transaction. Figures may not sum because of rounding. * CAGR is compound annual growth rate.

Average balance in general-purpose consumer credit card accounts (\$1,900) was extremely close to that of business accounts (\$1,899)

- Consumer
- Business

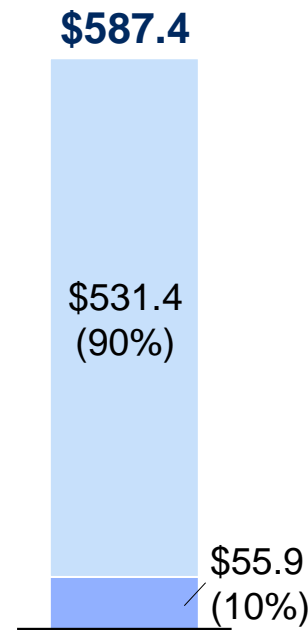
Number of general-purpose credit card accounts in 2012, by accountholder type

Millions



Total outstanding general-purpose credit card balances in 2012, by accountholder type

Billions



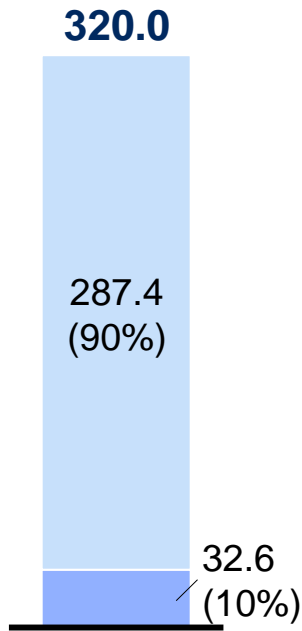
Figures may not sum because of rounding.

Average balance in consumer transaction accounts was \$8,001; average balance for business was \$61,706

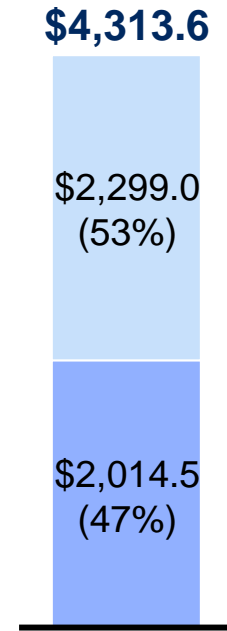
Payment accounts

Consumer
Business

Number of transaction deposit accounts in 2012, by accountholder type
Millions



Total outstanding transaction deposit account balances in 2012, by accountholder type
Billions

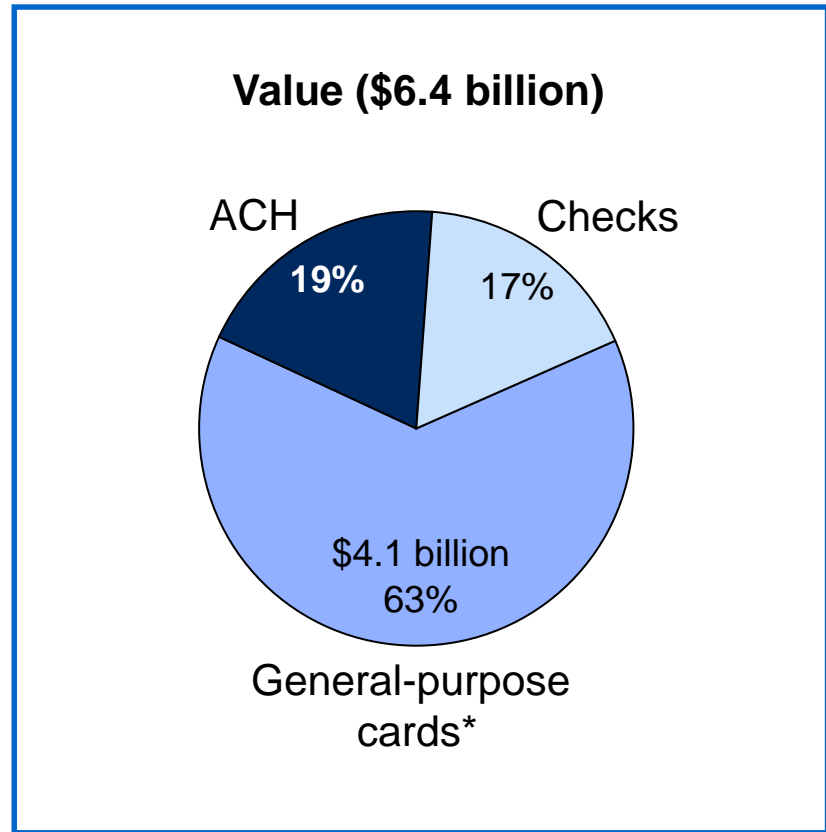
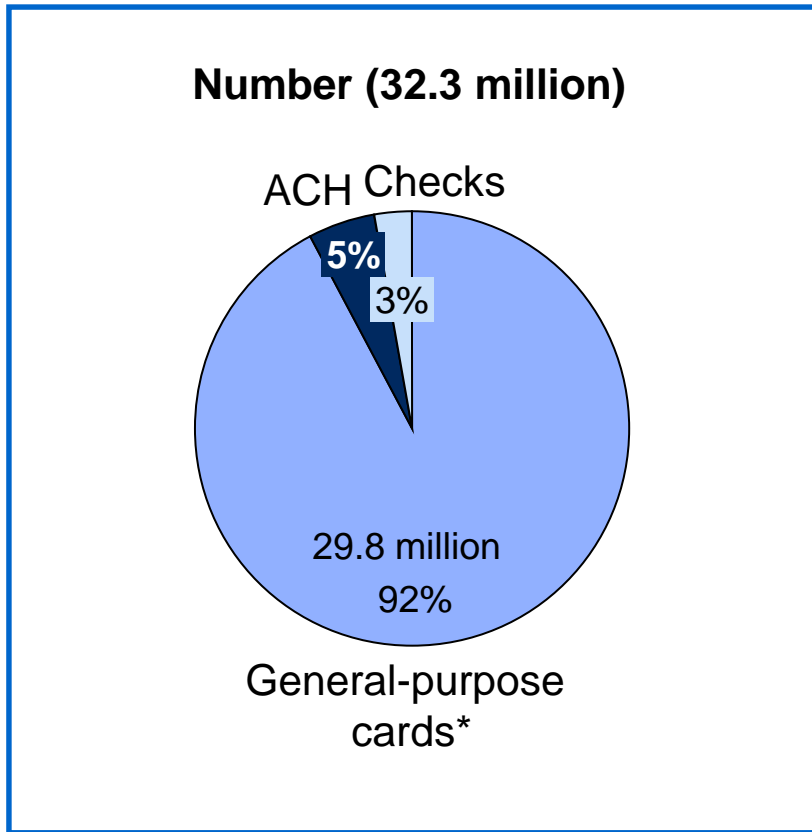


Includes deposits of individuals, partnerships, and corporations at commercial banks, savings institutions, and credit unions, and excludes deposits of other banks or foreign governments. Figures may not sum because of rounding.

General-purpose cards had the most unauthorized third-party fraud

Unauthorized third-party fraud payments

Distribution of unauthorized third-party fraud payments in 2012

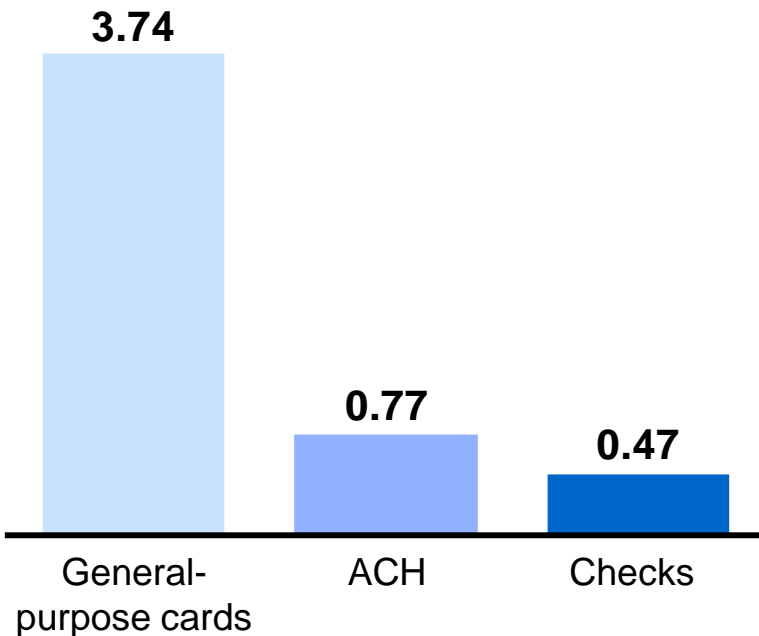


* General-purpose cards include credit, debit, and prepaid payments as well as ATM withdrawals. Figures may not sum because of rounding.

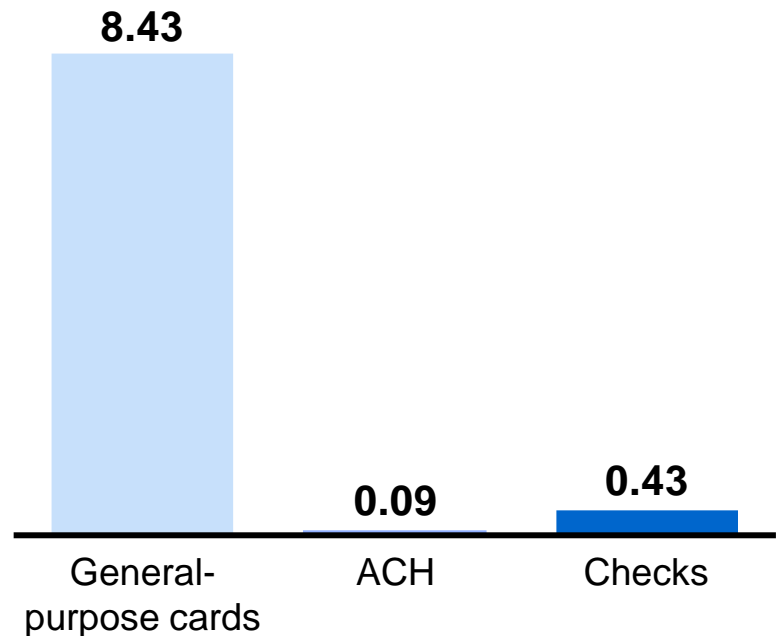
Checks had the lowest rate of third-party fraud: about 47 out of 1 million checks were unauthorized

Unauthorized third-party fraud payments

Rate of third-party fraud (number) in 2012
Basis points



Rate of third-party fraud (value) in 2012
Basis points

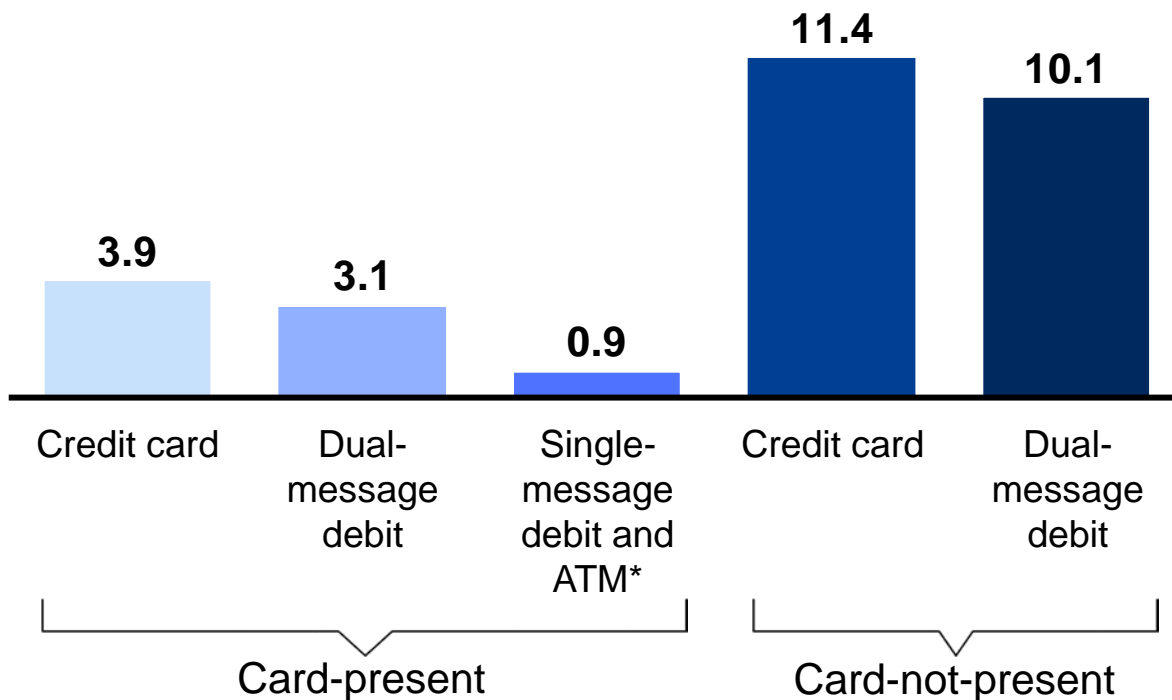


Basis points are the number of unauthorized third-party fraud transactions per 10,000 transactions or the value of unauthorized third-party fraud transactions per \$10,000 spent. One hundred basis points equals 1 percent.

