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## Overview of Study

The *2010 Federal Reserve Payments Study* is the fourth in a series of triennial studies conducted by the Federal Reserve System to comprehensively estimate and study aggregate trends in noncash payments in the United States. This study estimates the total number and value of payments in 2009 made by check, debit card, credit card, automated clearinghouse (ACH), or prepaid card from accounts domiciled in the United States. The study also estimates the number and value of ATM withdrawals, selected emerging payment instruments, and the proportion of electronic and paper-based methods being used by depository institutions for check processing and in providing account statements to customers.

As in previous studies, the 2010 study included two data collection efforts to estimate the annual number and value of the most frequently used types of noncash payments. Estimates of check payments and ATM withdrawals were based on findings from the *2010 Depository Institutions Payments Study* (2010 DI Study). Electronic payments estimates were based on findings from the *2010 Electronic Payments Study* (2010 EPS) and supplemented by the 2010 DI Study.

A third effort, the *2010 Check Sample Study* (2010 CSS), was the basis for estimating the distribution of checks by counterparty and purpose.

The research methods used in 2010 are similar to those used in 2007, 2004 and 2001. Some 2006 estimates have been revised to reflect new information and to ensure consistency with the 2009 estimates.

McKinsey & Company assisted the Federal Reserve in this effort.

# 1 Description of Component Studies

## 1.1 DEPOSITORY INSTITUTIONS PAYMENTS STUDY

The *2010 Depository Institutions Payments Study* estimated the number and value of various types of transactions from United States deposit accounts in 2009. McKinsey & Company worked with Lieberman Research Group as a subcontractor for this effort.

Estimates were based on survey data gathered from a stratified random sample of about 2,700 depository institutions. Larger institutions were sampled at higher rates, and the largest depository institutions were sampled with certainty in an effort to count as large an amount of transactions as possible and to minimize the amount that had to be estimated, which is reflected in low estimation errors and narrow confidence intervals for many of the key figures in this report. The sample and relevant population included commercial banks, savings institutions, and credit unions. A total of 1,311 depository institutions provided data for the survey, including all of the 50 largest US depository institutions.

The survey reference period was March and April, 2010. Unless otherwise noted, data from the *2010 Depository Institutions Payments Study* were, where appropriate, adjusted and reported as annual figures for 2009, allowing for comparison to 2009 estimates from the *2010 Electronic Payments Study*.

## 1.2 ELECTRONIC PAYMENTS STUDY

The *2010 Electronic Payments Study* estimated the number and value of electronic payments in the United States in 2009. Estimates were based on survey data collected from a census-style list of payment organizations that processed, cleared, or settled electronic payments in the United States in 2009. This included payment networks, processors, and card issuers. Of the 116 organizations asked to participate, 94 of the largest organizations (by transaction volume) provided data. Respondents to this voluntary

study collectively accounted for an estimated 95.5 percent of the electronic transactions and 99.6 percent of the electronic payments value in the United States.

### **1.3 CHECK SAMPLE STUDY**

The *2010 Check Sample Study* estimated the 2009 distribution of checks by counterparty and purpose. Estimates are based on data gathered from random sample of checks processed by 11 banks that use the Viewpointe archive.

## 2 Executive Summary

The estimated number of noncash payments totaled 109.0 billion in 2009, with a value of \$72.2 trillion. The number of noncash payments in the United States has increased at a compounded annual rate of 4.6 percent since 2006, the year examined in the *2007 Federal Reserve Payments Study* (Exhibit 1).

### Exhibit 1: Number of Noncash Payments

	2006	2009	CAGR*
<b>Total (billions)</b>	<b>95.2</b>	<b>109.0</b>	<b>4.6%</b>
Checks (paid)	30.5	24.5	-7.1%
ACH	14.6	19.1	9.4%
Credit card	21.7	21.6	-0.2%
Debit card	25.0	37.9	14.8%
Prepaid card	3.3	6.0	21.5%

Figures may not add due to rounding.

\*CAGR is compound annual growth rate.

Electronic payments (those made with cards and by ACH) now collectively exceed three-quarters of all noncash payments while payments by check are now less than one-quarter. Electronic payments totaled 84.5 billion in 2009 for a value of \$40.6 trillion. The number of electronic payments increased at average annual rate of 9.3 percent between 2006 and 2009.

The increase in electronic payments and the decline of checks can be attributed to technological and financial innovations that influenced the payment instrument choices of consumers and businesses. Many other factors, including the business cycle, changes in the composition of economic activity, regulatory developments, and population growth may also have influenced these trends.

The check collection process has become substantially more electronic since the last survey. Depository institution accountholders' use of check image deposit services ("remote deposit capture") and replacement of paper exchange with image exchange between depository institutions has expanded. Approximately 13 percent of checks were deposited as images at the bank of first deposit, and 97 percent of "interbank" checks – those deposited at one depository institution but drawn on another – involved electronic clearing.<sup>1</sup> The latter compares to an estimate of 43 percent in the 2007 study.

ACH transactions grew at 9.4 percent per year from 2006 to 2009, resulting in 19.1 billion entries at the end of the period. Interim data demonstrate that ACH growth decelerated between studies: the number of ACH entries grew more rapidly early in the three-year period than at the end.

Since 2006, the debit card has eclipsed the check as the most used noncash instrument. This was not only because the number of debit card transactions increased at 14.8 percent per year from 2006 to 2009 but also because the number of checks paid declined 7.1 percent per year. The number of checks written also continued to decline, albeit at a somewhat slower pace (5.7 percent) than checks paid. The rates of decline in checks written and check paid during this period were both greater than during the previous three-year period (2003-2006).

Though starting from a smaller base, payments made with prepaid cards (which include private label, general purpose, and EBT cards) increased at the fastest rate (21.5 percent per year), reaching a total of 6 billion transactions in 2009. Aggregate credit card payments, on the other hand, exhibited the first observed decline (-0.2 percent per year) of any instrument besides the check since the *Federal Reserve Payments Study* began in 2000.

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<sup>1</sup> The number of interbank checks used for this estimate includes commercial checks only, excluding U.S. Treasury checks and Postal Money Orders.

## 3 Study Findings

### 3.1 CHECK

#### 3.1.1 Overall Findings

The total number of checks written in the United States was 27.8 billion in 2009. The value of these checks was \$32.4 trillion and they had an average value of \$1,165. From 2006 to 2009 the number of checks written fell 5.7 percent per year, while the value of these checks declined at 8.6 percent per year. Of checks written, 24.5 billion were cleared and paid as checks; the rest were converted to electronic items. In addition, most checks that involved two or more financial institutions to clear (“interbank checks”) were received as electronic images by the paying bank. The value of paid checks was \$31.6 trillion, and they had an average value of \$1,292. The number of paid checks in the United States declined 7.1 percent per year from 2006 to 2009, while the value of these checks fell at 8.8 percent per year. In 2009, 6.4 billion paid checks were on-us checks, i.e., checks drawn on the same institution at which they were deposited, accounting for 26 percent of total paid checks. The number of on-us checks increased 1.2 percent per year from 2006 to 2009, in part reflecting industry consolidation. Please note that while the 2007 and 2010 DI Studies that are referenced in subsequent findings are so named because of the years during which they were conducted, these studies estimated the number and value of industry transactions for the 2006 and 2009 calendar years.

#### 3.1.2 DI Study Findings

##### 3.1.2.1 Checks Written

The 2010 DI Study estimated that 27.8 billion checks were written in the United States in 2009. The value of these checks totaled \$32.4 trillion. These estimates include checks

that were converted to substitute checks or cleared as images (“checks paid”) as well as checks written and subsequently converted to ACH for clearing (“ACH conversions”).<sup>2</sup>

Exhibit 1 and Exhibit 2 below illustrate the estimated number and dollar value of checks written in the United States and the margin of error for each estimate. The exhibits below show aggregate national estimates and estimates by depository institution (DI) type. They also include checks paid on behalf of the U.S. Treasury and the U.S. Postal Service. The Federal Reserve Banks—as paying bank on these types of checks—provided actual counts of the number of U.S. Treasury checks and postal money orders.

These estimates were revised after the release of the summary report in December 2010. An adjustment was made to include on-us checks converted to ACH.

#### Exhibit 1: Number of Checks Written

	<u>Total Checks (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>27.8</b>	<b>(+/-)</b>	<b>0.5</b>
Commercial Banks	20.7	(+/-)	0.5
Credit Unions	2.1	(+/-)	0.1
Savings Institutions	1.3	(+/-)	0.2
<i>ACH Conversion</i>	3.3		
U.S. Treasury Checks	0.2		
Postal Money Orders	0.1		

Figures may not add due to rounding.

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<sup>2</sup> The number of checks paid differs from the number of checks written. By agreement between the payer and the payee, consumer checks can be converted into electronic payments by merchants at the point of sale or in the back office and by billers that receive check remittances. These ACH entries are identified by their three-letter “standard entry class code”: “POP” entries are created by the conversion of checks presented at the point of sale; “BOC” entries are created by checks presented at the point of sale and converted in the back office; “ARC” entries are created by the conversion of remittance checks.

**Exhibit 2: Value of Checks Written**

	<u>Total Checks (trillion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$32.4</b>	<b>(+/-)</b>	<b>\$0.9</b>
Commercial Banks	\$29.2	(+/-)	\$0.8
Credit Unions	\$0.7	(+/-)	\$0.0
Savings Institutions	\$1.3	(+/-)	\$0.3
<i>ACH Conversion</i>	\$0.8		
U.S. Treasury Checks	\$0.3		
Postal Money Orders	\$0.0		

Figures may not add due to rounding.

The average value per check written in 2009 was \$1,165 (Exhibit 3).

**Exhibit 3: Average Value of Checks Written**

	<u>Total Checks Avg. Value</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$1,165</b>	<b>(+/-)</b>	<b>\$35</b>
Commercial Banks	\$1,414	(+/-)	\$42
Credit Unions	\$352	(+/-)	\$10
Savings Institutions	\$973	(+/-)	\$150
<i>ACH Conversion</i>	\$227		
U.S. Treasury Checks	\$1,545		
Postal Money Orders	\$183		

**3.1.2.1.1 Change in Checks Written**

The number of checks written declined 5.7 percent per year between 2006 and 2009 according to the 2007 and 2010 DI Studies. The value of these checks fell more rapidly at 8.6 percent annually. Overall, the average value per check written declined 3.0 percent per year between 2006 and 2009.

**Exhibit 4: Number, Value and Average Value of Checks Written**

	2006	2009	CAGR
Checks Written (billion)	33.1 (+/-) 0.6	27.8 (+/-) 0.5	-5.7%
Value of Checks Written (trillion)	\$42.3 (+/-) \$0.9	\$32.4 (+/-) \$0.9	-8.6%
Average Value	\$1,277 (+/-) \$31	\$1,165 (+/-) \$35	-3.0%

**3.1.2.2 Checks Paid**

The 2010 DI Study estimated that 24.5 billion checks were paid as checks in 2009 (Exhibit 5). This estimate excludes checks that were written and converted to ACH transactions.

The value of these checks was \$31.6 trillion, resulting in an average value of \$1,292 per check paid. See Exhibit 6 and Exhibit 7 below.

**Exhibit 5: Number of Checks Paid**

	Total Checks (billion)	95% Confidence Interval
<b>U.S. Market</b>	<b>24.5</b>	<b>(+/-) 0.5</b>
Commercial Banks	20.7	(+/-) 0.5
Credit Unions	2.1	(+/-) 0.1
Savings Institutions	1.3	(+/-) 0.2
U.S. Treasury Checks	0.2	
Postal Money Orders	0.1	

Figures may not add due to rounding.

**Exhibit 6: Value of Checks Paid**

	Total Checks (trillion)	95% Confidence Interval
<b>U.S. Market</b>	<b>\$31.6</b>	<b>(+/-) \$0.9</b>
Commercial Banks	\$29.2	(+/-) \$0.8
Credit Unions	\$0.7	(+/-) \$0.0
Savings Institutions	\$1.3	(+/-) \$0.3
U.S. Treasury Checks	\$0.3	
Postal Money Orders	\$0.0	

Figures may not add due to rounding.

**Exhibit 7: Average Value of Checks Paid**

	<u>Total Checks Avg. Value</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$1,292</b>	<b>(+/-)</b>	<b>\$35</b>
Commercial Banks	\$1,414	(+/-)	\$42
Credit Unions	\$352	(+/-)	\$10
Savings Institutions	\$973	(+/-)	\$150
U.S. Treasury Checks	\$1,545		
Postal Money Orders	\$183		

**3.1.2.2.1 Change in Checks Paid**

The number of checks paid in the United States decreased 7.1 percent per year from 2006 to 2009 from 30.5 billion to 24.5 billion. The value of checks paid fell at a slightly faster rate during the period, from \$41.6 trillion to \$31.6 trillion; a decrease of 8.8 percent per year. The average value per check paid decreased \$71, to \$1,292 from 2006 to 2009. Exhibit 8 below illustrates the number, value, and average value of checks paid annually according to the 2007 and 2010 DI studies.

**Exhibit 8: Number, Value and Average Value of Checks Paid**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
Checks Paid (billion)	30.5	(+/-)	0.6	24.5	(+/-)	0.5	-7.1%
Value of Checks Paid (trillion)	\$41.6	(+/-)	\$0.9	\$31.6	(+/-)	\$0.9	-8.8%
Average Value	\$1,363	(+/-)	\$31	\$1,292	(+/-)	\$35	-1.8%

**3.1.2.3 "Interbank" Checks Paid**

The 2010 DI Study estimated that of the 24.5 billion checks paid in 2009, 18.0 billion (74 percent) were interbank checks. These are checks that involved two or more financial institutions to clear. Exhibit 9 below provides details of interbank checks paid.

**Exhibit 9: Number of Interbank Checks Paid**

	<u>Interbank Checks (billion)</u>	(+/-)	<u>95% Confidence Interval</u>	<u>% of Total Checks</u>
<b>U.S. Market</b>	<b>18.0</b>		<b>0.4</b>	<b>74%</b>
Commercial Banks	14.6	(+/-)	0.3	71%
Credit Unions	2.0	(+/-)	0.1	93%
Savings Institutions	1.1	(+/-)	0.2	85%
U.S. Treasury Checks	0.2			
Postal Money Orders	0.1			

Figures may not add due to rounding.

The value of interbank checks paid was \$20.6 trillion as estimated by the 2010 DI Study (Exhibit 10). The average value per interbank check paid was \$1,146 (Exhibit 11).

**Exhibit 10: Value of Interbank Checks Paid**

	<u>Interbank Checks (trillion)</u>	(+/-)	<u>95% Confidence Interval</u>	<u>% of Total Checks</u>
<b>U.S. Market</b>	<b>\$20.6</b>		<b>\$0.5</b>	<b>65%</b>
Commercial Banks	\$18.6	(+/-)	\$0.4	64%
Credit Unions	\$0.7	(+/-)	\$0.0	89%
Savings Institutions	\$1.1	(+/-)	\$0.3	83%
U.S. Treasury Checks	\$0.3			
Postal Money Orders	\$0.0			

Figures may not add due to rounding.

**Exhibit 11: Average Value of Interbank Checks Paid**

	<u>Interbank Checks Avg. Value</u>	(+/-)	<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$1,146</b>		<b>\$26</b>
Commercial Banks	\$1,274	(+/-)	\$30
Credit Unions	\$336	(+/-)	\$10
Savings Institutions	\$941	(+/-)	\$173
U.S. Treasury Checks	\$1,545		
Postal Money Orders	\$183		

Between 2006 and 2009, the number of interbank checks paid decreased 9.5 percent per year from 24.3 billion to 18.0 billion. During the same period the value associated with these checks decreased 11.4 percent per year.

Exhibit 12 below illustrates the change in the number, value, and average value of interbank checks paid between the two studies.

**Exhibit 12: Number, Value and Average Value of Interbank Checks Paid**

	2006			2009			CAGR
Interbank Checks (billion)	24.3	+/-	0.5	18.0	(+/-)	0.4	-9.5%
Value of Interbank Checks (trillion)	\$29.7	+/-	\$0.6	\$20.6	(+/-)	\$0.5	-11.4%
Average Value	\$1,221	+/-	\$28	\$1,146	(+/-)	\$26	-2.1%

**3.1.2.3.1 “Interbank” Checks Paid by Format Received**

The 2010 DI Study estimated that 16.3 billion interbank checks—excluding Treasury checks and postal money orders—were presented electronically to the paying banks in 2009 (Exhibit 13). This represents 92.4 percent of all interbank checks received by DIs.

Electronically presented interbank checks were received in one of two ways:

- Image Cash Letter (ICL) – The paying bank received interbank checks as either an electronic check presentment file with accompanying images or images received in a continuous stream from a clearing agent or collecting institution.
- Other – The paying bank receives an electronic file only, without accompanying image or paper. The receipt of this electronic file constitutes presentment, but images are available on demand from shared archive.

Of the remaining 7.5 percent of checks that were received in paper form, 3.2 percent of all interbank checks received by DIs were received as the original paper check, and 4.3 percent were substitute checks (Exhibit 13).

**Exhibit 13: Number of Paper vs. Truncated Interbank Checks Paid**

	<u>Interbank Checks (billion)</u>		<u>95% Confidence Interval</u>	<u>% of Total Interbank Checks Received by DIs</u>
<b>U.S. Market</b>	<b>18.0</b>	(+/-)	<b>0.4</b>	<b>NA</b>
U.S. Treasury Checks	0.2			NA
Postal Money Orders	0.1			NA
<b>Total Interbank Checks Received by DIs</b>	<b>17.7</b>	(+/-)	<b>0.4</b>	<b>100.0%</b>
<i>Received as . . .</i>				
<b>Paper</b>	<b>1.3</b>	(+/-)	<b>0.2</b>	<b>7.5%</b>
Original Paper	0.6	(+/-)	0.1	3.2%
Substitute Check/IRD	0.8	(+/-)	0.1	4.3%
<b>Image Exchange</b>	<b>16.3</b>	(+/-)	<b>0.4</b>	<b>92.4%</b>
ICL	16.0	(+/-)	0.4	90.7%
Other	0.3	(+/-)	0.1	1.7%

Figures may not add due to rounding.

**3.1.2.3.2 Change in “Interbank” Checks Paid**

Between 2006 and 2009, the number of interbank checks received by paying institutions as paper declined 57.3 percent annually from 17.2 billion to 1.3 billion (excluding Treasury checks and postal money orders). Interbank checks received via image exchange increased 34.2 percent per year from 6.8 billion to 16.3 billion (Exhibit 14)

**Exhibit 14: Change in the Number of Interbank Checks Paid by Format**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
Total Interbank Checks Received by DIs (billion)*	23.9	+/-	0.5	17.7	(+/-)	0.4	-9.6%
<i>Received as . . .</i>							
<b>Paper (billion)</b>	<b>17.2</b>	(+/-)	<b>0.4</b>	<b>1.3</b>	(+/-)	<b>0.2</b>	<b>-57.3%</b>
<b>Image Exchange (billion)</b>	<b>6.8</b>	(+/-)	<b>0.3</b>	<b>16.3</b>	(+/-)	<b>0.4</b>	<b>34.2%</b>

Figures may not add due to rounding.

\*Does not include U.S Treasury Checks or Postal Money Orders.

### 3.1.2.3.3 Image Exchange Exceptions

Of the 16.3 billion interbank checks received electronically in 2009, 7.4 million – or 0.05 percent of all images – required exception handling (Exhibit 15). Exceptions occur when paying institutions judge images to be of insufficient quality to be processed accurately or because the check image and accompanying data do not match. The former types of exceptions result from a check image failing the paying institution’s image quality analysis (IQA), which measures objective characteristics of the image, or its image usability analysis (IUA), which includes more subjective measures. Data mismatch exceptions result from the MICR codeline of a check and the image of the check becoming disassociated during processing. Images with IQA /IUA or codeline data match account for 0.4% of interbank checks received electronically.

Other image exchange related exceptions occur when a paying institution received duplicate images of checks in an image exchange file or duplicate files of check images. These exceptions affected 0.01% of all images.

#### Exhibit 15: Number of Image Exchange Exceptions

	<u>Exceptions (million)</u>		<u>95% Confidence Interval</u>	<u>% of Total Images</u>
<b>U.S. Market</b>	<b>7.4</b>	<b>(+/-)</b>	<b>0.9</b>	<b>0.05%</b>
Commercial Banks	5.9	(+/-)	0.1	0.04%
Credit Unions	0.6	(+/-)	0.2	0.03%
Savings Institutions	0.9	(+/-)	0.8	0.09%

Figures may not add due to rounding.

### 3.1.2.4 “On-Us” Paid Checks

Of the 24.5 billion checks paid, the 2010 DI Study estimated that 6.4 billion, or 26 percent, were on-us (Exhibit 16). On-us checks are checks that were deposited (or cashed) at the same depository institution on which they were drawn.

**Exhibit 16: Number of On-Us Checks Paid**

	<u>On-Us Checks (billion)</u>		<u>95% Confidence Interval</u>	<u>% of Total Checks</u>
<b>U.S. Market</b>	<b>6.4</b>	<b>(+/-)</b>	<b>0.2</b>	<b>26%</b>
Commercial Banks	6.1	(+/-)	0.2	29%
Credit Unions	0.2	(+/-)	0.0	7%
Savings Institutions	0.2	(+/-)	0.0	15%

Figures may not add due to rounding.

The value of on-us checks is estimated to have been 11.0 trillion in 2009 (Exhibit 17), with an average value of \$1,702. See Exhibit 18 below.

**Exhibit 17: Value of On-Us Checks Paid**

	<u>On-Us Checks Value (trillion)</u>		<u>95% Confidence Interval</u>	<u>% of Total Checks</u>
<b>U.S. Market</b>	<b>\$11.0</b>	<b>(+/-)</b>	<b>\$0.7</b>	<b>35%</b>
Commercial Banks	\$10.6	(+/-)	\$0.6	36%
Credit Unions	\$0.1	(+/-)	\$0.0	11%
Savings Institutions	\$0.2	(+/-)	\$0.1	17%

Figures may not add due to rounding.

**Exhibit 18: Average Value of On-Us Checks Paid**

	<u>On-Us Checks Avg. Value</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$1,702</b>	<b>(+/-)</b>	<b>\$95</b>
Commercial Banks	\$1,750	(+/-)	\$102
Credit Unions	\$538	(+/-)	\$53
Savings Institutions	\$1,163	(+/-)	\$208

**3.1.2.4.1 Change in “On-Us” Checks Paid**

The number of on-us checks estimated by the 2007 and 2010 DI studies increased from 6.2 billion in 2006 to 6.4 billion in 2009, even as overall checks declined, most likely a result of industry consolidation. This represents an increase of 1.2 percent per year (Exhibit 19). The combined effect of the increase of on-us with the overall decline led to an increase in the proportion of on-us in total checks from 20 to 26 percent over the period.

The value of on-us checks fell 2.7 percent per year between the two studies, from \$11.9 trillion to \$11.0 trillion, as seen in Exhibit 19 below.

**Exhibit 19: Change in the Number, Value and Average Value of On-Ups Checks Paid**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
On-Ups Checks (billion)	6.2	+/-	0.3	6.4	(+/-)	0.2	1.2%
Value of On-Ups Checks (trillion)	\$11.9	+/-	\$0.6	\$11.0	(+/-)	\$0.7	-2.7%
Average Value	\$1,916	+/-	\$130	\$1,702	(+/-)	\$95	-3.9%

**3.1.2.5 Checks Returned Unpaid**

The 2010 DI Study estimates that 126.8 million checks, totaling \$126.9 billion, were returned unpaid. The average value per returned check was \$1,001.

Exhibit 20, Exhibit 21, and Exhibit 22 illustrates the number, value, and average value respectively of checks returned unpaid.

**Exhibit 20: Number of Checks Returned Unpaid**

	<u>Returned Checks (million)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>126.8</b>	<b>(+/-)</b>	<b>13.8</b>
Commercial Banks	97.8	(+/-)	11.4
Credit Unions	22.8	(+/-)	7.8
Savings Institutions	6.2	(+/-)	0.7

Figures may not add due to rounding.

**Exhibit 21: Value of Checks Returned Unpaid**

	<u>Returned Checks (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$126.9</b>	<b>(+/-)</b>	<b>\$10.4</b>
Commercial Banks	\$114.4	(+/-)	\$10.3
Credit Unions	\$6.8	(+/-)	\$0.3
Savings Institutions	\$5.7	(+/-)	\$0.9

Figures may not add due to rounding.

**Exhibit 22: Average Value of Checks Returned Unpaid**

U.S. Market	Returned Checks		95% Confidence
	Avg. Value		Interval
	<u>\$1,001</u>	(+/-)	<u>\$65</u>
Commercial Banks	\$1,169	(+/-)	\$41
Credit Unions	\$300	(+/-)	\$104
Savings Institutions	\$915	(+/-)	\$92

**3.1.2.5.1 Change in Checks Returned Unpaid**

From 2006 to 2009 the number of checks returned unpaid decreased at a rate of 6.1 percent per year, a slower rate of decline than for checks paid (7.1 percent per year). However, the ratio of checks returned to checks paid remained effectively unchanged at 0.5 percent.

The value of checks returned decreased 11.4 percent per year during the same period, and the ratio of returned checks to paid checks by value also remained effectively constant at 0.4 percent. The average value of returned checks decreased \$192 from \$1,193 in 2006 to \$1,001 in 2009.

Exhibit 23 below illustrates the number, value, and average value of checks returned unpaid in 2006 and 2009.

**Exhibit 23: Change in the Number, Value and Average Value of Checks Returned Unpaid**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
Returned Checks (million)	153.0	+/-	6.2	126.8	+/-	13.8	-6.1%
Value of Returned Checks (billion)	\$182.5	+/-	\$6.7	\$126.9	+/-	\$10.4	-11.4%
Average Value	\$1,193	+/-	\$52	\$1,001	+/-	\$65	-5.7%

**3.1.2.6 "Interbank" Checks Returned Unpaid**

The 2010 DI Study estimated that 107.4 million interbank checks were returned unpaid in 2009. They totaled \$104.2 billion, averaging \$970 per check.

Exhibit 24 illustrates the number of checks returned in 2009 in aggregate and by type of paying DI. Exhibit 25 and Exhibit 26 detail the value and average value respectively of interbank checks returned unpaid.

#### Exhibit 24: Number of Interbank Checks Returned Unpaid

	Interbank Returned Checks (million)		95% Confidence Interval
<b>U.S. Market</b>	<b>107.4</b>	(+/-)	<b>10.8</b>
Commercial Banks	80.1	(+/-)	7.5
Credit Unions	21.5	(+/-)	7.8
Savings Institutions	5.8	(+/-)	0.7

Figures may not add due to rounding.

#### Exhibit 25: Value of Interbank Checks Returned Unpaid

	Interbank Returned Checks Value (billion)		95% Confidence Interval
<b>U.S. Market</b>	<b>\$104.2</b>	(+/-)	<b>\$6.4</b>
Commercial Banks	\$92.6	(+/-)	\$6.4
Credit Unions	\$6.4	(+/-)	\$0.3
Savings Institutions	\$5.2	(+/-)	\$0.8

Figures may not add due to rounding.

#### Exhibit 26: Average Value of Interbank Checks Returned Unpaid

	Interbank Returned Checks Avg. Value		95% Confidence Interval
<b>U.S. Market</b>	<b>\$970</b>	(+/-)	<b>\$74</b>
Commercial Banks	\$1,156	(+/-)	\$42
Credit Unions	\$298	(+/-)	\$109
Savings Institutions	\$890	(+/-)	\$91

##### 3.1.2.6.1 Change in “Interbank” Checks Returned Unpaid

From 2006 to 2009 the number of interbank checks returned unpaid fell from 131.1 million to 107.4 million, a 6.4 percent decrease per year. The value of these checks decreased 10.5 percent during the same period from \$145.4 billion to \$104.2 billion. As a result, the average value per returned check decreased from \$1,109 to \$970 over the period. See Exhibit 27 below.

