

Board of Governors of the Federal Reserve System



2011 Interchange Fee Revenue, Covered Issuer Costs, and Covered Issuer and Merchant Fraud Losses Related to Debit Card Transactions

March 5, 2013

I. Executive Summary

On October 1, 2011, the debit card interchange fee standard in Regulation II went into effect. Regulation II capped the interchange fee that a debit card issuer may charge or receive at 21 cents per transaction plus 5 basis points times the value of the transaction. The standard applies to issuers with consolidated assets of \$10 billion or more (“covered issuers”). A covered issuer may also be eligible to receive up to an additional one-cent adjustment to its interchange fee if it meets certain fraud-prevention standards. In early 2012, the Board surveyed payment card networks and covered issuers to collect data regarding interchange fee revenue, covered issuer costs, and covered issuer and merchant fraud losses for calendar year 2011.

Payment card networks processed 46.7 billion debit card transactions valued at \$1.82 trillion in the United States during 2011. These numbers represent a 24 percent increase in debit card volume and a 27 percent increase in debit card value from 2009. Of the 46.7 billion transactions, 63 percent were signature-based and 37 percent were PIN (personal identification number)-based. In 2011, prepaid cards represented 2.43 billion transactions, or about 5 percent of all debit card transactions, valued at \$83.6 billion.

In the fourth quarter of 2011 (the portion of the reporting period in which the interchange fee standard was in effect), 36 percent of all debit card transactions were processed by issuers that were exempt from the interchange fee standard. During this period, 82 percent of prepaid transactions were exempt from the interchange fee standard. For covered issuers, interchange fees for all transactions averaged 24 cents per transaction, a 52 percent decrease from the 50 cent average received by covered issuers during the first nine months of 2011. Over all transactions, exempt issuers received an average interchange fee of 43 cents per transaction, a 4 percent decline from the 45 cents per transaction average during the first nine months of 2011.

The payments and incentives that networks pay to issuers fell for covered issuers after the interchange fee standard went into effect. Payments and incentives to covered issuers in 2011 averaged 2.8 cents per transaction before the standard went into effect but only 1.5 cents per transaction during the fourth quarter of 2011. Payments and incentives to exempt issuers were relatively flat, averaging 1 cent before October 1, 2011, and 1.2 cents after that date. Payments and incentives to acquirers and merchants averaged 0.7 cent for the year. The average incentive payment per transaction was generally higher for signature networks than for PIN networks, regardless of the recipient.

Network fees paid by acquirers to networks averaged 5.4 cents per transaction in 2011. After the interchange fee standard went into effect, covered issuers paid an average of 3.2 cents per transaction in network fees and exempt issuers paid an average of 6.3 cents. These fee levels were not materially different from what the issuers paid before the standard went into effect. Signature networks charged higher network fees on average than PIN networks.

The Board estimated fraud losses to all parties (merchants, cardholders, and issuers) to be \$1.38 billion in 2011. Signature transactions accounted for \$1.13 billion of those losses while PIN accounted for \$204 million. Prepaid card fraud losses were \$51 million. The incidence of debit card fraud was 0.3 percent of transactions, down from 0.4 percent in 2009. Card-not-present and counterfeit card fraud continue to be the most common types of debit card fraud reported. Issuers bore 60 percent, merchants bore 38 percent, and cardholders bore 2 percent of debit card fraud losses. The distribution of fraud losses differed significantly by authentication method, with issuers bearing virtually all PIN debit fraud losses (96 percent) and slightly more than half (54 percent) of signature debit fraud losses. Merchants continued to bear the majority of card-not-present losses, and issuers bear most of the counterfeit card fraud losses.

Authorization, clearing, and settlement (ACS) costs, excluding fraud losses, for covered issuers averaged 5 cents per transaction in 2011. ACS costs varied greatly across respondents, however, with the median issuer having an average ACS cost of 11 cents but the issuer at the 75th percentile having an average ACS cost of more than 36 cents. The issuers with the highest debit card transaction volumes generally had the lowest ACS costs per transaction. Conversely, issuers with the smallest debit card programs generally had much higher ACS costs per transaction. Issuers that responded to both the 2009 and 2011 data collections typically reported that ACS costs per transaction were lower in 2011 than in 2009.

In 2011, fraud-prevention and data security costs averaged 1.9 cents per transaction for covered issuers, with the median issuer averaging slightly less than 1.5 cents per transaction. Costs for cardholder inquiries not related to fraud averaged 4.4 cents per transaction for covered issuers.

The 2011 survey had many first-time respondents, most of which had small debit card programs and high ACS costs per transaction. These issuers were typically branches of foreign banking organizations or large financial institutions that have minimal retail banking operations. These new respondents tended to skew upward average ACS costs across covered issuers.

Sixty-seven percent of covered issuers had average ACS costs below the 21 cent interchange fee standard. These issuers accounted for 99.7 percent of covered issuer transactions.

II. Background

Section 920 of the Electronic Fund Transfer Act (as added by Section 1075 of the Dodd-Frank Wall Street Reform and Consumer Protection Act) requires the Board to disclose every

two years “aggregate or summary information concerning the costs incurred, and the interchange transaction fees charged or received, by issuers or payment card networks in connection with the authorization, clearing, or settlement of electronic debit transactions as the Board considers appropriate and in the public interest.”¹ The Act, as amended, authorizes the Board to collect such information from issuers and payment card networks as may be necessary to implement the debit card interchange fee standards required under that section.

The Board conducted its first data collection in 2010, collecting data from payment card networks and issuers for the calendar year 2009. The Board published a report containing summary information from its first data collection in June 2011 when it issued Regulation II (Debit Card Interchange Fees and Routing, 12 CFR part 235).² The information from the first data collection included in the report assisted the Board in developing the rule.³ Regulation II establishes an interchange fee standard under which no issuer with consolidated assets of \$10 billion or more may charge or receive an interchange fee for an electronic debit transaction greater than 21 cents plus 5 basis points times the value of that transaction. An issuer that is subject to the standard may be eligible to receive up to an additional 1-cent adjustment to the interchange fee it charges or receives if the issuer meets certain fraud-prevention standards.⁴ Government-administered payment programs and certain reloadable general-use prepaid cards are exempt from this interchange fee limitation.

Regulation II also prohibits all issuers and networks from restricting the number of networks over which electronic debit transactions may be processed to fewer than two

¹ Electronic Fund Transfer Act § 920(a)(3)(B), 12 USC § 1693o-2(a)(3)(B).

² The report published in June 2011 and the surveys used in that report are available at <http://www.federalreserve.gov/paymentsystems/regii-data-collections.htm>.

³ See Final Rule, 76 FR 43394 (Jul. 20, 2011).

⁴ The Board issued the fraud-prevention adjustment as an interim final rule, which went into effect on October 1, 2011. 76 FR 43478 (Jul. 20, 2011). The Board subsequently issued the final fraud-prevention adjustment rule (also a one-cent per transaction adjustment), which went into effect on October 1, 2012. 77 FR 46258 (Aug. 3, 2012).

unaffiliated networks, and from inhibiting a merchant's ability to direct the routing of an electronic debit transaction over any network that the issuer has enabled to process it. The interchange fee standard (including the fraud-prevention adjustment) and the prohibition on inhibiting merchant routing choice became effective on October 1, 2011. For issuers, the prohibitions on restricting the number of networks over which transactions may be processed became effective on April 1, 2012, for most debit cards.

In early 2012, the Board surveyed payment card networks that process debit card transactions and issuers that are subject to the interchange fee standard in Regulation II. All respondents were asked to report data for calendar year 2011. The Board requested comment on proposed survey instruments.⁵ After reviewing the comments received, the Board finalized a modified version of the survey instruments.⁶

The fifteen networks that process debit card transactions completed the payment card network survey.⁷ The network survey asked for information related to the volume and value of debit card transactions, interchange fees charged by networks to merchant acquirers and paid to issuers, payments and incentives paid by networks to both issuers and acquirers, and network fees charged by networks to both issuers and acquirers. The network survey asked respondents, where possible, to break out the information by issuers subject to the interchange fee standard and issuers exempt from the interchange fee standard. The Board used data from the network

⁵ 76 FR 57037 (Sept. 15, 2011).

⁶ 76 FR 79184 (Dec. 21, 2011). The 2011 card issuer and payment card network surveys are available at <http://www.federalreserve.gov/paymentsystems/regii-data-collections.htm>.

⁷ Three networks had both signature and PIN (personal identification number) networks. In these cases, the networks were asked to submit separate responses for their signature and PIN networks. Thus, there were 18 total responses to the network survey.

survey for this report and for its report published in May 2012 on the average interchange fees received by both exempt and non-exempt issuers by payment card network.⁸

The debit card issuer survey was completed by 131 financial institutions.⁹ These institutions included bank and thrift holding companies with assets of at least \$10 billion; independent commercial banks, thrifts, and credit unions with assets of at least \$10 billion; and FDIC-insured U.S. branches and agencies of foreign banking organizations with worldwide assets of at least \$10 billion.¹⁰ The issuer respondents ranged from the largest debit card issuers in the country to issuers with sizeable assets but very small debit card programs.

The debit card issuer survey asked for information related to the volume and value of debit card transactions processed; costs of authorization, clearing, and settlement (ACS costs); certain costs associated with a particular debit card transaction that are not ACS costs; fraud-prevention and data security costs; and interchange fee revenue. The survey also asked for information regarding the incidence of debit card fraud and associated fraud losses absorbed by issuers and cardholders, and fraud losses charged back to merchant acquirers.

In general, the surveys instructed respondents to provide the requested information separately for signature debit and PIN debit operations. Prepaid card operations were considered separately from signature and PIN debit operations in the debit card issuer survey but treated as a

⁸ The report on average interchange fees is available at <http://www.federalreserve.gov/paymentsystems/regii-average-interchange-fee.htm>.