Card-not-present fraud was 3 times more likely than card-present fraud; single-message fraud was the lowest

Unauthorized third-party fraud payments

Rate of unauthorized third-party fraud payments (number) in 2012, by type of general-purpose card transaction
Basis points

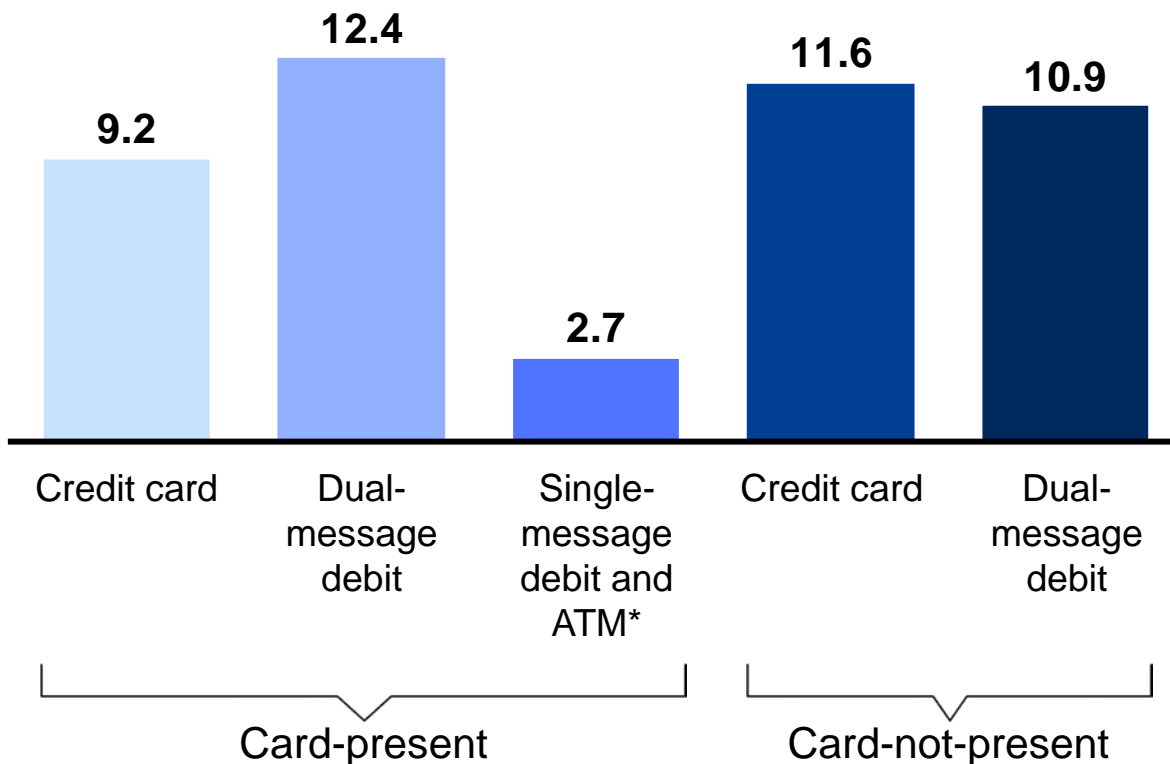


Includes general-purpose cards only. Debit includes prepaid. Basis points are the number of unauthorized third-party fraud transactions per 10,000 transactions. One hundred basis points equals 1 percent. * The rate of unauthorized ATM withdrawal fraud transactions alone by number was 2.2 basis points.

By value, dual-message debit and credit card fraud rates of card-present and card-not-present were similar

Unauthorized third-party fraud payments

Rate of unauthorized third-party fraud transactions (value) in 2012, by type of general-purpose card transaction
Basis points



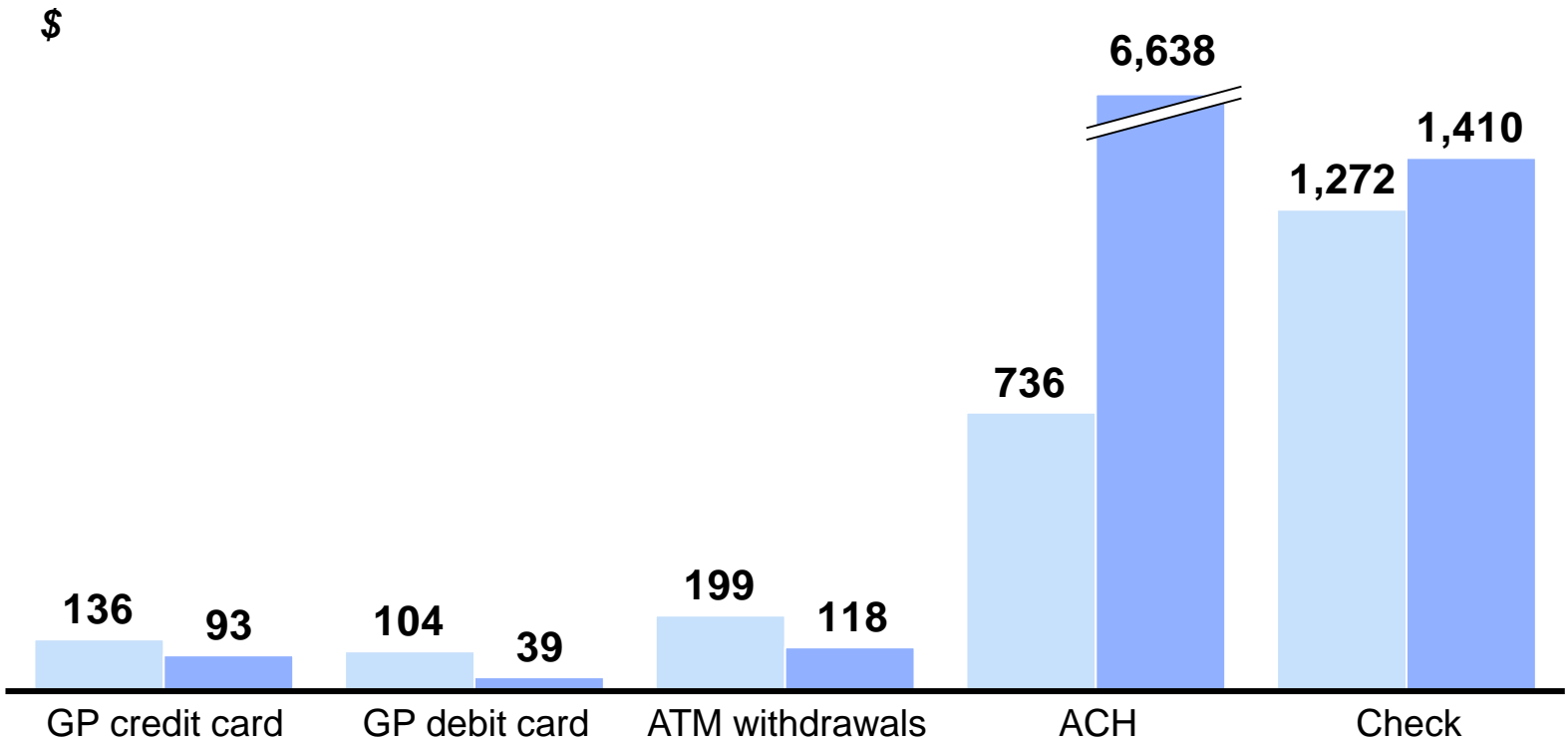
Includes general-purpose cards only. Debit includes prepaid. Basis points are the dollar value of unauthorized third-party fraud transactions per \$10,000 spent. One hundred basis points equals 1 percent. * The rate of unauthorized ATM withdrawal fraud transactions alone by value was 3.7 basis points.

Fraudulent payments by card tended to be larger than overall card payments; fraudulent payments by ACH and check tended to be smaller

Unauthorized third-party fraud payments

Average values of unauthorized third-party fraud payments and overall payments in 2012, by transaction type

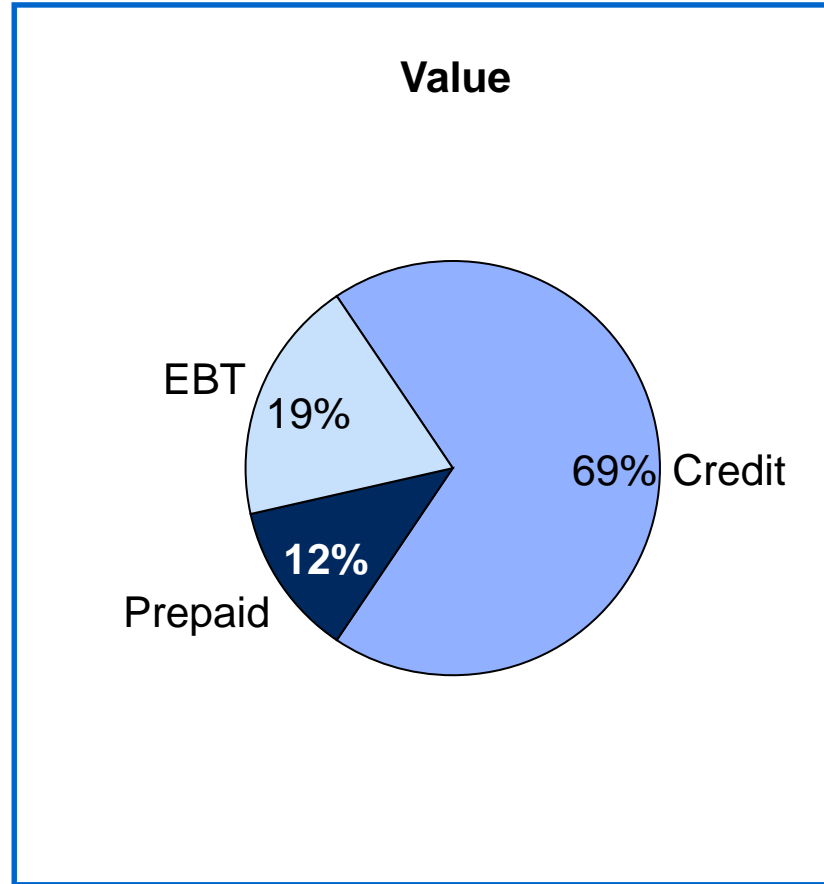
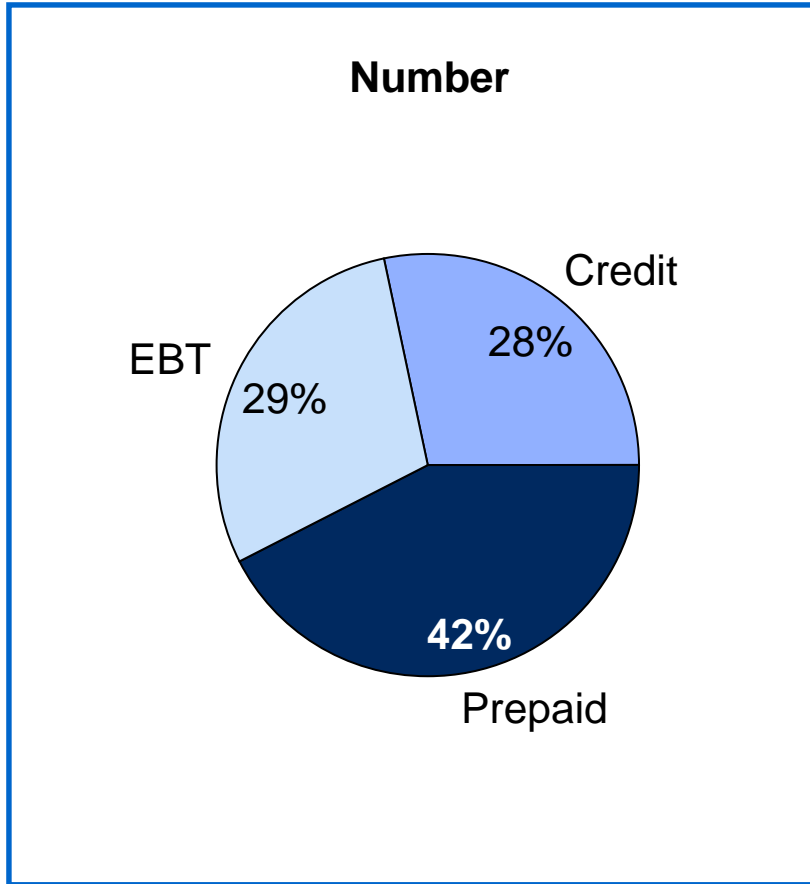
■ Fraud payments
■ Overall payments



GP denotes general purpose. Debit card includes prepaid card.