**Exhibit 27: Change in the Number, Value and Average Value of Interbank Checks Returned**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
Interbank Returned Checks (million)	131.1	+/-	5.9	107.4	+/-	10.8	-6.4%
Value of Interbank Returned Checks (billion)	\$145.4	+/-	\$6.0	\$104.2	+/-	\$6.4	-10.5%
Average Value	\$1,109	+/-	\$57	\$970	+/-	\$74	-4.4%

**3.1.2.7 “On-Us” Checks Returned Unpaid**

In addition to interbank checks, some DIs returned on-us checks that could not be paid. These on-us returned checks were returned unpaid (or “charged back”) to the depositing accountholder. The 2010 DI Study estimated that there were 19.4 million on-us checks returned in 2009, totaling \$22.8 billion, as illustrated by Exhibit 28 and Exhibit 29 below.

**Exhibit 28: Number of On-Us Checks Returned Unpaid**

	<u>On-Us Returned Checks (million)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>19.4</b>	<b>(+/-)</b>	<b>4.2</b>
Commercial Banks	17.8	(+/-)	4.2
Credit Unions	1.2	(+/-)	0.5
Savings Institutions	0.4	(+/-)	0.3

Figures may not add due to rounding.

**Exhibit 29: Value of On-Us Checks Returned Unpaid**

	<u>On-Us Returned Checks Value (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$22.8</b>	<b>(+/-)</b>	<b>\$4.1</b>
Commercial Banks	\$21.8	(+/-)	\$4.1
Credit Unions	\$0.4	(+/-)	\$0.1
Savings Institutions	\$0.5	(+/-)	\$0.3

Figures may not add due to rounding.

The average value per on-us check returned in 2009 was \$1,174 (Exhibit 30).

**Exhibit 30: Average Value of On-U.S. Checks Returned Unpaid**

	<b>On-U.S. Returned Checks Avg. Value</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$1,174</b>	<b>(+/-)</b>	<b>\$59</b>
Commercial Banks	\$1,229	(+/-)	\$70
Credit Unions	\$342	(+/-)	\$103
Savings Institutions	\$1,242	(+/-)	\$342

**3.1.2.7.1 Change in “On-U.S.” Checks Returned Unpaid**

The number of on-us checks returned fell 4.0 percent per year from 2006 to 2009, from 21.9 million to 19.4 million (Exhibit 31).

During the same time period the value of on-us checks returned unpaid fell 15.0 percent per year from \$37.1 billion to \$22.8 billion, resulting in a decline in average value from \$1,694 to \$1,174 (Exhibit 31).

**Exhibit 31: Change in the Number, Value and Average Value of On-U.S. Checks Returned Unpaid**

	<b>2006</b>			<b>2009</b>			<b>CAGR</b>
On-U.S. Returned Checks (million)	21.9	+/-	1.6	19.4	(+/-)	4.2	-4.0%
Value of On-U.S. Returned Checks (billion)	\$37.1	+/-	\$3.4	\$22.8	(+/-)	\$4.1	-15.0%
Average Value	\$1,694	+/-	\$200	\$1,174	(+/-)	\$59	-11.5%

**3.1.2.8 Deposited Checks**

The 2010 DI Study estimates the number and value of checks deposited in 2009. Unlike the estimated number of checks written or checks paid, the total number of checks deposited does not represent the number of *unique* checks deposited. By design, deposited checks includes not only checks that were deposited only with the bank of first deposit but also includes checks that were deposited more than once, such as those sent indirectly through correspondent banks for collection. In addition, though this is likely uncommon, some deposited checks are not included in the estimates of checks written or paid because they were paid by foreign institutions on accounts located outside of the

United States. Conversely, some checks could be included in checks paid but deposited in a foreign bank and thus not included in checks deposited.

The sum of checks deposited by consumer and business customers, excluding correspondent check deposits, is equal to 23.6 billion, 0.9 billion fewer than the number of checks paid reported above. In an ideal setting the aggregate sum of all checks deposited by consumers and businesses would be exactly equal to the aggregate sum of all checks paid. This difference, however, is small in light of the differences described above, the timing differences between depositing and paying checks relative to the survey reference period, and the measurement error inherent in the estimates.

Overall, an estimated 30.6 billion checks were deposited at DIs within the United States in 2009, including checks deposited by one DI at another for correspondent clearing. Of the total number of deposited checks, 9.4 billion were deposited as images – almost one-third of all checks deposited (Exhibit 32).

**Exhibit 32: Number of Deposited Checks**

	Deposited Checks (billion)		95% Confidence Interval
<b>U.S. Market</b>	<b>30.6</b>	(+/-)	<b>0.5</b>
<i>Of which</i>			
<b>Image</b>	<b>9.4</b>	(+/-)	<b>0.1</b>
Consumer or Business	3.0	(+/-)	0.0
Correspondent	6.4	(+/-)	0.1
<b>Paper</b>	<b>21.2</b>	(+/-)	<b>0.5</b>
Consumer or Business	20.6	(+/-)	0.5
Correspondent	0.5	(+/-)	0.0

Figures may not add due to rounding.

The value associated with checks deposited totaled \$37.5 trillion in 2009, with an average value of \$1,226 per deposited check (Exhibit 33 and Exhibit 34).

### Exhibit 33: Value of Deposited Checks

	<u>Deposited Checks Value (trillion)</u>	(+/-)	<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$37.5</b>		<b>\$0.5</b>
<i>Of which</i>			
<b>Image</b>	<b>\$11.6</b>	<b>(+/-)</b>	<b>\$0.1</b>
Consumer or Business	\$4.1	(+/-)	\$0.1
Correspondent	\$7.5	(+/-)	\$0.1
<b>Paper</b>	<b>\$25.9</b>	<b>(+/-)</b>	<b>\$0.4</b>
Consumer or Business	\$25.2	(+/-)	\$0.4
Correspondent	\$0.7	(+/-)	\$0.0

Figures may not add due to rounding.

### Exhibit 34: Average Value of Deposited Checks

	<u>Deposited Checks Avg. Value</u>	(+/-)	<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$1,226</b>		<b>\$24</b>
<i>Of which</i>			
<b>Image</b>	<b>\$1,233</b>	<b>(+/-)</b>	<b>\$15</b>
Consumer or Business	\$1,354	(+/-)	\$27
Correspondent	\$1,175	(+/-)	\$17
<b>Paper</b>	<b>\$1,223</b>	<b>(+/-)</b>	<b>\$32</b>
Consumer or Business	\$1,220	(+/-)	\$33
Correspondent	\$1,329	(+/-)	\$26

#### 3.1.2.9 Statements

Although no comparable estimate exists from which to judge industry progress, the 2010 DI Study suggests DIs have been reducing the use of paper when delivering regular periodic statements for checkable deposit accounts.<sup>3</sup> Nearly one quarter (24 percent) of regular periodic statements were fully electronic in 2009, requiring no paper. Electronic statements were second only to itemized paper statements (49 percent), which include transaction detail but neither actual checks nor images of checks printed on the statement page, and which required substantially reduced paper compared with these alternatives.

<sup>3</sup> Checkable deposit accounts include checking accounts, NOW accounts, savings accounts, and money market deposit accounts, but excludes certificates of deposit (CDs).

Image statements, which include printed images of paid checks on the statement page, accounted for 24 percent of all statements. Only one percent of all statements included actual checks enclosed. Exhibit 35 illustrates the distribution of the estimated 4.5 billion regular periodic statements issued in 2009.<sup>4</sup>

### Exhibit 35: Number of Statements

	<u>Statements (billion)</u>	(+/-)	<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>4.5</b>	<b>(+/-)</b>	<b>0.3</b>
<i>Of which</i>			
Itemized Paper	49%	(+/-)	3%
Image Paper	24%	(+/-)	2%
Electronic	24%	(+/-)	2%
Other	2%	(+/-)	1%
Check Enclosure	1%	(+/-)	0%

Figures may not add due to rounding.

### 3.1.3 CSS Findings

Estimates from the 2010 CSS are based on data obtained from a random sample of 44,094 checks written during 2009 and processed by 11 banks that use the Viewpointe archive. Nine of those banks also participated in the 2007 CSS.

In section 3.1.3.1, estimates of the 2009 distribution of checks by counterparty and purpose are based on data from 44,094 checks sampled from the complete group of 2010 participant banks.

For trend analysis, section 3.1.3.2 introduces an alternative set of 2009 estimates. The alternative estimates are based on a sample of 34,623 checks from the nine banks that participated in both the 2010 and 2007 studies. The alternative estimates also adjust for major acquisitions by some of the banks between studies.<sup>5</sup> In exhibits below, these alternative 2009 estimates are labeled “2009 - Alternative Participant Group.”

<sup>4</sup> Includes monthly statements only (i.e., excludes quarterly and yearly statements).

<sup>5</sup> To facilitate longitudinal analyses, checks were sampled from now merged organizations as if they were still separate entities as in 2007.

### 3.1.3.1 2009 Distribution of Checks

As noted above, estimates of the 2009 distribution of checks are based on data from 44,094 checks sampled from the complete group of 11 banks in the 2010 CSS.

#### 3.1.3.1.1 Distribution of the Number of Checks

The tables in this section detail the distribution of the number of check payments according to payer, payee, and purpose. For payer and payee categorization federal, state or municipal government entities and nonprofit organizations have been included as “Business.” (See section 4.2.4.1 for more detail.)

The highest percentage of check payers were consumers at 54.5 percent (Exhibit 36), while the highest percentage of check payees were businesses at 71.5 percent (Exhibit 37). A negligible percentage of checks could not be categorized accurately based on data available from the survey.<sup>6</sup>

#### Exhibit 36: Distribution of the Number of Checks by Payer

<u>Payer</u>	<u>Distribution</u>		<u>95% Confidence Interval</u>
Consumer	54.5%	+/-	0.5%
Business	45.5%	+/-	0.5%
Unknown	0.0%	+/-	0.0%
Total	100.0%		

Figures may not add due to rounding.

#### Exhibit 37: Distribution of the Number of Checks by Payee

<u>Payee</u>	<u>Distribution</u>		<u>95% Confidence Interval</u>
Consumer	28.5%	+/-	0.4%
Business	71.5%	+/-	0.4%
Unknown	0.1%	+/-	0.0%
Total	100.0%		

Figures may not add due to rounding.

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<sup>6</sup> The unknown category includes checks that could not be definitively categorized as a determinant classification of consumer or business.

Combining payer and payee types into counterparty combinations,

Exhibit 38 below shows that consumer to business checks (C2B) were the single largest category of checks written in 2009 (44.3 percent). Business to business checks (B2B) were the second largest category at 27.1 percent.

**Exhibit 38: Distribution of the Number of Checks by Counterparty**

Counterparty	Distribution	95% Confidence Interval	
C2B	44.3%	+/-	0.5%
C2C	10.1%	+/-	0.3%
B2B	27.1%	+/-	0.4%
B2C	18.3%	+/-	0.4%
Unknown*	0.1%	+/-	0.0%

\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

Including categorization for the purpose of each check written, the 2010 CSS has nine discrete categories of checks. This included one “unknown” category, for which neither the counterparty nor purpose could be reliably determined, and two categories of checks whose counterparty but not purpose could be determined. See Exhibit 39 below.

Purpose categories were Income, Casual, Remittance or POS. Checks written by businesses to consumers (B2C) or by consumers to other consumers (C2C) were defined as Income or Casual payments respectively. Checks written to businesses were categorized as either remittance, POS or, in cases when the purpose of a check written to a business could not be determine, remittance/POS. (See section 4.2.4.2, for details about purpose categories.)

Remittance checks accounted for approximately half (51.5 percent) of all checks written: 30.8 percent were consumer to business remittance checks, 20.6 percent business to business. The next largest category of checks written by purpose were business to consumer checks (18.3 percent).

**Exhibit 39: Distribution of the Number of Checks by Counterparty and Purpose**

Distribution*												
Purpose	Counterparty		C2B		B2B		B2C		Unknown**		Total	
	C2C	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-		
Income							18.3%	0.4%			18.3%	0.4%
Casual	10.1%	0.3%									10.1%	0.3%
REM			30.8%	0.4%	20.6%	0.4%					51.5%	0.5%
POS			7.3%	0.2%	2.1%	0.1%					9.3%	0.3%
REM/POS			6.2%	0.2%	4.4%	0.2%					10.6%	0.3%
Unknown***									0.1%	0.0%	0.1%	0.0%
Total	10.1%	0.3%	44.3%	0.5%	27.1%	0.4%	18.3%	0.4%	0.1%	0.0%	100.0%	

\*Point estimate +/- half-width of the 95% confidence interval.

\*\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

\*\*\*Unknown includes all checks that have an indeterminate purpose.

**3.1.3.1.2 Estimated Number of Checks Written by Counterparty and Purpose**

The percentage estimates from the 2010 CSS can be applied to the estimated 27.8 billion checks written in 2009 to estimate the number of checks written in the United States by counterparty and purpose.<sup>7</sup>

Using this approach, the 2010 CSS estimates that there were 14.3 billion remittance checks written in 2009: 8.6 billion from consumers to businesses and 5.7 billion written by businesses to other businesses. Consumers wrote approximately 800 million more checks to each other (2.8 billion) than to merchants at the point of sale (2.0 billion). Businesses wrote 5.1 billion checks to consumers. See Exhibit 40 below.

<sup>7</sup> See section 2.1.2.1 for information about the number of checks written.

**Exhibit 40: Number of Checks Written by Counterparty and Purpose**

Counterparty		Volume (billion)*										
		C2C		C2B		B2B		B2C		Unknown**		Total
Purpose		+/-		+/-		+/-		+/-		+/-		+/-
Income							5.1	0.0			5.1	0.0
Casual	2.8	0.0									2.8	0.0
REM			8.6	0.0	5.7	0.0					14.3	0.1
POS			2.0	0.0	0.6	0.0					2.6	0.0
REM/POS			1.7	0.0	1.2	0.0					2.9	0.0
Unknown***									0.0	0.0	0.0	0.0
Total	2.8	0.0	12.3	0.1	7.5	0.0	5.1	0.0	0.0	0.0	27.8	

\*Point estimate +/- half-width of the 95% confidence interval.

\*\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

\*\*\*Unknown includes all checks that have an indeterminate purpose.

**3.1.3.1.3 Distribution of the Value of Checks**

Although consumer-written checks comprise over 50 percent of the number of checks, they account for only 17.2 percent of the total value. Checks written by businesses, on the other hand account for 82.8 percent of check value (Exhibit 41). Businesses also receive 79.4 percent of checks by value (Exhibit 42).

**Exhibit 41: Distribution of the Value of Checks by Payer**

<u>Payer</u>	<u>Distribution</u>		<u>95% Confidence Interval</u>
Consumer	17.2%	+/-	0.4%
Business	82.8%	+/-	0.4%
Unknown	0.0%	+/-	0.0%
Total	100.0%		

Figures may not add due to rounding.

**Exhibit 42: Distribution of the Value of Checks by Payee**

<u>Payee</u>	<u>Distribution</u>		<u>95% Confidence Interval</u>
Consumer	20.5%	+/-	0.4%
Business	79.4%	+/-	0.4%
Unknown	0.0%	+/-	0.0%
Total	100.0%		

Figures may not add due to rounding.

The skew in value toward business payers and payees is seen in Exhibit 43 as business to business checks comprised two-thirds (66.4 percent) of the total value of checks written in 2009. Business to consumer checks were the second largest category, at 16.4 percent of total value.

**Exhibit 43: Distribution of the Value of Checks by Counterparty**

Counterparty	Distribution	95% Confidence Interval	
C2B	13.1%	+/-	0.3%
C2C	4.1%	+/-	0.2%
B2B	66.4%	+/-	0.4%
B2C	16.4%	+/-	0.3%
Unknown*	0.0%	+/-	0.0%

\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

Check value by purpose is heavily concentrated in remittance checks. They comprise two-thirds (64.6 percent) of check value: 54.0 percent business to business and 10.6 percent consumer to business. The exact distribution may have favored remittance checks even more heavily, but 12.8 percent of check value could not be determined as either Remittance or POS (Exhibit 44).

**Exhibit 44: Distribution of the Value of Checks by Counterparty and Purpose**

Counterparty		Distribution*											
		C2C		C2B		B2B		B2C		Unknown**		Total	
Purpose		+/-		+/-		+/-		+/-		+/-		+/-	
Income							16.4%	0.3%			16.4%	0.3%	
Casual	4.1%	0.2%									4.1%	0.2%	
REM			10.6%	0.3%	54.0%	0.5%					64.6%	0.4%	
POS			0.8%	0.1%	1.2%	0.1%					2.0%	0.1%	
REM/POS			1.7%	0.1%	11.2%	0.3%					12.8%	0.3%	
Unknown***									0.1%	0.0%	0.1%	0.0%	
<b>Total</b>			4.1%	0.2%	13.1%	0.3%	66.4%	0.4%	16.4%	0.3%	0.1%	0.0%	100.0%

\*Point estimate +/- half-width of the 95% confidence interval.

\*\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

\*\*\*Unknown includes all checks that have an indeterminate purpose.

### 3.1.3.1.4 Average Dollar Value by Purpose and Counterparty

Exhibit 45 below illustrates the estimated average value of 2009 checks by counterparty and purpose. The largest average values were for business to business remittance checks (\$3,030) and business to business remittance/POS checks (\$2,946). Given the relatively large average value of business to business remittance/POS checks – much larger than the business to business POS checks – it is likely that the majority of these remittance/POS checks were remittance items.

At an average of \$472, consumer to consumer checks have the highest average value of all consumer check types, \$72 higher than consumer to business remittance checks. The relatively high value of consumer to consumer checks may reflect consumers' use of checks to transfer value between multiple depository accounts or to make rent payments. As checks become less common, consumers may also be turning to cash to make smaller value payments.

#### Exhibit 45: Average Value per Check by Counterparty and Purpose

Purpose	Average Value*											
	Counterparty C2C +/-		C2B +/-		B2B +/-		B2C +/-		Unknown** +/-		TOTAL +/-	
Income							\$1,037	\$57			\$1,037	\$57
Casual	\$472	\$16									\$472	\$16
REM			\$400	\$32	\$3,030	\$191					\$1,455	\$124
POS			\$121	\$5	\$697	\$26					\$248	\$13
REM/POS			\$312	\$45	\$2,946	\$356					\$1,403	\$234
Unknown***									\$793	\$22	\$793	\$22
Total	\$472	\$16	\$342	\$32	\$2,839	\$222	\$1,037	\$57	\$793	\$22	\$1,160	\$121

\*Point estimate +/- half-width of the 95% confidence interval.

\*\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

\*\*\*Unknown includes all checks that have an indeterminate purpose.

### 3.1.3.1.5 Distribution of Checks by Dollar Value Category

Eight in ten checks (79.4 percent) are written for \$500 or less, and nearly half (47.8 percent) are written for \$100 or less (Exhibit 46). Consumer checks comprise 54.5 percent of all checks and are on average \$366 – lowering the overall average value for checks written.

**Exhibit 46: Distribution of Checks by Dollar Amount**

<u>Dollar Amount Range</u>	<u>Distribution</u>		<u>95% Confidence Interval</u>
\$0.01-\$50	31.4%	+/-	0.4%
\$50.01-\$100	16.3%	+/-	0.3%
\$100.01-\$500	31.7%	+/-	0.4%
\$500.01-\$1000	9.3%	+/-	0.3%
\$1000.01-\$2500	6.4%	+/-	0.2%
\$2500.01-\$5000	2.2%	+/-	0.1%
\$5000.01+	2.6%	+/-	0.1%

Figures may not add due to rounding.

**3.1.3.1.6 Remotely Created Checks**

The 2010 CSS estimates that approximately 2.1 percent of 2009 checks were remotely created checks (RCCs).<sup>8</sup> As outlined in section 4.2.7.1, the study did not estimate the number or value of other types of demand drafts.

**3.1.3.1.7 Checks Ineligible for ACH Conversion**

The study estimates that 45.7 percent of 2009 checks were ineligible for ACH conversion according to National Automated Clearing House Association (NACHA) rules. See section 4.2.7.2 for details.

**3.1.3.2 Comparison of the 2009 Distribution of Checks to the 2006 Distribution**

This section compares the 2010 CSS estimates to those from the 2007 CSS.<sup>9</sup> As described in section 3.1.3 above, nine of the eleven 2010 CSS participants also participated in the 2007 CSS. For trends analysis, this section introduces an alternative set of 2009 estimates based on a sample of 34,623 checks from the nine banks that participated in both the 2010 and 2007 studies. These alternative 2009 estimates also

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<sup>8</sup> Demand drafts that have in lieu of a signature, a typed statement, such as “No Signature Required,” “Signature on File,” “Authorized by the Depositor,” or “Authorized by the Payer.”

<sup>9</sup> To view the 2007 CSS report, refer to <https://www.frb services.org/assets/news/research/2007-check-sample-study.pdf>.

adjust for major acquisitions by some of the banks between studies.<sup>10</sup> In exhibits below, these alternative 2009 estimates are labeled “2009 - Alternative participant group.”

### 3.1.3.2.1 Change in the Distribution of Checks

From 2006 to 2009, consumer-written checks decreased from 58.0 percent to 53.0 percent, while business-written checks increased from 41.9 percent to 46.9 percent (Exhibit 47). The proportion of checks written to consumers increased from 23.4 percent in 2006 to 27.4 percent in 2009, while checks written to businesses decreased from 76.5 percent in 2006 to 72.5 percent in 2009 (Exhibit 48).

#### Exhibit 47: Change in the Distribution of Checks by Payer

Payer	2006			2009 - Alternative Participant Group			Absolute Change
	Point estimate	+/-	95% CI	Point estimate	+/-	95% CI	
Consumer	58.0%	+/-	0.5%	53.0%	+/-	0.5%	-5.0%
Business	41.9%	+/-	0.5%	46.9%	+/-	0.5%	5.1%
Unknown	0.1%	+/-	0.0%	0.0%	+/-	0.0%	-0.1%

Figures may not add due to rounding.

Point estimate +/- half-width of the 95% confidence interval.

#### Exhibit 48: Change in the Distribution of Checks by Payee

Payee	2006			2009 - Alternative Participant Group			Absolute Change
	Point estimate	+/-	95% CI	Point estimate	+/-	95% CI	
Consumer	23.4%	+/-	0.4%	27.4%	+/-	0.5%	16.9%
Business	76.5%	+/-	0.4%	72.5%	+/-	0.5%	-5.2%
Unknown	0.1%	+/-	0.0%	0.1%	+/-	0.0%	-0.4%

Figures may not add due to rounding.

Point estimate +/- half-width of the 95% confidence interval.

<sup>10</sup> To facilitate longitudinal analyses, checks were sampled from now merged organizations as if they were still separate entities as in 2007.

### **3.1.3.2.2 Change in the Number of Checks Written by Counterparty and Purpose**

The percentage estimates from the 2010 CSS and 2007 CSS can be applied to the estimated 27.8 billion checks written in 2009 and 33.1 billion written in 2006 respectively to estimate changes in the number of checks written in the United States by counterparty and purpose. As noted in section 3.1.3.2, these analyses use an alternative distribution of 2009 checks to provide the most reliable comparison to 2006 estimates.

Using the alternative 2009 distribution of checks, 12.3 billion checks were estimated to be consumer to business checks, a decline from 17.0 billion in 2006. In spite of the decline, C2B checks remained the most common form of check.

All purpose categories of C2B checks experienced declines over the period, including checks written for remittance, POS, and remittance / POS. The decline in C2B check writing reflects, among other things, the replacement of consumer checks by electronic payments, such as online bill payments through the ACH, or point-of-sale purchases with debit cards.

Replacement of checks by electronic instruments and the economic slowdown are likely also to have affected the number of checks written by businesses. The number of checks written by businesses to consumers (B2C) declined from 5.6 billion in 2006 to 5.2 billion in 2009 (using either the alternative distribution). Simultaneously, the number of business-to-business (B2B) checks declined from 8.3 billion in 2006 to 7.9 billion using the alternative distribution (7.5 billion otherwise).

The number of consumer to consumer (C2C) checks is estimated to have increased from 2.2 billion in 2006 to 2.4 billion in 2009 using the alternative distribution (or 2.8 billion otherwise).

See Exhibit 49 for details.

**Exhibit 49: Change in the Number of Checks Written by Counterparty and Purpose**

2006 Volume (billion)*												
Purpose	Counterparty		C2B	+/-	B2B	+/-	B2C	+/-	Unknown**	+/-	Total	+/-
	C2C	+/-										
Income							5.6	0.0			5.6	0.0
Casual	2.2	0.0									2.2	0.0
REM			10.7	0.1	5.4	0.0					16.2	0.1
POS			4.4	0.0	1.1	0.0					5.5	0.0
REM/POS			1.9	0.0	1.8	0.0					3.7	0.0
Unknown***									0.1	0.0	0.1	0.0
Total	2.2	0.0	17.0	0.1	8.3	0.0	5.6		0.1	0.0	33.1	

2009 - Alternative Participant Group												
Purpose	Counterparty		C2B	+/-	B2B	+/-	B2C	+/-	Unknown**	+/-	Total	+/-
	C2C	+/-										
Income							5.2	0.0			5.2	0.0
Casual	2.4	0.0									2.4	0.0
REM			8.6	0.0	6.0	0.0					14.7	0.1
POS			2.0	0.0	0.6	0.0					2.6	0.0
REM/POS			1.6	0.0	1.2	0.0					2.8	0.0
Unknown***									0.0	0.0	0.0	0.0
Total	2.4	0.0	12.3	0.1	7.9	0.0	5.2	0.0	0.0	0.0	27.8	

CAGR							
Purpose	Counterparty		C2B	B2B	B2C	Unknown**	Total
	C2C	+/-					
Income					-2.5%		-2.5%
Casual	3.8%						3.8%
REM			-7.0%	3.7%			-3.2%
POS			-23.0%	-16.0%			-21.5%
REM/POS			-5.0%	-12.7%			-8.6%
Unknown***						-19.5%	-19.5%
Total	3.8%		-10.4%	-1.8%	-2.5%	-19.5%	-5.7%

\*Point estimate +/- half-width of the 95% confidence interval.

\*\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

\*\*\*Unknown includes all checks that have an indeterminate purpose.

**3.1.3.2.3 Change in the Number of Remotely Created Checks**

The 2010 CSS found the incidence of remotely created checks to have increased from 2006 to 2009, from 1.5 percent to 2.1 percent of checks written. Growth occurred not only in share, but also in absolute volume. Applying the percentages above to the estimated number of checks written in 2006 and 2009, the estimated number of remotely created checks is estimated to have increased from approximately 495 million in 2006 to approximately 575 million in 2009.

### 3.1.3.2.4 Change in the Number of Checks Ineligible for ACH Conversion

The 2007 CSS found that 41.4 percent of checks were ineligible for conversion in 2006. That percentage increased to 47.6 in 2009 based on the alternative distribution. Translating these percentages into check written, the number of checks ineligible for conversion decreased slightly from 13.7 billion in 2006 to 13.2 billion checks.

National Automated Clearing House Association (NACHA) rules prohibit the conversion of business checks to ACH; therefore, the increase in the proportion of business checks is one reason the percentage of ineligible items increased. However, it does not explain the increase in the estimated number of ineligible items, because the estimated number of business checks declined from 2006 to 2009. The apparent increase may be due to an increase in the number of other ineligible items, or it may reflect estimation error inherent in the survey.

### 3.1.3.2.5 Change in the Distribution of the Value of Checks

The distribution of checks by dollar value shifted further toward checks written by businesses and away from consumer-written checks between 2006 and 2009. Business checks increased from 80.3 percent of check value to 83.5 percent (Exhibit 50). The rise in business check's share of value came from an increase in B2B check value share, from 62.9 percent in 2006 to 67.3 percent in 2009 (Exhibit 52). Consumer-written checks declined from 19.6 percent of check value in 2006 to 16.5 percent in 2009 (Exhibit 50). The decrease came from a drop in the portion of value attributable to consumer to business checks, from 16.5 percent in 2006 to 12.9 percent in 2009 (Exhibit 52).