⁹ The Board distributed surveys to holding companies of covered financial institutions. The Board initially contacted 279 financial institutions. Participation was mandatory for institutions that had debit card programs in 2011. Institutions that indicated that they did not have a debit card program in 2011 were not required to complete a survey. Institutions that did not have debit card programs were typically either foreign banking organizations or other financial institutions with large nonbank affiliates that do not provide retail banking services.

¹⁰ Assets were computed using the Consolidated Financial Statements for Bank Holding Companies (FR Y-9C; OMB No. 7100-0128), the Consolidated Reports of Condition and Income (Call Reports) for independent commercial banks (FFIEC 031 & 041; OMB No. 7100-0036) and for U.S. branches and agencies of foreign banks (FFIEC 002; OMB No. 7100-0032), the Thrift Financial Reports (OTS 1313; OMB No. 1550-0023) for thrift holding companies and thrift institutions, and the Credit Union Reports of Condition and Income (NCUA 5300/5300S; OMB No. 3133-0004) for credit unions. The ownership structure of banking organizations was established using the FFIEC's National Information Center structure database.

subcategory of signature and PIN debit operations in the payment card network survey. For purposes of the surveys, a signature debit card program provides access to funds in a cardholder's asset account for point-of-sale or other purchase transactions through use of a debit card, payment code, or other device, in which the access is not authenticated through the use of a PIN. A PIN debit card program provides access to funds in a cardholder's asset account for point-of-sale or other purchase transactions through use of a debit card, payment code, or other device, in which the access is generally authenticated through the use of a PIN. Cards that can access only ATM networks and cannot be used to make point-of-sale transactions were excluded from the survey.

The survey requested information on general-use prepaid cards, which are cards or other payment codes or devices that are (1) issued on a prepaid basis in a specified amount, whether or not that amount may be increased or reloaded, in exchange for payment and (2) redeemable upon presentation at multiple unaffiliated merchants for goods or services. The debit card issuer survey did not distinguish between general-use prepaid cards that were exempt from the interchange fee standard from those that were not exempt.¹¹

III. Card Use¹²

Payment card networks processed 46.7 billion purchase transactions in 2011, a 24 percent increase from the 37.6 billion purchase transactions processed in 2009 (see Table 1).¹³ Over the

¹¹ The payment card network survey did distinguish between exempt and non-exempt general-use prepaid cards.

¹² Both the payment card network survey and debit card issuer survey asked respondents for data pertaining to the number and value of purchase transactions on debit cards in 2011. Comparison between data from the two surveys suggests a high level of consistency across network and issuer responses: The total number and value of transactions reported in the debit card issuer survey differed from the number and value of transactions reported for covered issuers in the payment card network survey by less than 0.3 percent. Because the debit card issuer survey only includes debit card issuers covered by the interchange fee standard in Regulation II, the figures reported in this section come from payment card network survey data unless otherwise noted.

same time period, the total value of purchase transactions increased 27 percent from \$1.43 trillion to \$1.82 trillion. The number and value of general-use prepaid card transactions and card-not-present transactions grew particularly rapidly. Signature debit networks continued to process a greater share of transactions than PIN networks. In the October-December 2011 period, the transactions of debit card issuers covered by the interchange fee standard accounted for nearly two-thirds of debit card transactions.

Table 1: Purchase transactions

	2009			2011		
	Number (billions)	Value (\$ billions)	Average (\$)	Number (billions)	Value (\$ billions)	Average (\$)
All transactions	37.58	1,434.8	38.18	46.66	1,821.0	39.02
Nonprepaid debit card	36.39	1,397.2	38.40	44.23	1,737.4	39.28
Prepaid card ¹	1.20	37.6	31.47	2.43	83.6	34.42
<i>Signature</i>				29.59	1,107.1	37.42
Nonprepaid debit card	22.52	836.5	37.15	28.00	1,054.9	37.67
Prepaid card ¹				1.58	52.2	32.97
<i>PIN</i>				17.08	713.8	41.80
Nonprepaid debit card	13.87	560.7	40.44	16.23	682.5	42.04
Prepaid card ¹				0.84	31.4	37.16

¹ Payment card networks did not report prepaid card transactions by authorization method in 2009.

A small fraction of the 46.7 billion purchase transactions processed in 2011 resulted in chargebacks and returns.¹⁴ In 2011, chargebacks represented less than 0.1 percent of debit card

¹³ Purchase transactions include transactions that are later charged back or returned. Purchase transactions exclude ATM transactions and any card activity in which value was not transferred between a cardholder and a merchant, such as denials, errors, or authorizations that did not clear or were not presented for settlement. Prepaid card transactions exclude funds loads to card accounts.

¹⁴ In a purchase transaction, value is transferred from the cardholder to the merchant in exchange for goods or services. In a chargeback transaction, the issuer reverses the dollar value of a transaction, in whole or in part, and value is transferred from the acquirer to the issuer. In a return transaction, the merchant reverses a purchase transaction (due, for example, to the return of goods by the cardholder), and value is transferred from the merchant to the cardholder.

transactions and returns represented about 1 percent of transactions.¹⁵ Together, chargebacks and returns totaled 373 million transactions and \$22 billion; purchase transactions net of chargebacks and returns totaled 46.3 billion (\$1.8 trillion in value). By volume, signature networks processed 98 percent of chargebacks and 84 percent of returns; PIN networks processed the remaining 2 percent of chargebacks and 16 percent of returns. By value, 98 percent of chargebacks and 88 percent of returns were over signature networks.

In 2011, signature debit transactions accounted for 63 percent of debit card transactions and 61 percent of transaction value; PIN debit transactions accounted for the remaining 37 percent of volume and 39 percent of value. Growth in nonprepaid signature debit use outpaced growth in nonprepaid PIN debit use from 2009 to 2011. Nonprepaid signature debit transactions increased 24 percent by volume and 26 percent by value; nonprepaid PIN debit transactions increased 17 percent by volume and 22 percent by value. The average value of PIN debit transactions in 2011 (\$41.80), however, exceeded that of signature debit transactions (\$37.42).

Prepaid card transactions are a small but rapidly growing subset of all debit card transactions. The 2.43 billion prepaid card transactions processed in 2011 represented 5.2 percent of all debit card transactions and 4.6 percent of total transaction value. The number and value of prepaid card transactions reported by networks more than doubled from 2009 to 2011.¹⁶ The average value of prepaid card transactions increased 9 percent from \$31.47 to \$34.42, moving toward the average value of nonprepaid transactions. Around 65 percent of prepaid transactions were processed over signature networks and 35 percent were processed over PIN

¹⁵ In 2011, networks reported 9 million chargebacks totaling \$930 million and 364 million returns totaling \$21 billion.

¹⁶ This may be due in part to improved reporting of prepaid transaction data by payment card networks.

networks, similar to the distribution for debit card transactions overall.¹⁷ As is the case for debit card transactions generally, the average value of PIN prepaid transactions exceeded that of signature prepaid transactions by about \$4.19.

Card-not-present transactions (see Table 2), which include Internet, telephone, and mail order transactions, accounted for 5.1 billion transactions in 2011 (11 percent of total transaction volume) and \$386 billion (21 percent of total transaction value). The average value of card-not-present transactions (\$75.81) was more than double that of card-present transactions (\$34.52). Card-not-present volume grew about 41 percent from 2009 to 2011, and value grew 36 percent. Signature card-not-present transactions drove the growth. Signature networks processed approximately 96 percent of card-not-present transactions in 2011. Card-not-present volume over PIN networks grew more slowly than did overall debit card transaction volume as PIN networks continued to have a limited presence online.

Table 2: Card-present and card-not-present transactions

	2009 ¹					2011				
	Number (billions)		Value (\$ billions)		Average (\$)	Number (billions)		Value (\$ billions)		Average (\$)
All transactions²	37.58		1,434.8		38.18	46.66		1,821.0		39.02
Card-present	33.98	90%	1,152.1	80%	33.90	41.58	89%	1,435.4	79%	34.52
Card-not-present	3.60	10%	282.7	20%	78.55	5.09	11%	385.6	21%	75.81
<i>Signature²</i>	<i>23.45</i>		<i>865.4</i>		<i>36.90</i>	<i>29.59</i>		<i>1,107.1</i>		<i>37.42</i>
Card-present	20.05	85%	605.9	70%	30.22	24.72	84%	747.3	67%	30.23
Card-not-present	3.41	15%	259.5	30%	76.20	4.87	16%	359.9	33%	73.92
<i>PIN²</i>	<i>14.13</i>		<i>569.4</i>		<i>40.30</i>	<i>17.08</i>		<i>713.8</i>		<i>41.80</i>
Card-present	13.94	99%	546.2	96%	39.20	16.86	99%	688.1	96%	40.82
Card-not-present	0.19	1%	23.2	4%	120.18	0.22	1%	25.7	4%	118.09

¹ 2009 number, value, and average are estimated from the reported proportions of card-present and card-not-present transaction volume and value.

² Prepaid card transactions are included under signature or PIN debit card transactions based on the type of network over which they were processed. For 2009, the proportion of prepaid card transactions processed over signature and PIN networks is estimated from 2011 data.

¹⁷ In the 2009 data collection, prepaid transactions were not separated by authentication method.

Of the 46.7 billion debit card transactions processed in 2011, 12.1 billion transactions (26 percent) were processed after Regulation II took effect on October 1, 2011 (see Table 3). Nearly two-thirds of transactions from October 1 to December 31, 2011 (7.8 billion in volume and \$308 billion in value) were on cards of issuers covered by the interchange fee standard; the remaining 4.3 billion transactions and \$167 billion in value were on cards of exempt issuers. By volume, covered issuers accounted for 67 percent of signature transactions from October to December but only 60 percent of PIN transactions. The average value of signature transactions for covered issuers (\$38.03) was \$2.45 greater than that for exempt issuers (\$35.58). The average value of PIN transactions was roughly the same for covered issuers (\$42.13) and exempt issuers (\$42.78).