Private-label cards: Prepaid cards were used for more frequent, smaller-value payments; credit cards the opposite

Distribution of private-label card payments in 2012

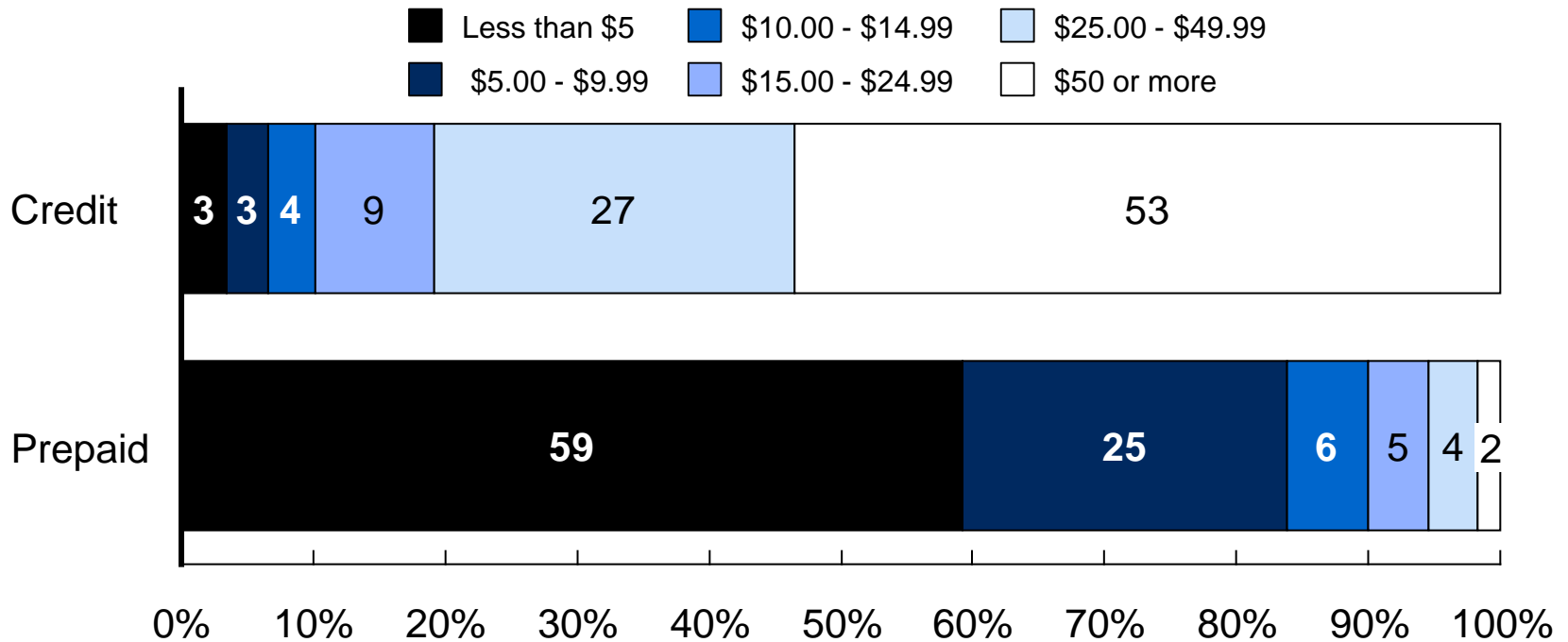


Figures may not sum because of rounding.
Private-label prepaid transportation payments are not included.

Private-label prepaid cards were used primarily for very small payments; private-label credit cards for larger payments

Private-label cards

Relative frequency of transaction value ranges in 2012, by private-label card type
Percent

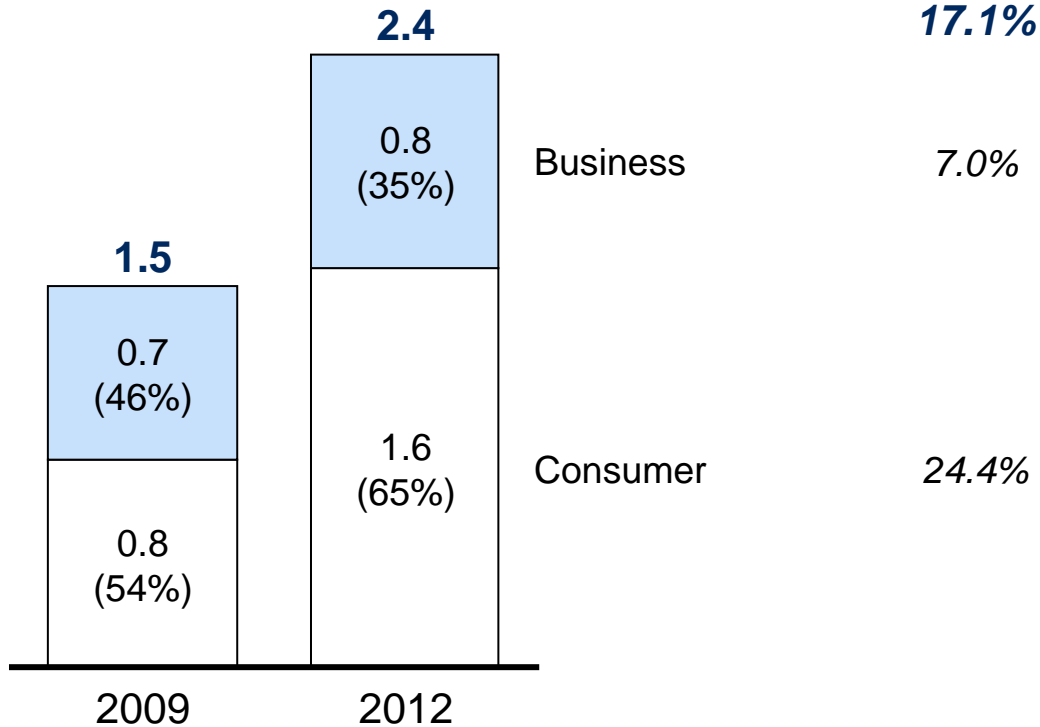


Percentage distribution is within each card type. Figures may not sum because of rounding.

Private-label credit cards: Consumer payments grew more rapidly than business payments

Number of business and consumer private-label credit card payments
Billions

CAGR*
2009-12



* CAGR is compound annual growth rate.

Substantial growth of general-purpose prepaid cards compared with private-label and EBT

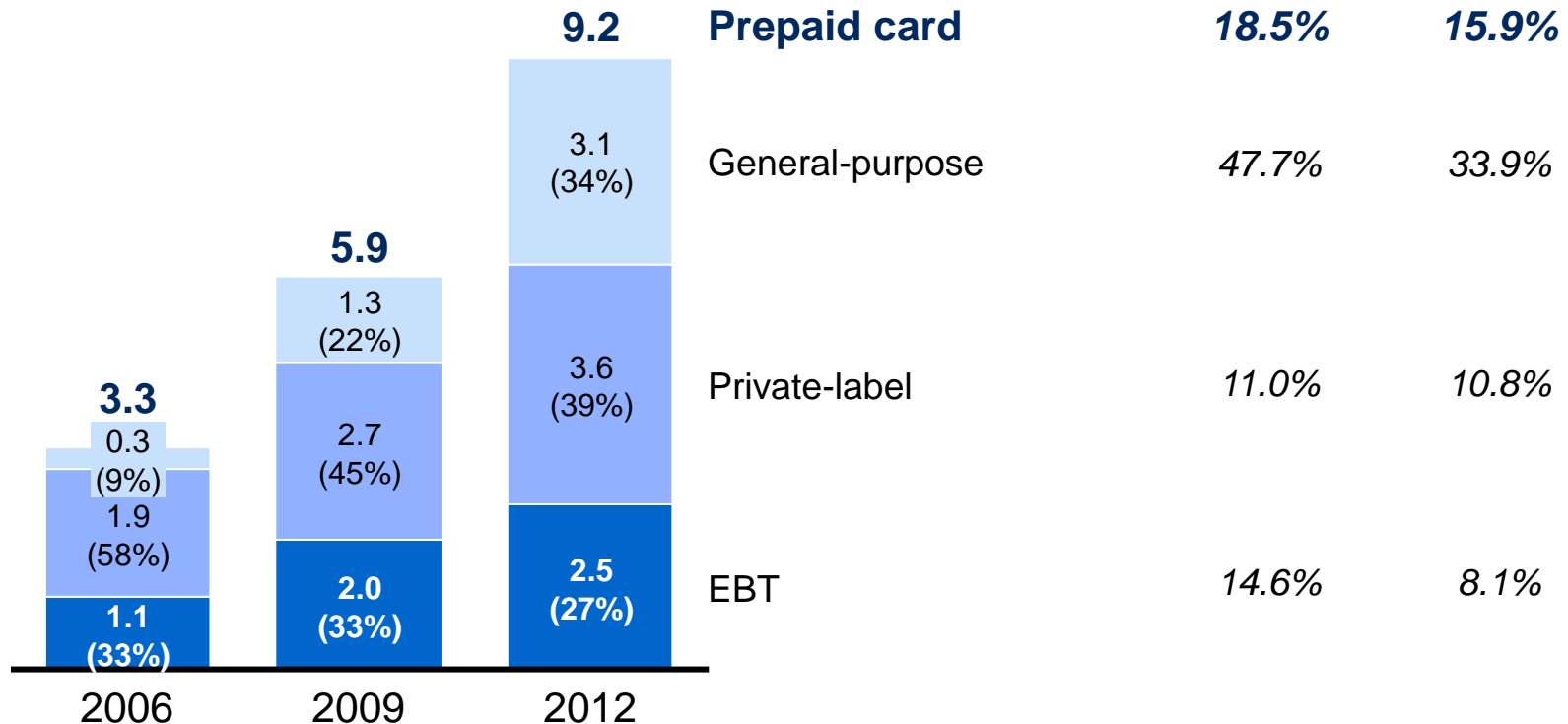
Private-label cards

Number of prepaid card payments, by card type

Billions

CAGR*

2006-12 2009-12



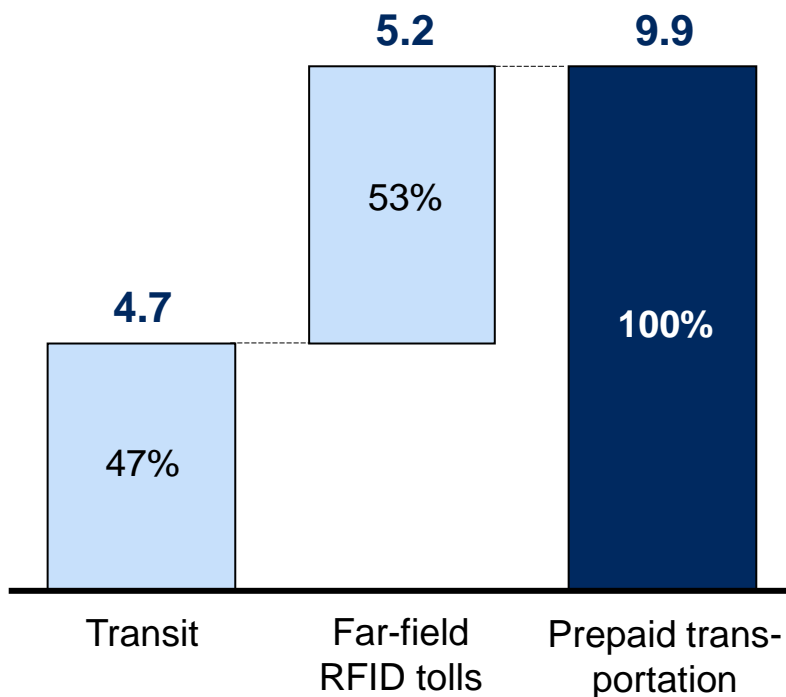
Excludes payments by private-label prepaid transit cards and far-field RFID toll collections, which are reported below. Figures may not sum because of rounding. * CAGR is compound annual growth rate.