#### Exhibit 50: Change in the Distribution of Check Value by Payer

Payer	2006			2009 - Alternative Participant Group			Absolute Change
	Point Estimate	+/-	95% CI	Point Estimate	+/-	95% CI	
Consumer	19.6%	+/-	0.4%	16.5%	+/-	0.4%	-3.2%
Business	80.3%	+/-	0.4%	83.5%	+/-	0.4%	3.2%
Unknown	0.1%	+/-	0.0%	0.1%	+/-	0.0%	0.0%

Figures may not add due to rounding.

Point estimate +/- half-width of the 95% confidence interval.

**Exhibit 51: Change in the Distribution of Check Value by Payee**

<u>Payee</u>	<u>2006</u>			<u>2009 - Alternative Participant Group</u>			<u>Absolute Change</u>
		+/-			+/-		
Consumer	20.5%	+/-	0.4%	19.8%	+/-	0.4%	-0.6%
Business	79.5%	+/-	0.4%	80.2%	+/-	0.4%	0.6%
Unknown	0.0%	+/-	0.0%	0.0%	+/-	0.0%	0.0%

Figures may not add due to rounding.

Point estimate +/- half-width of the 95% confidence interval.

Changes in the distribution of check value by purpose reflect a combination of shifts in check usage patterns as well as increased efficacy in categorizing checks during the 2010 CSS. For example, the proportion of check value attributable to remittance checks increased from 52.2 percent to 65.4 percent. Some of the increase may be attributable to a decline in the percentage of check value that could not be definitively categorized as either remittance or POS. Remittance/POS checks declined from 19.3 percent of checks in 2006 to 12.8 percent in 2010. Nevertheless, assuming that all of the decline in remittance/POS check value share (6.5 percentage points) materialized as growth in remittance check value share, it would account for only about half of the growth in remittance check share (13.2 percentage points).

The decline in the proportion of POS check value is more certain. POS checks declined from 7.9 percent of 2006 check value to 1.9 percent in 2009 (Exhibit 52).

**Exhibit 52: Change in the Distribution of Check Value by Counterparty and Purpose**

2006 Distribution*												
Purpose	Counterparty		C2B	+/-	B2B	+/-	B2C	+/-	Unknown**	+/-	Total	+/-
	C2C	+/-										
Income							17.4%	0.4%			17.4%	0.4%
Casual	3.1%	0.2%									3.1%	0.2%
REM			12.6%	0.3%	39.6%	0.5%					52.2%	0.5%
POS			1.6%	0.1%	6.3%	0.3%					7.9%	0.3%
REM/POS			2.3%	0.2%	17.0%	0.4%					19.3%	0.4%
Unknown***									0.1%	0.0%	0.1%	0.0%
Total	3.1%	0.2%	16.5%	0.4%	62.9%	0.5%	17.4%	0.4%	0.1%	0.0%	100.0%	

2009 - Alternative Participant Group												
Purpose	Counterparty		C2B	+/-	B2B	+/-	B2C	+/-	Unknown**	+/-	Total	+/-
	C2C	+/-										
Income							16.2%	0.4%			16.2%	0.4%
Casual	3.6%	0.2%									3.6%	0.2%
REM			10.6%	0.3%	54.9%	0.5%					65.4%	0.5%
POS			0.7%	0.1%	1.2%	0.1%					1.9%	0.1%
REM/POS			1.6%	0.1%	11.2%	0.3%					12.8%	0.4%
Unknown***									0.1%	0.0%	0.1%	0.0%
Total	3.6%	0.2%	12.9%	0.4%	67.3%	0.5%	16.2%	0.4%	0.1%	0.0%	100.0%	

Absolute Change							
Purpose	Counterparty		C2B	B2B	B2C	Unknown**	Total
	C2C	+/-					
Income					-1.2%		-1.2%
Casual	0.5%						0.5%
REM			-2.1%	15.3%			13.2%
POS			-0.9%	-5.1%			-6.0%
REM/POS			-0.7%	-5.8%			-6.5%
Unknown***						-23.4%	0.0%
Total	0.5%		-3.7%	4.4%	-1.2%	0.0%	

\*Point estimate +/- half-width of the 95% confidence interval.

\*\*Unknown includes all counterparty combinations where either the payer, payee, or both the payer and payee are an unknown/indeterminate classification.

\*\*\*Unknown includes all checks that have an indeterminate purpose.

## 3.2 ACH

National ACH estimates below derive from data from both the 2010 EPS and the 2010 DI Study. The 2010 EPS measured 2009 network volume, i.e., ACH payments cleared through an ACH operator – either the Federal Reserve or Electronic Payments Network (EPN). The study also measured network volume activity at the standard entry class (SEC) code level.

The 2010 DI Study supplements the 2010 EPS by estimating the number and value of ACH payments via direct exchange (section 3.2.7) or cleared on-us without involvement of

a network operator (section 3.2.9). Because some DIs clear even their on-us ACH payments through a network operator, this study uses the term “in-house on-us” to refer to on-us ACH payments that do not clear through a network operator.

The 2010 DI Study could also be used to make independent national estimates of the number and value of total ACH payments. DIs reported the number and value of ACH payments from deposit accounts cleared as network, in-house on-us, or direct exchange entries. Dollar value data proved difficult to estimate reliably, however, due in part to depository institutions’ use of ACH for high-dollar internal transfers, which inflate value estimates.

### 3.2.1 Total ACH Payments

The number of ACH payments increased 9.4 percent per year from 2006 to 2009, from 14.6 billion transactions in 2006 to 19.1 billion transactions in 2009. Interim data from NACHA suggest that ACH growth likely decelerated between studies: the number of ACH entries grew more rapidly early in the three-year period than at the end. ACH payments in 2009 exceeded those in 2006 by 4.5 billion and the value of ACH payments in 2009 exceeded 2006 value by \$6.2 trillion. The growth in number of ACH transactions (9.4 percent per year) also exceeded the growth in value (6.3 percent per year) from 2006 to 2009, resulting in a decline in average value per ACH payment from \$2,122 to \$1,946 during the period. These estimates reflect all ACH payments, including those cleared through a network operator, on-us entries (for which the same DI is both sender and receiver), and direct exchange entries (i.e., entries between two DIs without involvement of a network operator).

**Exhibit 53: Change in the Number, Value and Average Value of ACH Payments**

	<u>2003</u>	<u>2006</u>	<u>2009</u>	<u>2003-2006</u> <u>CAGR %</u>	<u>2006-2009</u> <u>CAGR %</u>
Number (billion)	8.8	14.6	19.1	18.6	9.4
Value (trillion)	\$24.1	\$31.0	\$37.2	8.7	6.3
Average Value	\$2,754	\$2,122	\$1,946	-8.3	-2.8

### 3.2.2 ACH Payments by DI Type

Eighty-five percent of all ACH payments were made from deposit accounts at commercial banks in 2009. This accounted for 98 percent of the value of all ACH transactions. These ACH payments had an average value of \$2,244. Payments from deposit accounts at credit unions accounted for 9 percent of all ACH payments and 1 percent of total ACH value – yielding an average value of \$131. Savings institution accountholders made 6 percent of total ACH payments, accounting for 2 percent of total ACH value and yielding an average value of \$511 (Exhibit 54 to Exhibit 56).

#### Exhibit 54: Number of ACH Payments

	ACH Payments (billion)		95% Confidence Interval
<b>U.S. Market</b>	<b>19.1</b>		<b>0.2</b>
Commercial Banks	85%	(+/-)	0.8%
Credit Unions	9%	(+/-)	0.6%
Savings Institutions	6%	(+/-)	0.4%

Figures may not add due to rounding.

#### Exhibit 55: Value of ACH Payments

	ACH Payments Value (trillion)		95% Confidence Interval
<b>U.S. Market</b>	<b>\$37.2</b>		<b>\$0.4</b>
Commercial Banks	98%	(+/-)	0.2%
Credit Unions	1%	(+/-)	0.0%
Savings Institutions	2%	(+/-)	0.1%

Figures may not add due to rounding.

#### Exhibit 56: Average Value of ACH Payments

	ACH Payments Avg. Value		95% Confidence Interval
<b>U.S. Market</b>	<b>\$1,946</b>	<b>(+/-)</b>	<b>\$27</b>
Commercial Banks	\$2,244	(+/-)	\$33
Credit Unions	\$131	(+/-)	\$6
Savings Institutions	\$511	(+/-)	\$31

### 3.2.3 Network ACH Payments by DI Type

The 2010 EP Study estimated that in 2009 15.2 billion ACH payments were cleared through an ACH operator – either the Federal Reserve or EPN (Exhibit 57). The value of these network ACH payments totaled \$29.6 trillion (Exhibit 58).

Commercial banks accounted for the largest share of Network ACH payments: their accountholders made 83 percent of them and 95 percent by value. Network ACH payments from deposit accounts at commercial banks had an average value of \$2,237. Deposit accounts at credit Unions accounted for 11 percent of Network ACH payments and 2 percent of the value, with an average value of \$352. Savings institution accountholders made the smallest number of Network ACH payments (6 percent) but accounted for 3 percent of the value – yielding an average value of \$915 (Exhibit 57 to Exhibit 59).

#### Exhibit 57: Number of Network ACH Payments

	<b>Network ACH Payments (billion)</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>15.2</b>		<b>0.0</b>
Commercial Banks	83%	(+/-)	0.9%
Credit Unions	11%	(+/-)	0.7%
Savings Institutions	6%	(+/-)	0.5%

Figures may not add due to rounding.

#### Exhibit 58: Value of Network ACH Payments

	<b>Network ACH Payments Value (trillion)</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$29.6</b>		<b>\$0.0</b>
Commercial Banks	95%	(+/-)	0.4%
Credit Unions	2%	(+/-)	0.2%
Savings Institutions	3%	(+/-)	0.3%

Figures may not add due to rounding.

**Exhibit 59: Average Value of Network ACH Payments**

	<b>Network ACH Payments Avg. Value</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$1,947</b>	<b>(+/-)</b>	<b>\$0</b>
Commercial Banks	\$2,237	(+/-)	\$51
Credit Unions	\$352	(+/-)	\$13
Savings Institutions	\$915	(+/-)	\$92

**3.2.4 Change in the Use of Network ACH Payments**

The number of Network ACH payments increased 7.4 percent annually between 2006 and 2009, from 12.3 billion entries to 15.2 billion entries (Exhibit 87). The value of these entries increased from \$26.3 trillion to \$29.6 trillion – an increase of 4.0 percent per year (Exhibit 87).

The average value per Network ACH payment decreased \$197 between 2006 and 2009, from \$2,144 to \$1,947.

**Exhibit 60: Change in the Number, Value and Average Value of Network ACH Payments**

	<b>2006</b>	<b>2009</b>	<b>2006-2009 CAGR %</b>
Number (billion)	12.3	15.2	7.4%
Value (trillion)	\$26.3	\$29.6	4.0%
Average Value	\$2,144	\$1,947	-3.2

**3.2.5 Network ACH Payments by Standard Entry Class (SEC)****Code**

In terms of number of transactions, PPD was the most frequently used SEC code in 2009, accounting for 48.1 percent of all ACH transactions. For ACH debits, PPD, ARC, and WEB transactions comprised the greatest share of transactions at 30.4 percent, 26.4 percent and 25 percent respectively. For credits, PPD (e.g., payroll direct deposit) is by far the most used SEC code by number of transactions, accounting for 74.5 percent of all ACH credits in 2009.

In dollar value terms, CCD ACH transactions accounted for the largest share of total ACH value in 2009, with 65.5 percent of all ACH debit value, 50.5 percent of all ACH credit

value, and 56.5 percent of total ACH value in 2009. PPD transactions accounted for the next largest share of total ACH transaction value, with 28.7 percent, followed by CTX transactions at 8.9 percent. The remaining SEC codes each accounted for 3.0 percent or less of total ACH payments value.

**Exhibit 61: Number of Network ACH Transactions by SEC Code**

	<b>Debits</b>	<b>% of Debits</b>	<b>Credits</b>	<b>% of Credits</b>	<b>Total</b>	<b>% of Total</b>
ARC	2,409,945,748	26.4%	142,948	0.0%	2,410,088,696	15.8%
BOC	160,435,547	1.8%	65,566	0.0%	160,501,113	1.1%
CBR	2,143	0.0%	7,791	0.0%	9,934	0.0%
CCD	611,575,008	6.7%	1,384,115,844	22.7%	1,995,690,852	13.1%
CIE	46,276	0.0%	119,130,677	2.0%	119,176,953	0.8%
CTX	7,723,111	0.1%	52,598,997	0.9%	60,322,108	0.4%
PBR	1,836	0.0%	822,310	0.0%	824,146	0.0%
POP	480,698,868	5.3%	49,951	0.0%	480,748,819	3.2%
POS	30,723,220	0.3%	622,391	0.0%	31,345,611	0.2%
PPD	2,769,889,900	30.4%	4,544,914,263	74.5%	7,314,804,163	48.1%
RCK	11,840,716	0.1%	243	0.0%	11,840,959	0.1%
SHR	8,812,031	0.1%	122,217	0.0%	8,934,248	0.1%
TEL	343,503,775	3.8%	45,397	0.0%	343,549,172	2.3%
TRC	0	0.0%	0	0.0%	0	0.0%
WEB	2,279,793,748	25.0%	211,235	0.0%	2,280,004,983	15.0%
XCK	1,510	0.0%	0	0.0%	1,510	0.0%
<b>Total</b>	<b>9,114,993,437</b>	<b>100.0%</b>	<b>6,102,849,830</b>	<b>100.0%</b>	<b>15,217,843,267</b>	<b>100.0%</b>

**Exhibit 62: Dollar Value of Network ACH transactions by SEC Code**

	<b>Debits (thousands)</b>	<b>% of Debits</b>	<b>Credits (thousands)</b>	<b>% of Credits</b>	<b>Total</b>	<b>% of Total</b>
ARC	639,402,703	5.3%	31,072	0.0%	639,433,775	2.2%
BOC	12,932,439	0.1%	5,350	0.0%	12,937,789	0.0%
CBR	11,868	0.0%	108,758	0.0%	120,626	0.0%
CCD	7,837,556,234	65.5%	8,908,933,394	50.5%	16,746,489,628	56.5%
CIE	5,416	0.0%	59,946,071	0.3%	59,951,487	0.2%
CTX	124,121,942	1.0%	2,497,986,965	14.1%	2,622,108,907	8.9%
PBR	813	0.0%	449,661	0.0%	450,474	0.0%
POP	40,226,555	0.3%	5,833	0.0%	40,232,388	0.1%
POS	1,974,405	0.0%	84,365	0.0%	2,058,770	0.0%
PPD	2,305,361,615	19.3%	6,185,783,589	35.0%	8,491,145,204	28.7%
RCK	2,180,216	0.0%	125	0.0%	2,180,341	0.0%
SHR	324,283	0.0%	324,292	0.0%	648,575	0.0%
TEL	118,005,620	1.0%	23,110	0.0%	118,028,730	0.4%
TRC	0	0.0%	0	0.0%	0	0.0%
WEB	890,259,033	7.4%	151,258	0.0%	890,410,291	3.0%
XCK	646	0.0%	0	0.0%	646	0.0%
<b>Total</b>	<b>11,972,363,788</b>	<b>100.0%</b>	<b>17,653,833,843</b>	<b>100.0%</b>	<b>29,626,197,631</b>	<b>100.0%</b>

### **3.2.6 Change in Number and Value of Network ACH Transactions by SEC Code, 2006-2009**

The number of network ACH credits increased 6 percent per year, and value increased 5.3 percent per year from 2006 to 2009. The number of ACH debits cleared through an ACH operator also increased 8.4 percent annually over the period. The value of ACH debits grew at 2.3 percent per year (Exhibit 63).

Among ACH credits, POS credits grew at the fastest rate from 2006 to 2009, at 69.4 percent annually, followed by WEB credits at 24.8 percent per year and POP at 24.6 percent per year.<sup>11</sup> The value of WEB transactions increased most, at 27.2 percent annually during this period, followed by POP and CTX at 16.9 percent and 9.4 percent, respectively. The number of SHR and RCK credits witnessed the largest declines, at 34.5 percent and 31.9 percent per year. The value of SHR credits declined at 35.6 percent and RCK credit value declined 23.6 percent per year.

ACH debits trends were largely in line with ACH Credits: point-of-sale ACH applications demonstrated the highest growth rates, with the number of POP debits growing at 21.3 percent annually and POS debits at 20.4 percent. The number of WEB debits grew at 18.6 percent. SHR debits declined 35.9 percent annually and RCK debits declined 17.3 percent per year from 2006 to 2009.

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<sup>11</sup> Growth figures include only SEC codes that had volume in both 2006 and 2009. They do not include new SEC codes introduced after 2006.

**Exhibit 63: Change in the Number and Value of Network ACH Transaction by SEC Code (CAGR 2006-2009)**

	Credits		Debits	
	Number	Value	Number	Value
ARC	-11.9%	-30.3%	3.9%	0.9%
BOC	N/A	N/A	N/A	N/A
CCD	5.6%	2.9%	6.2%	-0.2%
CIE	-4.7%	-1.5%	-3.5%	-1.0%
CTX	13.1%	9.4%	19.3%	10.7%
POP	24.6%	16.9%	21.3%	22.7%
POS	69.4%	7.7%	20.4%	33.1%
PPD	6.4%	7.4%	3.5%	6.3%
RCK	-31.9%	-23.6%	-17.3%	-14.1%
SHR	-34.5%	-35.6%	-35.9%	-35.6%
TEL	3.6%	-1.8%	5.4%	-0.1%
TRC	N/A	N/A	N/A	N/A
WEB	24.8%	27.2%	18.6%	19.0%
XCK	N/A	N/A	-76.0%	-73.3%
<b>Total</b>	<b>6.0%</b>	<b>5.3%</b>	<b>8.4%</b>	<b>2.3%</b>

### 3.2.7 Direct Exchange ACH Payments by DI Type

Direct exchange ACH payments are entries sent directly from the originating depository institution (or its third-party processor) to the receiving depository institution (or its third-party processor). These entries are not sent to an ACH operator (i.e., Federal Reserve or EPN) for clearing. An estimated 135.7 million ACH payments were made via direct exchange in 2009. Exhibit 64 below illustrates the distribution of direct exchange ACH payments by institution type.

**Exhibit 64: Number of Direct Exchange ACH Payments**

	Direct Exchange ACH Payments (million)		95% Confidence Interval
<b>U.S. Market</b>	<b>135.7</b>		<b>121.2</b>
Commercial Banks	70%	(+/-)	28%
Credit Unions	28%	(+/-)	28%
Savings Institutions*	2%	(+/-)	4%

Figures may not add due to rounding.

\*Sample data reveal that use of direct exchange for savings institutions is too rare to estimate reliably for the entire market.

The value associated with these direct exchange ACH payments is estimated to have been \$315.5 billion, and the average value per entry was \$2,325 (Exhibit 65 and Exhibit 66).

**Exhibit 65: Value of Direct Exchange ACH Payments**

	<b>Direct Exchange ACH Payments Value (billion)</b>		<b>95% Confidence Interval</b>	
<b>U.S. Market</b>	<b>\$315.5</b>		<b>\$235.9</b>	
Commercial Banks	97%	(+/-)	4%	
Credit Unions	3%	(+/-)	4%	
Savings Institutions*	0%	(+/-)	0%	

Figures may not add due to rounding.

\*Sample data reveal that use of direct exchange for savings institutions is too rare to estimate reliably for the entire market.

**Exhibit 66: Average Value of Direct Exchange ACH Payments**

	<b>Direct Exchange ACH Payments Avg. Value</b>		<b>95% Confidence Interval</b>	
<b>U.S. Market</b>	<b>\$2,325</b>	<b>(+/-)</b>	<b>\$933</b>	
Commercial Banks	\$3,225	(+/-)	\$425	
Credit Unions	\$273	(+/-)	\$229	
Savings Institutions*	--	(+/-)	--	

\*Sample data reveal that use of direct exchange for savings institutions is too rare to estimate reliably for the entire market.

**3.2.8 Change in the Use of Direct Exchange ACH Payments**

Although use of direct exchange is still rare, the number of direct exchange entries has increased 62.7 percent per year from 2006 to 2009 (Exhibit 67).

**Exhibit 67: Change in the Number, Value and Average Value of Direct Exchange ACH Payments**

	<b>2006</b>			<b>2009</b>			<b>CAGR</b>
Direct Exchange ACH Payments (million)	31.5	+/-	13.8	135.7	(+/-)	121.2	62.7%
Value of Direct Exchange ACH Payments (billion)	\$55.7	+/-	29.5	\$315.5	(+/-)	\$235.9	78.3%
Average Value	\$1,766	+/-	\$203	\$2,325	(+/-)	\$933	9.6%

### 3.2.9 In-House “On-U.s.” ACH Payments

In-house on-us ACH payments are payments made between accountholders at the same depository institution that are cleared internally using the depository institution’s ACH system and without the use of a network operator. In 2009, there were an estimated 3.7 billion in-house on-us ACH payments made, totaling \$7.2 trillion (Exhibit 68 and Exhibit 69).

#### Exhibit 68: Number of In-House On-U.s. ACH Payments

	<b>On-U.s. ACH Payments (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>3.7</b>	<b>(+/-)</b>	<b>0.2</b>
Commercial Banks	92%	(+/-)	0.8%
Credit Unions	0%	(+/-)	0.1%
Savings Institutions	8%	(+/-)	0.8%

Figures may not add due to rounding.

#### Exhibit 69: Value of In-House On-U.s. ACH Payments

	<b>On-U.s. ACH Payments Value (trillion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>7.2</b>	<b>(+/-)</b>	<b>0.3</b>
Commercial Banks	99%	(+/-)	0.1%
Credit Unions	0%	(+/-)	0.0%
Savings Institutions	1%	(+/-)	0.1%

Figures may not add due to rounding.

The average in-house on-us ACH payment was \$1,931, as illustrated by Exhibit 70 below.

#### Exhibit 70: Average Value of In-House On-U.s. ACH Payments

	<b>On-U.s. ACH Payments Avg. Value</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$1,931</b>	<b>(+/-)</b>	<b>\$349</b>
Commercial Banks	\$2,083	(+/-)	\$386
Credit Unions	\$104	(+/-)	\$267
Savings Institutions	\$295	(+/-)	\$153

### 3.2.10 Change in In-House “On-Ups” ACH Payments

From 2006 to 2009, the number of in-house on-us ACH payments increased from 2.3 billion entries to 3.7 billion entries respectively, a 17.9 percent increase per year (Exhibit 71).

The value associated with these on-us payments increased 16.4 percent per year during the same period, from \$4.6 trillion to \$7.2 trillion (Exhibit 71).

#### Exhibit 71: Change in the Number, Value and Average Value of In-House On-Ups ACH Payments

	2006			2009			CAGR
On-Ups ACH Payments (billion)	2.3	+/-	0.2	3.7	(+/-)	0.2	17.9%
Value of On-Ups ACH Payments (trillion)	\$4.6	+/-	\$0.42	\$7.2	(+/-)	\$0.3	16.4%
Average Value	\$2,007	+/-	\$333	\$1,931	(+/-)	\$349	-1.3%

## 3.3 CREDIT CARD

Credit cards, which include both general purpose and private label cards, were the only major electronic payment form to exhibit a decline in usage from 2006 to 2009. The total number of payments made by credit cards declined at an annual rate of 0.2 percent during the period, from 21.7 billion transactions in 2006 to 21.6 billion in 2009. The value of credit card payments declined at an annual rate of 3.4 percent, from \$2.1 trillion in 2006 to \$1.9 trillion in 2009 for an average value of \$89 per transaction (Exhibit 72).

**Exhibit 72: Change in the Number, Value and Average Value of Credit Card Transactions**

	<b>2003</b>	<b>2006</b>	<b>2009</b>	<b>2003-2006 CAGR %</b>	<b>2006-2009 CAGR%</b>
General Purpose Credit Card					
Number (billion)	15.2	19.0	19.9	7.6	1.6
Value (trillion)	\$1.4	\$1.9	\$1.7	9.9	-2.9
Average Value	\$93	\$99	\$86	2.1	-4.4
Private Label Credit Card					
Number (billion)	3.8	2.8	1.7	-9.6	-15.3
Value (trillion)	\$0.3	\$0.3	\$0.2	-3.7	-7.2
Average Value	\$76	\$92	\$121	6.6	9.6
<b>Total</b>					
<b>Number (billion)</b>	<b>19.0</b>	<b>21.7</b>	<b>21.6</b>	<b>4.6</b>	<b>-0.2</b>
<b>Value (trillion)</b>	<b>\$1.7</b>	<b>\$2.1</b>	<b>\$1.9</b>	<b>7.8</b>	<b>-3.4</b>
<b>Average Value</b>	<b>\$89</b>	<b>\$98</b>	<b>\$89</b>	<b>3.1</b>	<b>-3.1</b>

Figures may not add due to rounding.

The decline in credit card spending likely reflects the economic recession and may not represent permanent changes in payments preferences of consumers and businesses. Decline was not the trend throughout the entire period. Interim year data about general purpose credit cards indicate that the number of transactions increased from 2006 to 2007 and from 2007 to 2008 before declining from 2008 to 2009. Independent data from the Federal Reserve Board of Governors also suggest the decline in the use of revolving debt has been a recent phenomenon. The G.19 statistic on Consumer Credit reports that the level of seasonally adjusted consumer revolving debt in the United States increased in every month from January 2006 to its peak in August 2008 before declining in every subsequent month through November 2010.

**3.3.1 General Purpose Credit Card Transactions**

General purpose credit cards, like credit cards overall, declined in transaction value from 2006 to 2009. The value of general purpose credit card payments declined 2.9 percent per year, from \$1.9 trillion in 2006 to \$1.7 trillion in 2009. The decline in transaction value occurred in spite of 1.6 percent average annual growth in the number of transactions, from 19.0 billion in 2006 to 19.9 billion in 2009. During this period the average value of a credit card transaction declined \$13, from \$99 in 2006 to \$86 in 2009.

As noted above, the decline in general purpose credit card spending likely reflects the economic recession and probably does not represent a longer term trend.

**Exhibit 73: Change in the Number, Value and Average Value of General Purpose Credit Card Transactions**

	2003	2006	2009	2003-2006 CAGR %	2006-2009 CAGR%
Number (billion)	15.2	19.0	19.9	7.6	1.6
Value (trillion)	\$1.4	\$1.9	\$1.7	9.9	-2.9
Average Value	\$93	\$99	\$86	2.1	-4.4

**3.3.1.1 Card Present vs. Card Not Present Transactions**

Of the 19.9 billion general purpose card transactions in 2009, 16.1 billion (81 percent) were card present transactions, 1.9 billion were card not present e-commerce transactions (i.e., made via the Internet), and 1.9 billion were card not present mail or telephone transactions.

Card not present transactions had higher average values than in-person credit card payments. Mail or telephone transactions had the highest average value at \$145, followed by e-commerce transactions at \$119. Card present transactions had an average value of \$76 (Exhibit 74).

**Exhibit 74: Card Present vs. Not Present Transactions**

	Number (billion)	Value (trillion)	Avg. Value
Card present transactions	16.1	\$1.2	\$76
Card NOT present transactions (E-commerce)	1.9	\$0.2	\$119
Card NOT present transactions (Mail & telephone)	1.9	\$0.3	\$145

**3.3.1.2 Business Credit or Charge Card Transactions**

Business card transactions comprised 12 percent of total general purpose credit card transactions (2.4 billion) with an average value of \$178 (Exhibit 75).