Table 3: Covered and exempt debit card transactions

	<i>January 1-September 31, 2011</i>			<i>October 1-December 31, 2011</i>		
	<i>Number (billions)</i>	<i>Value (\$ billions)</i>	<i>Average (\$)</i>	<i>Number (billions)</i>	<i>Value (\$ billions)</i>	<i>Average (\$)</i>
All transactions¹	34.53	1,345.9	38.98	12.13	475.0	39.15
Covered issuers ²	22.37 65%	874.8 65%	39.10	7.81 64%	308.2 65%	39.47
Exempt issuers	12.16 35%	471.1 35%	38.76	4.33 36%	166.8 35%	38.57
<i>Signature¹</i>	<i>21.99</i>	<i>824.4</i>	<i>37.49</i>	<i>7.60</i>	<i>282.7</i>	<i>37.21</i>
Covered issuers ²	14.73 67%	560.8 68%	38.07	5.07 67%	192.7 68%	38.03
Exempt issuers	7.26 33%	263.6 32%	36.33	2.53 33%	90.0 32%	35.58
<i>PIN¹</i>	<i>12.54</i>	<i>521.5</i>	<i>41.59</i>	<i>4.54</i>	<i>192.3</i>	<i>42.39</i>
Covered issuers ²	7.64 61%	314.0 60%	41.10	2.74 60%	115.5 60%	42.13
Exempt issuers	4.90 39%	207.5 40%	42.35	1.80 40%	76.8 40%	42.78
Prepaid card transactions	1.76	61.3	34.89	0.67	22.3	33.19
Covered transactions	0.12	3.8	31.35	0.12 18%	3.8 17%	31.35
Exempt transactions ³	0.55	18.4	33.61	0.55 82%	18.4 83%	33.61
<i>Signature</i>	<i>1.17</i>	<i>39.1</i>	<i>33.46</i>	<i>0.42</i>	<i>13.2</i>	<i>31.60</i>
Covered transactions	0.07	1.8	26.28	0.07 17%	1.8 14%	26.28
Exempt transactions ³	0.35	11.3	32.68	0.35 83%	11.3 86%	32.68
<i>PIN</i>	<i>0.59</i>	<i>22.3</i>	<i>37.73</i>	<i>0.25</i>	<i>9.1</i>	<i>35.81</i>
Covered transactions	0.05	2.0	38.17	0.05 20%	2.0 22%	38.17
Exempt transactions ³	0.20	7.1	35.20	0.20 80%	7.1 78%	35.20

¹ Prepaid card transactions are included under signature or PIN debit card transactions based on the type of network over which they were processed. The prepaid card transactions reported are a subset of all debit card transactions.

² Transaction totals for covered issuers may include prepaid card transactions exempt from the interchange fee standard. All nonprepaid debit card transactions are subject to the interchange fee standard for covered issuers.

³ Prepaid card transactions may be counted as exempt either because the issuing institution is exempt or because the prepaid card transaction itself is exempt.

Some transactions on cards of covered issuers are exempt from the interchange fee standard. Specifically, transactions on cards issued pursuant to government-administered payment programs and certain general-use prepaid cards of covered issuers are exempt. Although the 2011 data break out transactions into exempt and non-exempt transactions for all issuers, they do not break out covered issuers' covered transactions from their exempt transactions.

Exempt prepaid card transactions across all issuers (covered and exempt) accounted for 549 million (82 percent) of the 671 million prepaid card transactions from October through December and \$18.4 billion (83 percent) of the \$22.3 billion of prepaid card transaction value.¹⁸ Exempt prepaid card transactions represented 4.5 percent of all debit card transactions in that period.

Covered prepaid card transactions had a lower average value (\$31.35) than exempt prepaid card transactions (\$33.61). Covered prepaid card transactions were more likely than exempt prepaid card transactions to be processed over PIN networks. Forty-two percent of covered prepaid card transactions were PIN transactions, compared with 37 percent of exempt prepaid card transactions.

¹⁸ All prepaid card transactions of exempt issuers are exempt from the interchange fee standard because the issuer is exempt.

IV. Interchange Fees

Debit card issuers received \$20.4 billion in interchange fee revenue in 2011 (see Table 4).¹⁹ Since 2009, the average interchange fee per transaction for PIN networks has increased significantly. The average interchange fee per transaction for signature networks has decreased, but this is mainly attributable to implementation of the interchange fee standard. The interchange fee revenue received by covered issuers dropped significantly following implementation of the interchange fee standard, while the revenue received by exempt issuers decreased by a relatively small degree.

Table 4: Interchange fee revenue

	2009			2011		
	Interchange fee revenue (\$ billions)	Fee per transaction (\$) ¹	Fee as % of transaction value ¹	Interchange fee revenue (\$ billions)	Fee per transaction (\$) ¹	Fee as % of transaction value ¹
All transactions	16.20	0.43	1.13%	20.40	0.44	1.12%
Nonprepaid debit card	15.73	0.43	1.13%	19.36	0.44	1.11%
Prepaid card ²	0.48	3%	0.40	1.04	0.43	1.25%
<i>Signature</i>				15.02	74%	0.51
Nonprepaid debit card	12.48	77%	0.55	14.24		0.51
Prepaid card				0.78		0.49
<i>PIN</i>				5.38	26%	0.31
Nonprepaid debit card	3.24	20%	0.23	5.12		0.32
Prepaid card				0.26		0.31

¹ Interchange fee revenue is divided by the number or value of purchase transactions. In the 2009 data report, interchange fee revenue was divided by the number or value of purchase transactions net of returns.

² Payment card networks did not report interchange fee revenue from prepaid card transactions by authentication method in 2009.

¹⁹ Interchange fees are those fees set by the network, charged to acquirers and received by debit card issuers as part of a debit card transaction. The acquirer typically passes these fees on to the merchants so interchange fees can be thought of as a cost to merchants and as revenue to debit card issuers.

Once the interchange fee standard took effect on October 1, 2011, the interchange fees received by covered issuers dropped to the level prescribed by the standard (see Table 5). Interchange fees for exempt issuers decreased slightly but remained close to the levels before October 1. Overall, the average interchange fee per transaction was 18 cents (38 percent) lower in the October-December period than in the January-September period. Interchange fees received by covered issuers dropped by more than half from an average of 50 cents per transaction (1.29 percent of transaction value) to 24 cents per transaction (0.60 percent of transaction value). As 24 cents is the maximum interchange fee allowed for a covered issuer under the interchange fee standard for the average \$39 transaction, assuming that the issuer is eligible for the 1-cent fraud-prevention adjustment, this suggests that most networks set interchange fees for covered issuers at the cap prescribed by Regulation II once the interchange fee standard took effect.

Table 5: Interchange fee revenue from covered and exempt debit card transactions

	<i>January 1-September 30, 2011</i>			<i>October 1-December 31, 2011</i>		
	<i>Interchange fee revenue (\$ billions)</i>	<i>Fee per transaction (\$)¹</i>	<i>Fee as % of transaction value¹</i>	<i>Interchange fee revenue (\$ billions)</i>	<i>Fee per transaction (\$)¹</i>	<i>Fee as % of transaction value¹</i>
All transactions²	16.71	0.48	1.24%	3.69	0.30	0.78%
Covered issuers ³	11.26 67%	0.50	1.29%	1.85 50%	0.24	0.60%
Exempt issuers	5.45 33%	0.45	1.16%	1.84 50%	0.43	1.10%
<i>Signature²</i>	<i>12.52</i>	<i>0.57</i>	<i>1.52%</i>	<i>2.50</i>	<i>0.33</i>	<i>0.88%</i>
Covered issuers ³	8.62 69%	0.59	1.54%	1.21 48%	0.24	0.63%
Exempt issuers	3.90 31%	0.54	1.48%	1.29 52%	0.51	1.43%
<i>PIN²</i>	<i>4.19</i>	<i>0.33</i>	<i>0.80%</i>	<i>1.19</i>	<i>0.26</i>	<i>0.62%</i>
Covered issuers ³	2.63 63%	0.34	0.84%	0.64 54%	0.23	0.55%
Exempt issuers	1.56 37%	0.32	0.75%	0.55 46%	0.31	0.72%
Prepaid card transactions	0.78	0.44	1.26%	0.27	0.40	1.20%
Covered transactions				0.03 11%	0.23	0.73%
Exempt transactions ⁴				0.24 89%	0.43	1.29%
<i>Signature</i>	<i>0.59</i>	<i>0.51</i>	<i>1.52%</i>	<i>0.19</i>	<i>0.46</i>	<i>1.44%</i>
Covered transactions				0.02 8%	0.22	0.84%
Exempt transactions ⁴				0.17 92%	0.50	1.54%
<i>PIN</i>	<i>0.18</i>	<i>0.31</i>	<i>0.82%</i>	<i>0.08</i>	<i>0.30</i>	<i>0.84%</i>
Covered transactions				0.01 16%	0.24	0.63%
Exempt transactions ⁴				0.06 84%	0.32	0.90%

¹ Interchange fee revenue is divided by the number or value of purchase transactions. In the 2009 data report, interchange fee revenue was divided by the number or value of purchase transactions net of returns.

² Prepaid card transactions are included under signature or PIN debit card transactions based on the type of network over which they were processed. The prepaid card transactions reported are a subset of all debit card transactions.

³ Revenue totals for covered issuers may include prepaid card transactions exempt from the interchange fee standard, such as transactions made using debit cards issued pursuant to government-administered payment programs. All other debit card transactions are subject to the interchange fee standard for covered issuers.

⁴ Prepaid card transactions may be counted as exempt either because the issuing institution is exempt or because the prepaid card transaction itself is exempt.