Captured a large portion of private-label prepaid transportation market: Number of transactions reached at least 9.9 billion in 2012

Private-label prepaid transportation

Number of private-label prepaid transportation payments in 2012

Billions



Private-label prepaid transit card payments

Payments by electronic fare cards issued by transportation authorities for use on local public bus and rail transportation systems

Far-field radio frequency identification (RFID) transponder toll collections

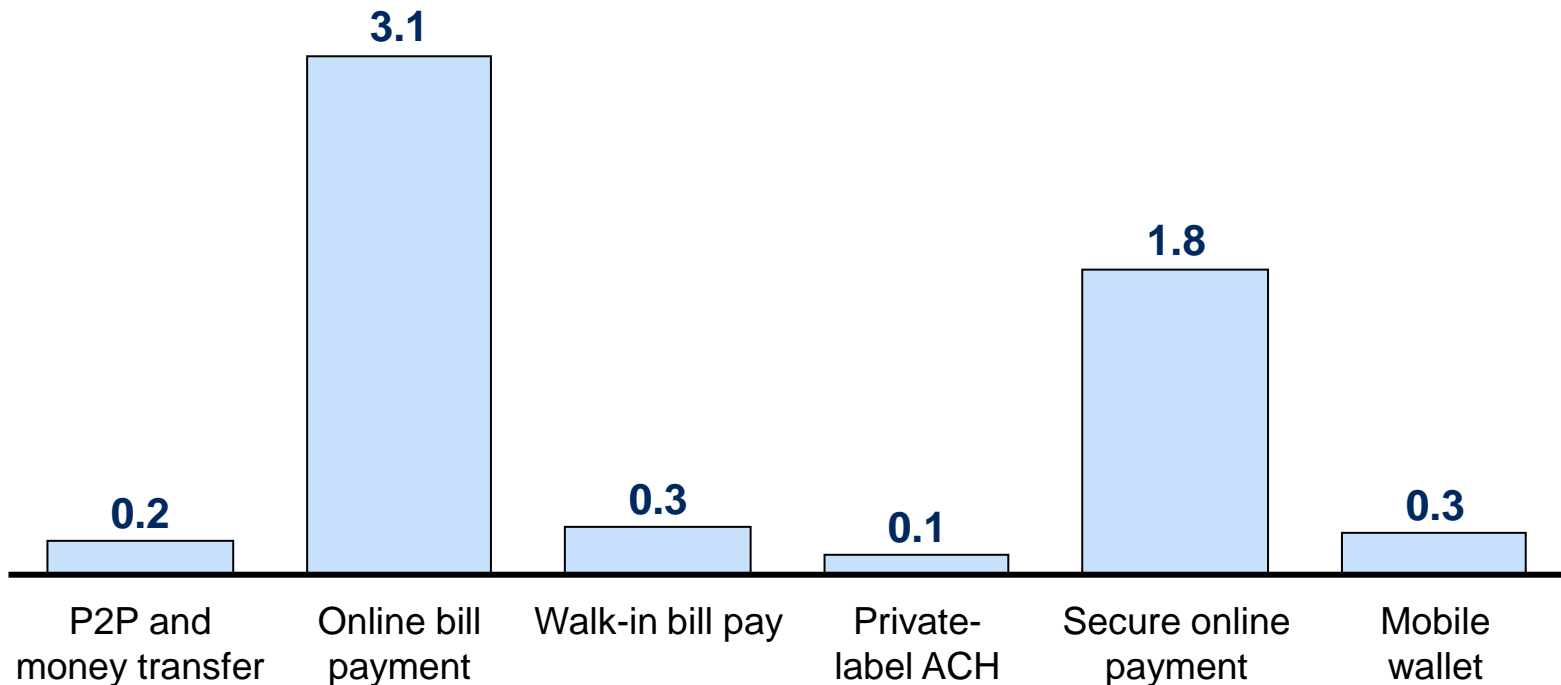
Payments by a device, usually mounted on a vehicle windshield, that debits a special-purpose account when the vehicle passes through a toll lane at the entrance or exit of a toll road or bridge

Person-to-person (P2P) and money transfer	Products that specialize in transferring funds between two individuals, usually featuring an online or email based system
Online bill payment	Bill payments initiated over the Internet via a bank or biller website and processed by bill payment aggregators and consolidators
Walk-in bill payment	In-person bill payments made at convenience stores, kiosks, and other locations and processed by large walk-in bill payment aggregators
Private-label ACH debit card	Cards, typically issued by merchants, which use point-of-sale debit terminals but route transactions through the ACH system rather than a card network
Secure online payment	Enhancements to online purchases that, for example, allow the entry of a PIN at the computer terminal, or redirect the purchaser to allow them to use an existing Internet payment account
Mobile wallet	Payments using the cell phone short message service (SMS), a mobile application, a virtual cloud based account, or near field RFID connected to a mobile device

Alternative payment initiation methods use card and ACH networks to clear and settle

Number of payments using alternative payment initiation methods in 2012, by payment type

Billions



All figures represent lower bound estimates of the number of payments of each type in 2012.

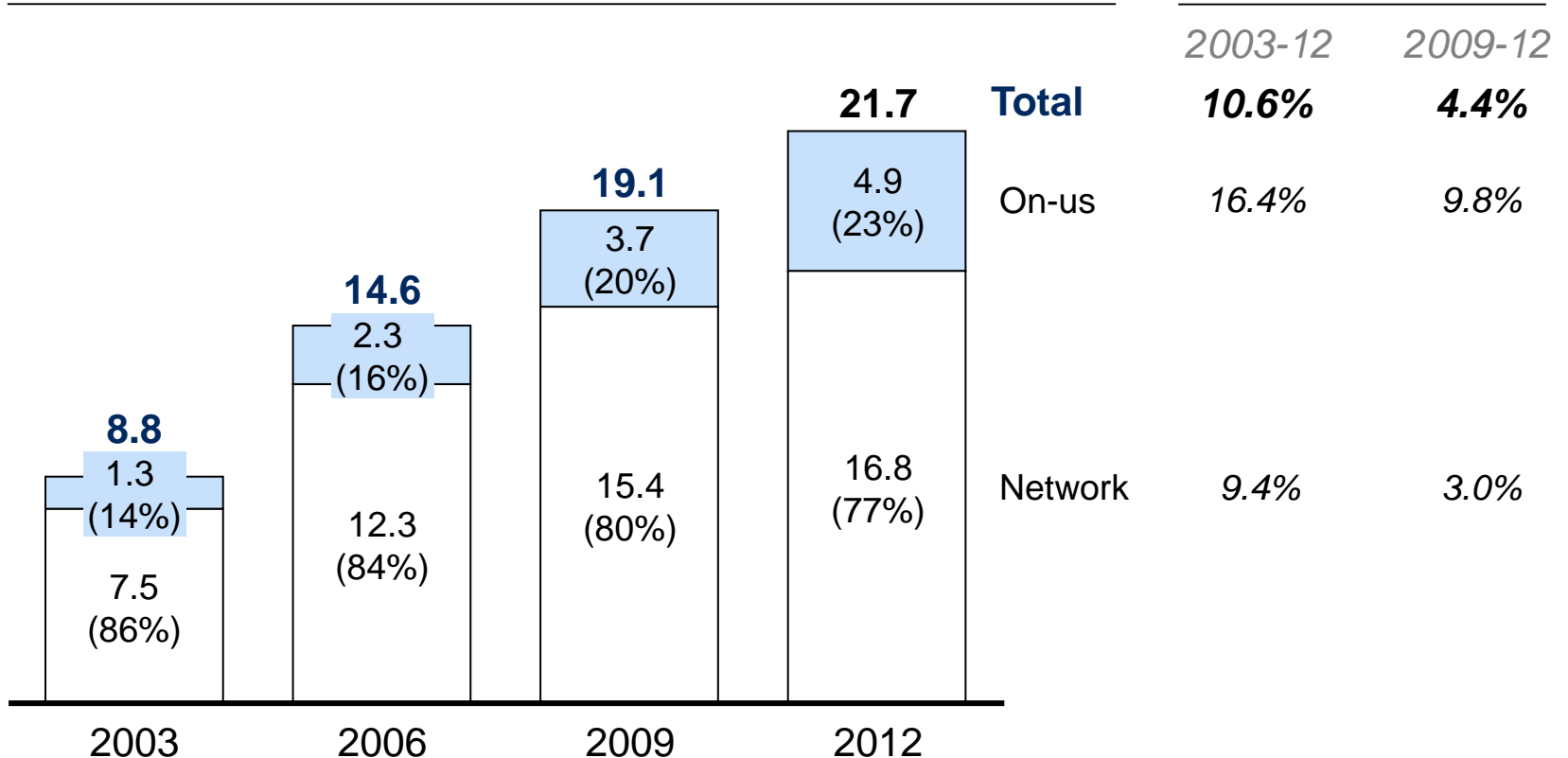
On-us ACH payments grew at a higher rate than network payments over both the long and short run

Automated clearinghouse

Number of ACH payments, by clearing method

Billions

CAGR*



Direct exchange ACH payments—those cleared directly between financial institutions without the use of a traditional network operator—were found to be negligible, and were included in the estimates of network volumes. Figures may not sum because of rounding. * CAGR is compound annual growth rate.

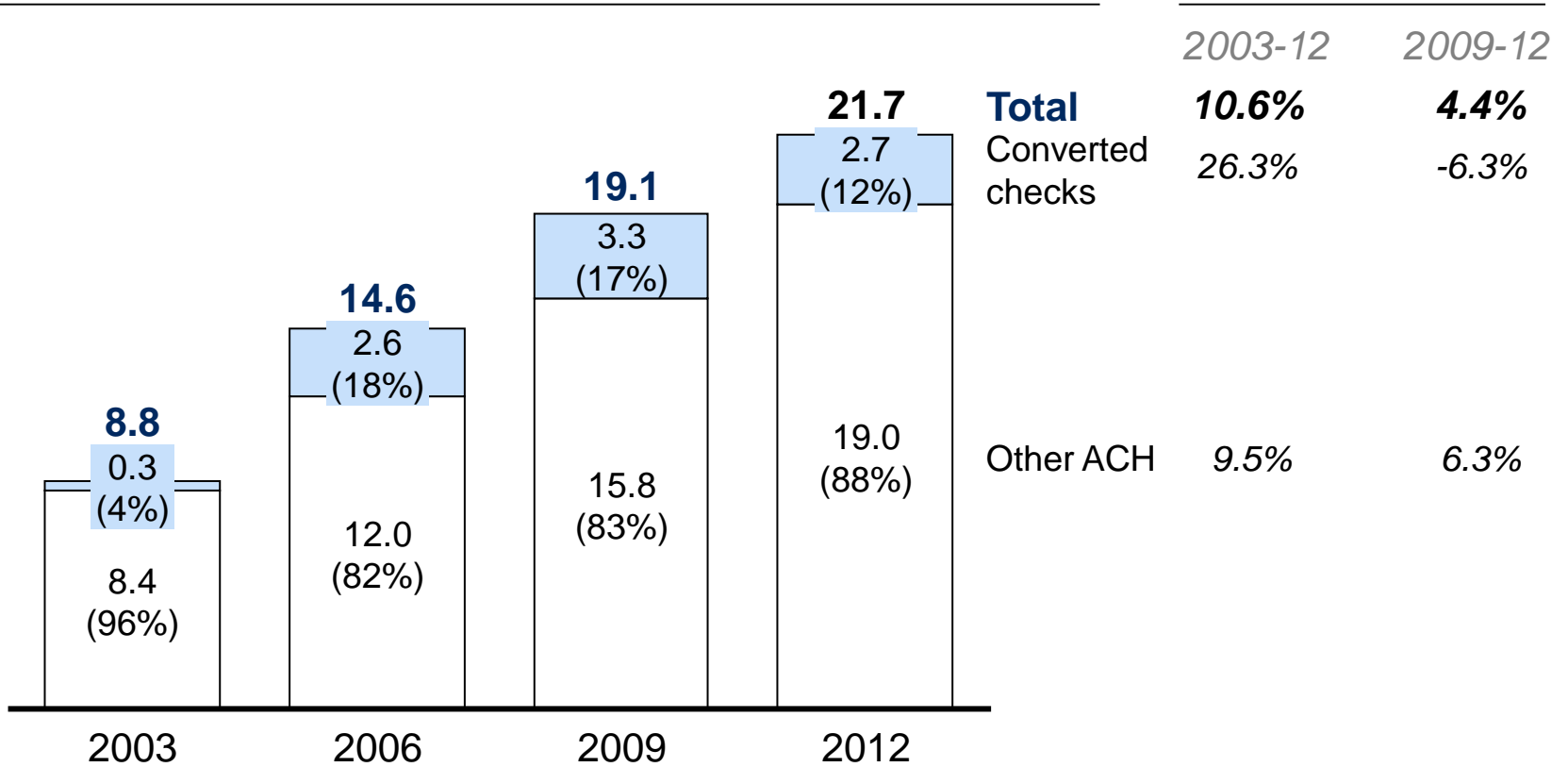
After rising through 2009, checks converted to ACH for clearing began to decrease

Automated clearinghouse

Number of ACH payments, by type

Billions

CAGR*



Figures may not sum because of rounding.

* CAGR is compound annual growth rate.