**Exhibit 75: Business Credit or Charge Card Transactions**

	Number (billion)	Value (trillion)	Avg. Value
Business transactions	2.4	\$0.4	\$178

**3.3.1.3 Contactless General Purpose Credit Card Transactions**

Contactless card payments accounted for 0.02 billion general purpose credit card payments in 2009 (0.1 percent of all general purpose card payments), with an average

value of \$43 (Exhibit 76). The average value is half that of the average general purpose credit card transactions and \$33 less than the average card present transaction. The relatively low average value of contactless transactions may reflect the types of retailers that have installed contactless card readers at the point of sale, the types of transactions for which cardholders prefer to make contactless payments, or both.

**Exhibit 76: Contactless General Purpose Credit Card Transactions**

	<u>Number (billion)</u>	<u>Value (trillion)</u>	<u>Avg. Value</u>
Contactless transactions	0.02	\$0.001	\$43

**3.3.1.4 Distribution of General Purpose Credit Card Payments by Dollar Value**

Purchases less than \$25 accounted for 43.7 percent of all general purpose credit card transactions and 5.6 percent of the value of transactions. Low value transactions (less than \$5) accounted for 10.7 percent of all transactions (Exhibit 77). These findings suggest that credit cards are used widely for day-to-day transactions. See section 3.6 for discussion of card use for low value transactions.

**Exhibit 77: Distribution of General Purpose Credit Card Payments by Transaction Amount**

	<u>Number (billion)</u>	<u>% of Total</u>	<u>Value (trillion)</u>	<u>% of Total</u>
<\$5	2.1	10.7%	\$0.004	0.3%
\$5.00-\$14.99	3.7	18.5%	\$0.036	2.1%
\$15-\$24.99	2.9	14.5%	\$0.057	3.3%
\$25+	11.2	56.3%	\$1.624	94.4%

**3.3.1.5 Interim Year Trends**

In addition to detailed data about 2009, 2010 EPS respondents provided the number and value of general purpose credit card transactions for 2007 and 2008. The findings provide insights into the nature of credit card's decline in use. Although the number of general purpose credit card transactions increased from 2006 to 2009, it declined from 20.3 billion in 2008 to 19.9 billion in 2009. Between 2008 and 2009 the value of credit card payments also declined from \$1.9 trillion to \$1.7 trillion, falling below the 2006 level of \$1.9 trillion. See Exhibit 78 for details.

**Exhibit 78: Trends in the Number, Value and Average Value of General Purpose Credit Card Transactions**

	2006	2007	2008	2009
Number (billion)	19.0	19.1	20.3	19.9
Value (trillion)	\$1.9	\$1.8	\$1.9	\$1.7
Average Value	\$99	\$93	\$93	\$86

It is difficult to discern from the data gathered for this study whether general purpose credit cards have become more or less common as substitutes for other payment types for low value transactions. Data in Exhibit 77 highlight general purpose credit card's use for low value transactions in 2009, but the study lacks historical data to which to compare it. Data in Exhibit 78 indicate that the average value of general purpose credit card transactions decreased from 2006 to 2007 and again from 2008 to 2009, but in both cases the total value of general purpose credit card payments also declined. It is conceivable that the declines in average value did not reflect increased use for low value transactions but rather decreased use for high value transactions. In no year in which general purpose credit card spending increased did the average value per transaction fall. However, the fact that general purpose credit card's average value remained steady at \$93 in 2007 and 2008 while inflation increased, suggests that general purpose credit cards may have increased their use as a low value payments substitutes since the 2007 EPS.

**3.3.2 Private Label Credit Cards**

Private label credit card activity declined during from 2006 to 2009 both in number and value of transactions. The number of private label credit card transactions declined at an annual rate of 15.3 percent between 2006 and 2009, from 2.8 billion to 1.7 billion. The value of transactions decreased by 7.2 percent per year over the same period, from \$0.3 billion in 2006 to \$0.2 billion in 2009. No interim year data are available from this study to indicate whether the decline in private label credit card use accelerated over the period.

**Exhibit 79: Change in the Number, Value and Average Value of Private Label Credit Card Transactions**

	2003	2006	2009	2003-2006 CAGR %	2006-2009 CAGR%
Number (billion)	3.8	2.8	1.7	-9.6	-15.3
Value (trillion)	\$0.3	\$0.3	\$0.2	-3.7	-7.2
Average Value	\$76	\$92	\$121	6.6	9.6

## 3.4 DEBIT CARD

National estimates for the number and value of debit card payments are based on data from the 2010 EPS. The 2010 DI Study also estimates the number and value of debit card payments. It is the basis for estimates by type of DI below.

In summary, the total number of debit card payments increased 14.8 percent per year from 2006 to 2009. The number of PIN debit transactions increased more rapidly (15.6 percent per year) than signature debit transactions (14.3 percent per year), but the absolute increase in number of signature debit payments from 2006 to 2009 (7.7 billion) exceeded the total increase in the number of PIN debit payments (5.1 billion).

### 3.4.1 Total Debit Card Payments

Debit card payments continued double-digit growth from 2006 to 2009 and accounted for 34.7 percent of noncash payments in 2009 (2.0 percent by value). The total number of debit card payments increased 14.8 percent per year during the period, from 25.0 billion in 2006 to 37.9 billion in 2009. The value of debit card payments increased at an average annual rate of 13.5 percent, from \$1.0 trillion in 2006 to \$1.4 trillion in 2009.<sup>12</sup> These estimates combine signature- and PIN-based debit card payments from deposit accounts.<sup>13</sup>

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<sup>12</sup> The estimate for debit card payments value was revised after the release of the summary report in December 2010. The value was revised from \$1.46 trillion to \$1.42 trillion. As a result, there was a revision to the annual rate of change between 2006 and 2009 from 14.4 to 13.4 percent.

<sup>13</sup> PIN debit transactions include purchases made with debit or ATM cards at the point of sale.

**Exhibit 80: Change in the Number, Value and Average Value of Debit Card Payments**

	<b>2003</b>	<b>2006</b>	<b>2009</b>	<b>2003-2006 CAGR %</b>	<b>2006-2009 CAGR %</b>
Signature Debit					
Number (billion)	10.3	15.7	23.4	15.1	14.3
Value (trillion)	\$0.4	\$0.6	\$0.9	13.5	11.2
Average Value	\$42	\$40	\$37	-1.4	-2.7
PIN Debit					
Number (billion)	5.3	9.4	14.5	20.6	15.6
Value (trillion)	\$0.2	\$0.3	\$0.6	19.5	17.3
Average Value	\$38	\$37	\$39	-0.9	1.5
<b>Total</b>					
<b>Number (billion)</b>	<b>15.6</b>	<b>25.0</b>	<b>37.9</b>	<b>17.1</b>	<b>14.8</b>
<b>Value (trillion)</b>	<b>\$0.6</b>	<b>\$1.0</b>	<b>\$1.4</b>	<b>15.5</b>	<b>13.5</b>
<b>Average Value</b>	<b>\$40</b>	<b>\$39</b>	<b>\$38</b>	<b>-1.3</b>	<b>-1.2</b>

Figures may not add due to rounding.

**3.4.2 Debit Card Payments by DI Type**

The 2010 DI Study estimated the proportion of debit card transactions and value by institution. The distributions by number and value of transactions are quite similar. Debit cards issued by commercial banks accounted for 76 percent of all debit card payments and 77 percent of debit card payments value. Credit union members made 18 percent of all debit card payments accounting for 17 percent of debit card payments value. The remaining 6 percent of transactions and value came from debit cards issued by savings institutions. See Exhibit 81 and Exhibit 82.

**Exhibit 81: Number of Debit Card Payments by DI Type**

	<b>Debit Card Payments (billion)</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>37.9</b>	<b>(+/-)</b>	<b>0.0</b>
Commercial Banks	76%	(+/-)	1%
Credit Unions	18%	(+/-)	1%
Savings Institutions	6%	(+/-)	1%

Figures may not add due to rounding.

**Exhibit 82: Value of Debit Card Payments by DI Type**

	<b>Debit Card Payments Value (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>1,420.6</b>		<b>0.0</b>
Commercial Banks	77%	(+/-)	1%
Credit Unions	17%	(+/-)	1%
Savings Institutions	6%	(+/-)	0%

Figures may not add due to rounding.

The average debit card payment was \$38 in 2009. Average value details are shown in Exhibit 83.

**Exhibit 83: Average Value of Debit Card Payments**

	<b>Debit Card Payments Avg. Value</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$38</b>		<b>0.0</b>
Commercial Banks	\$39	(+/-)	\$1
Credit Unions	\$37	(+/-)	\$1
Savings Institutions	\$39	(+/-)	\$1

**3.4.3 Signature Debit Card Payments**

An estimated 23.4 billion debit card payments authorized by signature (rather than PIN) were made in 2009. Of those, 75 percent were made by deposit account holders at commercial banks. Credit unions members made 18 percent of all signature debit payments, and debit cards issued by savings institutions accounted for 6 percent. See Exhibit 84 below.

**Exhibit 84: Number of Signature Debit Card Payments**

	<b>Signature Debit (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>23.4</b>		<b>0.0</b>
Commercial Banks	75%	(+/-)	1%
Credit Unions	18%	(+/-)	1%
Savings Institutions	6%	(+/-)	1%

Figures may not add due to rounding.

The distribution of 2009 dollar value of signature debit transactions across DI types was very similar to the distribution of transactions, because the average value per transaction varied little across DI types. (See Exhibit 85 and Exhibit 86 below.) Of the estimated \$857.5 billion in signature debit transactions in 2009, 77 percent were by debit cards issued by commercial banks, 17 percent by credit union debit cards, and 6 percent by those issued by savings institutions.

#### Exhibit 85: Value of Signature Debit Card Payments

	<u>Signature Debit Value (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$857.5</b>		<b>\$0.0</b>
Commercial Banks	77%	(+/-)	1%
Credit Unions	17%	(+/-)	1%
Savings Institutions	6%	(+/-)	1%

Figures may not add due to rounding.

#### Exhibit 86: Average Value of Signature Debit Card Payments

	<u>Signature Debit Avg. Value</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$37</b>		<b>\$0</b>
Commercial Banks	\$38	(+/-)	\$2
Credit Unions	\$33	(+/-)	\$1
Savings Institutions	\$36	(+/-)	\$4

Figures may not add due to rounding.

#### 3.4.3.1 Change in the Use of Signature Debit Card Payments

Signature debit card payments increased from 15.7 billion to 23.4 billion from 2006 to 2009, a 14.3 percent increase per year. The value of signature debit card payments increased at a rate of 11.2 percent per year, from \$624.2 billion in 2006 to \$857.5 billion in 2009. The average value per signature debit card payment decreased from \$40 to \$37, likely reflecting the increased use of signature debit cards as a substitute to make low value transactions. See Exhibit 87.

**Exhibit 87: Change in the Number, Value and Average Value of Signature Debit Card Payments**

	2006			2009			CAGR
Signature Debit Card Payments (billion)	15.7	+/-	0.0	23.4	(+/-)	0.0	14.3%
Value of Signature Debit Payments (billion)	\$624.2	+/-	\$0.0	\$857.5	(+/-)	\$0.0	11.2%
Average Value	\$40	+/-	\$0	\$37	(+/-)	\$0	-2.7%

**3.4.3.2 Card Present vs. Card Not Present Signature Debit Card Transactions**

Of the number of signature (offline) debit transactions in 2009, 19.9 billion were card present transactions (85 percent), 1.8 billion were card not present e-commerce transactions, and 1.6 billion were card not present mail or telephone transactions.

Mail or telephone signature debit transactions had the highest average value at \$76. E-commerce signature debit transactions averaged \$72, while card present signature debit transactions were materially lower with an average value of \$30 (Exhibit 88).

**Exhibit 88: Card Present vs. Card Not Present Signature Debit Card Transactions**

	Number (billion)	Value (trillion)	Avg. Value
Card present transactions	19.9	\$0.6	\$30
Card NOT present transactions (E-commerce)	1.8	\$0.1	\$72
Card NOT present transactions (Mail & telephone)	1.6	\$0.1	\$76

**3.4.3.3 Signature Debit Card Transactions by Businesses**

An estimated 0.8 billion signature debit card payments were made by businesses for a total value of \$0.07 trillion, comprising 3.5 percent of total signature debit card transactions and 8.5 percent of signature debit card payments value. Signature debit transactions by businesses averaged \$88 per transaction—more than twice the average for signature debit overall (Exhibit 89).

**Exhibit 89: Signature Debit Card Transactions by Businesses**

	Number (billion)	Value (trillion)	Avg. Value
Business transactions	0.8	\$0.07	\$88

#### 3.4.3.4 Contactless Signature Debit Card Transactions

There were an estimated 0.03 billion contactless signature debit transactions in 2009 for \$0.001 trillion (Exhibit 90). These accounted for 0.15 percent of total signature debit card payments and 0.08 percent of value. Contactless signature debit card transactions had an average value of \$20 – approximately half the average value of signature debit transactions overall. As with credit cards, the relatively low average value of contactless signature debit transactions may reflect the types of retailers that have installed contactless card readers at the point of sale, the types of transactions for which cardholders prefer to make contactless payments, or both.

#### Exhibit 90: Contactless Signature Debit Card Transactions

	<u>Number (billion)</u>	<u>Value (trillion)</u>	<u>Avg. Value</u>
Contactless transactions	0.03	\$0.001	\$20

#### 3.4.3.5 Distribution of Signature Debit Card Payments by Value

Two-thirds (64.0 percent) of signature debit card transactions in 2009 were for purchases of less than \$25, nearly half (46.7 percent) were less than \$15, and 15.4 percent (or about one out of every six or seven) was for less than \$5. See Exhibit 91 below for details. For further discussion of low value transactions see section 3.6.

#### Exhibit 91: Distribution of Signature Debit Card Payments by Transaction Amount

	<u>Number (billion)</u>	<u>% of Total</u>	<u>Value (trillion)</u>	<u>% of Total</u>
<\$5	3.6	15.4%	\$0.01	1.1%
\$5.00-\$14.99	7.3	31.3%	\$0.07	7.9%
\$15-\$24.99	4.0	17.3%	\$0.08	9.1%
\$25+	8.4	36.0%	\$0.70	81.9%

#### 3.4.3.6 Interim Year Trends

The number of signature debit card payments increased continually throughout the period from 2006 to 2009, but the rate of growth peaked between 2007 and 2008. From 2006 to 2007, the number of signature debit card transactions increased 13.8 percent, from 15.7 billion to 17.8 billion. From 2007 to 2008, the number of transactions increased 15.5 percent to 20.6 billion, and from 2008 to 2009 it increased 13.6 percent to 23.4 billion. The slowdown in growth 2008 to 2009 likely reflects the economic recession. However from

2008 to 2009, signature debit transactions continued to grow at double-digit rates in spite of the recession unlike general purpose credit cards, the use of which contracted.

The trend in signature debit card payments value was similar to the trend in the number of transactions. From 2006 to 2007, the dollar value of signature debit card transactions increased 9.4 percent, from \$0.6 trillion to \$0.7 trillion. From 2007 to 2008, the dollar value of transactions increased 15 percent to \$0.8 trillion, and from 2008 to 2009 it increased 9.2 percent to \$0.9 trillion.

The average value of signature debit transactions declined from \$40 in 2006 to \$37 in 2009. This is in part because the pace of transaction growth exceeded dollar value growth 2008-09, indicating that an increasing share of new signature debit transactions are coming from lower value purchases.

#### **Exhibit 92: Trends in the Number, Value and Average Value of Signature Debit Card Transactions**

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
Number (billion)	15.7	17.8	20.6	23.4
Value (trillion)	\$0.6	\$0.7	\$0.8	\$0.9
Average Value	\$40	\$38	\$38	\$37

### **3.4.4 PIN Debit Card Payments**

An estimated 14.5 billion PIN debit card payments were made in the United States in 2009 for a value of \$563.1 billion (Exhibit 93 and Exhibit 94). Seventy-seven percent of these transactions were made by cardholders at commercial banks, accounting for 76 percent of the value of PIN debit payments. Credit union members made 18 percent of the number and value of PIN debit transactions, while savings institutions accounted for the remaining 5 percent of transactions and 6 percent of value.

#### **Exhibit 93: Number of PIN Debit Card Payments**

	<u>PIN Debit (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>14.5</b>		<b>0.0</b>
Commercial Banks	77%	(+/-)	1%
Credit Unions	18%	(+/-)	1%
Savings Institutions	5%	(+/-)	1%

Figures may not add due to rounding.

**Exhibit 94: Value of PIN Debit Card Payments**

	<u>PIN Debit (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$563.1</b>		<b>\$0.0</b>
Commercial Banks	76%	(+/-)	1%
Credit Unions	18%	(+/-)	1%
Savings Institutions	6%	(+/-)	1%

Figures may not add due to rounding.

The average PIN debit card payment was \$39 in 2009. This average includes cash back at the point of sale. Exhibit 95 below illustrates average value details.

**Exhibit 95: Average Value of PIN Debit Card Payments**

	<u>PIN Debit Avg. Value</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$39</b>	<b>(+/-)</b>	<b>\$0</b>
Commercial Banks	\$38	(+/-)	\$2
Credit Unions	\$40	(+/-)	\$2
Savings Institutions	\$41	(+/-)	\$4

**3.4.4.1 Change in the Use of PIN Debit Card Payments**

The number of PIN debit card payments increased 15.6 percent per year 2006 to 2009, from 9.4 billion to 14.5 billion transactions (Exhibit 96). The value of these payments increased from \$348.6 billion to \$563.1 billion – an increase of 17.3 percent per year (Exhibit 96).

The average value per PIN debit card payment increased \$2 between 2006 and 2009, from \$37 to \$39.

**Exhibit 96: Change in the Number, Value and Average Value of PIN Debit Card Payments**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
PIN Debit Card Payments (billion)	9.4	+/-	0.0	14.5	(+/-)	0.0	15.6%
Value of PIN Debit Payments (billion)	\$348.6	+/-	\$0.0	\$563.1	(+/-)	\$0.0	17.3%
Average Value	\$37	+/-	\$0	\$39	(+/-)	\$0	1.5%

### 3.4.4.2 Distribution of PIN Debit Card Payments by Value

Transactions under \$25 made up 50.5 percent of all PIN debit transactions and 14.7 percent of the total value of PIN debit transactions (Exhibit 97). One-third (32.8 percent) of PIN debit transactions were for less than \$15, but only 8.7 percent of PIN debit card transactions were for transactions under \$5. See section 3.6 for discussion of card use for low value transactions.

**Exhibit 97: Distribution of PIN Debit Card Payments by Transaction Amount**

	Number (billion)	% of Total	Value (trillion)	% of Total
<\$5	1.3	8.7%	\$0.004	0.7%
\$5.00-\$14.99	3.5	24.1%	\$0.034	5.6%
\$15-\$24.99	2.6	17.7%	\$0.051	8.4%
\$25+	7.2	49.5%	\$0.512	85.3%

### 3.4.5 Debit Card Cash Back

In 2009 debit cardholders received cash back at the point of sale for an estimated 1.0 billion debit card purchases. The amount of cash back received totaled \$35.2 billion and averaged \$34 per cash back transaction. Exhibit 98 through Exhibit 100 provided details on the number, value of cash back, and average value of cash received.

The distribution of cash back transactions by DI type was consistent with the distribution of debit card transactions overall. Cardholders at commercial banks performed 77 percent of all debit cash back transactions and 76 percent of all debit transactions. Cards issued by credit unions and savings institutions accounted for 16 percent and 7 percent of cash back transactions respectively in 2009, compared to 18 percent and 6 percent of debit card transactions. See Exhibit 98.

**Exhibit 98: Number of Cash Back Transactions**

	Cash Back (billion)		95% Confidence Interval
<b>U.S. Market</b>	<b>1.0</b>	<b>(+/-)</b>	<b>0.1</b>
Commercial Banks	0.8	(+/-)	0.1
Credit Unions	0.2	(+/-)	0.0
Savings Institutions	0.1	(+/-)	0.0

Figures may not add due to rounding.

**Exhibit 99: Value of Cash Received in Cash Back Transactions**

	<u>Cash Back Value (billion)</u>	(+/-)	<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$35.2</b>		<b>\$2.7</b>
Commercial Banks	\$26.0	(+/-)	\$2.1
Credit Unions	\$7.0	(+/-)	\$1.4
Savings Institutions	\$2.2	(+/-)	\$0.3

Figures may not add due to rounding.

Although the distribution of cash back transactions closely mirrors the distribution of debit transactions, the distribution by value is less closely aligned. The difference is highlighted by differences in the average value per cash back transaction by accountholders of various types of DIs. Accountholders at commercial banks and savings institutions averaged \$33 and \$30 respectively in cash received per cash back transaction. Credit union members, however, averaged \$42 in cash per cash back transaction. The wider confidence interval around the estimates makes it difficult to draw definitive conclusions, but the differences in average value may reflect differential access to banking channels, such as ATMs or branches, through which cardholders can access cash at no direct cost to themselves. Faced with fewer low-cost options to access cash, some credit unions members may use debit cash back at the point of sale as a primary source of cash.

**Exhibit 100: Average Value of Cash Received**

	<u>Cash Back Avg. Value</u>	(+/-)	<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>\$34</b>		<b>\$2</b>
Commercial Banks	\$33	(+/-)	\$2
Credit Unions	\$42	(+/-)	\$8
Savings Institutions	\$30	(+/-)	\$5

**3.5 PREPAID CARD**

The 2010 EP Study estimated the total number and value of prepaid card payments in 2009. Prepaid card transactions were defined to include payments made by prepaid instruments purchased by households and payments made by cards funded by US firms or government agencies to disburse payments or benefits to households (e.g., payroll cards, EBT). Prepaid cards include single-use and reloadable cards, but for purposes of this

study exclude transit cards, toll way systems, and phone cards. General purpose prepaid instruments are network branded by either credit card or PIN networks (e.g., payroll or prepaid banking cards). Private label prepaid cards are those which are limited in usage to one or several merchants (e.g., gift cards).

### **3.5.1 Total Prepaid Card Payments**

There were an estimated 6.0 billion prepaid card transactions in 2009 for a total dollar value of \$140 billion. Although they represent a small share of noncash payments (5.4 percent by number of transactions), prepaid cards are the fastest growing major payment type. The number of prepaid card transactions increased 21.5 percent per year from 2006 to 2009, and the value of prepaid transactions increased at 22.9 percent per year.

The study distinguished between General Purpose (open loop) prepaid cards, Private label (closed loop) prepaid cards, and Electronic Benefits Transfer (EBT) cards. Private label prepaid was the most used type of prepaid card, with an estimated 2.7 billion transactions in 2009; however, it exhibited the lowest growth rates from 2006 to 2009 among prepaid products (11.8 percent per year). An estimated 2.0 billion transactions were made using EBT cards, reflecting 21.4 percent average annual growth since 2006. The number of General Purpose prepaid card transactions increased at an average annual rate of 63.4 percent, from 0.3 billion transactions in 2006 to 1.3 billion in 2009 (Exhibit 101).

**Exhibit 101: Change in the Number, Value and Average Value of Prepaid Card Types**

	2006	2009	2006-2009 CAGR %
Private Label Prepaid Cards			
Number (billion)	1.9	2.7	11.8
Value (trillion)	\$0.03	\$0.04	9.5
Average Value	\$18	\$17	-2.0
General Purpose Prepaid Cards			
Number (billion)	0.3	1.3	63.4
Value (trillion)	\$0.01	\$0.04	48.8
Average Value	\$41	\$33	-7.3
EBT			
Number (billion)	1.1	2.0	21.4
Value (trillion)	\$0.03	\$0.05	22.6
Average Value	\$27	\$28	1.0
<b>Total</b>			
<b>Number (billion)</b>	<b>3.3</b>	<b>6.0</b>	<b>21.5</b>
<b>Value (trillion)</b>	<b>\$0.08</b>	<b>\$0.14</b>	<b>22.9</b>
<b>Average Value</b>	<b>\$23</b>	<b>\$24</b>	<b>1.1</b>

Figures may not add due to rounding.

### 3.5.2 Distribution of Open Loop Prepaid Card Payments by Dollar Amount

Two-thirds (67.1 percent) of open loop prepaid card payments in 2009 were for less than \$25, and just over half (51.2 percent) were for purchases of less than \$15 (Exhibit 102). See section 3.6 for discussion of card use for low value transactions.

**Exhibit 102: Distribution of Open Loop Prepaid Card Payments by Transaction Amount**

	Number (billion)	% of Total	Value (trillion)	% of Total
<\$5	0.2	18.8%	\$0.001	1.6%
\$5.00-\$14.99	0.4	32.4%	\$0.004	8.9%
\$15-\$24.99	0.2	15.9%	\$0.004	9.3%
\$25+	0.4	32.9%	\$0.034	80.2%

### 3.6 USE OF CARDS FOR LOW VALUE TRANSACTIONS

The 2010 iteration of the EPS sought to measure the use of electronic payments for low value transactions. While numerous respondents provided the needed frequency distribution into five dollar-value categories (<\$5, \$5-\$14.99, \$15-\$24.99, \$25+), many respondents were unable to provide these data. Reporting for non-card instruments was too sparse to allow for proper estimates, while reporting from the major card networks for general purpose credit, signature debit and open loop prepaid was very robust. Only six of thirteen PIN debit networks were able to provide this data, but the PIN networks that did report represented 62% of the total PIN debit volumes. Estimates for PIN debit were extrapolated with the assumption that the six networks who had reported were representative of the total group.

Incomplete responses notwithstanding, data about the percentage of selected card payment transactions that occurred within each dollar value range may provide useful insight about cardholder behavior. Combining results for credit, debit and open loop prepaid cards, in 2009 users of these instruments made an estimated 7.2 billion transactions below \$5, 14.9 billion between \$5 and \$14.99, 9.7 billion between \$15 and \$24.99, and 27.2 billion for \$25 or more.

For transactions above \$5, it appears that substitution was most likely between signature debit and credit card. This was particularly true for higher value transactions. For transactions above \$25 general purpose credit cards were the most frequently used instrument and gained share from all other card types in question. Signature debit cards were particularly susceptible: signature debit was used for 42 percent of transactions between \$15 and \$24.99, but only 31 percent of transactions of \$25 or above. PIN debit use, however, remained relatively stable above or immediately below the \$25 threshold. For transactions between \$15 and \$24.99, and \$25+, PIN debit was used 26 percent of the time.

For transactions below \$5, PIN debit's share of transactions (18 percent) was considerably lower than it was for other transaction types. General purpose credit cards and, particularly, signature debit use were the preferred methods for transactions below \$5.

Their high share of these low value transactions may indicate the success of card network rules (and promotional campaigns) to allow merchants and cardholders to forego a signature authorization for low value transactions.

**Exhibit 103: Distribution of Open Selected Card Payment Types by Dollar Amount**

	<\$5		\$5-14.99		\$15-24.99		\$25+	
	Number (billion)	% of Total						
General Purpose Credit Card	2.1	29%	3.7	25%	2.9	30%	11.2	41%
Signature Debit	3.6	50%	7.3	49%	4.0	42%	8.4	31%
PIN Debit	1.3	17%	3.5	23%	2.6	26%	7.2	26%
Open Loop Prepaid	0.2	3%	0.4	3%	0.2	2%	0.4	2%
<b>Total</b>	<b>7.2</b>	<b>100%</b>	<b>14.9</b>	<b>100%</b>	<b>9.7</b>	<b>100%</b>	<b>27.2</b>	<b>100%</b>

Figures may not add due to rounding.

### 3.7 EMERGING PAYMENTS

The design of the 2010 EPS ensures that no electronic payments are double counted, except in the case of “emerging payments.” Estimates of emerging payments transactions, as defined here, inherently double count transactions by other major payment types (ACH). Emerging payments estimates are excluded from the aggregate estimates above but reported here to provide information on their growth separate from the larger categories. Several categories, such as bill payment and money transfer, are well established forms of payment. They are classified as “emerging” for the purposes of this study, because they represent use cases of other “core” payments types (primarily ACH) for which national estimates are provided above.<sup>14</sup>

The 2010 EPS attempted to measure the number and value of transactions in eight emerging payments categories:

- Online bill pay
- Walk-in bill payment

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<sup>14</sup> For further explanation of “core and “emerging” payments categories please refer to the EPS methodology section.