In contrast, the average interchange fee per transaction received by exempt issuers declined 4 percent, from 45 cents to 43 cents after the interchange fee standard became effective October 1, 2011. From January 1 to September 30, 2011, the average interchange fee for covered issuers was 5 cents more per transaction than for exempt issuers. This shifted in the

October-December period: Exempt issuers received 19 cents more per transaction than covered issuers. Almost all networks offered higher interchange fees to exempt issuers than covered issuers.²⁰ Exempt issuers accounted for about the same proportion of debit card transactions before and after introduction of the interchange fee standard. In the October-December period, exempt issuers did not appear to experience a substantial change in total interchange fee revenue.²¹

The average interchange fee per signature transaction was higher than the average interchange fee per PIN transaction before October 1, 2011. Because the same interchange fee standard applies to both signature and PIN transactions, the relative drop in interchange fees for signature transactions was much larger when the standard took effect. The average interchange fee per signature transaction for covered issuers dropped 35 cents, from 59 cents to 24 cents. As a percentage of transaction value, the interchange fee for signature transactions dropped from 1.54 percent to 0.63 percent. In contrast to the almost 60 percent decline in the average interchange fee per signature transaction for covered issuers, the average interchange fee per PIN transaction for covered issuers decreased about one-third, from 34 cents to 23 cents. As a percentage of transaction value, the interchange fee for PIN transactions decreased from 0.84 percent to 0.55 percent. For exempt issuers, the small decrease in interchange fees was fairly proportional between signature and PIN transactions.

The average interchange fee per prepaid card transaction declined 10 percent, from 44 cents in the January-September 2011 period to 40 cents in the October-December 2011 period.

²⁰ For more detail, the report on average interchange fees published in May 2012 is available at <http://www.federalreserve.gov/paymentsystems/regii-average-interchange-fee.htm>.

²¹ Seasonal factors, such as holiday shopping at the end of the year, complicate the comparison of total interchange fee revenue in the January-September and October-December periods. Nonetheless, the total interchange fee revenue received by exempt issuers in the fourth quarter of 2011 was slightly higher than the average interchange fee revenue per quarter received by exempt issuers in the January-September period.

The average interchange fee per exempt prepaid card transaction in the October-December period is comparable to the average interchange fee per transaction for all prepaid card transactions from January to September.²² From January 1 to September 30, 2011, the average interchange fee as a percentage of transaction value for prepaid card transactions was about the same as that for all debit card transactions. From October 1 to December 31, the average interchange fee per covered prepaid card transaction was 23 cents, essentially at the cap set by the interchange fee standard. Just as exempt issuers received higher interchange fees than covered issuers after October 1, 2011, issuers received higher interchange fees for exempt prepaid card transactions than for covered prepaid card transactions. The average interchange fee per exempt prepaid transaction was 20 cents higher than the average interchange fee per covered prepaid transaction from October to December. The average interchange fee per exempt signature prepaid transaction was 28 cents higher; the average interchange fee per exempt PIN prepaid transaction was 8 cents higher.

V. Payments and Incentives Paid by Networks

Use of payments and incentives by networks has changed considerably from 2009, even before the interchange fee standard took effect on October 1, 2011 (see Table 6). The overall amount of payments and incentives that networks paid to merchants, acquirers, and issuers declined relative to the number and value of debit card transactions. Payments and incentives vary widely from network to network; thus, the totals and averages reported in this section serve only as a general characterization of network practices. Moreover, payments and incentives are usually bilateral arrangements between a network on one side and a merchant, acquirer, or issuer

²² Networks reported prepaid card transactions in the January 1-September 30, 2011 as a single total.

on the other. These figures, calculated from network-reported totals, do not reflect the heterogeneity of these bilateral arrangements.

Table 6: Payments and incentives paid by networks

	2009			2011		
	Payments and incentives (\$ billions)	Payment per transaction (\$) ¹	Payment as % of transaction value ¹	Payments and incentives (\$ billions)	Payment per transaction (\$) ¹	Payment as % of transaction value ¹
All recipients	1.04	0.028	0.07%	1.24	0.027	0.07%
Paid to merchants/acquirers	0.34 33%	0.009	0.02%	0.32 25%	0.007	0.02%
Paid to issuers	0.70 67%	0.019	0.05%	0.92 75%	0.020	0.05%
<i>Signature</i> ²	0.87	0.037	0.10%	1.06	0.036	0.10%
Paid to merchants/acquirers	0.27 31%	0.012	0.03%	0.24 23%	0.008	0.02%
Paid to issuers	0.60 69%	0.025	0.07%	0.82 77%	0.028	0.07%
<i>PIN</i> ²	0.17	0.012	0.03%	0.18	0.010	0.02%
Paid to merchants/acquirers	0.07 41%	0.005	0.01%	0.08 43%	0.004	0.01%
Paid to issuers	0.10 59%	0.007	0.02%	0.10 57%	0.006	0.01%

¹ Payments and incentives are divided by the number or value of purchase transactions. In the 2009 data report, payments and incentives were divided by the number or value of purchase transactions plus returns.

² The distribution of prepaid card transactions between signature and PIN networks in 2009 is estimated based on 2011 proportions.

Payments and incentives paid by all networks to all recipients (merchants, acquirers, and issuers) increased from \$1.04 billion in 2009 to \$1.24 billion in 2011. However, the average payment/incentive per transaction declined 4 percent, from 2.76 cents to 2.66 cents. As a percentage of transaction value, payments and incentives decreased from 0.072 percent in 2009 to 0.068 percent in 2011. The decrease was larger for PIN networks than signature networks. PIN networks, which already spent less than one-third of the amount per transaction spent by signature networks on payments and incentives in 2009, decreased the average payment per transaction from around 1.2 cents in 2009 to 1.0 cent in 2011. Signature networks decreased the average payment per transaction from around 3.7 cents to 3.6 cents.

Networks direct the bulk of their payments and incentives to debit card issuers. Issuers received \$924 million in payments and incentives from networks in 2011, an average of 2.0 cents per transaction (an increase of 7 percent from 2009) and 0.05 percent of transaction value. In 2011, signature networks paid 77 percent of payments and incentives to issuers; PIN networks paid 57 percent to issuers. In per-transaction terms, signature networks increased payments and incentives to issuers from 2009 to 2011 while PIN networks decreased them.

The overall decrease in payments and incentives in per-transaction terms from 2009 to 2011 was driven by a decline in payments and incentives paid to merchants and acquirers as well as a decrease in payments and incentives paid to covered issuers after the interchange fee standard took effect. In 2009, networks paid 33 percent of payments and incentives to merchants and acquirers and 67 percent to issuers. In 2011, merchants' and acquirers' share dropped to 25 percent. In per-transaction terms, payments and incentives to merchants and acquirers declined from 0.91 cents per transaction in 2009 to 0.68 cents per transaction in 2011, a 25 percent decrease. The average decrease for merchants and acquirers was larger among signature networks than PIN networks.

Although networks reduced payments and incentives to covered issuers after October 1, 2011, covered issuers received a disproportionate share of payments and incentives (compared with exempt issuers) both before and after implementation of the interchange fee standard (see Table 7). Covered issuers, which accounted for 65 percent of transactions in 2011, received 83 percent of payments and incentives from January to September 2011 and 70 percent of payments and incentives from October to December 2011. The average payment per transaction to covered issuers declined from 2.8 cents in the January-September period to 1.5 cents in the

October-December period, a 46 percent decrease. Meanwhile, the average payment per transaction to exempt issuers rose from 1 cent to 1.2 cent after October 1, 2011.

Table 7: Payments and incentives paid to issuers by networks

	<i>January 1-September 30, 2011</i>			<i>October 1-December 31, 2011</i>		
	<i>Payments and incentives (\$ billions)</i>	<i>Payment per transaction (\$)¹</i>	<i>Payment as % of transaction value¹</i>	<i>Payments and incentives (\$ billions)</i>	<i>Payment per transaction (\$)¹</i>	<i>Payment as % of transaction value¹</i>
All issuers	0.75	0.022	0.06%	0.17	0.014	0.04%
Covered issuers	0.63 83%	0.028	0.07%	0.12 70%	0.015	0.04%
Exempt issuers	0.13 17%	0.010	0.03%	0.05 30%	0.012	0.03%
<i>Signature</i>	<i>0.67</i>	<i>0.030</i>	<i>0.08%</i>	<i>0.16</i>	<i>0.021</i>	<i>0.06%</i>
Covered issuers	0.56 84%	0.038	0.10%	0.11 71%	0.022	0.06%
Exempt issuers	0.11 16%	0.015	0.04%	0.05 29%	0.018	0.05%
<i>PIN</i>	<i>0.09</i>	<i>0.007</i>	<i>0.02%</i>	<i>0.01</i>	<i>0.003</i>	<i>0.01%</i>
Covered issuers	0.07 80%	0.009	0.02%	0.01 54%	0.003	0.01%
Exempt issuers	0.02 20%	0.004	0.01%	0.01 46%	0.004	0.01%

¹ Payments and incentives are divided by the number or value of purchase transactions. In the 2009 data report, payments and incentives were divided by the number or value of purchase transactions plus returns.

Both signature and PIN networks reduced payments and incentives to covered issuers in the October-December period but to varying degrees. Covered issuers saw the average payment per signature transaction decline 42 percent after October 1, 2011, and the average payment per PIN transaction declined nearly 70 percent. Signature networks generally increased payments and incentives for exempt issuers, while PIN networks kept payments and incentives for exempt issuers essentially unchanged. The average payment per signature transaction for exempt issuers rose 20 percent, from 1.5 cents in the January-September period to 1.8 cents in the October to December period. The average payment per PIN transaction for exempt issuers was 0.4 cents in both periods.

VI. Network Fees

Payment card networks collected \$4.6 billion in network fees from acquirers and issuers in 2011, which averaged 9.8 cents per transaction and 0.25 percent of transaction value (see Table 8). This represented an 11 percent decrease from the 2009 average of 11 cents per transaction. However, the burden of network fees shifted. In 2009, 44 percent of network fee revenue came from acquirers, while 56 percent came from issuers. In 2011, the shares reversed: Acquirers provided 55 percent of network fee revenue while issuers provided 45 percent.