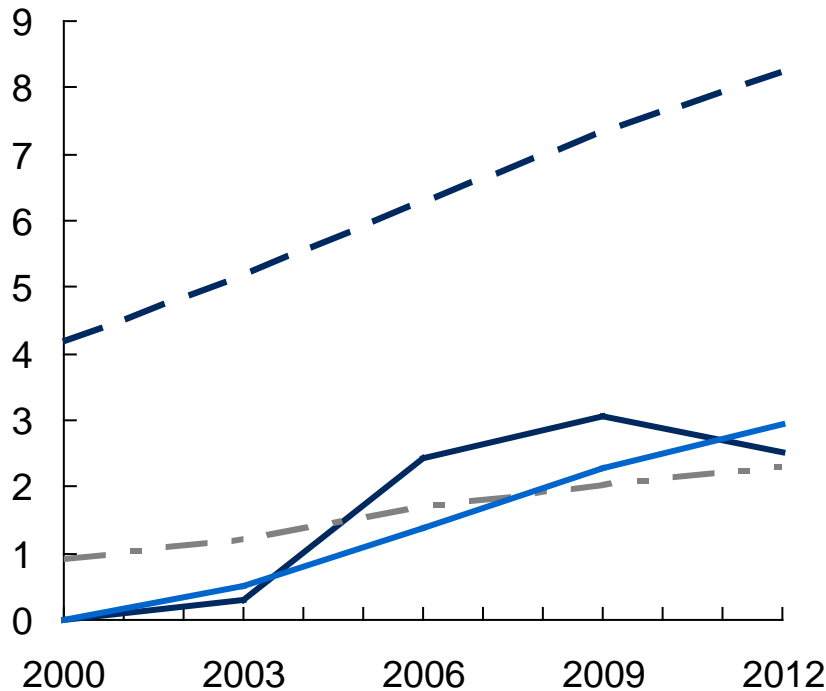
Even as ACH check conversion volume began to decline after 2009, ACH continued to grow from new markets such as Internet (WEB) payments

Automated clearinghouse

Check conversion
 CCD
 PPD
 WEB

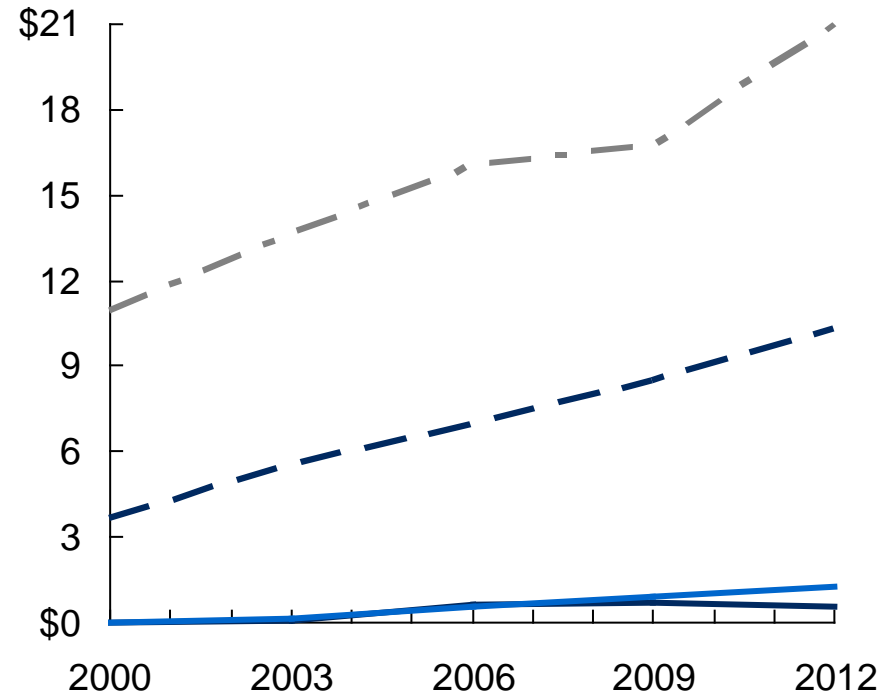
Trends in ACH payments (number) 2000-2012, by selected types of transactions

Billions



Trends in ACH payments (value) 2000-2012, by selected types of transactions

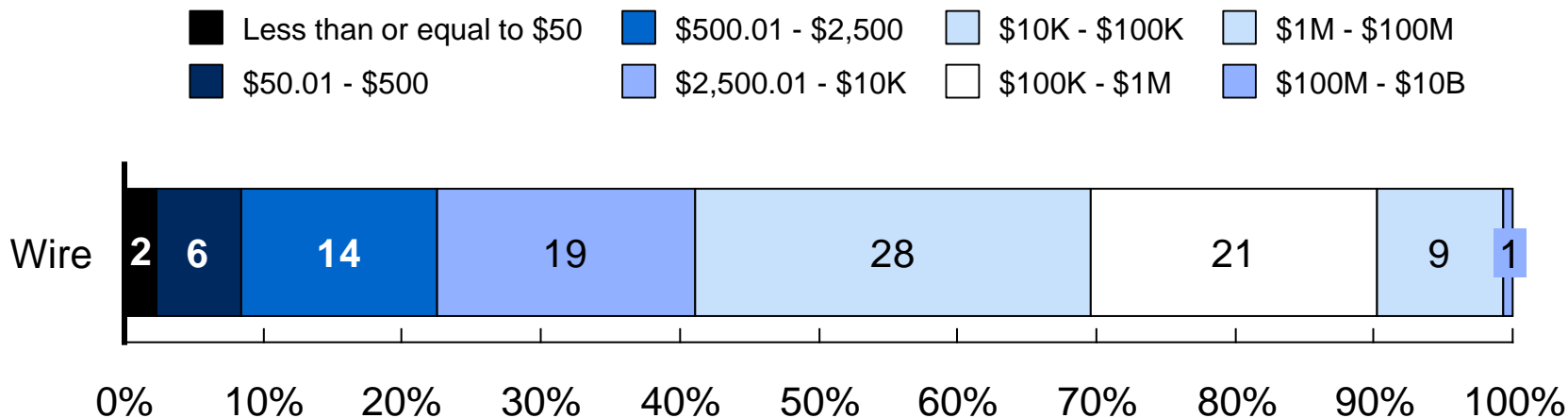
Trillions



ACH payment types are based on the definitions of the standard entry classification (SEC) codes assigned to the payments (obtained from NACHA-The Electronic Payments Association). Check conversion categories include ARC, POP, and BOC.

Relative frequency of transaction value ranges in 2012

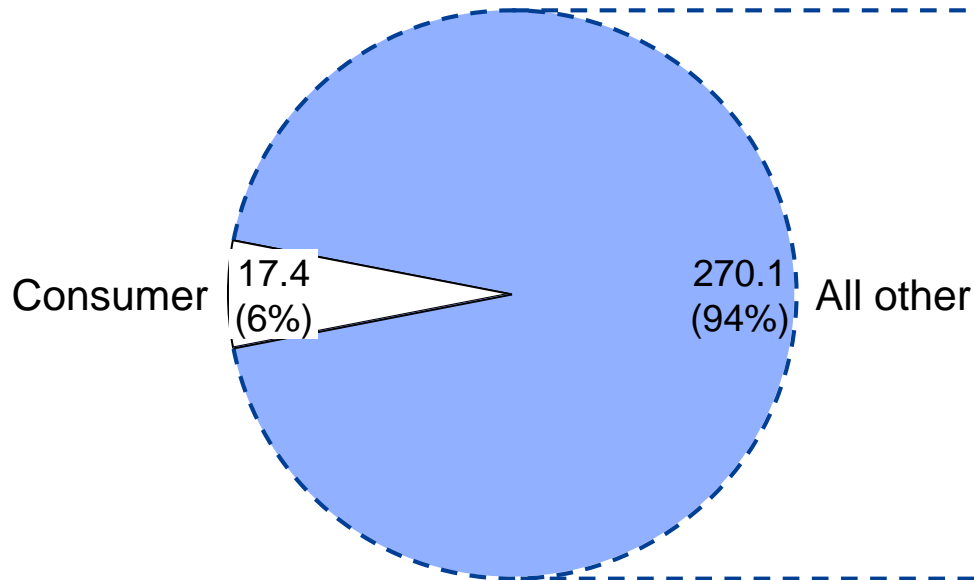
Percent



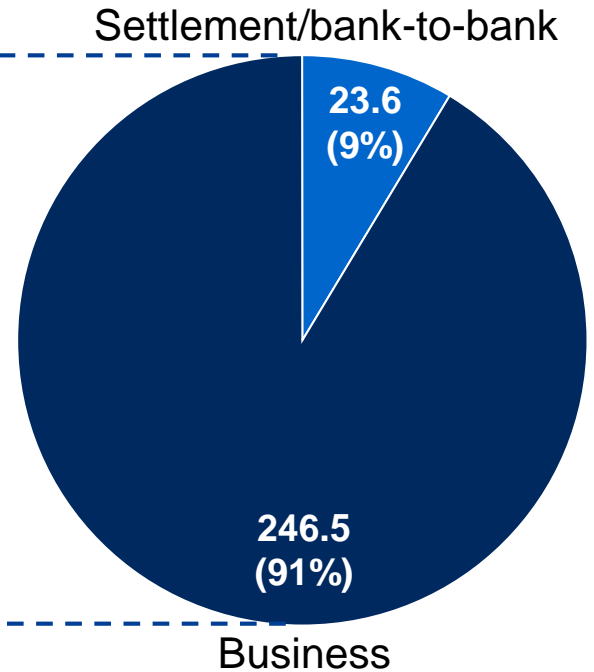
Includes only wire transfers sent over CHIPS and Fedwire.

Most wire transfers were for business customers; far fewer were for bank-to-bank settlement or consumers

Number of wire transfers in 2012, by accountholder type
Millions



Number of non-consumer wire transfers in 2012, by accountholder type
Millions

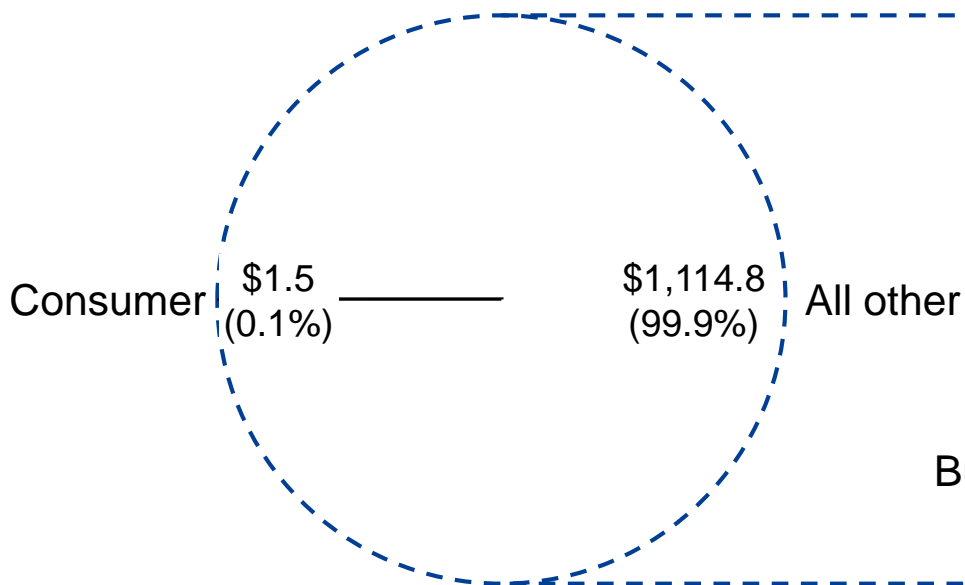


Total wire transfers reported in the survey includes both network volumes (CHIPS and Fedwire) as well as book transfers.