- Far field radio frequency identification (Far field RFID) transactions (i.e., prepaid transit toll transponders)
- Money transfer and Person to Person payments (P2P)
- Private label ACH transactions
- Secure online payments
- E-commerce PIN debit
- Deferred payments

Due to the low number of companies operating in several categories or, in some cases, to low response rates, several categories were omitted from this report to protect the anonymity of respondent data. Therefore, only online and walk-in bill payment, FFRFID, and money transfer / P2P appear in this report.

Definitions for the reported categories are as follows:

- Online bill pay: Includes online transactions initiated at a depository institution or third-party aggregator's website and processed by a third-party bill pay service provider. Excludes payments made directly at a biller's website (i.e., "biller direct" payments) and online bill pay transactions processed solely by a depository institution.
- Walk-in bill payment: Includes in-person payments made at a third party location (e.g., utility payment made at a currency exchange store). Excludes walk-in bill payments made directly at the biller's location.
- Money transfer & P2P payment: Includes domestic or domestic to foreign consumer to consumer transactions (including remittances), initiated in the United States. Transactions can be initiated in person, over the phone, via a website, or mobile device.
- Far field RFID: Long distance radio frequency identification devices used for payments (e.g., a contactless payments device used by motorist to pass through transit tolls without stopping).

With the exception of online bill pay, the 2009 estimates below are not comparable to 2006 estimates due to changes in study definitions or substantial changes in the survey groups. Changes were instituted in 2009 to allow for greater comparability with future studies.

**Exhibit 104: Number, Value and Average Value of Emerging Payment Types**

	<u>Number (billion)</u>	<u>Value (trillion)</u>	<u>Avg. Value</u>
Online Bill Pay	2.4	\$0.868	\$366
Walk-in Bill Pay	0.2	\$0.036	\$144
Money Transfer & P2P	0.1	\$0.045	\$309
Far Field RFID	3.5	\$0.006	\$2
<b>Total</b>	<b>6.3</b>	<b>\$0.955</b>	<b>\$152</b>

Figures may not add due to rounding.

## 3.8 ATM WITHDRAWALS

The 2010 DI Study estimated the number and value of ATM withdrawals in the United States during 2009. The study distinguished between ATM withdrawals made by cardholders at their depository institution (i.e., “on-us” withdrawals) and withdrawals from ATMs operated by organizations other than the cardholder’s depository institution (i.e., foreign ATM withdrawals).

### 3.8.1 Total ATM Withdrawals

There were an estimated 6.0 billion ATM withdrawals in United States in 2009, totaling \$646.7 billion (Exhibit 105 and Exhibit 106).

**Exhibit 105: Number of ATM Withdrawals**

	<u>ATM Withdrawals (billion)</u>		<u>95% Confidence Interval</u>
<b>U.S. Market</b>	<b>6.0</b>	<b>(+/-)</b>	<b>0.4</b>
Commercial Banks	4.2	(+/-)	0.2
Credit Unions	1.4	(+/-)	0.3
Savings Institutions	0.3	(+/-)	0.1

Figures may not add due to rounding.

**Exhibit 106: Value of ATM Withdrawals**

	<b>ATM Withdrawals Value (billion)</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$646.7</b>	<b>(+/-)</b>	<b>\$40.4</b>
Commercial Banks	\$478.5	(+/-)	\$17.2
Credit Unions	\$132.2	(+/-)	\$36.2
Savings Institutions	\$35.9	(+/-)	\$5.7

Figures may not add due to rounding.

The average ATM withdrawal was \$108 as illustrated in Exhibit 107 below.

**Exhibit 107: Average Value of ATM Withdrawals**

	<b>ATM Withdrawals Avg. Value</b>		<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$108</b>	<b>(+/-)</b>	<b>\$2</b>
Commercial Banks	\$113	(+/-)	\$2
Credit Unions	\$95	(+/-)	\$4
Savings Institutions	\$104	(+/-)	\$4

Figures may not add due to rounding.

**3.8.2 Change in ATM Withdrawals**

The number of ATM withdrawals in the United States increased 0.9 percent per year, from 5.8 billion in 2006 to 6.0 billion in 2009. The value of ATM withdrawals increased 3.8 percent per year, from \$578.8 billion in 2006 to \$646.7 billion in 2009 for a 2.9 percent annual increase in average value, from \$100 in 2006 to \$108 in 2009. See Exhibit 108.

**Exhibit 108: Change in the Number, Value and Average Value of ATM Withdrawals**

	<u>2006</u>			<u>2009</u>			<u>CAGR</u>
ATM Withdrawals (billion)	5.8	+/-	0.3	6.0	(+/-)	0.4	0.9%
Value of ATM Withdrawals (billion)	\$578.8	+/-	\$30.9	\$646.7	(+/-)	\$40.4	3.8%
Average Value	\$100	+/-	\$3	\$108	(+/-)	\$2	2.9%

### 3.8.3 “On-Us” ATM Withdrawals

An estimated 3.8 billion on-us ATM withdrawals were made in 2009, totaling \$439.9 billion. On-us withdrawals represented 64 percent of all ATM withdrawals that year.

Exhibit 109 and Exhibit 110 illustrate the number and value of on-us ATM withdrawals in 2009.

#### Exhibit 109: Number of On-Us ATM Withdrawals

	<b>On-Us Withdrawals (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>	<b>% of Total ATM Withdrawals*</b>
<b>U.S. Market</b>	<b>3.8</b>	<b>(+/-)</b>	<b>0.2</b>	<b>64%</b>
Commercial Banks	3.0	(+/-)	0.1	72%
Credit Unions	0.6	(+/-)	0.2	45%
Savings Institutions	0.2	(+/-)	0.0	49%

Figures may not add due to rounding.

\*Percentage of total ATM withdrawals within DI type that is on-us ATM withdrawals.

#### Exhibit 110: Value of On-Us ATM Withdrawals

	<b>On-Us Withdrawals (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>	<b>% of Total ATM Withdrawals*</b>
<b>U.S. Market</b>	<b>\$439.9</b>	<b>(+/-)</b>	<b>\$22.5</b>	<b>68%</b>
Commercial Banks	\$360.9	(+/-)	\$14.1	75%
Credit Unions	\$60.7	(+/-)	\$16.8	46%
Savings Institutions	\$18.2	(+/-)	\$3.6	51%

Figures may not add due to rounding.

\*Percentage of total ATM withdrawal value within DI type that is on-us ATM withdrawals.

The average on-us ATM withdrawal was \$115 (Exhibit 111).

#### Exhibit 111: Average Value of On-Us ATM Withdrawals

	<b>On-Us Withdrawal Avg. Value</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$115</b>	<b>(+/-)</b>	<b>\$1</b>
Commercial Banks	\$119	(+/-)	\$1
Credit Unions	\$97	(+/-)	\$4
Savings Institutions	\$108	(+/-)	\$7

### 3.8.4 Change in “On-Us” ATM Withdrawals

The number of on-us ATM withdrawals increased at an annual rate of 1.8 percent from 2006 to 2009, from 3.6 billion to 3.8 billion transactions. The value associated with these withdrawals increased from \$376.4 billion to \$439.9 billion, a 5.3 percent annual increase, based on an increase in the average withdrawal amount from \$106 in 2006 to \$115 in 2009.

See Exhibit 112 below for details on the change in number, value, and average value during the period.

#### Exhibit 112: Change in the Number, Value and Average Value of On-Us ATM Withdrawals

	2006			2009			CAGR
On-Us ATM Withdrawals (billion)	3.6	+/-	0.2	3.8	(+/-)	0.2	2.5%
Value of On-Us ATM Withdrawals (billion)	376.4	+/-	22.6	\$439.9	(+/-)	\$22.5	5.3%
Average Value	\$106	+/-	\$3	\$115	(+/-)	\$1	2.8%

### 3.8.5 “Foreign” ATM Withdrawals

There were an estimated 2.1 billion ATM withdrawals made in 2009 by deposit accountholders at ATMs operated by organizations other than their own DIs (Exhibit 113).

Foreign ATM withdrawals totaled \$206.7 billion in 2009 based on an average withdrawal amount of \$97. Exhibit 113 and Exhibit 114 show the number and value of foreign ATM withdrawals from deposit accounts at each type of DI. The data below do not reflect foreign ATM withdrawals made by non-acountholders at these institutions.

**Exhibit 113: Number of Foreign ATM Withdrawals**

	<b>Foreign Withdrawals (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>	<b>% of Total ATM Withdrawals*</b>
<b>U.S. Market</b>	<b>2.1</b>	<b>(+/-)</b>	<b>0.2</b>	<b>36%</b>
Commercial Banks	1.2	(+/-)	0.1	28%
Credit Unions	0.8	(+/-)	0.2	55%
Savings Institutions	0.2	(+/-)	0.0	51%

Figures may not add due to rounding.

\*Percentage of total ATM withdrawals within DI type that is foreign ATM withdrawals.

**Exhibit 114: Value of Foreign ATM Withdrawals**

	<b>Foreign Withdrawals Value (billion)</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>	<b>% of Total ATM Withdrawals*</b>
<b>U.S. Market</b>	<b>\$206.7</b>	<b>(+/-)</b>	<b>\$21.5</b>	<b>32%</b>
Commercial Banks	\$117.6	(+/-)	\$5.9	25%
Credit Unions	\$71.5	(+/-)	\$20.7	54%
Savings Institutions	\$17.7	(+/-)	\$3.1	49%

Figures may not add due to rounding.

\*Percentage of total ATM withdrawal value within DI type that is foreign ATM withdrawals.

**Exhibit 115: Average Value of Foreign ATM Withdrawals**

	<b>Foreign Withdrawal Avg. Value</b>	<b>(+/-)</b>	<b>95% Confidence Interval</b>
<b>U.S. Market</b>	<b>\$97</b>	<b>(+/-)</b>	<b>\$4</b>
Commercial Banks	\$98	(+/-)	\$7
Credit Unions	\$94	(+/-)	\$5
Savings Institutions	\$100	(+/-)	\$5

**3.8.6 Change in “Foreign” ATM Withdrawals**

The estimated number of foreign ATM withdrawals decreased at an annual rate of 1.8 from 2006 to 2009 while the associated value of these withdrawals increased 0.7 percent per year. The average value of foreign ATM withdrawals increased 2.6 percent per year from \$90 in 2006 to \$97 in 2009 (Exhibit 116).

**Exhibit 116: Change in the Number, Value and Average Value of Foreign ATM Withdrawals**

	2006			2009			CAGR
Foreign ATM Withdrawals (billion)	2.3	+/-	0.1	2.1	(+/-)	0.2	-1.8%
Value of Foreign ATM Withdrawals (billion)	\$202.4	+/-	\$11.4	\$206.7	(+/-)	\$21.5	0.7%
Average Value	\$90	+/-	\$3	\$97	(+/-)	\$4	2.6%

It is noteworthy that the average value per foreign ATM withdrawal (\$90 in 2006 and \$97 in 2009) remains consistently below the average value per on-us withdrawal (\$106 in 2006 and \$115 in 2009). It was found to be lower in 2003 as well. Considering that foreign ATM fees commonly result in cardholder fees, one would expect rational accountholders to try to minimize their cash access costs and withdrawal higher amounts when charged fees than when they are not.

The reason for the lower average foreign ATM withdrawal is unclear. One possible cause may be lower withdrawal limits on ATMs owned by non-financial institutions, which can only be used to make foreign ATM withdrawals. Another possible cause may be cardholder sensitivity to fees for balance inquiries. Such fees might dissuade cardholders from making more informed decisions about the amount available to withdraw. Not knowing their balances, cardholders might try to avoid reducing their deposit balances lower than is absolutely necessary. Any number of other possible explanations may also exist.

**3.8.7 Use of Foreign vs. On-U.S. ATMs by DI Type**

Among US deposit accountholders, credit union members were least likely to use ATMs owned by their own DIs (Exhibit 117). Only 45 percent of ATM withdrawals made by credit union members were on-us. This finding supports the inference above that the relatively high average value in cash per debit card cash back transaction at the point of sale by credit union members may reflect their limited access to lower cost cash access channels. Given that the vast majority of ATM withdrawals by credit union members are at foreign ATMs, and that fees by foreign ATM operators are common, it stands to reason that credit union members would feel greater incentives to seek out channel substitutes to access cash.

**Exhibit 117: On-Us vs. Foreign ATM Withdrawals by DI Type**

	<b>On-Us Withdrawals</b>		<b>Foreign Withdrawals</b>	
	Number (billion)	% of Total ATM Withdrawals*	Number (billion)	% of Total ATM Withdrawals*
<b>U.S. Market</b>	<b>3.8</b>	<b>64%</b>	<b>2.1</b>	<b>36%</b>
Commercial Banks	3.0	72%	1.2	28%
Credit Unions	0.6	45%	0.8	55%
Savings Institutions	0.2	49%	0.2	51%

Figures may not add due to rounding.

\*Percentage of total ATM withdrawals within DI type.

## 4 Methodology

### 4.1 DI STUDY METHODOLOGY

National estimates from the 2010 DI Study were based on data reported by a stratified random sample of depository institutions. For sampling and estimation, depository institutions were stratified by both institution size and type. The samples were used to create population estimates of the number and value of payments for the size-type strata using a statistical technique called ratio estimation.

#### 4.1.1 Sampling

Respondents selected for the study were sampled from the population of insured DIs in the United States. The population includes commercial banks, state-chartered and federally-chartered savings institutions, and credit unions. Domestic branches of foreign-owned banks were not sampled.

Most public checkable deposits (defined in section 4.1.1.1) are held by a relatively small number of very large DIs. As a result, the most efficient sampling method is to assign a higher sampling probability to the largest DIs. The largest DIs, therefore, were sampled with 100 percent probability. That approach resulted in a census of the largest DIs and random samples of the remaining ones. The probability of an institution being sampled decreased with size.

The largest DIs within each institution type as well as others likely to substantially affect estimate precision were designated “high-priority” institutions. Extraordinary efforts were made to maximize the completeness and quality of responses from these institutions. In addition to the large expenditure of effort on the largest institutions, enough high quality responses from DIs of all sizes and types were obtained to ensure that the results are representative of the entire population of DIs.

#### **4.1.1.1 Sample Design**

The population of depository institutions (the sample frame) was stratified before sampling, first by type of DI and then by size. There were four primary strata (by type of institution) in the original design:

1. Commercial banks (CMB)
2. State-chartered savings banks (SSB)
3. Federally-chartered savings banks (FSB)
4. Credit unions (CUS)

These categories were chosen because members of each type classification tend to share similar characteristics. Grouping them in this way improves the precision of the estimates.

Stratification of DIs within types was carried out on the basis of the sum of public checkable deposits (PCD) and deposits held in money market deposit accounts (MMDAs), both of which are available for all insured DIs in the United States.<sup>15</sup> In general, PCD is transaction deposits of individuals, partnerships, and corporations, but does not include deposits of the federal government or other DIs. Most payments and cash withdrawals are made from the types of accounts included in PCD. Payments and withdrawals can also be made from other accounts, such as MMDAs.

#### **4.1.1.2 Sample Frame**

The frame was constructed from reports filed with the Federal Reserve by DIs and holding companies. The frame represented the population of insured depository institutions in the United States with nonzero PCD + MMDA deposits. Prior to stratification, DIs were grouped with their holding company, if applicable, using the most current ownership information, and PCD + MMDA deposits for the holding company was defined as the sum

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<sup>15</sup> Prior studies used PCD alone as the size stratification variable. Studies conducted by Gerdes, Liu, and Parke (2009) and Gerdes and Liu (2010) showed that the standard error of estimates could be reduced by using the sum of PCD and MMDA instead. These reports are available from the authors upon request. Please send requests by email to Geoffrey Gerdes ([Geoffrey.gerdes@frb.gov](mailto:Geoffrey.gerdes@frb.gov)) or May Liu ([may.x.liu@frb.gov](mailto:may.x.liu@frb.gov)).

of the PCD + MMDA deposits for the DIs it owned. The sampling unit, therefore, was the DI at its highest institutional level (e.g., holding company).<sup>16</sup>

For estimation, the frame was defined as the entire population of DIs with PCD + MMDA deposits greater than zero.<sup>17</sup> For sampling, however, DIs with PCD + MMDA deposits less than \$1 million were not sampled because of their very small size. The DIs excluded from sampling represented a negligible share of PCD + MMDA deposits.

Estimates for DIs excluded from sampling were produced using the ratios from the smallest stratum of DIs within each type for which a sample was obtained. The preliminary frame consisted of 12,610 depository institutions. These institutions were stratified by type and then by size within each type, for a total of 25 strata.

#### **4.1.1.3 Sample Size and Allocation**

Like prior DI surveys, a sample size of 2,700 institutions was chosen. The sample size was based on the desired margin of error of less than +/-5 percent for a 95 percent level of confidence for the estimate of the total number of checks.

Allocation of the sample to strata was based on a version of Neyman allocation, which approximates the allocation that minimizes the standard error of the total estimate. Within each type, the allocation method included “certainty strata,” where very large DIs represent only themselves, which considerably reduces the estimated standard errors. Exhibit 118 shows the number of institutions in each stratum of the frame and the sample.

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<sup>16</sup> DIs reported data for their entire consolidated organization.

<sup>17</sup> DIs with no transaction deposits do not account for a significant number of payments.

**Exhibit 118: Original Sample Frame Detail**

Type Stratum	Size Stratum	PCD + MMDA		In Frame (N)	Sampled (n)
		upper bound (thousand)	lower bound (thousand)		
Commercial Banks	0	\$1,000	\$0	14	0
	1	\$31,500	\$1,000	2,195	220
	2	\$71,200	\$31,500	1,711	276
	3	\$142,000	\$71,200	1,071	304
	4	\$296,000	\$142,000	461	293
	5	\$655,000	\$296,000	225	225
	6	\$2,220,000	\$655,000	138	138
	7	max.	\$2,220,000	84	84
	<i>Subtotal:</i>			5,899	1,540
State-Chartered Savings Bank	0	\$1,000	\$0	4	0
	1	\$58,000	\$1,000	153	46
	2	\$140,000	\$58,000	102	47
	3	\$1,000,000	\$140,000	71	71
	4	max.	\$1,000,000	6	6
	<i>Subtotal:</i>			336	170
Federal Savings Banks	0	\$1,000	\$0	19	0
	1	\$79,000	\$1,000	451	46
	2	\$375,000	\$79,000	125	57
	3	\$20,000,000	\$375,000	52	52
	4	max.	\$20,000,000	5	5
	<i>Subtotal:</i>			652	160
Credit Unions	0	\$1,000	\$0	1,714	0
	1	\$16,500	\$1,000	3,019	193
	2	\$41,500	\$16,500	498	198
	3	\$95,000	\$41,500	265	212
	4	\$209,000	\$95,000	130	130
	5	\$1,000,000	\$209,000	92	92
	6	max.	\$1,000,000	5	5
	<i>Subtotal:</i>			5,723	830
<b>Overall Total:</b>				<b>12,610</b>	<b>2,700</b>

#### **4.1.1.4 High-Priority Respondents**

Depository institutions within each type stratum with the highest PCD + MMDA deposits (i.e., largest in size) were designated high-priority respondents. The largest DIs were expected to account for a high percentage of the figures being estimated. The project team made extraordinary efforts to ensure the participation of high-priority institutions, which helped increase the precision of the aggregate estimates.

#### **4.1.2 Estimation (and Imputation)**

Data were collected for March and April, 2010. For estimation purposes, a new frame concurrent with that period was constructed using PCD and MMDA deposits from reports filed with the Federal Reserve for March 31, 2010, and information on the ownership structure of depository institutions as of April 30, 2010. The population and sample were reallocated to strata according to the revised data. Exhibit 119 illustrates the final sample frame.

**Exhibit 119: Final Sample Frame Detail**

Type Stratum	Size Stratum	PCD+MMDA		In Frame (N)	Sampled (n)
		upper bound (thousand)	lower bound (thousand)		
Commercial Banks	0	\$1,000	\$0	5	0
	1	\$31,500	\$1,000	2,012	207
	2	\$71,200	\$31,500	1,739	274
	3	\$142,000	\$71,200	1,119	297
	4	\$296,000	\$142,000	500	291
	5	\$655,000	\$296,000	228	212
	6	\$5,250,000	\$655,000	197	195
	7	max.	\$5,250,000	46	46
	<i>Subtotal:</i>			5,846	1,522
State-Chartered Savings Bank	0	\$1,000	\$0	4	0
	1	\$58,000	\$1,000	132	40
	2	\$140,000	\$58,000	117	52
	3	\$1,000,000	\$140,000	73	69
	4	max.	\$1,000,000	7	7
	<i>Subtotal:</i>			333	168
Federal Savings Banks	0	\$1,000	\$0	20	0
	1	\$79,000	\$1,000	451	46
	2	\$375,000	\$79,000	130	58
	3	\$20,000,000	\$375,000	52	51
	4	max.	\$20,000,000	5	5
	<i>Subtotal:</i>			658	160
Credit Unions	0	\$1,000	\$0	1,574	1*
	1	\$16,500	\$1,000	3,041	188
	2	\$41,500	\$16,500	524	186
	3	\$95,000	\$41,500	306	227
	4	\$209,000	\$95,000	152	147
	5	\$660,000	\$209,000	75	74
	6	max.	\$660,000	7	7
	<i>Subtotal:</i>			5,679	830
<b>Overall Total:</b>				<b>12,516</b>	<b>2,680</b>

\*When PCD and MMDA deposit data were updated for final estimation from March 31, 2010 data reported to the Federal Reserve, one credit union had reported PCD less than \$1 million. When the original sample was drawn, this credit union had reported PCD + MMDA deposits greater than \$1 million and was eligible to be sampled at the time.

Some of the analysis required complete data for every included respondent. For example, estimated subcategories of various payment types needed to add up to totals. As some responses contained missing data, numbers and values were imputed using a linear

regression technique that provided estimated responses for all missing data, subject to logical constraints, and based on related data from other DI's of similar type and size. Estimates of standard errors were constructed using a technique called multiple imputation.<sup>18</sup> This technique allows the standard errors to account for the uncertainty inherent in the imputation process, by adding a random error to the imputations that simulates the amount of uncertainty in the regressions used for imputation. Thus, the standard errors (and the implied confidence intervals used in this report) reflect the uncertainty caused by sampling rather than conducting a census of all 12,516 depository institutions, and the uncertainty induced by the need to impute missing data.<sup>19</sup>

### 4.1.3 Reference Period

The reference period was March and April, 2010. A two-month survey period was chosen to mitigate any effect of an aberration in transaction number or value for any given month. March and April were chosen, because they are believed to be sufficiently representative for checks and do not have an unusual number of processing days.<sup>20</sup> The reference period for the 2001, 2004 and 2007 DI studies was also March and April. This significantly influenced the decision to use March and April, 2010, for the current study.

The research plan called for annual estimates. Monthly Federal Reserve check processing data show that the use of a multiplication factor of six (6) to annualize March and April data is reasonably accurate. For simplicity, the factor was used to annualize the two-month data for all transaction types. The same factor was used in previous studies conducted in 2001, 2004, and 2007.

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18 Five sets of imputations were generated. For an overview of the technique, see Donald B. Rubin, *Multiple Imputation for Nonresponse in Surveys*, John Wiley and Sons, 1987.

19 Thus, the reported standard errors are greater than standard errors that would have resulted from treating the imputed data as though it were actually reported, but less than standard errors that would have resulted from doing no imputation at all.

20 While April is the end of the annual filing period for most personal income tax returns, tax payments do not have a significant effect on the overall estimates. The research team does not believe April's tax payment and refund volume would have a significant impact on the overall estimates for either check or ACH. Federal refund checks and ACH disbursements are paid by the Federal Reserve Banks on behalf of the U.S. Treasury. The number and value of these payments are known to the Federal Reserve and not measured by the survey of depository institutions. The number and value of Treasury payments by check for 2009 were added to the national estimates after survey results were extrapolated to the industry and annualized. ACH payments by U.S. Treasury have not been added to the DI Study's estimates, as this study is not intended to be the source for national estimates of the number and value of ACH payments in the United States.

#### **4.1.4 The Survey Instrument**

A copy of the final survey instrument can be found in Appendix A: Survey Instrument (Long Form). A copy of the short form survey can be found in Appendix B: Survey Instrument (Short Form).

In addition to measuring the number and value of the payment types and cash withdrawal transactions during March and April, 2010, the survey included a section called the Institution Profile that listed all affiliates (if any) held by the sampled DI. The purpose of the Institution Profile section was to allow respondents to indicate if any particular affiliate had been excluded from the institution's response, and in which survey section(s) that affiliate's data were excluded. Because the design variable of the study, PCD + MMDA deposits, was a measure of each institution's size, it was important that the size of each institution in the sample correspond to the number of transactions reported. If data reported reflected activity from only half of a bank holding company's subsidiaries, for example, the PCD + MMDA deposits variable would need to be adjusted accordingly. Otherwise, the DI would appear to have a relatively low number of transactions for an institution of its size.

The survey was mailed to respondents in hardcopy with a postage-paid business reply envelop enclosed. Respondents were encouraged to respond either by returning the survey in the business reply envelope, by faxing the survey to a designated toll-free number, or by entering totals securely online at [www.paymentsstudy.com](http://www.paymentsstudy.com).

In all correspondence, respondents were encouraged to respond online at [www.paymentsstudy.com](http://www.paymentsstudy.com). Site access was secured by a unique ID and password for each institution. The ID and password were printed on each letter the institution received and in the header of each page of the hardcopy survey. The web site included an online version of the survey as well as a downloadable PDF (portable document format).

#### **4.1.5 Survey Recruitment and Participation**

Sampled DIs were asked to confirm their participation (during a recruitment phase) and then to report transaction totals for the two-month reference period. The recruitment phase served to identify the individual(s) who would report data for the survey and encouraged organizational buy-in. The process of recruitment and participation unfolded over many

months through multiple mailings, follow-up calls and emails as needed, and ultimately receipt of data from the respondent.

#### **4.1.5.1 Contact List Development and Recruitment**

After generating the sample, the project team identified two contacts at each institution. Accuity's *Databank* served as the default list for contact names, addresses, phone numbers, etc. McKinsey supplemented the default list with information from the firm's own database of industry contacts. This was done for high-priority respondents. In cases where McKinsey did not have contact information for a high-priority respondent, the institution was called and the appropriate contacts identified.

The two contacts were designated as primary and secondary. The primary contact was typically more senior in title than the secondary contact.

#### **4.1.5.2 Registration**

The project plan called for the initial mailing about the study to be sent to the primary contact. The mailing included a "preview copy" of the survey and requested that the primary contact return a *Respondent Registration Form* to identify the appropriate individual to coordinate the DI's response to the study. A copy of the form can be found in Appendix C. The *Registration Form* encouraged a DI to select a single individual who would coordinate the institution's response. Alternatively, a DI could indicate a different individual for each section of the survey.

If the primary contact did not respond within 14 business days, a second mailing was sent, this time to the secondary contact. If the secondary contact did not reply within 10 business days, McKinsey or its subcontractor, Liberman Research Group, followed up by calling each contact to confirm receipt of the mailing and to encourage the institution to register a study coordinator.

Exhibit 120 indicates the number of institutions that registered for the study by mode of registration.

**Exhibit 120: Distribution of Registrations by Mode**

	<b>Web Site</b>	<b>Phone</b>	<b>Fax</b>	<b>Mail</b>	<b>Total</b>
Commercial Banks	456	370	78	6	910
State-Chartered Savings Banks	49	40	6	3	98
Federal Savings Banks	58	24	6	0	88
Credit Unions	255	159	35	3	452
<b>Total</b>	<b>818</b>	<b>593</b>	<b>125</b>	<b>12</b>	<b>1,548</b>

**4.1.5.3 Respondent Training**

McKinsey invited registered DIs to participate in “webinars” to review and discuss the survey instrument. The webinars were intended to improve the quality of reporting by enhancing respondents’ understanding of what was being measured and why. The firm conducted eight one-hour webinars during the data collection phase of the study. These webinars were held from February through May, with two webinars being held each month. In all, 569 individuals representing 473 institutions participated in the survey review webinars.<sup>21</sup>

Sampled institutions were invited to participate in any webinar of their choosing, and participation was free. During each webinar, McKinsey explained in detail each data element being measured by the survey and fielded questions from participants regarding the study via web-based chat. After the conclusion of each webinar, questions and answers were e-mailed to webinar participants and posted on the study’s website on a frequently asked questions (FAQ) page.