Table 8: Network fees

	2009			2011		
	Network fee payments (\$ billions)	Fee per transaction (\$) ¹	Fee as % of transaction value ¹	Interchange fee revenue (\$ billions)	Fee per transaction (\$) ¹	Fee as % of transaction value ¹
All recipients	4.14	0.110	0.29%	4.56	0.098	0.25%
Paid by acquirers	1.84 44%	0.049	0.13%	2.50 55%	0.054	0.14%
Paid by issuers	2.31 56%	0.061	0.16%	2.07 45%	0.044	0.11%
<i>Signature</i> ²	3.25	0.139	0.38%	3.57	0.121	0.32%
Paid by acquirers	1.30 40%	0.056	0.15%	1.82 51%	0.061	0.16%
Paid by issuers	1.95 60%	0.083	0.23%	1.75 49%	0.059	0.16%
<i>PIN</i> ²	0.89	0.063	0.16%	1.00	0.058	0.14%
Paid by acquirers	0.53 60%	0.038	0.09%	0.68 68%	0.040	0.10%
Paid by issuers	0.36 40%	0.025	0.06%	0.32 32%	0.018	0.04%

¹ Network fees are divided by the number or value of purchase transactions. In the 2009 data report, network fees were divided by the number or value of purchase transactions plus returns.

² The distribution of prepaid card transactions between signature and PIN networks in 2009 is estimated based on 2011 proportions.

Covered issuers paid lower network fees than exempt issuers in 2011, and covered issuers' network fees generally decreased after October 1, 2011 (see Table 9). Covered issuers paid an average network fee of 3.5 cents per transaction from January to September. In the October-December period, the average network fee for covered issuers declined 9 percent, to 3.2

cents per transaction. The average network fee for exempt issuers in 2011 was almost double that for covered issuers, at 6.2 cents per transaction.²³ The average network fee for exempt issuers barely changed between the January to September 2011 and October to December 2011 periods.

Table 9: Network fees paid by issuers

	<i>January 1-September 30, 2011</i>			<i>October 1-December 31, 2011</i>		
	<i>Network fee payments (\$ billions)</i>	<i>Fee per transaction (\$)¹</i>	<i>Fee as % of transaction value¹</i>	<i>Interchange fee revenue (\$ billions)</i>	<i>Fee per transaction (\$)¹</i>	<i>Fee as % of transaction value¹</i>
All issuers	1.55	0.045	0.11%	0.52	0.043	0.11%
Covered issuers	0.79 51%	0.035	0.09%	0.25 48%	0.032	0.08%
Exempt issuers	0.76 49%	0.062	0.16%	0.27 52%	0.063	0.16%
<i>Signature</i>	<i>1.32</i>	<i>0.060</i>	<i>0.16%</i>	<i>0.43</i>	<i>0.057</i>	<i>0.15%</i>
Covered issuers	0.71 54%	0.048	0.13%	0.22 51%	0.043	0.11%
Exempt issuers	0.61 46%	0.084	0.23%	0.21 49%	0.084	0.24%
<i>PIN</i>	<i>0.23</i>	<i>0.018</i>	<i>0.04%</i>	<i>0.09</i>	<i>0.019</i>	<i>0.05%</i>
Covered issuers	0.08 35%	0.010	0.03%	0.03 32%	0.010	0.02%
Exempt issuers	0.15 65%	0.030	0.07%	0.06 68%	0.033	0.08%

¹ Network fees are divided by the number or value of purchase transactions. In the 2009 data report, network fees were divided by the number or value of purchase transactions plus returns.

The gap between network fees for covered and exempt issuers existed for both signature and PIN networks after October 1, 2011. The average signature network fee for covered issuers dropped 10 percent, from 4.8 cents per transaction in the January to September period to 4.3 cents in the October to December period. The average signature network fee for exempt issuers was almost twice that level at 8.4 cents, with no significant change after October 1. The average PIN network fee for covered issuers dropped slightly, from 1.04 cents per transaction before

²³ In general, covered issuers settle more transactions than exempt issuers and are likely to receive volume discounts to their network fees. Table 13 provides some evidence that network fees are subject to volume discounts.

October 1 to 1.0 cent after. The average PIN network fee for exempt issuers increased 10 percent, from 3.0 cents per transaction to 3.3 cents per transaction. Although both payments and incentives and network fees decreased for covered issuers, the decrease in payments and incentives exceeded the decrease in network fees.

VII. Covered Issuer Fraud Losses

Fraud losses per transaction declined slightly from 2009 to 2011. Using responses from covered issuers and networks, the Board estimates that industry wide fraud losses to all parties of debit card transactions totaled approximately \$1.38 billion in 2011.²⁴ About \$1.13 billion of these estimated losses arose from signature debit card transactions, \$204 million arose from PIN debit card transactions, and \$51 million arose from prepaid card transactions. The overall incidence of fraudulent debit card transactions among covered issuers fell from 0.04 percent of all purchase transactions in 2009 to 0.03 percent in 2011 (see Table 10). Card-not-present fraud was the most common type of debit card fraud (42 percent of fraudulent transactions), followed by counterfeit fraud.²⁵ The overall incidence of fraud and the distribution of fraud by type differed between signature, PIN, and prepaid transactions.

²⁴ Industry-wide fraud losses were extrapolated from data reported in the issuer and network surveys. Of the 131 issuers that responded to the issuer survey, 87 issuers provided data on total fraud losses related to their electronic debit card transactions by authorization method. These issuers reported \$827 million in total fraud losses to all parties to card transactions and represented 90 percent of the total transactions reported by covered issuers.

²⁵ From the 2009 debit card issuer survey, the most commonly reported and highest cost fraud types were counterfeit card fraud; lost and stolen card fraud; and card-not-present fraud. (i.e. mail, telephone and Internet order fraud). The 2011 survey asked debit card issuers to report, in addition to the overall incidence and losses to various parties for all fraudulent debit card transactions, the incidence and losses to various parties for each of these types of fraudulent debit card transactions.

Table 10: Fraudulent debit card activity reported by covered issuers

	2009	2011	
	<i>Fraud as % of purchase transactions¹</i>	<i>Fraud as % of purchase transactions¹</i>	<i>Average loss per fraudulent transaction (\$)²</i>
Fraudulent activity³	0.04%	0.030%	101
Card-not-present fraud		0.013%	42%
Counterfeit fraud		0.010%	33%
Lost and stolen fraud		0.005%	18%
Other fraud		0.002%	7%
<i>Signature</i>	<i>0.06%</i>	<i>0.043%</i>	<i>91</i>
Card-not-present fraud		0.020%	46%
Counterfeit fraud		0.014%	32%
Lost and stolen fraud		0.007%	16%
Other fraud		0.002%	5%
<i>PIN</i>	<i>0.01%</i>	<i>0.006%</i>	<i>187</i>
Card-not-present fraud		0.001%	10%
Counterfeit fraud		0.003%	48%
Lost and stolen fraud		0.002%	33%
Other fraud		0.001%	9%
<i>Prepaid</i>	<i>0.03%</i>	<i>0.037%</i>	<i>66</i>
Card-not-present fraud		0.013%	36%
Counterfeit fraud		0.008%	23%
Lost and stolen fraud		0.011%	30%
Other fraud		0.004%	11%

¹ Number of fraudulent transactions divided by the total number of purchase transactions.

² Total fraud losses to all parties (merchants, cardholders, and issuers) divided by the number of fraudulent transactions.

³ Only fraudulent activity reported by covered issuers is included.

Fraud incidence was higher among signature and prepaid transactions than among PIN transactions. The percentage of signature transactions that were fraudulent was more than seven times that of PIN transactions in 2011.²⁶ Fraud incidence declined for both signature and PIN transactions from 2009 to 2011: from 0.06 percent to 0.043 percent for signature transactions, and from 0.01 percent to 0.006 percent for PIN transactions. Fraud incidence among prepaid transactions, which can be processed by either signature or PIN networks, increased slightly, from 0.03 percent in 2009 to 0.037 percent in 2011. Fraud incidence for prepaid transactions in 2011 was higher than that for nonprepaid transactions.

²⁶ Fraudulent use of PIN debit cards may be via ATM cash withdrawals; respondents were instructed not to include the incidence of and losses from fraudulent ATM withdrawals for these statistics.

Covered issuers reported card-not-present fraud as the most common type of fraudulent signature transaction and counterfeit fraud as the most common type of fraudulent PIN transaction. Because more than 95 percent of card-not-present transactions are processed over signature networks, card-not-present fraud was a much more common fraud type among signature transactions (46 percent of fraudulent signature transactions) than among PIN transactions (10 percent of fraudulent PIN transactions). Counterfeit fraud constituted 48 percent of fraudulent PIN debit transactions and 32 percent of fraudulent signature transactions. Lost and stolen fraud was a more significant type of fraudulent transaction for PIN than for signature, representing 33 percent of fraudulent PIN transactions but only 16 percent of fraudulent signature transactions.

Covered issuers reported that 7 percent of fraudulent debit transactions did not fit in the three categories mentioned above. Respondents were asked to identify what types of fraud were included in this “other” category. The most common response was account takeover fraud. Other types of fraudulent transactions that were mentioned were those related to data breaches, fraudulent merchants, and “friendly” or “family” fraud, which usually involves associates of a cardholder inappropriately using the card.

The loss to all parties (issuer, merchant, and cardholder) per fraudulent transaction averaged \$101 in 2011.²⁷ The average loss per fraudulent transaction was much higher for PIN fraud (\$187) than for signature fraud (\$91), possibly reflecting the fact that fraudulent PIN

²⁷ The average loss to all parties per fraudulent transaction is the gross value of fraudulent transactions divided by the number of fraudulent transactions for a particular transaction type. The vast majority of all fraud losses are absorbed by issuers, merchants and cardholders. The data presented on merchant fraud losses assumes that acquirers pass on to merchants virtually all of the fraud losses that issuers charged back to acquirers. Data were not collected on fraud losses absorbed by networks, which are assumed to be negligible.

transactions may involve cash back. The average loss per fraudulent prepaid card transaction was \$66.