Almost all value of wire transfers were for business or bank-to-bank settlement transactions

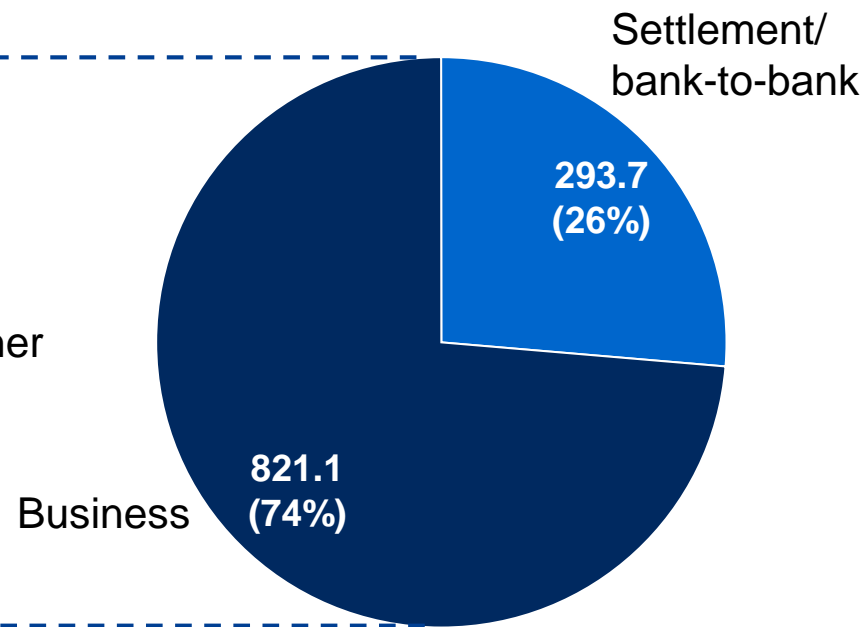
Value of wire transfers in 2012, by accountholder type

Trillions



Value of non-consumer wire transfers in 2012, by accountholder type

Trillions

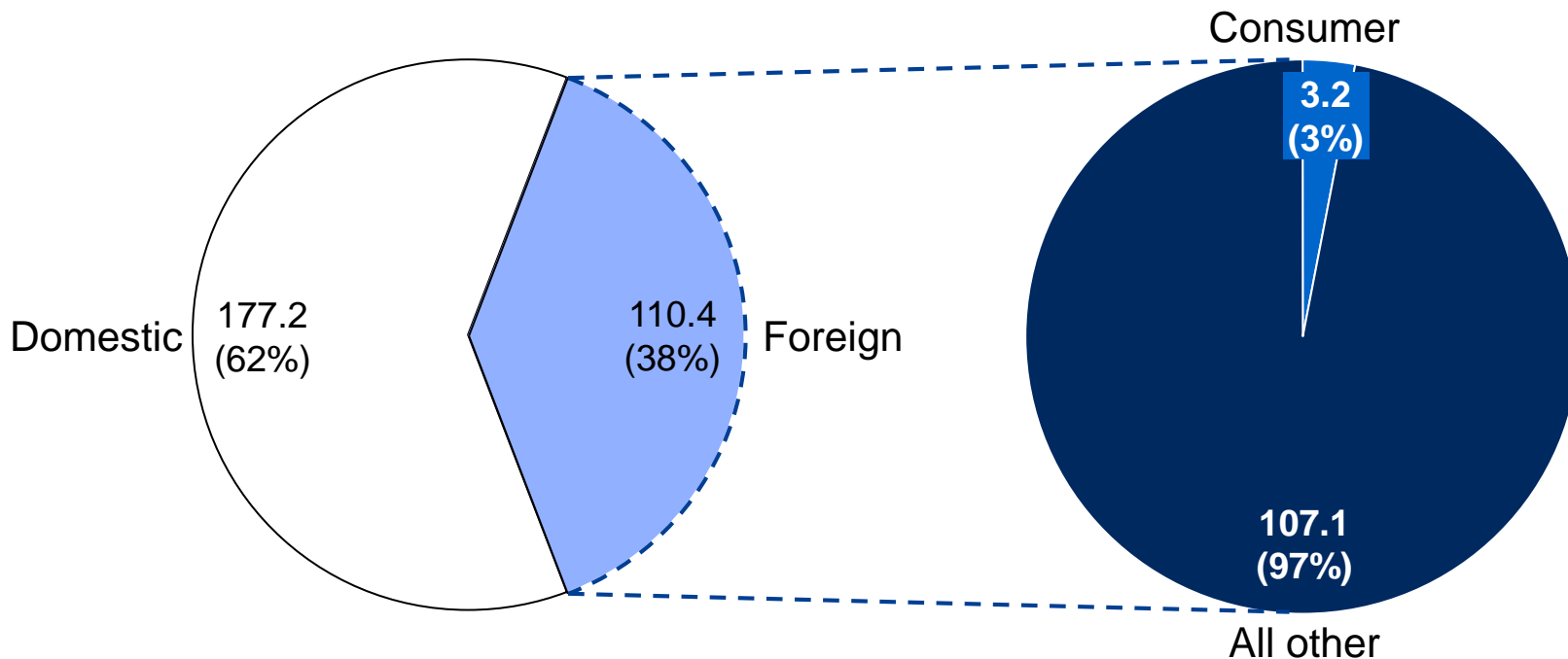


Total wire transfers reported in the survey includes both network volumes (CHIPS and Fedwire) as well as book transfers.

Most wires were domestic; of the 38 percent sent to foreign payees, 3 percent were sent from consumer accountholders

Number of wire transfers in 2012, by payee location
Millions

Number of foreign wire transfers in 2012, by accountholder type
Millions

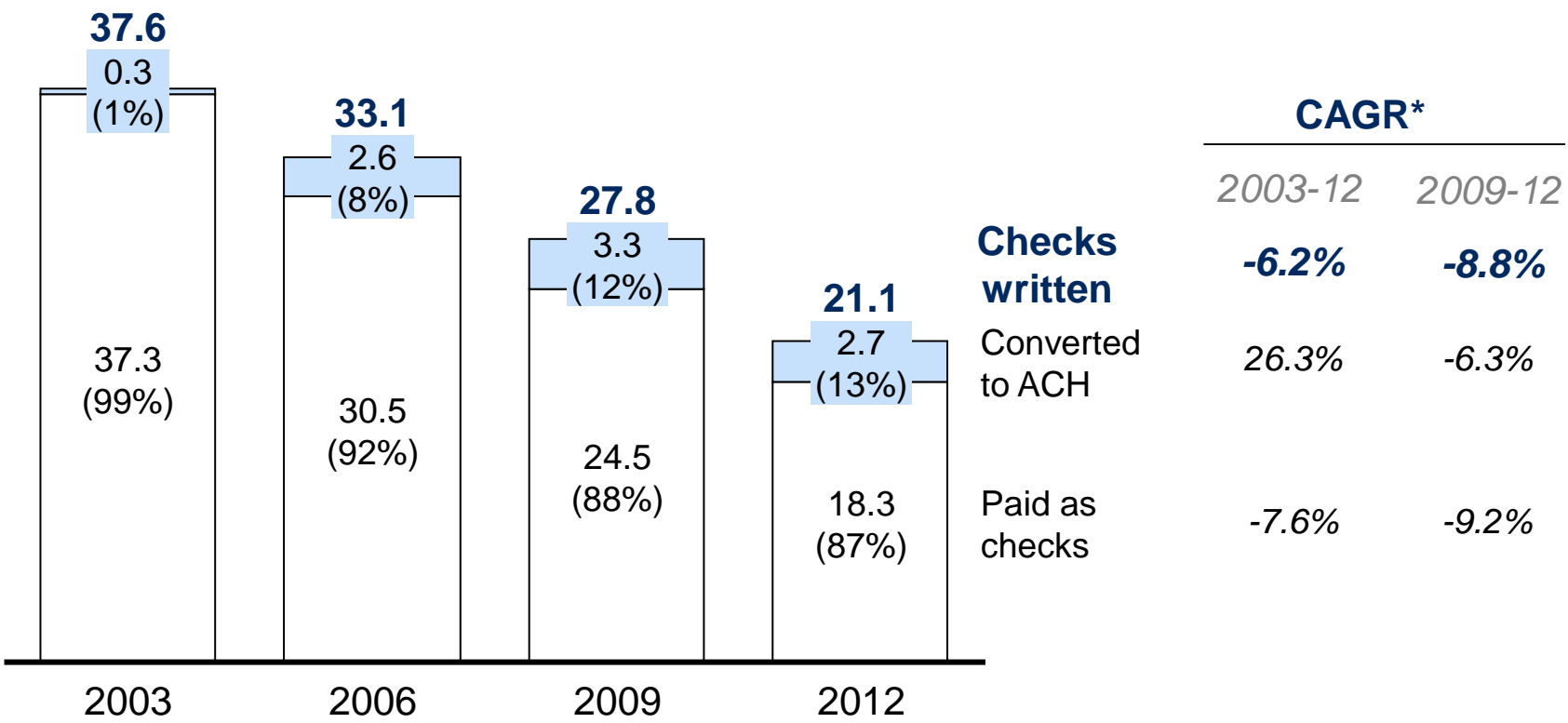


Total wire transfers reported in the survey includes both network volumes (CHIPS and Fedwire) as well as book transfers. Figures may not sum because of rounding.

The number of checks written declined roughly the same amount per year since 2003; the rate of decline accelerated because of a shrinking base

Number of checks written, by converted to ACH or paid as checks

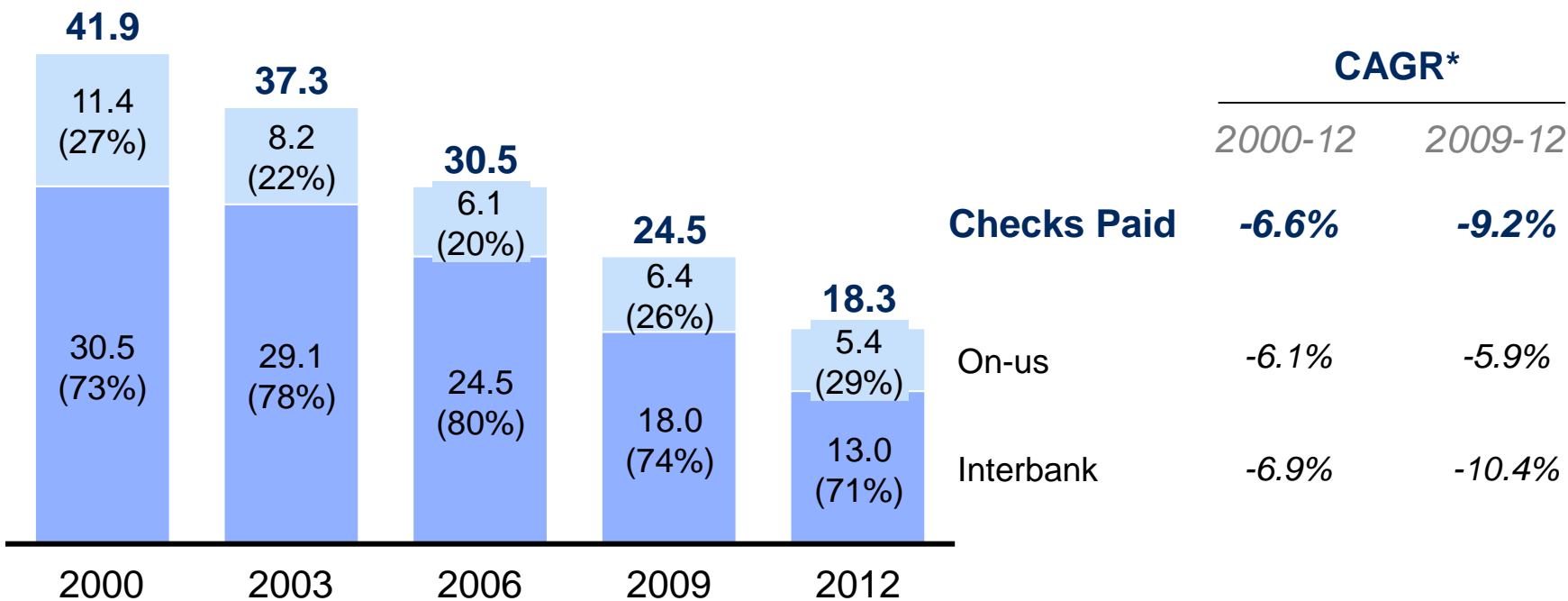
Billions



Figures may not sum because of rounding.
* CAGR is compound annual growth rate.