**4.1.5.4 Survey Response**

Of the 1,600 DIs that registered to participate in the study, a total of 1,311 DIs provided survey data. Out of the 2,680 DIs in the final sample, this represents a 49 percent rate of

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<sup>21</sup> In the 2007 DI Study, 295 individuals across 278 institutions participated in survey review webinars.

response.<sup>22</sup> Exhibit 121 illustrates the number of responses received from DIs in each stratum. The lowest response rate, at 22 percent, was for the smallest federal savings banks.

Participation of the largest DIs was the highest. All of the 46 largest commercial banks participated. The high concentration of payments among the largest commercial banks allowed the 2010 DI Study to count a large number of payments rather than estimate their totals through statistical estimation.

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<sup>22</sup> Prior DI studies' response rates ranged from 54 to 56 percent.

**Exhibit 121: Response Rate per Stratum**

Type Stratum	Size Stratum	In Frame (N)	Sampled (n)	Responses	Rate of Response
Commercial Banks	0	5	0		
	1	2,012	207	78	38%
	2	1,739	274	109	40%
	3	1,119	297	143	48%
	4	500	291	139	48%
	5	228	212	121	57%
	6	197	195	128	66%
	7	46	46	46	100%
	<i>Subtotal:</i>	5,846	1,522	764	50%
State-Chartered Savings Bank	0	4	0		
	1	132	40	16	40%
	2	117	52	27	52%
	3	73	69	32	46%
	4	7	7	7	100%
	<i>Subtotal:</i>	333	168	82	49%
Federal Savings Banks	0	20	0		
	1	451	46	10	22%
	2	130	58	29	50%
	3	52	51	32	63%
	4	5	5	5	100%
	<i>Subtotal:</i>	658	160	76	48%
Credit Unions	0	1,574	1*		
	1	3,041	188	63	34%
	2	524	186	67	36%
	3	306	227	119	52%
	4	152	147	81	55%
	5	75	74	52	70%
	6	7	7	7	100%
	<i>Subtotal:</i>	5,679	830	389	47%
<b>Overall Total:</b>		<b>12,516</b>	<b>2,680</b>	<b>1,311</b>	<b>49%</b>

\*When PCD and MMDA deposit data were updated for final estimation from March 31, 2010 data reported to the Federal Reserve, one credit union had reported PCD less than \$1 million. When the original sample was drawn, this credit union had reported PCD + MMDA deposits greater than \$1 million and was eligible to be sampled at the time.

#### **4.1.6 Data Collection and Data Management**

Responses were received through any of four modes: mail, fax, email or online. Mail and fax surveys were logged and processed through a manual data entry system by Lieberman. Responses received online were input into a mirror copy of the master database as respondents saved data they entered online. Data from all modes were integrated in a master database maintained by Lieberman.

Lieberman distributed the current copy of the master dataset on a weekly basis to team members from the Federal Reserve and McKinsey. In this way team members synchronized their copies of the data while maintaining a central, master copy of the database. Lieberman backed up the database daily to provide redundancy and as an ongoing record of point-in-time data.

Lieberman also implemented a software program to track changes and edits to the database, including the source of the change, the content of the record before the change, and the data and time of the change.

#### **4.1.7 Data Editing**

In collaboration with Federal Reserve team members, McKinsey worked from June to October to improve the quality of survey data. Data editing, as this process was called, involved testing the reasonableness of each respondent's data to identify potential reporting errors, following up with respondents as necessary, and either revising or confirming the accuracy of submitted data.

##### **4.1.7.1 Outlier Identification**

Outliers – data outside the expected range of responses – were identified in numerous ways. Some outliers were identified with respect to the sample as a whole. Others were identified within a particular stratum.

McKinsey focused on identifying outliers in distributions that included the entire sample. For example, staff members calculated each respondent's average value of paid checks (i.e., total value / total number). Responses greater than two standard deviations (assuming a normal distribution) from the mean of these average values were flagged for

follow-up. Example statistics used to test the reasonableness of a response included the following:

1. Average value per transaction
2. Transaction number per deposit liabilities (i.e., size of the institution)
3. Percentage of total transactions that are on-us (i.e., intra-DI payments)
4. Ratio of returned checks to total checks
5. Ratio of one month's number (or value) to the other month's number (or value)

McKinsey also identified any logical errors in reported data. For example, cases where the sum of subsets did not equal totals were flagged for follow-up.

Federal Reserve team members focused on identifying outliers using various techniques, such as reviewing data that made substantial contributions to standard errors.

McKinsey maintained a central database to identify outlier responses and tracking data edits and confirmations.

#### **4.1.7.2 Tracking Outliers and Revisions**

Managing the data editing process required the project team to coordinate a regularly updated list of outlier responses and the status of revisions to those outliers. This included tracking current outliers as well as those already "resolved." An outlier response might be resolved in a number of ways based on follow-up dialogue with respondents. A relational database was used to track the status of individual outlier responses throughout the data editing process. Additional details about outlier responses were tracked through detailed annotations. If an outlier response had not been revised before the estimation process began, the project team could review the disposition and any annotations about the outlier to determine whether to use the data or not in the estimation.

## 4.2 CSS METHODOLOGY

In an effort to characterize checks written, McKinsey worked with 11 large banks to conduct a random sample survey of checks processed by those banks during 2009.<sup>23</sup>

### 4.2.1 Sampling

Participation in the study was voluntary, and respondents selected for the study were from the group of banks that are customers of Viewpointe's check image archive. The use of a common check image archive helped to standardize the process of sampling checks at random and greatly reduced the overall data collection effort. The final sample represents the population of checks processed during 2009 by 11 Viewpointe customer banks, including checks both drawn on and collected by the participants. The population is estimated to represent approximately 40 percent of all "prime pass" items in the United States.<sup>24</sup> Additionally, participant banks held approximately 31 percent of deposit liabilities and paid approximately 25 percent of all checks paid in the United States in 2009.<sup>25</sup>

Although the population of checks archived for these 11 large banks represents a significant share of checks, it is unclear how the results would have differed had the sample been drawn from a nationally representative sample of depository institutions.

#### 4.2.1.1 Sample Size and Sampling Technique

A sample size of 40,000 checks was determined to be sufficient to accurately characterize the population of checks sampled with a 95 percent confidence interval of +/- 5 percent. The number of items sampled from each bank was proportional to its share of all items processed by participant banks in 2009.

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<sup>23</sup> *The Check Sample Study* sampled "prime pass" checks, including both transit checks, which were deposited at a participant bank but drawn on another depository institution, and checks paid by the participant banks. Adjustments were made to account for sample bias from checks deposited at one of the participant banks and paid by another participant bank.

<sup>24</sup> Prime pass items refers to the total number of discrete items processed, excluding any re-handling of checks for the purpose of sorting to paying bank endpoints, customer statements, etc. The estimated number of industry prime pass items excludes item processing by the Federal Reserve Banks.

<sup>25</sup> Deposit liabilities as of December 2009.

To reach the target final sample of 40,000 checks, archived items were oversampled. This allowed for duplicate checks and non-check items to be removed from the sample.<sup>26</sup> After oversampling and eliminating duplicate checks and non-check items, the final sample was 44,094 checks.

For details see section 4.2.3.2, Eliminating Duplicate Checks.

#### **4.2.1.2 Weighting the Final Sample**

Two weights were applied to data from each sampled check:

1. *Primary weighting.* Sample weights were applied to ensure the final sample was representative of the population of checks processed by participant banks.
2. *Secondary weighting.* A second weight adjusted for the fact that an interbank check exchanged between two participants in the study had a higher probability of random selection than an interbank check between a study participant and a depository institution (DI) not in the study.<sup>27</sup> Although each interbank check is a single paper item, it may be stored as discrete images in multiple banks' archives. To adjust for this, the research team weighted interbank checks between participant banks such that each interbank item in the final sample appeared to have the same probability of selection.<sup>28</sup>

#### **4.2.2 Reference Period**

A 12-month reference period of January 1-December 31, 2009 was chosen to mitigate seasonal variation in check writing during the year.

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<sup>26</sup> Item processing archives house check and non-check items (e.g., deposit slips). Therefore, the method of over-sampling provides a cushion to cull out any non-check documents during data collection. Additionally, because the participants send checks to one another, over-sampling allows for the removal of any duplicate checks from the sample.

<sup>27</sup> An interbank check is a check drawn on one bank and deposited at another.

<sup>28</sup> The weighting for interbank checks differed for each of the 11 banks depending upon their percentage of checks found to be interbank.

### 4.2.3 Data Collection

The data collection strategy required gathering non-sensitive information about each sampled check to use in an effort to categorize it by its counterparty and purpose. The data collection approach required independent investigators to collect information from each sampled check. Investigators collected data by using one of two survey instruments: the Full CSS Survey Instrument or the Short CSS Survey Instrument.<sup>29</sup> A copy of the Full CSS Survey Instrument and Short CSS Survey Instrument can be found in Appendices D and E, respectively. The Full CSS survey consisted of 25 questions, and the Short survey asked eight questions.

The survey instruments collected Boolean data about the presence of specific attributes on each check, such as the following:

1. Organizational suffixes, such as LLC, PLC, LTD, Co., Corp., Corporation, Services, .com, Assoc., etc. in the name or address of the payer or payee.
2. Indicators of government entities, such as State of, County of, City of, Town of, Township of, Bureau of, Municipality, etc. in the name or address of the payer or payee.
3. Indicators of organizational departments, such as Treasury, Treasurer, Commissioner, Controller, Office of, Accounts Payable, etc. in the name or address of the payer or payee.
4. Indicators of personal addresses, such as Apartment or Apt # in the payer or payee address.
5. Whether the payee line contains an address.
6. Whether the check contains an auxiliary on-us field.
7. Whether the maker's signature or payee's endorsement is hand-written.
8. Presence of handwritten information recorded at the time of tender, such as a driver's license number, date of birth, etc.
9. Whether the payee's endorsement is vertical or horizontal.

In addition to recording Boolean data, investigators also recorded non-sensitive information from the front and back of the check, such as the following:

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<sup>29</sup> Section 4.2.3.3.2 describes the methodology of using three independent surveys. Two of the three investigators used the Short CSS Survey to collect data. The third investigator gathered data using the Full Survey.

1. Date of the check.
2. Dollar amount of the check.
3. Nine-digit routing number (RTN) of the payer bank.
4. Serial number of the check.
5. Endorsing bank(s) RTN.
6. Payer's zip code (if present).

The survey instrument also asked the investigators to render an opinion about the type of payer and payee – *consumer*, *business*, or *government* - for each check based on all available information.<sup>30</sup>

#### **4.2.3.1 Metadata**

Some participant banks also provided metadata for the sampled checks. The amount of information stored in a metadata file varied by bank. For the purposes of the study, when metadata were available, the research team used them to automatically determine serial numbers, dollar amounts, and payer bank transit routing numbers (RTN).

#### **4.2.3.2 Eliminating Duplicate Checks**

Because the study required sampling checks from multiple banks' archives, and because checks deposited at one participant bank and drawn on another were part of the sample population, there was some risk that a check sampled from one bank's archive data would be identical to a check sampled from another bank's archive data. Additionally, the research team considered the possibility that random sampling may select the same check more than once from the same archive (e.g., a returned check that was subsequently re-presented). In order to eliminate duplicates from the sample, the research team systematically analyzed four fields of data recorded by participant banks about each check:

1. Check date
2. Serial number

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<sup>30</sup> Investigators had an option to choose whether a check's payer or payee was a government entity. During the analysis and categorization of the sample, the results combined government checks with business checks under the heading business. See section 4.2.4.1, Payer and Payee Categories for the rationale.

3. Dollar amount
4. Nine-digit transit routing number (RTN) of the payer bank.

If two or more items within the sample had all four fields equal, this flagged a potential duplicate item. Through this method all duplicate items were systematically identified and removed from the final sample.

#### **4.2.3.3 Data Collection Process**

CSS data collection began in the summer of 2010 and concluded in the fall of 2010. McKinsey staff provided training for participant banks' data collection.

##### **4.2.3.3.1 Data Collection Training**

McKinsey administered in-person training with each participant bank's investigation staff, which consisted of the following:

1. Describing the purpose of the study.
2. Explaining the basic fields contained on a check.
3. Providing examples of *consumer*, *business*, and *government* checks, and discussing important characteristics of each.
4. Listing specific examples of payer and payee categories as well as types of checks (e.g., travelers checks) and how to appropriately categorize them.
5. Walking the investigators through the process of gathering data from several example checks.
6. Answering questions from investigators or team leaders about how to answer various types of questions.

##### **4.2.3.3.2 Independent Survey Collection**

Each sampled check was interrogated three times during data collection, as described in section 4.2.3, Data Collection, above. In each round, a different investigator surveyed each check. There were two primary reasons to investigate each check three times:

1. To improve the ability to confidently categorize each check based on multiple, independent observations about its payer, payee and purpose.
2. To provide a basis to reconcile discrepancies in categorization by any two investigators and to recognize and correct keying errors.

#### 4.2.4 Check Payments Categorization

Based on data received from each bank's data collection team, the research team employed a model to categorize each sampled check according to its payer, payee, and purpose.

##### 4.2.4.1 Payer and Payee Categories

During the design phase the research team decided that two categories – *Consumer* and *Business* – sufficiently described the potential parties to a payment.

1. *Consumer* (C) – an individual, household or small business.<sup>31</sup>
2. *Business* (B) – a private sector entity (also includes Government entities – local, state or federal).

These categories are commonly accepted in the industry and represent groups with a common set of behaviors and payment options available to them.

Very small businesses, such as sole proprietorships, may resemble a *consumer* payer or payee more closely than a *business* in terms of availability and use of electronic payment alternatives. As a practical matter, the 2010 CSS effectively deals with the commonality between consumers and sole proprietorships by assuming that any check written to or from an individual and having no characteristics on the check to indicate a *business* payer or payee is classified as *consumer* payer or payee, respectively.

Because the distinction between *business* and *government* is largely immaterial for the purpose of evaluating substitution potential, the two entities are grouped together in the study's results. We refer to them collectively as *business* entities. Generally, there are no

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<sup>31</sup> Some small business owners (e.g., sole proprietorships) use their personal checking accounts for business purposes and likely cannot be distinguished from consumers based on data from their checks alone.

particular impediments to a *government* entity accepting a payment type that a *business* might accept and vice versa. Likewise, *business* or *government* payers are assumed to have comparable access to payment alternatives, such as purchasing cards, financial EDI (an electronic format for exchanging financial business transaction data) or ACH initiation capabilities.

#### **4.2.4.2 Purpose Categories**

Considering all possible payment types and their various options for substitution of electronic for paper payments, McKinsey defined the following four primary purpose categories:

1. Casual – Payment from one individual to another. By definition, all *consumer-to-consumer* payments are categorized as Casual.
2. Income – Payment to an individual from either a *business* or *government* entity. By definition all *business-to-consumer* or *government-to-consumer* payments are categorized as Income. Examples of Income payments include the following:
  - a. Payroll
  - b. Pension
  - c. Benefits / entitlements
  - d. Rebate / promotional / refund
  - e. Expense reimbursement
  - f. Tax refunds
  - g. Investment disbursements
  - h. Remittances to small businesses indistinguishable from consumers
3. Remittance (REM) – Payment from any type of payer to a *business* payee that does not occur at the point of sale. The following are examples of Remittance payments:
  - a. Recurring retail remittance – Regular recurring payments, typically described as “bill payments.” Examples include: utility bill payments,

insurance premiums, telecommunications charges, credit card bill payments, or loan repayments

- b. Non-recurring retail remittance – Irregular remittance payments made for products or services rendered for consumer consumption. Examples include: medical bill, plumber, contractor, pest control, legal fees, or accountant fees
  - c. Commercial remittance – Any *business-to-business* payments not made at the point of sale. Examples include: raw materials purchase, office supplies, business equipment, finished goods from wholesalers, or professional services.
4. Point of Sale (POS) – Payments from any type of payer to a *business* payee that occur in a storefront (i.e. a traditional single or multi-lane retail environment), such as department store, drugstore, clothing store, gas station, or dry cleaner.

Exhibit 122 below illustrates the intersection of the two payer types, two payee types and four purpose classifications. A primary purpose of the study was to document the distribution of check payments across this matrix. Note that dark shaded cells indicate check payment types that do not exist.<sup>32</sup>

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<sup>32</sup> It was decided that dividend payments to corporate shareholders would not qualify as Income payments. From a substitution perspective – i.e., the ability to substitute electronic for paper payments – this category is indistinguishable from business-to-business remittance payments and, therefore, should be categorized as such.

**Exhibit 122: Original Check Categorization Matrix**

Purpose	Payer	Payee	
		Consumer (C)	Business (B)
Remittance (REM)	Consumer (C)		
	Business (B)		
Point of Sale (POS)	Consumer (C)		
	Business (B)		
Income Payments	Consumer (C)		
	Business (B)		
Casual Payments	Consumer (C)		
	Business (B)		
Total (Number and Value)	Consumer (C)		
	Business (B)		

**4.2.5 Check Categorization Model**

McKinsey employed a categorization model based on conditional logic to assign a classification to each check. Judging from data recorded by each investigator, the model assigned a payer, payee, and purpose classification to each item.

The model derived the classification categories (payer, payee, and purpose) for each check, by first analyzing the objective data gathered in the survey instruments. If the responses yielded enough information without inconsistencies, the model produced a determinate response (e.g., *consumer* or *business*).

If the model could not definitively categorize the surveyed item, it generated one of two alternate responses: *Indeterminate* or *Error*. The model returned an *Indeterminate* outcome if the surveys were correctly completed but the logical chain did not contain enough information to yield a determinate response. Otherwise, if the surveys were incorrectly completed or provided inconsistent data, the model produced an *Error* outcome.

The model then combined this initial categorization for payer, payee, and purpose based on objective data with the subjective responses made by the Investigators to determine a final categorization. The combination of the initial result based on objective data with subjective categorizations provided the study with well reconciled results to limit the number of indeterminate classifications.

#### **4.2.5.1 Categorization of the Payer**

Information on the face of the check determined its payer type.

Checks were typically categorized as *business* based on the characteristics of the MICR line (e.g., Federal Government checks' MICR line begins with 000, many *business* checks include an auxiliary on-us field), the method used to frank the check (e.g., typed or machine printed "signature"), and the characteristics of the payer name and address. For example, the payer name/address field was useful in both subjective and objective categorizations, because it contained indicators such as Inc., LLC, PLC, LTD, Corp., Department of, City of, Town of, Bureau of, Accounts Payable, etc. The payee line (e.g., following "Pay to the order of...") was also useful in some cases, because *business* or *government* payers – unlike *consumers* – sometimes include the full mailing address of the payee (machine printed) on the face of the check.

Checks classified as *consumer* generally included checks without characteristics in the MICR line or name/address fields to suggest a *business*. It is entirely possible that some small businesses or sole proprietors might use their personal checks for business payments. Without any characteristics to indicate a business use, these checks would be classified as *consumer*. This risk of misclassification was deemed acceptable. With regard to payments substitution, small businesses that are difficult to distinguish from consumers have similar payments preferences to consumers' and face many of the same payments choices.

#### **4.2.5.2 Categorization of the Payee**

The determination of the payee was made from information on both the front and back of the check: the payee line, the endorsement, and any other writing/stamp/print on the check.

Investigators used the payee line to identify any obvious signs of a *business* payee, e.g., Inc., LLC, Corp., IRS, Tax Commissioner, Bureau of, Town of, County of, etc. Additionally, investigators recorded the presence of unique printing or stamps on the checks that might indicate a POS transaction, such as a driver's license number, store number, terminal number, etc. The payee endorsement was also a significant determinant of payee type. *Business* payees tend to stamp or machine print their endorsements on the back of checks. Lockbox (i.e., remittance) payments in particular tend to be endorsed along the length of the check (i.e., parallel to text on the face of the check) rather than across the end of the check (i.e., perpendicular to text on the face of the check).

#### **4.2.5.3 Categorization of Purpose**

The categorization model determined the purpose of each check by combining information gathered directly from the check with the Final Categorization of its counterparty (i.e., payer and payee combination).

The first step in determining the purpose of a check was to cross-reference the Payer and Payee Final Categorizations, as shown in Exhibit 123 below:

**Exhibit 123: Purpose by Counterparty Combinations**

		Payee Categorization		
		Consumer	Business <sup>33</sup>	Unknown
Payer Categorization	Consumer	Casual	REM or POS	Unknown
	Business	Income	REM or POS	Unknown
	Unknown	Unknown	REM or POS	

Several cells in Exhibit 123 show that most payer and payee relationships alone were enough to determine the purpose of some checks. For example, all *business-to-consumer* checks were classified as *Income*. As noted in section 4.2.4.2, Purpose Categories, not all income payments as categorized by this study are payroll checks. Rebate checks, tax refunds, stock dividends are all examples of checks that would fall into the *Income* category.

Similarly, all checks written from one individual to another individual were classified as *Casual*. Based on the examples discussed above in section 4.2.4.1, Payer and Payee Categories, this category likely includes payments to or from sole proprietorships or small businesses that use what are, or appear to be, personal checks for business transactions. For instance, rent payments from tenants to individual landlords may be included in *Casual* unless the information on the check (e.g., statements on the memo line) indicated that the payer was a business. The classification of some of these checks as *Casual* may not be entirely inappropriate. During 2009, these types of checks described above had a low probability of substitution by electronic instruments. The risk of misclassification is acceptable for the purposes of this study.

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<sup>33</sup> As noted in section 4.2.4.1, Payer and Payee Categories, business and government categorizations are combined under the heading of business.

If the model classified a check's purpose as *Income* or *Casual* based on its counterparty (e.g., a *business-to-consumer* check), the algorithm automatically defined that as the final categorization for its purpose.

Any check written to a *business* payee was initially categorized as either *Remittance* or *POS* based on the logic of Exhibit 123 above. To go one step further and definitively categorize these items, the model evaluated other data about the payee, such as the endorsement or other information added to the check by the payee. If the endorsement included such information as a store number, a terminal number or a customer's driver's license number, this suggested a *POS* transaction. Lockbox endorsements, apparent by their alignment across the length of the check in conjunction with the terms like "absentee" or "absent endorsed," indicated a *Remittance* payment.

The distinction between *Remittance* and *POS* was also based on information recorded by the investigators about the type of organization paid. If an investigator reported that the payee was clearly a credit card issuer, a utility, etc., this lent evidence toward a *Remittance* classification. Conversely, payments made to a convenience store, a restaurant, drugstore, or retail store suggested a *POS* payment.

If the distinction between *Remittance* and *POS* could not be determined through the data collected in the study, the model ultimately classified the check as *Remittance/POS* (REM/POS).

#### **4.2.6 Estimation**

The results of the check categorization process yielded percentage estimates for the distribution of checks within the population of checks processed by participant banks. To derive national point estimates for the number of checks written in a given category, McKinsey applied those percentages to the estimated number of checks written in the United States.

Each subtotal data element shown in the tables includes a corresponding estimate of the half-width of the 95 percent confidence interval. The boundaries of the confidence interval are estimated as the point estimate plus or minus the half-width. Assuming the data are normally distributed and the sample is large, an estimate of the half-width is equal to 1.96

times the standard error of the given estimate. The standard error is an estimate of the amount of variability associated with computing the proportions with a sample rather than the population of checks in the archives of the participating banks. It is an estimate of how closely the sample estimates approximate that population, not the population of all checks in the United States.<sup>34</sup> The standard error also does not account for the possibility that the algorithm misclassified a check.

## 4.2.7 Additional Analysis

In addition to studying the distribution of checks by payer, payee, and purpose, the research team sought to identify the incidence of certain demand drafts and checks ineligible for conversion to ACH.

### 4.2.7.1 Demand Drafts

A demand draft is a check that does not require the account holder's handwritten signature and is issued by a third party under the purported authority of the customer for the purpose of charging to the customer's bank account.<sup>35</sup> A demand draft may come in one of two varieties. The first variety contains the customer's printed or typewritten name or account number; a notation that the customer authorized the draft. This includes checks written by check printers who process invoices for businesses. Banks and other third parties such as RR Donnelley are industry providers of this service. These checks do not have any distinguishing characteristics that can be recorded without capturing sensitive information such as payer name or account number (a central requirement of this study was that no sensitive information be collected). Therefore, the research team cannot estimate the incidence of this type of check from the data gathered by this study.

The second variety of demand drafts, which this report refers to as remotely created checks, consists of checks that have in lieu of a signature, a typed statement, such as "No

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<sup>34</sup> It is recognized that the participating institutions do not represent the entire population of checks in the U.S. However, the participants do process a sizeable portion of prime pass items, therefore, we provide an estimation of check counterparty and purpose for all checks written in the U.S.

<sup>35</sup> The third party creating a demand draft may have the account holder's electronic signature on file, and may include that signature on the draft.

Signature Required,” “Signature on File,” “Authorized by the Depositor,” or “Authorized by the Payer.” The study measured the incidence of remotely created checks.

#### **4.2.7.2 Checks Ineligible for ACH Conversion**

Certain checks by agreement between the payer and payee can be converted to ACH for clearing and settlement and other checks cannot be converted. The CSS aimed to identify the incidence of checks that are ineligible for conversion to ACH, according to NACHA rules.<sup>36</sup> The determination was made based on the following conditions:

1. If characteristics within the Payer’s name and address indicated that the payer was a federal entity, such as the US Treasury, Federal Reserve, Federal Home Loan, a mutual fund or investment firm.
2. If the amount of the check exceeded \$25,000.
3. If the leftmost portion of the MICR line, before the RTN, contained the optional number known as the auxiliary on-us field.
4. If a signature was not present. This included blanks and statements in lieu of a signature such as “No Signature Required.”

## **4.3 EPS METHODOLOGY**

National estimates from the 2010 EPS, as in past studies, derive from a census-based survey of relevant payments processors and networks for each payment instrument category.<sup>37</sup> The 2010 EPS results reflect aggregate volumes for the calendar year 2009. Participation was voluntary, and response rates were over 95% in most categories. If a company declined to participate, the research team imputed its number and value of transactions in an effort to compute the most reliable national estimates for that instrument.

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<sup>36</sup> NACHA is the National Automated Clearing House Association. NACHA is the rules governing body for ACH and has set the rules for what types of checks can or cannot be converted to ACH.

<sup>37</sup> In a census, all members of a given population are surveyed.

### 4.3.1 Objectives

The primary objective of the 2010 EPS was to provide an accurate, precise estimate of the number and dollar value of retail electronic payments made in the United States during the 2009 calendar year.<sup>38</sup> For card payment types, the primary metric for the study was net, authorized and settled transactions (NAST), minus any cash back or cash advance transactions, which were not considered payments. The NAST metric also excluded transactions or dollar amounts that were denied during an authorization process or were pre-authorized, as in certain credit and debit card schemes, but not settled.

The secondary objective of the 2010 EPS was to understand the use of retail electronic payments for “small dollar” value transactions. Such information is expected to help inform analyses of which electronic retail payment categories have more or less potential for use as cash substitutes. This objective was achieved by measuring the distribution of transactions and aggregate dollar value across four categories for NAST:

1. Less than \$5
2. \$5-\$14.99
3. \$15-\$24.99
4. Greater than \$25.

#### 4.3.1.1 Scope

The 2010 EPS included 16 separate surveys, each measuring volumes (i.e., transactions and dollar amounts) for one of 16 different payment instrument types. These include “core” payment types as well as “emerging” payments categories (see table below).