For all transaction types, the average loss per purchase transaction was about 3 cents, and represented about 8 basis points of transaction value in 2011, representing a slight decrease from what was reported in 2009, 4 cents and 9 basis points, respectively (see Table 11).²⁸ For signature debit, the average loss per purchase transaction was 4 cents in 2011, down from 5 cents in 2009, and represented about 11 basis points of transaction value in 2011, down from 13 basis points in 2009. For PIN debit, the average loss per transaction was 1 cent, or about 3 basis points of transaction value in 2011. This was essentially unchanged from 2009. For prepaid, the average loss per transaction was about 2 cents, and represented about 7 basis points of transaction value in 2011. Both were higher than their 2009 values of 1 cent and 4 basis points, respectively.

Across all types of transactions, in 2011, 60 percent of reported fraud losses were borne by issuers, 38 percent were borne by merchants, and 2 percent were borne by cardholders. This breakout was roughly in line with what was reported in 2009.²⁹ The distribution of fraud losses among issuers, merchants, and cardholders differed based on the authentication method used in a debit card transaction. Covered issuers reported that they bore nearly all the fraud losses (96 percent) associated with PIN debit card transactions, with merchants and cardholders absorbing only 2 percent each. In contrast, reported fraud losses were distributed more evenly between issuers and merchants for signature debit and prepaid card transactions. Specifically, issuers and

²⁸ Respondents were asked to report the gross value of fraudulent transactions and allocate those losses absorbed by issuers and cardholders, and fraud losses charged back to merchant acquirers. In the 2009 card issuer survey, respondents were only asked to break out fraud losses between acquirers and issuers.

²⁹ The 2009 report did not break out the shares of cardholders and represented only the relative fraction of losses for issuers and merchants. Thus, the 2011 and 2009 numbers are not directly comparable.

merchants bore 54 percent and 45 percent of signature debit fraud losses, respectively. Issuers and merchants bore 72 percent and 23 percent of prepaid fraud losses, respectively. Cardholders only absorbed 2 percent of signature fraud losses and 4 percent of prepaid card losses.

Table 11: 2011 fraud losses reported by covered issuers

	<i>All fraud¹</i>		<i>Card-not-present fraud²</i>			<i>Counterfeit fraud</i>			<i>Lost and stolen fraud</i>		
	<i>Loss per transaction (\$)³</i>	<i>Loss as share of transaction value (bp)⁴</i>	<i>Loss per transaction (\$)³</i>	<i>Loss as share of transaction value (bp)⁴</i>		<i>Loss per transaction (\$)³</i>	<i>Loss as share of transaction value (bp)⁴</i>		<i>Loss per transaction (\$)³</i>	<i>Loss as share of transaction value (bp)⁴</i>	
All fraud losses⁵	0.030	7.77	0.012	3.05		0.013	3.22		0.004	1.05	
Merchant losses	0.012	2.98 38%	0.008	2.08 68%		0.002	0.49 15%		0.001	0.28 26%	
Cardholder losses	<0.001	0.14 2%	<0.001	0.10 3%		<0.001	0.04 1%		<0.001	0.07 7%	
Issuer losses	0.018	4.65 60%	0.003	0.87 29%		0.011	2.69 83%		0.003	0.70 67%	
<i>Signature</i>	<i>0.041</i>	<i>10.62</i>	<i>0.018</i>	<i>4.66</i>		<i>0.015</i>	<i>3.80</i>		<i>0.005</i>	<i>1.28</i>	
Merchant losses	0.018	4.74 45%	0.013	3.28 70%		0.003	0.77 20%		0.002	0.44 35%	
Cardholder losses	<0.001	0.18 2%	<0.001	0.13 3%		<0.001	0.05 1%		<0.001	0.03 2%	
Issuer losses	0.022	5.70 54%	0.005	1.26 27%		0.011	2.98 78%		0.003	0.81 63%	
<i>PIN</i>	<i>0.012</i>	<i>2.87</i>	<i><0.001</i>	<i>0.14</i>		<i>0.007</i>	<i>1.59</i>		<i>0.002</i>	<i>0.54</i>	
Merchant losses	<0.001	0.06 2%	<0.001	0.02 18%		<0.001	0.01 1%		<0.001	0.02 3%	
Cardholder losses	<0.001	0.07 2%	<0.001	<0.01 5%		<0.001	<0.01 0%		<0.001	0.06 11%	
Issuer losses	0.011	2.74 96%	<0.001	0.10 77%		0.006	1.57 99%		0.002	0.46 85%	
<i>Prepaid</i>	<i>0.021</i>	<i>7.38</i>	<i>0.012</i>	<i>3.93</i>		<i>0.007</i>	<i>2.42</i>		<i>0.007</i>	<i>2.46</i>	
Merchant losses	0.005	1.73 23%	0.002	0.59 15%		0.003	0.87 36%		0.002	0.75 30%	
Cardholder losses	<0.001	0.32 4%	<0.001	0.34 9%		<0.001	0.05 2%		<0.001	0.16 7%	
Issuer losses	0.015	5.33 72%	0.009	3.01 76%		0.004	1.50 62%		0.005	1.55 63%	

¹ Card-not-present, counterfeit, and lost and stolen fraud losses do not necessarily sum to all fraud losses. Some fraud losses could not be categorized by issuers into the categories above but are still included under all fraud losses.

² Card-not-present fraud losses may also be reported in another second category.

³ Fraud losses divided by the number of purchase transactions (both fraudulent and non-fraudulent).

⁴ Fraud losses divided by the value of purchase transactions (both fraudulent and non-fraudulent).

⁵ Only fraud losses reported by covered issuers are included.

In general, merchants bore more fraud losses in card-not-present transactions than in card-present transactions. According to the debit card issuer survey data, merchants absorbed approximately 70 percent of signature debit card fraud losses for card-not-present transactions, compared with 20 percent of signature counterfeit fraud losses and 35 percent of signature lost and stolen fraud losses. Merchants only absorbed about 18 percent of PIN card-not-present fraud

losses. There are, however, very few card-not-present PIN transactions reported. On the other hand, issuers absorbed most of the losses associated with card-present transactions. Regardless of the authentication method used, issuers absorbed approximately 83 percent of counterfeit fraud losses and 67 percent of lost and stolen fraud losses.

The transaction-weighted average issuer fraud loss in 2011 was 4.65 basis points, and the median issuer's average fraud loss was 4.66 basis points (see Table 14). Issuer fraud losses were greater, on average, for signature transactions than for PIN transactions, averaging 5.7 basis points and 2.74 basis points, respectively. Average prepaid losses were 5.33 basis points per transaction.

VIII. Covered Issuer Costs of Authorization, Clearing, and Settlement (Excluding Fraud Losses)

Authorization, clearing, and settlement (ACS) costs vary widely across covered issuers (those with consolidated assets of \$10 billion or more as of year-end 2011).³⁰ In particular, covered issuers with the highest debit card transaction volume tend to have much lower costs per transaction than covered issuers with smaller debit card transaction volume. ACS costs were generally lower for PIN transactions than for signature and prepaid transactions in 2011.

Meanwhile, the distribution of ACS costs between in-house costs, third-party processing fees, and network fees differed between signature, PIN, and prepaid transactions.³¹

³⁰ The costs of authorization, clearing, and settlement include transactions-monitoring costs, in-house costs, third-party processing fees, and network processing fees. Issuers were instructed not to include costs related to corporate overhead, account relationships, rewards programs, non-sufficient funds handling, non-sufficient funds losses, cardholder inquiries, card production and delivery, fraud-prevention costs that are not incurred as part of authorization, fraud losses, costs associated with funds loads (or deposits) or account set-up and maintenance. Issuers were instructed to include costs for purchase transactions, chargebacks, and other non-routine transactions.

³¹ In-house costs are ACS costs that are not outsourced to third parties and include costs incurred by the card issuer or its affiliated processor (i.e., a processor in the same holding company). Third-party processing fees are fees paid

To examine covered issuers' ACS costs, the Board separated respondents into three tiers based on transaction volume (see Table 12). Of the 131 issuers that responded to the Board survey, 31 processed more than 100 million debit card transactions in 2011 (high-volume issuers). High-volume issuers accounted for about 94 percent of transaction volume and value reported by covered issuers; they include the largest deposit-taking institutions in the country. In contrast, 37 of the 131 respondents processed fewer than 1 million debit card transactions in 2011 (low-volume issuers). Low-volume issuers accounted for less than 1 percent of transaction volume and value reported by covered issuers. Many low-volume issuers are branch operations of foreign banking organizations. Although affiliated with large institutions, such branches do not have large U.S. retail banking operations or debit card programs. The remaining 63 respondents each processed between 1 million and 100 million transactions in 2011 (mid-volume issuers) and represented about 6 percent of the transaction volume and value reported by covered issuers.

to external service providers for services related to the ACS of debit card transactions that are performed by those service providers on behalf of the debit card issuer. Service providers may include payment card networks or affiliates of payment card networks to the extent that such parties provide optional services related to transaction processing. They do not include other fees charged by a payment card network or an affiliated processor for services that are required for the network processing of transactions. Network processing fees are total fees charged by payment card networks for services that are required for the network processing of transactions and do not include any fees for optional services related to transaction processing that may be provided by a payment card network or an affiliate of a payment card network, or any network fees that are not directly linked to the processing of transactions, such as membership or license fees.

Table 12: Covered issuers by 2011 volume

	<i>Number of covered issuers</i>		<i>% of transactions¹</i>	<i>% of transaction value¹</i>	<i>Average transaction value (\$)²</i>
All covered issuers	131				39.21
High-volume issuers (more than 100 million transactions)	31	24%	94.04%	93.60%	39.03
Mid-volume issuers (1-100 million transactions)	63	48%	5.94%	6.37%	42.04
Low-volume issuers (less than 1 million transactions)	37	28%	0.02%	0.03%	73.85

¹ The percentage of the total number or value of covered issuer transactions. Covered issuers represent about 65 percent of all debit card transactions.