Trends in checks paid (number) 2000-2012, by check type

Billions



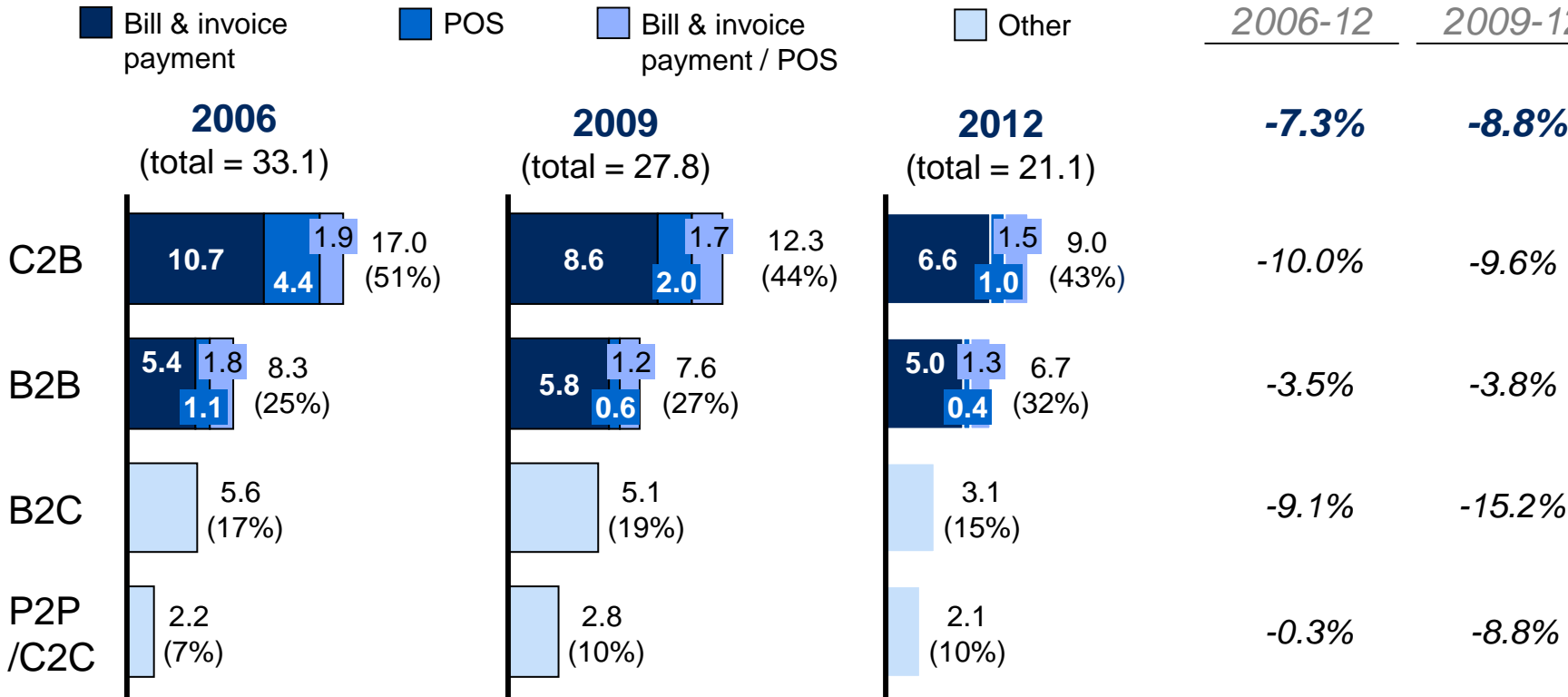
An on-us check is a check paid by the depository institution at which it was first deposited. An interbank check is a check paid at one depository institution but deposited at another. Figures may not sum because of rounding. * CAGR is compound annual growth rate.

Business-to-consumer and consumer-to-business checks declined the fastest

Number of checks written, by counterparty

Billions

CAGR*



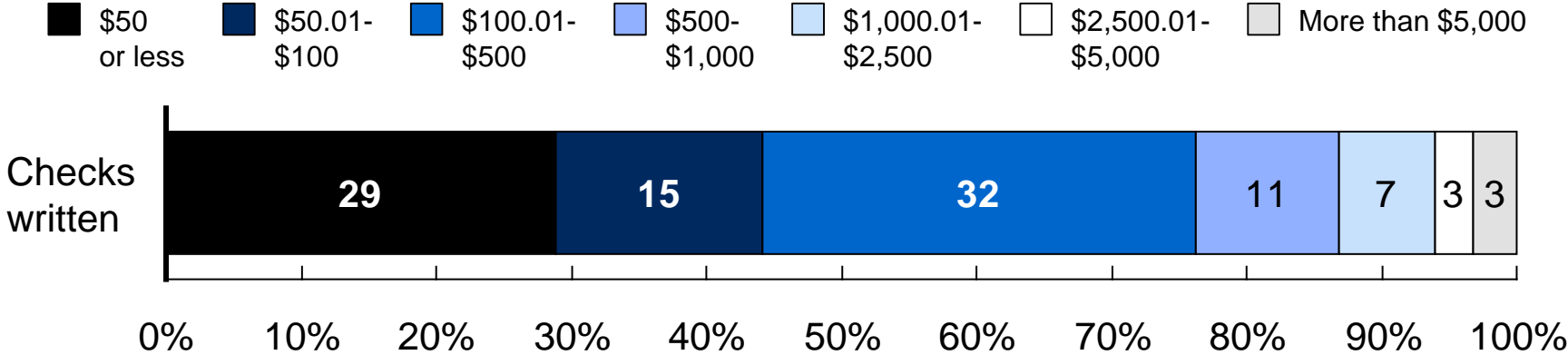
Estimates are based on a large sample of checks from 11 large commercial banks. "C" refers to consumers. "B" refers to businesses, nonprofits, or government organizations. The rise in the number of C2C checks from 2006 to 2009 may have, in part, been because of a change in the composition of the sample from 2006 to 2009 (explained in the detailed report). Figures may not sum because of rounding. * CAGR is compound annual growth rate.

About three-quarters of checks were written for \$500 or less

Checks

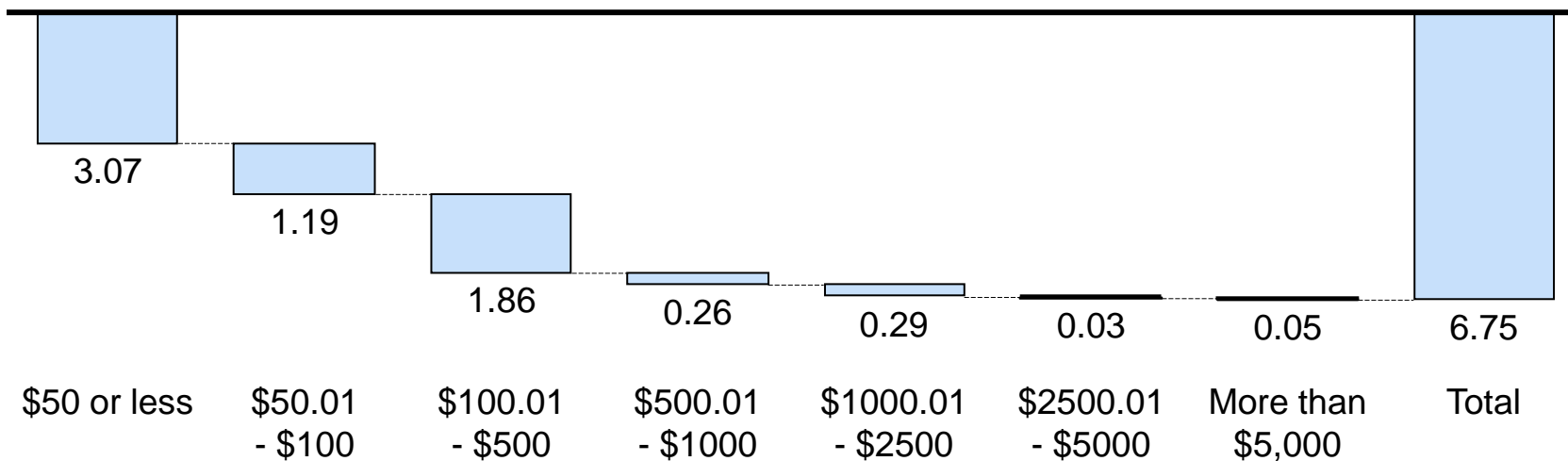
Relative frequency of transaction value ranges in 2012, checks written

Percent



Estimates are based on a large sample of checks from 11 large commercial banks.

Change in the number of checks written from 2009 to 2012, by transaction value ranges Billions



Estimates are based on checks sampled from 11 large commercial banks.

More than 1 out of 6 checks were deposited by images in 2012, an increase from about 1 out of 8 in 2009

Number of checks deposited, by format*
Billions

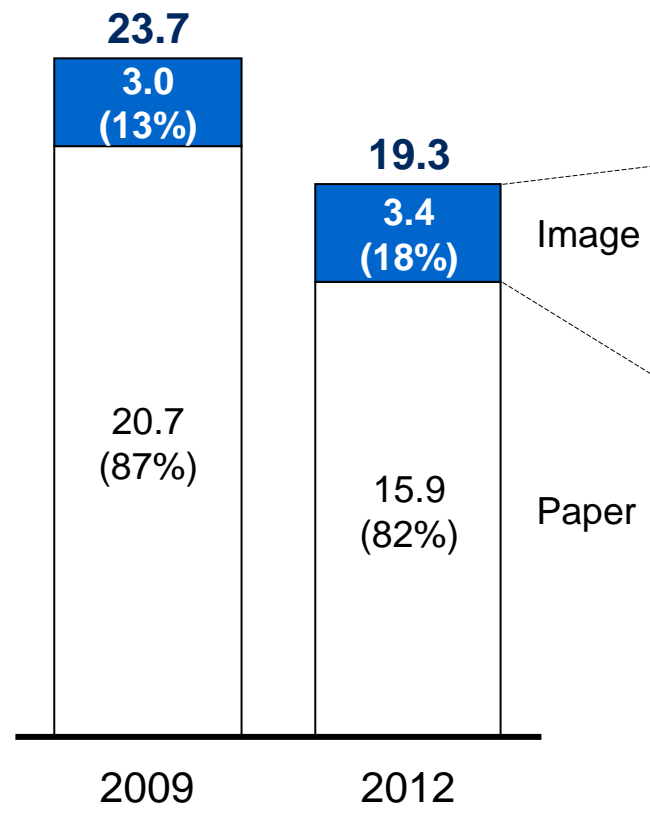
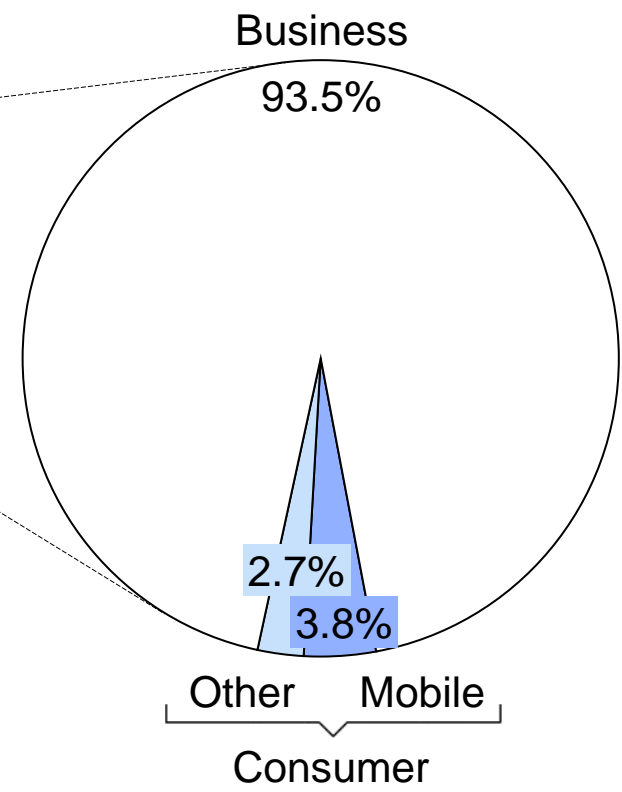


Image checks deposited, by accountholder type

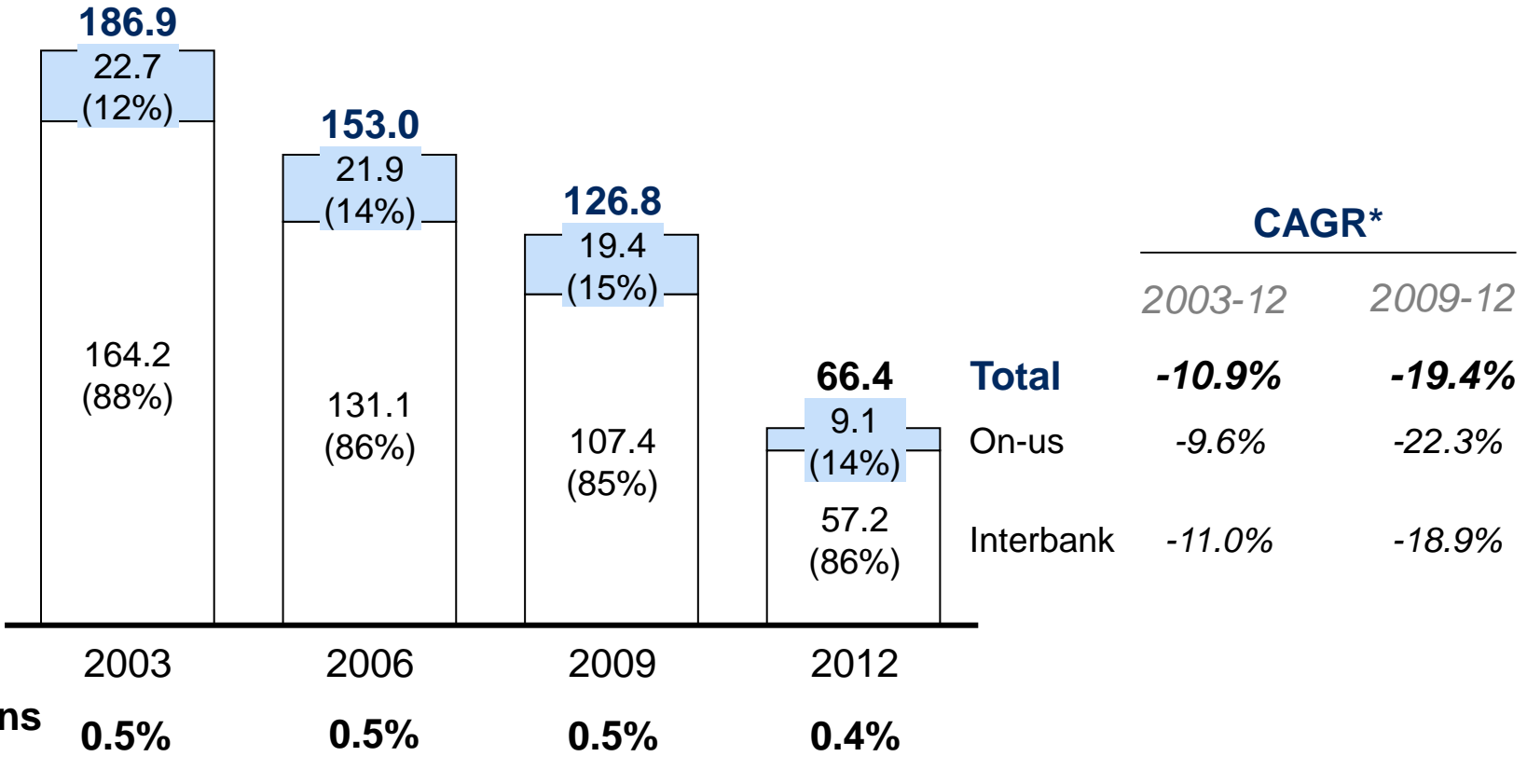


* Format means the method, either image or paper, by which accountholders deposit checks at the bank of first deposit.