The core payment types were defined to be mutually exclusive so as to avoid double counting transactions. Certain emerging categories were understood to double count core payment type volumes (e.g., some online bill payments were also counted in ACH volumes). The emerging payments categories are reported separately in this report to

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<sup>38</sup> Retail payments as defined for this study are those other than wire transfer.

illustrate the growth of these payment applications regardless of the core payment types used for clearing or settling such transactions.

	Instrument	Type of organization surveyed	Respondents % of Market <sup>39</sup>	Respondents % of Estimated \$ Total <sup>40</sup>
Core Payments	ACH	Network	100%	100%
	General Purpose Credit Card	Networks	100%	100%
	Signature Debit	Networks	100%	100%
	PIN Debit	Networks	85%	82%
	Private Label Credit Card	Processors, Retailers	83%	92%
	Electronic benefits transfer	USDA FNS, States	100%	100%
	Open Loop Prepaid	Networks	67%	96%
	Closed Loop Prepaid	Processors	71%	60%
Emerging Payments	Online Bill Payment	Originators	100%	100%
	Walk-in Bill Payment	Originators	88%	97%
	P2P / Money Transfer	Originators	86%	99%
	Far Field Transit Payments	Networks	90%	98%
	Deferred Payments	Processors	N/A	N/A
	E-commerce PIN Debit	Processors	N/A	N/A
	Private Label ACH Cards	Processors	N/A	N/A
	Secure Online Payments	Originators	N/A	N/A

Estimates of some emerging payment categories do not appear in this report. In some cases payment categories are aggregated to avoid reporting data that would reveal competitively sensitive information about a particularly small number of organizations providing a payment service. In other cases low response rates among emerging payments providers made reliable estimation too difficult.

<sup>39</sup> Represents the number of respondents divided by the number of invited participants (% of total market).

<sup>40</sup> The percentage of the total estimated dollar value that respondents reported. Data for non-reporting companies was imputed to produce final estimates.

With the exception of ACH network volume data, all 2010 EPS data were gathered through survey instruments designed collaboratively by the research team and administered by McKinsey. ACH network volume data were gathered through a request to NACHA (the National Automated Clearing House Association), which aggregates and reports quarterly network volume statistics for the industry. Data were provided via spreadsheet at the standard entry classification (SEC) code level.

### 4.3.2 Survey Instrument Design

The survey instruments were modified substantially between 2007 and 2010, while retaining comparability with past studies. There were several aspects to these changes:

- **Additional questions:** The most substantial changes to the 2010 EPS questionnaires were due to the addition of new questions, primarily to achieve the secondary objective of measuring the dollar value distribution of payments. The research team also included questions to provide the industry with additional information on payment trends.
- **Formatting:** The survey was revised to provide consistency in appearance and question order between printed versions and the web data entry form.
- **Update to survey instructions:** Surveys instructions were updated to reflect any changes in study scope or methodology since the previous study.

### 4.3.3 Identifying Participant Organizations

Given the census-based survey approach of the study, it was critical to identify, and achieve a high level of participation from entities relevant to the retail electronic payments market.

To create a comprehensive list of relevant entities, the study adopted a two-step approach:

1. **Identify prior study participants:** McKinsey compiled a list of organizations that participated in the prior study in 2007.
2. **Edit and expand participant list:** McKinsey added or removed organizations from the sample based on the combination of recent information and its expert understanding of the market in order to ensure a census of relevant firms for the 2010 study. McKinsey relied in part on a proprietary database it maintains to track non-financial institution players in the payments market. McKinsey collaborated with research team members from the Federal Reserve Board and the Retail Payments Office to vet the list and agree on the final sample frame for the census.

#### **4.3.4 Avoiding Double Counting**

To develop the most accurate national estimates, it was critical that respondents' volumes not be double counted. Double counting occurs when two respondents report the same transactions. This can commonly occur if the same transaction is counted by both a processor and a network or if a gateway network counts volumes also counted by the receiving network (as can occur in PIN debit transactions). The selection of respondents, and the instructions for study surveys were crafted in order to eliminate double counting. The validation process was also used to confirm that each respondent correctly reported their volumes and did not include potentially double counted transactions.

#### **4.3.5 Minimizing the Reporting Effort for the Industry**

To minimize the reporting effort by industry stakeholders, the respondent group for each survey was designed to comprise the smallest number of respondents that would account for all volume associated with an electronic payments category.<sup>41</sup> Whenever possible, payments networks were surveyed (Credit Card, Signature and PIN Debit, Open Loop (Network Branded) Prepaid). When payment networks were not relevant to the category (e.g., private label credit cards or online bill payment), the research team identified processors that serve as points of aggregation due to processing volumes for multiple issuers or originators. Finally, when needed, individual issuers or originators were surveyed (e.g., retailers that operate their own private label credit card programs).<sup>42</sup>

#### **4.3.6 Recruiting Study Participants**

To increase response rates, the research team executed a two pronged communication and recruitment plan.

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<sup>41</sup> One exception to this process was the open loop prepaid card survey, where both networks and processors were surveyed separately to ensure all volumes were accurately captured. In this instance, the network volumes are used in the final report and the processor volumes are only used as a reference.

<sup>42</sup> Definitional steps were also taken to avoid double counting (e.g., excluding PIN debit gateway transactions).

#### **4.3.6.1 Industry Awareness**

The study undertook a coordinated effort to build favorable industry awareness prior to direct contact with prospective study participants. Three approaches were used:

- Federal Reserve press releases announced the study and described its sponsorship at the highest levels within the Federal Reserve System.
- Detailed information about the study and links to past results were made available on a Federal Reserve website: [www.frbservices.org](http://www.frbservices.org).
- Representatives of the Federal Reserve System spoke about the upcoming study during industry speeches and made themselves available to answer questions about the study.

#### **4.3.6.2 Outreach to Target Organizations**

To recruit study participants it was necessary first to identify contacts at each organization. McKinsey used its proprietary client list and secondary sources to identify one or more executives within each organization to receive an invitation to participate.<sup>43</sup> An initial invitation mailing was sent to each prospective participant organization describing the study and requesting that the executive contact appoint a study coordinator to oversee data collection and validation.

The recruitment process itself included the following components:

- Invitation letter and registration packet: Recruitment packets were mailed to the designated executive contact(s) at prospective organizations. Each packet contained the following personalized materials:
  - Invitation letter from the Federal Reserve Board
  - Invitation letter from McKinsey
  - Registration form and instructions for registering online

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<sup>43</sup> Due to confidentiality issues with prior year studies conducted by Dove Consulting, McKinsey was unable to utilize prior contact lists to know who the individual contacts were that were contacted in prior studies.

- Customized instrument for each survey within the 2010 EPS in which the company was being asked to participate
- Registration: In many cases, study coordinators registered directly on the data collection website or by contacting a member of the McKinsey research team via phone or email.
- Study coordinator outreach: Shortly after receiving the participation agreement from each organization, a McKinsey research team member contacted each study coordinator by email and/or telephone. The goal of this outreach was to familiarize contacts with the study objectives and timeline.

#### **4.3.6.3 Follow-up with Non-responders**

The McKinsey research team followed up with companies that did not register by the deadline or with registered study coordinators who did not submit complete data by the due date. The following workflow was used to ensure high rates of survey completion:

- Reminder emails / calls prior to due date: At multiple designated times prior to the survey completion deadline, the team sent reminder emails to survey contacts at non-responding institutions. Just prior to the deadline, the team also began telephone contact with survey contacts to remind them of the imminent deadline and to assess the likelihood of survey completion by the deadline.
- Post-due-date follow-up: At one or more designated times following the survey completion deadline, the team made follow-up telephone calls to non-responding survey contacts. If survey contacts were non-responsive, team members placed follow-up calls to the executive(s) who originally agreed to participate in the survey.
- Federal Reserve follow-up: Certain non-responding contacts were referred to a Federal Reserve representative to assist in survey enrollment.

### 4.3.7 Data Collection

To ensure the highest possible response rate, both a secure, online (web) survey and paper-based survey were provided. Most respondents completed the online survey. Some organizations faxed their responses or submitted data electronically in spreadsheet or other document form. A mail option was available but not used by any respondents.

### 4.3.8 Data Validation and Editing

Data validation and editing were essential to the overall reliability of the 2010 EPS results. After receiving initial data from respondents, the McKinsey research team employed several techniques to identify questionable data:

- **Summation checks:** The survey instrument requested totals and subtotals. For respondents using the online survey, an online database included validation logic to identify potential errors. Upon submitting a survey response, the respondent was presented with a web-form listing suspected errors and providing the opportunity to correct errors before finalizing the data. All responses, regardless of mode, were subsequently imported into an offline database and similarly checked for potential errors.
- **Average value:** Ranges were set around the average values of all payment instruments based on historical data. If a response fell outside the expected ranges, the respondent was asked to verify the reported information, and if necessary provide an explanation.
- **Consistency:** All questions were checked to confirm that volumes reported throughout the survey were logically consistent with one another.
- **Secondary source comparison:** Where possible, respondent data were compared to secondary sources and prior Payments Study reporting. In addition, respondent volume shares were calculated and gauged for reasonableness based upon the research team's industry knowledge.

In order to structure the interaction with respondents about questionable data, McKinsey prepared files listing and explaining data issues. The files detailed any data omissions or inconsistencies based on the validation work mentioned above. The McKinsey research

team returned these files to the study coordinator followed by telephone outreach to discuss data issues. Revised data were interrogated through a similar process until all data were deemed final.

#### **4.3.9 Imputing Missing or Invalid Data**

In some cases, it was necessary to impute missing or invalid data. When imputation was necessary, McKinsey provided the Federal Reserve Retail Payment Team (RPT) with a list by entity of which survey fields required imputation. The list included McKinsey's recommendation and rationale for an imputed value. During meetings with the RPT, the team discussed individual imputations and considered alternative data sources or methodologies for imputation.

McKinsey relied on the following sources of information for imputed data:

- Prior year reporting, adjusted for the impact of industry growth and the organization's market share gains / losses
- Secondary source data, such annual reports or other public information about the company
- Comparison to peer volumes

Whenever possible, McKinsey contacted organizations to request their confirmation of imputed values. In a number of cases, requests for confirmation of an imputed values led participants to provide or revise data.

#### **4.3.10 Estimation**

For all payment types except ACH, final estimates for the number and value of transactions were computed by summing the total reported volume of study participants (including imputations) and imputed volumes for non-responders.

- To estimate total ACH payments, the research team relied on a combination of network volume data from NACHA and data from the DI Study for estimates of other ACH volume not counted by NACHA. Specifically, the proportions of on-us and direct exchange entries estimated by the DI Study were applied to network

volume statistics from NACHA to estimate the total number and value of ACH payments in 2009.

# APPENDICES

**Appendix A: DI Study Survey Instrument (*Long Form*)**

(Follow this link.)

**Appendix B: DI Study Survey Instrument (*Short Form*)**

(Follow this link.)

**Appendix C: DI Study Registration Form**

(Follow this link.)

**Appendix D: CSS Survey Instrument (Full)**

(Follow this link.)

**Appendix E: CSS Survey Instrument (Short)**

(Follow this link.)

**Appendix F: EPS Survey Instruments**

(Follow this link.)

Appendix A:  
DI Study Survey Instrument (Long Form)

# The Federal Reserve Payments Study



**Survey Period: March – April, 2010**

A survey of the number and dollar value of transactions by:

- ▶ Check
- ▶ ACH
- ▶ Debit Card
- ▶ ATM

**>> Please Respond By: Friday, May 21 <<**

**Response Options:** Online [www.paymentsstudy.com](http://www.paymentsstudy.com)  
Institution ID: \*\*\*\*\*  
Password: \*\*\*\*\*

Mail Federal Reserve  
Payments Study c/o LRG  
98 Cutter Mill Road  
Great Neck, NY 11021

Fax (866) 829-9419

**Questions? Call Us:** Phone (866) 829-8881

## General Instructions

**About the study...** The Federal Reserve Payments Study is a national survey of financial institutions about payments and withdrawals from deposit accounts. The survey gathers data about check, ACH, and debit card payments as well as cash withdrawals from ATMs that post to deposit accounts during March and April, 2010. Data from your response will contribute to estimates of the national number of payments and withdrawals made by these transaction methods. The Federal Reserve will compare the results of this study to those of similar studies in 2001, 2004, and 2007 to document how the U.S. payments system is changing.

**Confidentiality...** Any information you provide for this study is strictly confidential. Individual responses to the survey will not be shared with the public or the industry.

**Your Participation...** As a participant in a random sample survey, your responses may be used to represent other institutions like yours that were not selected for the study. To achieve the most reliable results, it is important that you respond completely and accurately. If your institution outsources payments processing to another organization, please request the necessary data from that organization or provide them with the survey so they may respond on your behalf.

**Please leave no item blank...** There are three possible ways to answer a survey question:

Enter a Value: The actual numeric value of the data element.

Enter a Zero: When the calculated value actually equals zero or if your financial institution does not provide the payment alternative to your customers. Please do not enter a non-numeric value, e.g., "NA" or "NR."

Enter "NR" (Not Reported): If your institution has volume of the type being measured, but you are unable to report an accurate figure that reflects volumes across your entire organization / customer base. Please do not enter "NA."

**Reporting after a merger...** If you acquire or merge with an institution, or begin processing combined volume during the March-April reference period, please identify that institution in *Item 2* of the next section and report data for the combined enterprise as if the merger had occurred before March 1, 2010.

If you cannot provide combined data please contact us at (866) 829-8881.

**Definitions and examples...** Definitions and examples can be found in the Glossary. If the Glossary is no longer available to you in hardcopy, please visit [www.paymentsstudy.com](http://www.paymentsstudy.com) to download a PDF copy or to use the web version online.

# Institution Profile

This is an enterprise-wide survey... According to our records, transaction volume data from the following affiliated institutions should be included in your response (unless you indicate their exclusion below).

Throughout this survey instrument, "your institution" refers to the entire enterprise including all affiliates.

Please contact us at (866) 829-8881 if you have any questions or concerns about the items on this page.

1) Please indicate if any of these affiliates are excluded from your response.

Name	City	State	Approximate Total Deposit Balances (in millions of dollars)*	Which data are missing?			
				Check	ACH	Debit Card	ATM
<Affiliate name>	<City>	<ST>	<Total Deposits (MM)>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\* Deposit information as of September 2009

2) Please list any affiliates not identified above that are included in your response.

Name	City	State

3) Do you or any of your affiliates employ overnight sweep accounts for consumer (i.e., retail) accounts? In order to make national estimates, we use your institution's deposit balances as a sizing measure. Understanding if your institution uses a retail sweeps program will help to inform our estimates. In a retail sweep, financial institutions move unused funds from checkable deposit accounts to special purpose MMDA subaccounts and return the funds to checkable deposit accounts only as needed to cover payments. This practice does not adversely impact the accountholder, but allows the institution to reduce nonearning assets.

- Yes
- No
- Don't Know

# Check Payments

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

1) Do you process checks for another financial institution as part of a correspondent banking relationship?  
As a “correspondent bank,” your institution holds balances for another financial institution in a due-to account and performs check clearing services on its behalf.

- Yes
- No (Please report “0” for items 2a.2, 7a.2, and 7b.2 below.)
- Don't Know

**Note:** If your answer to this question is “No,” please report “0” for items **2a.2**, **7a.2**, and **7b.2** below.

2) All Checks Drawn on Your Institution  
= 2a + 2b

**Include:** All checks (and/or “share drafts”) drawn on your institution. Include items **2a** and **2b** below. Include controlled disbursement checks, if applicable. Include checks you subsequently return unpaid (i.e., outgoing returns).

**Do Not Include:** Checks drawn on other institutions (i.e., transit checks). Be sure to exclude non-check documents, such as deposit slips, G/L tickets, etc., if possible.

	March	April
Number		
Value (\$)		

2a) Checks Drawn on Your Institution for Which You are Not the “Bank of First Deposit” = 2a.1 + 2a.2

**Include:** Checks drawn on your institution for which another institution is “bank of first deposit.” Include Inclearings (**2a.1** below) and “On-Us” Checks Deposited by Correspondent Customers (**2a.2** below). Include checks received via clearinghouses, image exchange networks, or the Fed, or in direct presentment for same-day settlement. Include controlled disbursement checks if applicable.

**Do Not Include:** Checks for which you are the “bank of first deposit” or checks drawn on other institutions. Be sure to exclude non-check documents if possible.

**Note:** This is a subset of item **2** above. Do not double-count electronic check presentment (ECP) items with paper to follow.

	March	April
Number		
Value (\$)		

# Check Payments (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## 2a.1) Inclearings

**Include:** Checks drawn on your institution for which another institution is the “bank of first deposit” and which you do not receive in a deposit for correspondent processing.

**Do Not Include:** “On-Us” Checks Deposited by Correspondent Customers (2a.2 below) or “On-Us” Checks for Which You are the “Bank of First Deposit” (2b below).

**Note:** This is a subset of item 2a above.

	March	April
Number		
Value (\$)		

## 2a.2) “On-Us” Checks Deposited by Correspondent Customers

**Include:** Checks drawn on your institution that you receive in a deposit from another institution for correspondent processing. If you report “No” to item 1 above, report “0” here.

**Do Not Include:** Inclearings (2a.1 above) or “On-Us” Checks for Which You are the “Bank of First Deposit” (2b below).

**Note:** This is a subset of item 2a above. These checks are deposited into due-to accounts held at your institution. If you reported “No” on item 1 above, you should report “0” here.

	March	April
Number		
Value (\$)		

## 2b) “On-Us” Checks for Which You are the “Bank of First Deposit”

**Include:** All checks drawn on your institution for which you are the “bank of first deposit.” This includes checks cleared between your affiliates. These checks can be received from any of several deposit channels (see glossary). Include controlled disbursement checks if applicable.

**Do Not Include:** Any checks drawn on another institution. In particular, exclude checks deposited at your institution and sent to another institution for collection. Do not include Inclearings (2a.1 above) or “On-Us” Correspondent Deposits (2a.2 above). Be sure to exclude non-check documents if possible.

**Note:** This is a subset of item 2 above. If you truncate checks at the teller line, do not report “0.”

	March	April
Number		
Value (\$)		

- 3) Were you able to exclude non-check documents from the volumes reported in items 2a and 2b above? Non-Check documents are “other” items processed on check sorters, e.g., batch headers, general ledger tickets, cash-in or cash-out tickets, deposit tickets, etc.
- Yes  
 No  
 Don’t Know
- 4) Did you include checks deposited at one affiliate of your institution but drawn on another affiliate of your institution in 2b rather than 2a? Some institutions call this “on-we” volume, which should be reported entirely under item 2b if possible.
- Yes  
 No  
 Not applicable  
 Don’t Know

Comments:

# Checks Received by Format

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

5) Does your institution outsource check processing to another organization (i.e., “your processor”)?

- Yes** (Please be sure to report items **6a** and **6b** according to the method by which your processor receives checks from a clearing agent or collecting institution.)
- No**
- Don't Know**

6) Checks Drawn on Your Institution for Which You are Not the “Bank of First Deposit” (2a) = 6a + 6b

**Note:** This question classifies data reported in item **2a** above according to whether presentment occurred to you or your processor via Paper (**6a** below) or Image Exchange (**6b** below).

**Please re-enter data from item 2a above** ►

	March	April
Number		
Value (\$)		

6a) Paper = 6a.1 + 6a.2

**Include:** Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as Original Paper check (**6a.1** below) or Substitute Check / IRD (**6a.2** below).

**Note:** This is a subset of item **6** above.

	March	April
Number		
Value (\$)		

6a.1) Original Paper

**Include:** Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as the original checks.

**Do Not Include:** Checks received as Substitute Check / IRD (**6a.2** below).

**Note:** This is a subset of item **6a** above. If you are unable to distinguish between Original Paper check (**6a.1**) and Substitute Check / IRD (**6a.2**), report “NR” for this item (**6a.1**).

	March	April
Number		
Value (\$)		

6a.2) Substitute Check / IRD

**Include:** Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as substitute checks / IRDs (Image Replacement Documents).

**Note:** This is a subset of item **6a** above. If you are unable to distinguish between Original Paper check (**6a.1**) and Substitute Check / IRD (**6a.2**), report “NR” for this item (**6a.2**).

	March	April
Number		
Value (\$)		

## Checks Received by Format (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

6b) Image Exchange = 6b.1 + 6b.2

**Include:** Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as images. This includes Checks in Image Cash Letters (6b.1 below) or Image on Demand (6b.2 below).

**Note:** This is a subset of item 6 above.

	March	April
Number		
Value (\$)		

6b.1) Checks in Image Cash Letters

**Include:** Image exchange items received in an image cash letter (e.g., ECPI, ICL). Include images that you or your processor receive in a continuous stream from a clearing agent or collecting institution.

**Note:** This is a subset of item 6b above.

	March	April
Number		
Value (\$)		

6b.2) Other Checks Received via Image Exchange (i.e., Image on Demand)

**Include:** Image exchange items that are available on demand from a shared archive but for which presentment is made via an electronic file only, without accompanying images or paper.

**Do Not Include:** Checks in Image Cash Letters (6b.1 above) which are also available on demand from an archive.

**Note:** This is a subset of item 6b above.

	March	April
Number		
Value (\$)		

Comments:

# Check Deposits

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## 7) Deposited Checks = 7a + 7b

**Include:** All checks deposited at your institution. This includes checks that are drawn on your institution (i.e., “On-Ups” Checks for Which You are the “Bank of First Deposit,” **2b** above and “On-Ups” Checks Deposited by Correspondent Customers, **2a.2** above) and checks drawn on other financial institutions (i.e., transit checks). These checks can be received from any of several deposit channels (see glossary).

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

**Note:** Include checks itemized in **7a** and **7b** below. The volumes you report in this section are not necessarily payments by your accountholders. If you perform branch or ATM capture, report these volumes under **7b**.

## 7a) Image Check Deposits = 7a.1 + 7a.2

**Include:** Checks deposited by means of the customer’s capturing and transmitting an image of each check for deposit. The paper check is truncated by the customer at the point of capture / deposit.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

**Do Not Include:** ACH check conversion entries, paper check deposits, deposited checks for which your institution performs image capture at a branch, ATM, or other processing center.

**Note:** This is a subset of item **7** above.

### 7a.1) Checks Deposited by Consumer or Commercial Depositors via Client Image Capture

**Include:** Checks deposited by customers (other than correspondent customers) by means of the customer’s capturing and transmitting an image of each check for deposit. The paper check is truncated by the customer at the point of capture/deposit.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

**Do Not Include:** ACH check conversion entries, paper check deposits, deposited checks for which your institution performs image capture at a branch, ATM, or other processing center, or checks deposited by correspondent customers.

**Note:** This is a subset of item **7a** above.

# Check Deposits (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## 7a.2) Correspondent Checks Deposited via Image Capture / Cash Letter

**Include:** Checks deposited by a correspondent customer (i.e., a financial institution) by means of the customer’s capturing and transmitting an image of each check for deposit. The paper check is truncated by the customer at the point of capture / deposit. If you report “No” to item 1 above, report “0” here.

**Do Not Include:** ACH check conversion entries, paper check deposits, or deposits made by consumers or commercial depositors.

**Note:** This is a subset of item 7a above. If you reported “No” on item 1 above, report “0” here.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

## 7b) Paper Checks Deposited = 7b.1 + 7b.2

**Include:** Paper checks deposited at your institution. These checks can be received from several deposit channels (e.g., branch, lockbox, etc.). Include deposited checks for which your institution performs image capture at a branch, ATM, or other location.

**Do Not Include:** ACH check conversion entries or checks deposited as images.

**Note:** This is a subset of item 7 above.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

## 7b.1) Paper Checks Deposited by Consumer or Commercial Depositors

**Include:** Paper checks deposited by customers (other than correspondent customers). These checks can be received from several deposit channels (e.g., branch, lockbox, etc.).

**Do Not Include:** ACH check conversion entries, checks deposited as images, or checks deposited by correspondent customers.

**Note:** This is a subset of item 7b above.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

## 7b.2) Correspondent Checks Deposited via Paper Check / Cash Letter

**Include:** Paper checks deposited by a correspondent customer (i.e., a financial institution). If you report “No” to item 1 above, report “0” here.

**Do Not Include:** ACH check conversion entries, checks deposited as images, or checks deposited by consumers or commercial depositors.

**Note:** This is a subset of item 7b above. If you reported “No” on item 1 above, report “0” here.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

Comments:

# Outgoing Check Returns

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **"Your institution" refers to the entire enterprise** including all affiliates.

## 8) Outgoing Returned Checks = 8a + 8b

**Include:** All checks drawn on your institution that you return unpaid, whether to another institution (8a below) or to your customer (8b below).

**Do Not Include:** Checks drawn on another FI returned to you unpaid (9a below).

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

## 8a) Checks You Return Unpaid to the Collecting Institution = 8a.1 + 8a.2

**Include:** Checks drawn on your institution for which another institution is "bank of first deposit" (2a above) that you return unpaid. These checks are drawn on your institution but are returned to another institution unpaid.

**Note:** This is a subset of item 8 above.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

### 8a.1) Outgoing Paper Returns

**Include:** Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" (2a above) that you return unpaid and send as original paper or substitute check / IRD to your clearing agent or the collecting institution.

**Note:** This is a subset of item 8a above.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

### 8a.2) Outgoing Image Returns

**Include:** Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" (2a above) that you return unpaid and send electronically to your clearing agent or the collecting institution.

**Note:** This is a subset of item 8a above.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

## 8b) "On-Ups" Checks You Return Unpaid to a Consumer or Commercial Depositor

**Include:** All "On-Ups" Checks for Which You are the "Bank of First Deposit" (2b above) that you return unpaid. These are a subset of items charged back to depositing customers. Some institutions call these "charge backs."

**Do Not Include:** Checks that you return to another institution or checks drawn on another institution returned to you unpaid.

**Note:** This is a subset of item 8 above. The number and value (\$) reported in item 8b should match the number and value (\$) reported in item 9b below.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

Comments:

# Incoming Check Returns *Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

9) Incoming Returned Checks = 9a + 9b

**Include:** All checks deposited at your institution that are returned to you by the paying financial institution. This includes transit checks that are returned to you unpaid by another institution (9a below) and “On-Ups” Checks You Return Unpaid to a Consumer or Commercial Depositor (9b below). Some institutions call these “return deposited checks.”

**Do Not Include:** Checks drawn on your institution that you return unpaid to another FI (8a above).

**Note:** Include checks deposited by correspondent customers that are returned to you unpaid.

	March	April
Number		
Value (\$)		

9a) Transit Checks Returned = 9a.1 + 9a.2

**Include:** Checks forwarded presented by you, the collecting institution, that are returned to you unpaid.

**Note:** This is a subset of item 9 above.

	March	April
Number		
Value (\$)		

9a.1) Incoming Paper Returns

**Include:** Checks forwarded presented by you, the collecting institution, that are returned to you unpaid and received by you or your processor as original paper checks or substitute checks / IRDs.

**Note:** This is a subset of item 9a above.

	March	April
Number		
Value (\$)		

9a.2) Incoming Image Returns

**Include:** Checks forwarded presented by you, the collecting institution, that are returned to you unpaid and received electronically by you or your processor from a clearing agent or another institution.

**Note:** This is a subset of item 9a above.

	March	April
Number		
Value (\$)		

9b) “On-Ups” Checks You Return Unpaid to a Consumer or Commercial Depositor (item 8b)

**Note:** The number and value (\$) reported in item 9b should match the number and value (\$) reported in item 8b above.

Please be sure that item 9 equals the sum of items 9a and 9b.

**Please re-enter data from item 8b above** ►

	March	April
Number		
Value (\$)		

Comments:

# Check 21 Exceptions

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

10) Total Check 21 Exceptions = 10a + 10b

**Include:** Checks Drawn on Your Institution for Which You are Not the “Bank of First Deposit” (2a above) that you or your processor send back as exceptions for administrative reasons related to the collecting institution’s application of image processing. These exceptions may be a result of IQA / IUA or Code Line Data Mismatch (10a below). Also include exception items that were identified by your institution for other image related reasons such as Duplicate Images, or Checks in Duplicate Files (10b below).