² Average transaction values in this table are calculated from the debit card issuer survey. Average transaction values reported in Tables 1-3 are calculated from the payment card network survey. The 2011 average transaction value for all covered issuers calculated from the payment card network survey data is \$39.20.

Although most high-volume and mid-volume issuers also responded to the 2009 survey, many low-volume issuers were new respondents to the debit card issuer survey. The number of respondents increased because, unlike the 2009 survey, the 2011 survey was mandatory for all covered debit card issuers. Because of this change in the composition of responses, 2009 and 2011 statistics weighted by issuer are not comparable. Because most new respondents were low-volume issuers, transaction-weighted statistics are still fairly comparable between 2009 and 2011.³²

Covered issuers' ACS costs averaged 5 cents per transaction in 2011 (see Table 13). As in 2009, the average ACS cost for a PIN transaction was lower than that for a signature transaction, but the gap has narrowed. In 2009, the average ACS cost was 8.4 cents per signature transaction and 5 cents per PIN transaction, a difference of 3.4 cents. In 2011, the average ACS cost was reported as 5.5 cents per signature transaction and 3.1 cents per PIN transaction, a difference of only 2.4 cents. The 2011 average ACS cost for prepaid transactions was higher than nonprepaid transactions although lower than what was reported in 2009. The average ACS cost for prepaid transactions was 22 cents in 2009 and 12.2 cents in 2011.

³² In addition to the change in composition of responses, the types of costs categorized as ACS costs also differed between the 2009 and 2011 surveys to better match the categorization of costs used to determine the interchange fee standard.

Average ACS costs varied greatly across respondents, with the median issuer having an average ACS cost of 11 cents but the issuer at the 75th percentile having an average ACS cost over 36 cents (see the ACS costs (excluding fraud losses) rows in table 14 at the end of the document). High-volume issuers had the lowest average ACS costs, averaging 4.7 cents per transaction, with the median high-volume issuer averaging 7.1 cents and the high-volume issuer at the 75th percentile averaging 9.1 cents. By comparison, mid-volume issuers had average ACS costs of 11.9 cents per transaction, the median mid-volume issuer had average ACS costs of 12.4 cents, and the mid-volume issuer at the 75th percentile had average ACS costs of 18.3 cents; low-volume issuers averaged 74.6 cents per transaction, the median low-volume issuer had average ACS costs of 98 cents, and the low-volume issuer at the 75th percentile had average ACS costs of \$3.75. This relative ordering holds true for both signature and PIN transactions. High-volume issuers averaged 5.1 cents and 2.9 cents for signature and PIN transactions, respectively, mid-volume issuers averaged 12.7 cents and 7.3 cents for signature and PIN transactions, respectively, and low-volume issuers averaged \$1.05 and 78.1 cents for signature and PIN transactions, respectively. Prepaid transactions have the highest average ACS costs for high- and medium-volume issuers, averaging 11.7 cents for high-volume issuers and 70 cents for medium-volume issuers.³³

³³ There were insufficient data to report average ACS costs for prepaid transactions for low-volume issuers.

Table 13: Average authorization, clearing, and settlement (ACS) costs per transaction (\$)

	2009		2011							
	<i>All covered issuers</i>		<i>All covered issuers</i>		<i>High-volume issuers</i>		<i>Mid-volume issuers</i>		<i>Low-volume issuers</i>	
ACS costs	0.076		0.050		0.047		0.119		0.746	
In-house costs	0.030	39%	0.017	35%	0.017	37%	0.017	15%	0.242	32%
Third-party processing fees	0.023	29%	0.017	33%	0.015	31%	0.052	44%	0.338	45%
Network fees	0.025	33%	0.016	33%	0.015	31%	0.049	41%	0.166	22%
<i>Signature</i>	<i>0.084</i>		<i>0.055</i>		<i>0.051</i>		<i>0.127</i>		<i>1.046</i>	
In-house costs	0.031	37%	0.018	34%	0.018	36%	0.020	16%	0.468	45%
Third-party processing fees	0.025	30%	0.017	32%	0.016	31%	0.045	35%	0.496	47%
Network fees	0.030	36%	0.019	34%	0.017	33%	0.062	49%	0.083	8%
<i>PIN</i>	<i>0.050</i>		<i>0.031</i>		<i>0.029</i>		<i>0.073</i>		<i>0.781</i>	
In-house costs	0.024	48%	0.015	48%	0.015	51%	0.009	12%	0.374	48%
Third-party processing fees	0.012	24%	0.008	25%	0.007	24%	0.025	34%	0.247	32%
Network fees	0.016	32%	0.008	27%	0.007	25%	0.039	54%	0.160	21%
<i>Prepaid¹</i>	<i>0.22</i>		<i>0.122</i>		<i>0.117</i>		<i>0.700</i>			
In-house costs	0.04	18%	0.018	14%	0.017	15%	0.069	10%		
Third-party processing fees	0.132	58%	0.068	56%	0.064	54%	0.557	80%		
Network fees	0.056	25%	0.037	30%	0.036	31%	0.073	10%		

¹ Prepaid figures for low-volume issuers are not reported because of the small number of respondents in this category.

As noted above, the 2011 survey had many first-time respondents, most of which had small debit card programs and high ACS costs per transaction. These issuers were typically branches of foreign banking organizations or large financial institutions that have small debit card programs. As a result, these issuers tended to skew average ACS costs across covered issuers upward. Issuers who responded to both the 2009 and 2011 data collections typically reported that ACS costs per transaction were lower in 2011 than in 2009. Covered issuers' ACS costs for all transactions split almost evenly between in-house costs, third-party processing fees, and network fees. In-house costs comprised a greater percentage of ACS costs for PIN transactions (48 percent) than for signature transactions (34 percent). Conversely, network fees made up a greater percentage of ACS costs for signature transactions (34 percent) than for PIN transactions (27 percent). Mid-volume issuers had a greater share of ACS costs come from third-

party processing fees and network fees than high-volume issuers. Only 15 percent of mid-volume issuers' ACS costs were from in-house costs, compared with 37 percent for high-volume issuers and 32 percent for low-volume issuers. Low-volume issuers had a lower share of ACS costs come from network fees than high- and mid-volume issuers. Network fees represented only 22 percent of low-volume issuers' average ACS costs, compared with 31 percent and 41 percent of high-volume issuers and mid-volume issuer ACS costs, respectively. For prepaid transactions, third-party processing fees were a major component of ACS costs, 56 percent overall and almost 80 percent for mid-volume issuers.

IX. Other Covered Issuer Costs

In addition to authorization, clearing, and settlement costs discussed above, debit card issuers also incur costs for fraud prevention and data security, non-fraud-related cardholder inquiries, cardholder rewards, and nonsufficient funds handling (see Table 14).³⁴ Fraud-prevention and data security costs reported in this section include fraud-related cardholder inquiries but do not include transactions monitoring costs tied to authorization. (Transaction monitoring costs are already included in ACS costs.)³⁵

³⁴ Costs associated with cardholder inquiries include costs associated with cardholder communication with a debit card issuer related to specific debit card transactions, such as inquiries about transactions details, errors, and potential fraudulent activity. These do not include inquiries that are not related to specific debit card transactions, such as account balances, rewards programs, credit card transactions, and ATM transactions. Rewards and other incentives costs are incentive payments given to cardholders as a result of particular debit card transactions. Costs associated with nonsufficient funds handling are the costs of handling of events in which an account does not have enough funds to settle an authorized debit card transaction between the time of authorization of that transaction and the settlement of that transaction.

³⁵ Fraud-prevention and data security costs are costs related to activities aimed at identifying and preventing debit card fraud, costs related to the monitoring of the incidence of, reimbursements received for, and losses incurred from debit card fraud, costs related to responding to suspected and realized debit card fraud in order to prevent or limit losses, costs incurred in securing the data processing and communications infrastructure of debit card operations, and costs incurred in the development or improvement of fraud-prevention technologies.

Table 14: Covered issuer costs per transaction (\$) and fraud losses as share of transaction value (bp)