The total number of checks returned unpaid dropped by almost half from 2009 to 2012

Number of checks returned unpaid, by check type

Millions



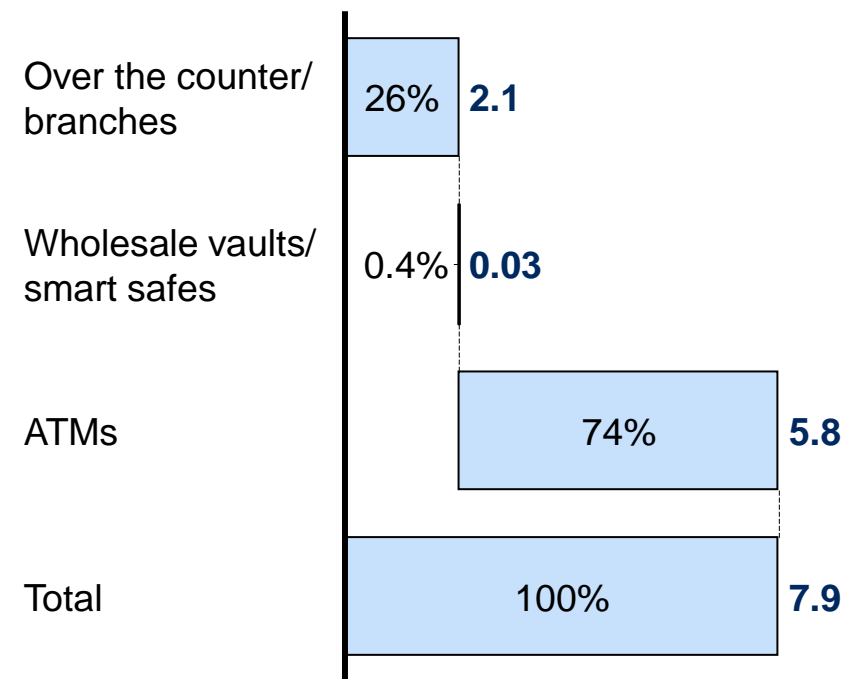
Figures may not sum because of rounding. * CAGR is compound annual growth rate.

ATM withdrawals were largest by number, while over-the-counter withdrawals were largest by value

Number and value of cash withdrawals at depository institutions in 2012, by method

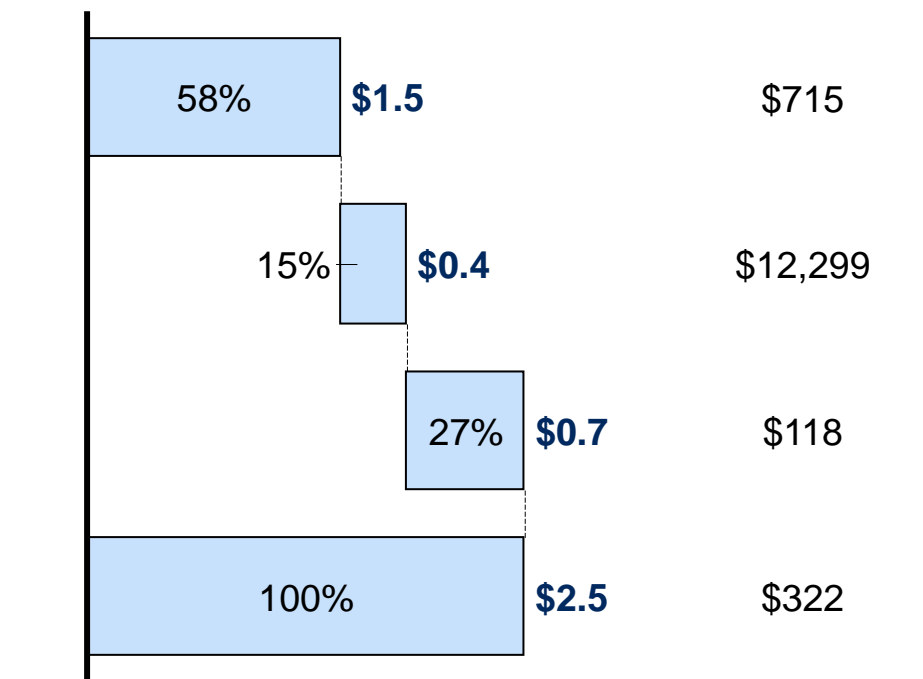
Number of cash withdrawals

Billions



Value of cash withdrawals

Trillions



Average value

\$715

\$12,299

\$118

\$322

Includes cash (currency and coin) withdrawals from domestic deposit accounts only. Does not include credit card cash advances (measured separately). May include withdrawals made with checks written for "cash" at the counter. Figures may not sum because of rounding.

Over-the-counter deposits were largest by both number and value

Number and value of cash deposits at depository institutions in 2012, by method

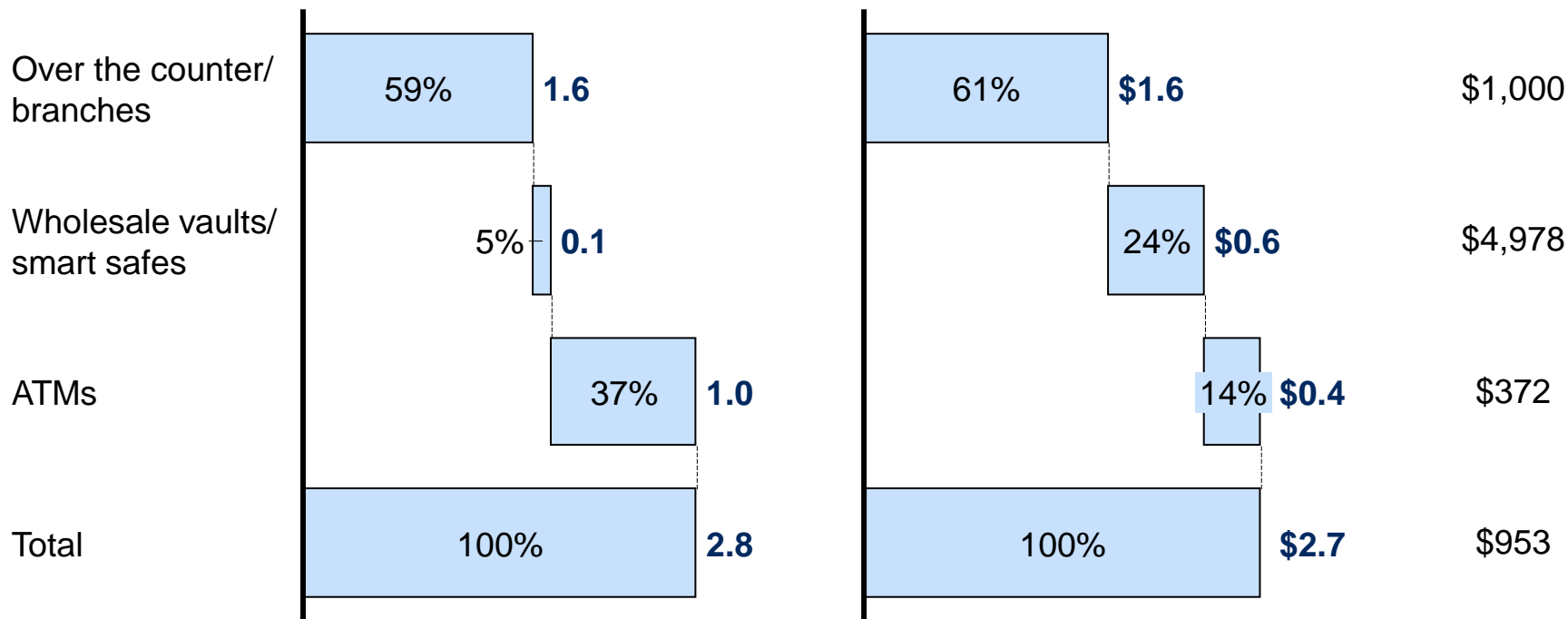
Number of cash deposits

Billions

Value of cash deposits

Trillions

Average value



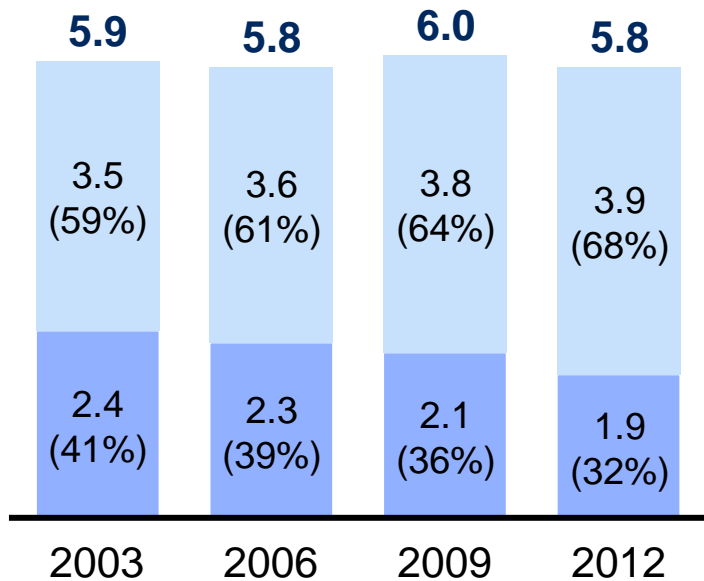
Includes cash (currency and coin) deposits to domestic deposit accounts only. Check deposits are not included. Figures may not sum because of rounding.

Even as ATM withdrawals declined, the value increased faster than inflation; On-us (own bank) ATM growth is driving total ATM value

Trends in ATM cash withdrawals 2003-2012, by withdrawal type

Number of ATM cash withdrawals

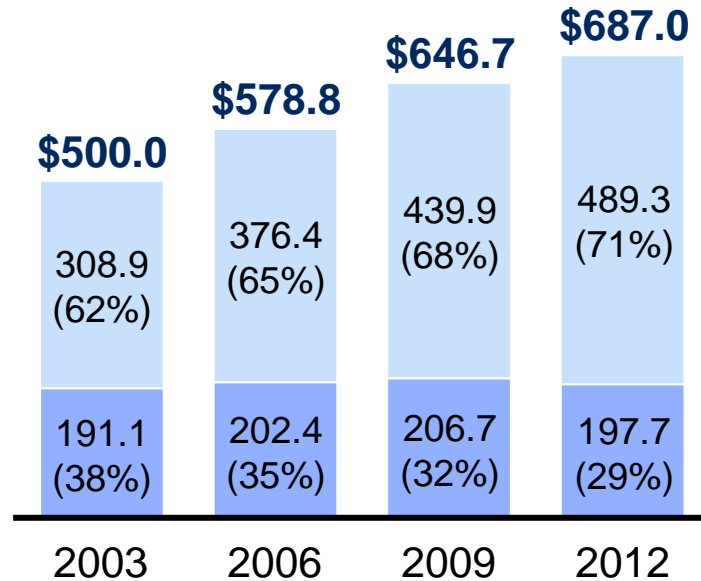
Billions



Value of ATM cash withdrawals

Billions

- On-us (own bank)
- Foreign (other bank)



ATM cash withdrawal data was not collected for 2000. Figures may not sum because of rounding.

The surveys offer different vantage points and insights into the use of the payments system