	<i>All covered issuers</i>					<i>High-volume issuers</i>					<i>Mid-volume issuers</i>					<i>Low-volume issuers</i>				
	<i>Transaction-weighted average</i>	<i>Issuer-weighted average</i>	<i>Issuer percentiles</i>			<i>Transaction-weighted average</i>	<i>Issuer-weighted average</i>	<i>Issuer percentiles</i>			<i>Transaction-weighted average</i>	<i>Issuer-weighted average</i>	<i>Issuer percentiles</i>			<i>Transaction-weighted average</i>	<i>Issuer-weighted average</i>	<i>Issuer percentiles</i>		
			<i>25th</i>	<i>50th</i>	<i>75th</i>			<i>25th</i>	<i>50th</i>	<i>75th</i>			<i>25th</i>	<i>50th</i>	<i>75th</i>			<i>25th</i>	<i>50th</i>	<i>75th</i>
Covered issuer costs (\$)																				
ACS costs (excluding fraud losses) ¹	0.050	7.511	0.074	0.110	0.361	0.047	0.068	0.044	0.071	0.091	0.119	0.162	0.081	0.124	0.183	0.746	28.310	0.520	0.979	3.746
Fraud-prevention costs ²	0.019	0.265	0.006	0.015	0.037	0.019	0.018	0.007	0.012	0.021	0.013	0.020	0.006	0.010	0.021	0.055	0.900	0.016	0.076	0.483
Cardholder inquiry costs ³	0.044	0.031	<0.001	0.011	0.035	0.045	0.027	0.009	0.018	0.050	0.020	0.029	0.002	0.014	0.034	0.012	0.039	-	-	0.010
Reward program costs	0.030	0.019	-	-	0.007	0.030	0.020	<0.001	0.007	0.027	0.026	0.030	-	-	0.011	-	-	-	-	-
NSF handling costs ⁴	0.007	0.003	-	<0.001	0.003	0.007	0.007	0.001	0.005	0.012	0.004	0.002	-	<0.001	0.003	<0.001	<0.001	-	-	-
<i>Signature</i>																				
ACS costs (excluding fraud losses) ¹	0.055	6.283	0.082	0.120	0.230	0.051	0.080	0.054	0.087	0.100	0.127	0.157	0.092	0.139	0.183	1.046	34.370	0.713	1.177	5.789
Fraud-prevention costs ²	0.021	0.067	0.006	0.014	0.031	0.021	0.022	0.010	0.015	0.023	0.015	0.021	0.006	0.012	0.030	0.061	0.244	0.002	0.050	0.434
Cardholder inquiry costs ³	0.045	0.032	<0.001	0.014	0.038	0.046	0.030	0.013	0.024	0.050	0.020	0.019	0.002	0.014	0.023	0.019	0.058	-	-	0.010
Reward program costs	0.042	0.025	-	-	0.009	0.042	0.026	<0.001	0.009	0.029	0.044	0.038	-	-	0.006	-	-	-	-	-
NSF handling costs ⁴	0.008	0.003	-	<0.001	0.004	0.008	0.008	0.003	0.006	0.013	0.005	0.002	-	<0.001	0.002	<0.001	<0.001	-	-	-
<i>PIN</i>																				
ACS costs (excluding fraud losses) ¹	0.031	1.820	0.038	0.072	0.183	0.029	0.050	0.032	0.045	0.064	0.073	0.129	0.050	0.083	0.141	0.781	9.464	0.374	1.050	3.756
Fraud-prevention costs ²	0.018	0.301	0.004	0.014	0.035	0.019	0.018	0.004	0.014	0.020	0.013	0.017	0.004	0.010	0.026	0.150	1.393	0.020	0.246	0.567
Cardholder inquiry costs ³	0.046	0.034	<0.001	0.014	0.038	0.047	0.028	0.009	0.018	0.048	0.024	0.019	0.002	0.015	0.026	0.034	0.069	-	-	0.005
Reward program costs	0.006	0.004	-	-	-	0.006	0.006	-	-	<0.001	0.002	0.004	-	-	-	-	-	-	-	-
NSF handling costs ⁴	0.006	0.003	-	-	0.003	0.006	0.007	<0.001	0.003	0.012	0.002	0.002	-	<0.001	0.002	<0.001	<0.001	-	-	-
<i>Prepaid⁵</i>																				
ACS costs (excluding fraud losses) ¹	0.122	0.436	0.084	0.186	0.498	0.117	0.233	0.068	0.174	0.350	0.700	0.827	0.089	0.749	0.951					
Fraud-prevention costs ²	0.021	0.033	0.001	0.008	0.025	0.021	0.022	0.002	0.009	0.025	0.013	0.065	<0.001	0.007	0.022					
Cardholder inquiry costs ³	0.051	0.101	<0.001	0.027	0.147	0.050	0.078	<0.001	0.025	0.099	0.192	0.161	0.009	0.097	0.164					
Reward program costs	<0.001	<0.001	-	-	-	<0.001	<0.001	-	-	-	-	-	-	-	-					
NSF handling costs ⁴	<0.001	0.003	-	-	-	<0.001	0.003	-	-	-	0.010	0.004	-	-	-					
Covered issuer fraud losses (bp)⁶	4.65	7.18	2.76	4.66	9.43	4.59	5.44	3.20	4.42	5.41	5.95	7.31	3.33	5.27	8.74	10.33	8.63	<0.01	2.63	13.14
<i>Signature</i>	5.70	8.76	3.48	5.63	10.76	5.61	7.04	3.89	5.65	8.44	8.17	9.39	4.00	7.38	12.56	10.83	9.88	<0.01	<0.01	13.96
<i>PIN</i>	2.74	3.40	<0.01	1.13	3.18	2.77	2.72	0.75	1.74	3.44	1.96	3.65	0.30	1.48	3.63	6.46	3.82	<0.01	<0.01	<0.01
<i>Prepaid⁵</i>	5.33	4.97	0.93	2.69	3.70	5.34	5.53	1.14	3.08	3.70	3.90	3.72	<0.01	2.16	3.81					

¹ Authorization, clearing, and settlement costs include transaction monitoring costs. The transaction-weighted average for ACS costs excludes covered issuers that could not allocate between in-house, third-party, and network costs. The issuer-weighted average and issuer percentiles include all responses.

² Fraud-prevention costs include fraud-related cardholder inquiry costs and exclude transaction monitoring costs, which are counted as part of ACS costs.

³ Cardholder inquiry costs exclude fraud-related cardholder inquiry costs, which are counted as part of fraud-prevention costs.

⁴ Nonsufficient funds (NSF) handling costs.

⁵ Prepaid figures for low-volume issuers are not reported because of the small number of respondents in this category.

⁶ Covered issuer fraud losses for all transactions include covered issuers that could not allocate fraud losses between signature, PIN, and prepaid transactions.

Fraud-prevention and data security costs averaged 1.9 cents per transaction, with the median issuer's average fraud-prevention and data security cost at 1.5 cents. The transaction-weighted average was highest for low-volume issuers at 5.5 cents per transaction, compared with 1.9 cents for high-volume issuers and 1.3 cents for mid-volume issuers. Fraud-prevention and data security costs did not vary greatly by whether the transaction was signature, PIN, or prepaid.

Issuers reported a variety of fraud-prevention activities. For example, many cards have an additional security code, such as a cardholder verification value or code, that is required to be entered separately at the point of sale from the PIN and the card number. Other fraud-prevention activities include cardholder education and alert systems to help cardholders be more vigilant at preventing fraud. Many issuers also noted that they require cardholders to activate their cards after receiving them to help prevent the use of cards that were stolen from the mail. Finally, many issuers indicated that they monitor various trends in fraudulent activity and work with others in the industry to combat new types of fraud.

Costs for non-fraud-related cardholder inquiries averaged 4.4 cents per transaction for all covered issuers. Cardholder inquiry costs reported in this section only include non-fraud-related cardholder inquiries that pertain to particular debit card transactions. As noted above, fraud-related cardholder inquiries are included in the fraud-prevention and data security costs. Cardholder inquiry costs were highest for high-volume issuers, averaging 4.5 cents per transaction, and lowest for low-volume issuers at 1.2 cents per transaction. By comparison, mid-volume issuers' cardholder inquiry costs averaged 2 cents per transaction. Cardholder inquiry costs did not vary greatly by the type of authentication method used, but were slightly higher for prepaid transactions (5.1 cents).

Cardholder reward costs averaged 3 cents per transaction for all issuers. Reward costs were significantly higher for signature than PIN, averaging 4.2 cents and 0.6 cents, respectively. There were virtually no cardholder reward costs for prepaid transactions. Low-volume issuers typically did not report any cardholder reward costs; there was no noticeable difference between the average costs for mid- and high-volume issuers.

Nonsufficient funds handling costs averaged 0.7 cents per transaction for all issuers. Costs for signature debit programs (0.8 cent) were slightly higher than those for PIN debit programs (0.6 cent) for this category, but were not significant for prepaid transactions or low-volume issuers.

X. Comparison of Covered Issuer ACS Costs with the Interchange Fee Standard

According to covered issuers' 2011 survey responses, 67 percent of issuers had average ACS costs below 21 cents, the base component of the interchange fee standard (see Table 15). These issuers comprised 99.7 percent of all reported covered transactions. All high-volume issuers reported average ACS costs below 21 cents, while 81 percent of mid-volume issuers and 12 percent of low-volume issuers reported average ACS costs below the 21 cents.

Table 15: Covered issuers with costs/losses below the interchange fee standard levels

	2011	
	% of covered issuers ¹	% of transactions represented ²
All covered issuers		
Base component ³	67%	99.7%
Ad-valorem component ⁴	54%	82.5%
Fraud-prevention adjustment ⁵	41%	24.5%
<i>High-volume issuers</i>		
Base component ³	100%	100.0%
Ad-valorem component ⁴	65%	83.3%
Fraud-prevention adjustment ⁵	45%	22.5%
<i>Mid-volume issuers</i>		
Base component ³	81%	94.8%
Ad-valorem component ⁴	47%	69.5%
Fraud-prevention adjustment ⁵	52%	59.8%
<i>Low-volume issuers</i>		
Base component ³	12%	26.3%
Ad-valorem component ⁴	55%	15.0%
Fraud-prevention adjustment ⁵	20%	36.1%

¹ Percentage of covered issuers with average ACS costs, fraud losses, or fraud-prevention costs below interchange fee standard base component, ad valorem component, and fraud-prevention adjustment, respectively. All covered issuers are included, but some of these issuers may not have been eligible for the fraud-prevention adjustment.

² Percentage of purchase transactions represented by covered issuers with average costs/losses below the interchange fee standard level. All covered issuer transactions are included although certain prepaid transactions were exempt from the interchange fee standard.

³ Average ACS cost per transaction of 21 cents or less.

⁴ Average fraud loss as share of transaction value of 5 basis points or less.

⁵ Average fraud-prevention cost per transaction of 1 cent or less.

The ad valorem component of the interchange fee standard is 5 basis points. In 2011, 54 percent of covered issuers reported average issuer fraud loss below 5 basis points. These issuers comprised 82.5 percent of reported transactions by covered issuers. Sixty-five percent of high-volume issuers, 47 percent of mid-volume issuers, and 55 percent of low-volume issuers reported average issuer fraud loss per transaction below 1 cent.

The fraud-prevention adjustment to the interchange fee standard is 1 cent. For 2011, 41 percent of covered issuers reported average issuer fraud-prevention costs below 1 cent. These issuers comprised 24.5 percent of reported transactions by covered issuers. The 1 cent fraud-

prevention adjustment was greater than the average fraud-prevention costs of 45 percent of high-volume issuers, 52 percent of mid-volume issuers, and 20 percent of low-volume issuers.