	March	April
Number	<input type="text"/>	<input type="text"/>

10a) IQA / IUA or Code Line Data Mismatch Exceptions

**Include:** Checks received as images by your institution that you or your processor send back as exceptions because they fail your institution’s Image Quality Analysis (IQA) or Image Usability Analysis (IUA), or because of Code Line Data Mismatch. Code line data mismatch results when the information accompanying the image does not match the actual image sent (e.g., mismatched MICR line detail, check amount, etc.).

	March	April
Number	<input type="text"/>	<input type="text"/>

**Note:** This is a subset of item 10 above.

10b) Duplicate Images, or Checks in Duplicate Files

**Include:** Checks received as images by your institution that you or your processor identify as exceptions for image related administrative reasons. These exceptions include duplicate images, or checks in duplicate files.

	March	April
Number	<input type="text"/>	<input type="text"/>

**Note:** This is a subset of item 10 above.

Comments:

# Accountholder Statements

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## Account-Type Definitions

**Consumer Account:** A checkable deposit account, for personal use by an individual or household, from which payments can be made. This includes checking accounts, NOW accounts, savings accounts, and money market deposit accounts, but excludes certificates of deposit (CDs).

**Business/Government Account:** A checkable deposit account, owned by an organization (i.e., business, government, or not-for-profit), from which payments can be made. This includes checking accounts, savings accounts, and money market deposit accounts, but excludes certificates of deposit. Include analyzed accounts (i.e., those for which fees can be offset by balances via an earnings credit rate) and non-analyzed accounts. Include small business accounts.

### 11) Total Checkable Deposit Account Statements

$$= 11a + 11b + 11c + 11d + 11e$$

**Include:** All regular monthly statements for account types listed above regardless of delivery method. Be sure to count each statement only once.

**Do Not Include:** Online statements prepared for accountholders who also receive paper statements. Do not include statements expressly for accounts from which payments cannot be made (e.g., CD).

Total = 1 + 2

1) Consumer

2) Bus / Gov

March	April

### 11a) Check Enclosure Statements

**Include:** Regular monthly statements mailed with paid checks enclosed, either original paper or substitute checks, for return to accountholders.

**Do Not Include:** Statements that do not include physical checks returned to accountholders.

**Note:** This is a subset of item 11 above.

Total = 1 + 2

1) Consumer

2) Bus / Gov

March	April

### 11b) Image Statements

**Include:** Regular monthly statements mailed out that include printed images of paid checks on the statement page.

**Do Not Include:** Statements where physical checks are returned to customers (11a above) or where only line item detail is provided on transactions (11c below). Do not include Electronic Statements (11d below) or statements classified as “Other” (11e below).

**Note:** This is a subset of item 11 above.

Total = 1 + 2

1) Consumer

2) Bus / Gov

March	April

# Accountholder Statements (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## 11c) Itemized Paper Statements

**Include:** Regular monthly statements mailed out with neither enclosed checks, because check-return is not provided as part of the account service or because no checks were paid during the statement cycle, nor check images. Only include statements with itemized transaction details.

**Do Not Include:** Statements where physical checks are returned to customers or check images are provided. Do not include Electronic Statements (**11d** below) or statements classified as “Other” (**11e** below).

**Note:** This is a subset of item **11** above.

Total = 1 + 2

1) Consumer

2) Bus / Gov

March	April

## 11d) Electronic Statements

**Include:** Regular monthly statements delivered only via electronic means, such as email or via online access, for which no postage expense is incurred.

**Do Not Include:** Statements that are physically mailed to customers. Do not include online statements prepared for accountholders who also receive paper statements.

**Note:** This is a subset of item **11** above. Some institutions refer to these as statements with “suppressed” paper delivery.

Total = 1 + 2

1) Consumer

2) Bus / Gov

March	April

## 11e) Other Statements

**Include:** All other regular monthly statements, such as those delivered via CD-ROM, you did not report in items 11a – 11d above but for which you bear postage expense.

**Note:** This is a subset of item **11** above.

Total = 1 + 2

1) Consumer

2) Bus / Gov

March	April

Comments:

## ACH: Profile

- 1) Does your institution originate ACH credits?  Yes  
 No  
 Don't Know
- 2) Does your institution originate ACH debits?  Yes  
 No  
 Don't Know

## ACH: Network Entries

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. "Your institution" refers to the entire enterprise including all affiliates.

### Network ACH Entries

A Network ACH entry is one that is cleared through a network operator, i.e., the Fed or EPN. This would **not include** ACH entries cleared directly between your institution and another (i.e., Direct Exchange ACH entries). Please consider all Network ACH entries that result in payments from accounts at your institution, including those for which you are both the ODFI and RDFI (i.e., Network On-Us ACH entries).

**Note:** See glossary for definitions of ODFI (Originating Depository Financial Institution) and RDFI (Receiving Depository Financial Institution).

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

### 3) ACH Credits Your Institution Originates Through the Fed or EPN

**Include:** All Network ACH Credit entries for which you are the ODFI. Include returns. Include Network On-Us Credit entries for which you are both the ODFI and RDFI. See above for definition of "Network" entry.

**Do Not Include:** ACH entries received from other institutions; debits originated; Direct Exchange Entries, such as ACH Credits Your Institution Originates Directly to Another Institution (**5** below); In-House On-Us Entries, such as In-House On-Us Credits Your Institution Originates (**7** below); addenda records; or zero-dollar entries.

	March	April
Number		
Value (\$)		

- 3a) Does your institution originate Network On-Us ACH Credit entries?  Yes  
 No  
 Don't Know  
 These are credit entries for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution that you originate through the Fed or EPN. If applicable, they should be reported in item 3 above. (**Note:** "Your institution" refers to all affiliates.)

**ACH: Network Entries (cont.)***Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

4) ACH Debits Your Institution Receives  
Through the Fed or EPN

**Include:** All Network ACH Debit entries for which you are the RDFI. Include returns. Include Network On-Ups Debit entries for which you are both the ODFI and RDFI. See previous page for definition of “Network” entry.

**Do Not Include:** ACH entries sent to other institutions; credits received; Direct Exchange Entries, such as ACH Debits Your Institution Receives Directly from Another Institution (**6** below); In-House On-Ups Entries, such as In-House Debits Your Institution Originates (**8** below); addenda records; or zero-dollar entries.

	March	April
Number		
Value (\$)		

4a) Does your institution originate Network On-Ups ACH Debit entries?

These are debit entries for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution that you originate through the Fed or EPN. If applicable, they should be reported in item 4 above. (**Note:** “Your institution” refers to all affiliates.)

- Yes  
 No  
 Don't Know

Comments:

# ACH: Direct Exchange Entries

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## Direct Exchange ACH Entries

A Direct Exchange ACH entry is one that is exchanged directly between your institution and another. Some institutions call these “Direct Send” entries. Please consider all Direct Exchange ACH entries that result in payments from accounts at your institution.

**Note:** See glossary for definitions of ODFI (Originating Depository Financial Institution) and RDFI (Receiving Depository Financial Institution).

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

### 5) ACH Credits Your Institution Originates Directly to Another Institution

**Include:** All Direct Exchange ACH Credit entries for which you are the ODFI. Include returns. See above for definition of “Direct Exchange” entry.

**Do Not Include:** ACH entries received from other institutions; debits originated; Network Entries originated, such as ACH Credits Your Institution Originates Through the Fed or EPN (3 above); In-House On-Ups Entries, such as In-House On-Ups Credits Your Institution Originates (7 below); addenda records; or zero-dollar entries.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

### 6) ACH Debits Your Institution Receives Directly from Another Institution

**Include:** All Direct Exchange ACH debit entries for which you are the RDFI. Include returns. See above for definition of “Direct Exchange” entry.

**Do Not Include:** ACH entries sent to other institutions; credits received; Network Entries received, such as ACH Debits Your Institution Receives Through the Fed or EPN (4 above); In-House On-Ups Entries, such as In-House On-Ups Debits Your Institution Originates (8 below); addenda records; or zero-dollar entries.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

Comments:

# ACH: In-House On-U's Entries

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **"Your institution" refers to the entire enterprise** including all affiliates.

In-House On-U's ACH Entries (Cleared within Your Institution and Not through the Fed or EPN)

An In-House On-U's ACH entry is one for which you are both the ODFI and the RDFI without the use of a network, such as the Fed or EPN, for clearing or settlement. On-U's entries result in the movement of funds from one account to another within your institution.

**Note:** See glossary for definitions of ODFI (Originating Depository Financial Institution) and RDFI (Receiving Depository Financial Institution).

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

## 7) In-House On-U's Credits Your Institution Originates

**Include:** All ACH credit entries not cleared through the Fed or EPN for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution.

**Do Not Include:** ACH entries sent to or received from other institutions, In-House On-U's Debits Your Institution Originates (**8** below), addenda records, or zero-dollar entries. If possible, be sure to exclude offset entries or entries used to post non-ACH payments to your DDA system using the ACH platform.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

**Note:** "Your institution" includes all affiliates.

## 8) In-House On-U's Debits Your Institution Originates

**Include:** All ACH debit entries not cleared through the Fed or EPN for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution.

**Do Not Include:** ACH entries sent to or received from other institutions, In-House On-U's Credits Your Institution Originates (**7** above), addenda records, or zero-dollar entries. If possible, be sure to exclude offset entries or entries used to post non-ACH payments to your DDA system using the ACH platform.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

**Note:** "Your institution" includes all affiliates.

Comments:

# ACH Processing Practices

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

9) Do you originate offset entries? (Also known as originating “balanced files.”)

**Example:** You originate ACH credits on behalf of a corporate customer for the purpose of payroll. In order to fund the payroll credits you originate a single on-us debit (i.e., debit offset) to an account of the customer.

- Yes**
- No** (Skip to 10)
- Don't Know** (Skip to 10)

9a) If yes, were you able to exclude these entries from the totals you reported for the items listed below?

	Yes	No	Don't Know
(Item 3) ACH Credits Your Institution Originates Through the Fed or EPN.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Item 4) ACH Debits Your Institution Receives Through the Fed or EPN.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Item 7) In-House On-Us Credits Your Institution Originates.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Item 8) In-House On-Us Debits Your Institution Originates.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) Do you post transactions from other payment instruments to your DDA system using your ACH platform?

**Explanation:** Rather than maintaining an interface between your institution's DDA system and a particular transaction processing system, e.g., signature-based debit card, wire transfer, etc., your institution creates a separate ACH entry to post each of those non-ACH transactions to DDA.

- Yes**
- No** (Skip 10a)
- Don't Know** (Skip 10a)

10a) If yes, were you able to exclude these entries from the totals you reported for the items listed below?

	Yes	No	Don't Know
(Item 3) ACH Credits Your Institution Originates Through the Fed or EPN.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Item 4) ACH Debits Your Institution Receives Through the Fed or EPN.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Item 7) In-House On-Us Credits Your Institution Originates.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Item 8) In-House On-Us Debits Your Institution Originates.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

# Debit Card Transactions

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

1) Do you issue open-loop prepaid debit cards where the cardholder’s signature can be used to authorize transactions?

These open-loop prepaid debit cards include general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards that carry the Visa, MasterCard, Discover, or American Express brands.

- Yes
- No (Please report “0” for item 3a.2 below.)
- Don’t Know

**Note:** If your answer to this question is “No,” please report “0” for item **3a.2** below.

2) Do you issue open-loop prepaid debit cards where the cardholder’s PIN can be used to authorize transactions?

These open-loop prepaid debit cards include general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards that are PIN-authenticated and can be use at the point of sale.

- Yes
- No (Please report “0” for item 3b.2 below.)
- Don’t Know

**Note:** If your answer to this question is “No,” please report “0” for item **3b.2** below.

3) Total Debit Card Transactions  
(Offline and Online) = 3a + 3b

**Include:** All point-of-sale (POS) or bill pay transactions made either by debit cards linked to a deposit account, open-loop prepaid debit cards, or ATM cards used at the point of sale for which you are the card issuing institution. Include both consumer and business card transactions. Include **3a** and **3b** below.

**Do Not Include:** ATM withdrawals or credit card transactions.

	March	April
Number		
Value (\$)		

3a) Offline (Signature-Based) Debit and Signature-Based Open-Loop Prepaid Transactions = 3a.1 + 3a.2

**Include:** All debit card transactions that carry the Visa, MasterCard, Discover, or American Express brands for which you are the card issuing institution. This includes signature-debit transactions linked to a deposit account (**3a.1** below) and signature-based prepaid debit (**3a.2** below). Include both consumer and business debit card transactions.

**Do Not Include:** ATM withdrawals, PIN-based debit (**3b** below), or credit card transactions.

**Note:** This is a subset of item **3** above.

	March	April
Number		
Value (\$)		

## Debit Card Transactions (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

### 3a.1) Offline (Signature-Based) Debit Card Transactions

**Include:** All debit card transactions that carry the Visa, MasterCard, Discover, or American Express brands for which you are the card issuing institution and where funds are debited from your customer’s deposit account.

**Do Not Include:** ATM withdrawals, PIN-based debit (3b below), prepaid debit, or credit card transactions.

**Note:** This is a subset of item 3a above.

	March	April
Number		
Value (\$)		

### 3a.2) Signature-Based Open-Loop Prepaid Transactions

**Include:** All prepaid debit card transactions that carry the Visa, MasterCard, Discover, or American Express brands for which you are the card issuing institution. Include signature-based transactions on general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards. If you report “No” to item 1 above, report “0” here.

**Do Not Include:** ATM withdrawals, PIN-based debit (3b below), debit transactions linked to a deposit account, or credit card transactions.

**Note:** This is a subset of item 3a above. If you report “No” to item 1 above, report “0” here.

	March	April
Number		
Value (\$)		

## Debit Card Transactions (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

### 3b) Online (PIN-Based) POS Transactions and PIN-Based Open-Loop Prepaid Transactions = 3b.1 + 3b.2

**Include:** All PIN-based debit and prepaid debit card transactions for which you are the card issuing institution. This includes PIN-authenticated transactions made either by PIN-enabled debit cards linked to a deposit account, PIN-enabled open-loop prepaid debit cards, or ATM cards used at the point of sale. Also include “PINless” debit transactions for bill pay transactions that are cleared and settled through a regional EFT network.

**Do Not Include:** ATM withdrawals, signature-based debit (3a above), or credit card transactions.

**Note:** This is a subset of item 3 above.

	March	April
Number		
Value (\$)		

#### 3b.1) Online (PIN-Based) POS Transactions

**Include:** All PIN-based debit card transactions for which you are the card issuing institution and where funds are debited from your customer’s deposit account. This includes PIN-authenticated transactions made either by PIN-enabled debit cards or by ATM cards used at the point of sale. Also include “PINless” debit transactions linked to a deposit account for bill pay transactions that are cleared and settled through a regional EFT network.

**Do Not Include:** ATM withdrawals, signature-based debit (3a above), prepaid debit, or credit card transactions.

**Note:** This is a subset of item 3b above.

	March	April
Number		
Value (\$)		

#### 3b.2) PIN-Based Open-Loop Prepaid Transactions

**Include:** All PIN-based prepaid transactions for which you are the card issuing institution. Include only PIN-based transactions made by PIN-enabled prepaid cards including general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards. Also include “PINless” prepaid debit transactions for bill pay transactions that are cleared and settled through a regional EFT network. If you report “No” to item 2 above, report “0” here.

**Do Not Include:** ATM withdrawals, signature-based debit (3a above), PIN-based debit card transactions linked to a deposit account (3b.1 above), or credit card transactions.

**Note:** This is a subset of item 3b above. If you report “No” to item 2 above, report “0” here.

	March	April
Number		
Value (\$)		

Comments:

**Debit Card Cash Back***Please Do Not Round.*

- 4) Do the values (\$) you reported in questions 3 through 3b.2 (above) include the amount of cash received for cash back transactions at the point of sale?
- Yes**  
 **No**  
 **Don't Know**

## 5) Total Cash Back Transactions

**Include:** All debit card and prepaid card transactions for which you are the card issuing institution and the customer receives cash back at the point of sale. This includes both signature-based cash back and PIN-based cash back transactions. For cash back (\$), only include the amount of cash your cardholders receive at the POS.

	March	April
Number		
Cash Back (\$)		

**Do Not Include:** ATM withdrawals, credit card transactions, or the amount paid for goods and services.

**Note:** This is a subset of item 3 above.

Comments:

# ATM Withdrawals

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 1 of the *Institution Profile* section on page 2. **“Your institution” refers to the entire enterprise** including all affiliates.

## 1) ATM Withdrawals

(Your Customer, Any ATM) = 1a + 1b

**Include:** All cash withdrawals made by your customers from any ATM, including those at your ATMs (**1a** below) or “foreign” ATMs (**1b** below). A “foreign” ATM is an ATM operated by another financial institution or ATM operator.

**Do Not Include:** Withdrawals by another institution's customers, deposit transactions, or other non-withdrawal transactions (e.g., inquiries, statement print-out, purchases of stamps, tickets, etc.)

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

### 1a) On-U.S. ATM Withdrawals

(Your Customer, Your ATM)

**Include:** All cash withdrawals made by your customers at your ATMs. Include withdrawals made by your customers at fee-free ATM networks in which you participate.

**Do Not Include:** Withdrawals by cardholders other than your customers, withdrawals by your customers at “foreign” ATMs, or non-withdrawal transactions by your customers.

**Note:** This is a subset of item 1 above. Please count only withdrawals by your customers at your ATMs.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

### 1b) Your Customer, “Foreign” ATM

**Include:** All cash withdrawals made by your customers at “foreign” ATMs.

**Do Not Include:** Any transactions at your ATMs, whether by your customer or another cardholder, or any non-withdrawal transactions by your customers.

**Note:** This is a subset of item 1 above. Please count only withdrawals by your customers at ATMs operated by other financial institutions or ATM operators.

	March	April
Number	<input type="text"/>	<input type="text"/>
Value (\$)	<input type="text"/>	<input type="text"/>

Comments:

# The Federal Reserve Payments Study



**Survey Period: March – April, 2010**

A survey of the number and dollar value of transactions by:

- ▶ Check
- ▶ ACH
- ▶ Debit Card
- ▶ ATM

----- Glossary with Examples -----

# Glossary with Examples

## General Terminology

Your Institution –

The sampled financial institution at its highest organizational level (e.g., holding company, if applicable), including all affiliates.

Note: If you represent a third-party processor responding on behalf of a financial institution that was sampled for this study, please ensure that your response reflects transaction activity of accounts at the sampled institution only and does not include data from other institutions for which you process payments.

## Check Payments

### GENERAL TERMINOLOGY

Check –

A negotiable instrument drawn on a financial institution. For this study, please follow these guidelines:

Checks include...	Checks do <u>not</u> include...
<ul style="list-style-type: none"><li>▪ Checks written by individuals, business or government entities</li><li>▪ Traveler's checks drawn on your institution</li><li>▪ Money orders drawn on your institution</li><li>▪ Cashier's checks drawn on your institution</li><li>▪ Official checks drawn on your institution</li><li>▪ Teller's checks drawn on your institution</li><li>▪ Payable through drafts drawn on your institution</li><li>▪ Truncated checks (i.e., image exchange)</li></ul>	<ul style="list-style-type: none"><li>▪ Deposit slips</li><li>▪ General ledger tickets</li><li>▪ Other non-check documents, such as payment coupons</li><li>▪ Courtesy checks on credit card accounts</li><li>▪ Checks converted to ACH (i.e., ARC, POP, BOC transactions)</li></ul>

Bank of First Deposit –

The first financial institution in which a check is deposited. The “bank of first deposit” may be a bank or credit union.

“On-Us” Correspondent Deposits –

Checks drawn on your institution that are deposited at your institution by a correspondent banking customer, which is the “bank of first deposit.”

### SURVEY ITEMS

1) Do you process checks for another financial institution as part of a correspondent banking relationship?

As a “correspondent bank,” your institution holds balances for another financial institution in a due-to account and performs check clearing services on its behalf.

Note: If your answer to this question is “No,” please report “0” for items **2a.2**, **7a.2**, and **7b.2** below, which measure correspondent processing volumes.

► Example: Bank A receives deposits at its branches. Rather than process and forward present transit checks for collection itself, Bank A deposits the checks into a “due-to” account at Bank B. Bank B clears Bank A’s checks on its behalf. In this scenario, Bank B is a correspondent processor and would answer “Yes” to this question.

## 2) All Checks Drawn on Your Institution

All checks (or “share drafts”) for which your institution is the paying bank as defined by Reg. CC. Include **2a** and **2b** below. Include controlled disbursement checks, if applicable. Include checks you subsequently return unpaid to the “bank of first deposit” or its designated processor (i.e., outgoing returns) or charge back to the depositing customer if you are the “bank of first deposit” (i.e., “on-us” returns). Also include official checks written by your institution (as opposed to by your accountholders).

Do Not Include:

- Checks drawn on other institutions (i.e., transit checks).
- Checks that you receive as a “pass through correspondent” for which another institution is the paying bank.
- Non-check documents, such as batch headers, general ledger tickets, cash-in or cash-out tickets, deposit tickets, etc., that are processed on check sorters.

Note: Do not double-count electronic check presentment (ECP) items if you receive an electronic file with paper to follow. Also, if you perform proof-of-deposit processing, do not over-report All Checks Drawn on Your Institution (item **2**) by calculating it as the difference between prime pass and transit check volumes. Prime pass includes non-check documents that you should avoid counting in All Checks Drawn on Your Institution (item **2**).

► Example: Your customers write checks to pay utility bills. If you have depository relationships with the utilities, some of these checks will be “On-Us” Deposited Checks. Others will be presented to you as Inclearings from other financial institutions through the Federal Reserve, local clearinghouse or directly for same-day settlement.

☞ All Checks Drawn on Your Institution = Checks Drawn on Your Institution for Which You are Not the “Bank of First Deposit” (**2a**) + “On-Us” Checks for Which You are the “Bank of First Deposit” (**2b**).

### 2a) Checks Drawn on Your Institution for Which You are Not the “Bank of First Deposit”

Checks drawn on your institution for which another institution is the “bank of first deposit.” Include Inclearings (**2a.1** below) and “On-Us” Checks Deposited by Correspondent Customers (**2a.2** below). Include checks received from the Federal Reserve or via clearinghouses and image exchange networks, or in direct presentment for same-day settlement. Include controlled disbursement checks if applicable.

Do Not Include:

- Checks for which you are the “bank of first deposit” or checks drawn on other institutions:
  - Checks drawn on another financial institution that are deposited at your institution (i.e., outbound transit checks).
  - Checks drawn on your institution for which you are also the “bank of first deposit” (i.e., “On-Us” Checks for Which You are the “Bank of First Deposit,” **2b** below).
- Non-check documents that are processed on check sorters such as batch headers, general ledger tickets, cash-in or cash-out tickets, deposit tickets, etc.

Note: This is a subset of item **2** above. Do not double-count electronic check presentment (ECP) items if you receive an electronic file with paper to follow.

► Example: Your customer writes a check to pay for her groceries. The grocery store has a depository relationship with another financial institution. After processing the grocer’s deposit, that institution (i.e., the “collecting bank”) presents the check, through the Federal Reserve, local clearinghouse or directly for same-day settlement, to your institution for payment.

☞ Checks Drawn on Your Institution for Which You are Not the “Bank of First Deposit” = Inclearings (**2a.1**) + “On-Us” Checks Deposited by Correspondent Customers (**2a.2**).

#### 2a.1) Inclearings

Checks drawn on your institution for which another institution is “bank of first deposit” and which you do not receive in a deposit for correspondent processing.

Do Not Include: “On-Us” Checks Deposited by Correspondent Customers (**2a.2** below) or “On-Us” Checks for Which You are the “Bank of First Deposit” (**2b** below).

Note: This is a subset of item **2a** above.

► Example: Your customer writes a check to pay for goods at a retailer. The retailer has a depository relationship with another financial institution. After processing the retailer’s deposit, that institution (i.e., the “collecting bank”) presents the original paper check, through the Federal Reserve, local clearinghouse or directly for same-day settlement, to your institution for payment.

#### 2a.2) "On-Us" Checks Deposited by Correspondent Customers

Checks drawn on your institution that you receive in a deposit from another institution for correspondent processing. If you report "No" to item 1 above, report "0" here.

Do Not Include: Inclearings (2a.1 above) or "On-Us" Checks for Which You are the "Bank of First Deposit" (2b below).

Note: This is a subset of item 2a above. These checks are deposited into due-to accounts held at your institution. If you reported "No" on item 1 above, you should report "0" here.

► Example: Your customer pays a retailer using a check (i.e., the check is drawn on your institution). The retailer deposits this check at a financial institution other than your own. The bank of first deposit outsources its checking processing to your institution as part of a correspondent banking relationship. The institution (your correspondent customer) deposits the check with you for processing and forward collection.

#### 2b) "On-Us" Checks for Which You are the "Bank of First Deposit"

All checks drawn on your institution for which you are the "bank of first deposit." This includes all checks cleared between your affiliates. These checks are a subset of total deposited checks, which include, but are not limited to, the following:

- Checks deposited in your branches.
- Checks received from other internal departments (e.g., wholesale or retail lockbox, currency / coin vault operations, and loan payments processing operations).
- Checks deposited by corporate clients (typically in the evening) directly to your item processing operations (e.g., pre-encoded or un-encoded deposits or remote capture deposits).
- Checks deposited and drawn on different affiliates of your institution (some call this "on-we" volume).

Do Not Include:

- Inclearings received from the Federal Reserve, a clearinghouse, or another institution (e.g., same-day settlement).
- Transit or non-check documents (e.g., general ledger tickets, cash-in or cash-out tickets, deposit tickets, etc.).
- Checks deposited by correspondent customers, even if they are drawn on your institution. These are "On-Us" Correspondent Deposits and should be counted in item 2a.2 above.

Note: This is a subset of item 2 above.

► Example: Your customer writes a check to her babysitter, who also happens to be your customer. When the check is deposited by the babysitter, you are both the collecting institution and the paying institution on this check.

#### 3) Were you able to exclude non-check documents from the volumes reported in items 2a and 2b above?

Non-Check documents are "other" items processed on check sorters, e.g., batch headers, general ledger tickets, cash-in or cash-out tickets, deposit tickets, etc.

#### 4) Did you include checks deposited at one affiliate of your institution but drawn on another affiliate of your institution in 2b rather than 2a?

Some institutions call this "on-we" volume, which should be reported entirely under item 2b if possible.

## Checks Received by Format

#### 5) Does your institution outsource check processing to another organization (i.e., "your processor")?

Note: If your answer to this question is "Yes," please be sure to report items 6a and 6b according to the method by which your processor receives checks from a clearing agent or collecting institution.

#### 6) Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" (Same as 2a above)

☞ Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" = Paper (6a) + Image Exchange (6b).

##### 6a) Paper

Checks drawn on your institution for which you are not the "bank of first deposit" and that you or your processor receive as Original Paper check (6a.1 below) or Substitute Check / IRD (6a.2 below).

Note: This is a subset of item 6 above. If your institution outsources check processing to another organization, please be sure to report data in this question according to the method by which your processor receives checks from a clearing agent or collecting institution.

☞ Paper = Original Paper (6a.1) + Substitute Check / IRD (6a.2).

#### 6a.1) Original Paper

Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as the original checks.

Do Not Include: Checks received as Substitute Check / IRD (**6a.2** below)

Note: This is a subset of item **6a** above. If you are unable to distinguish between Original Paper (**6a.1**) and Substitute Check / IRD (**6a.2**), you should report “NR” for both items, **6a.1** and **6a.2**, and report the combined total under Paper (**6a**). If your institution outsources check processing to another organization, please be sure to report data in this question according to the method by which your processor receives checks from a clearing agent or collecting institution.

► Example: Your customer writes a check to pay for goods at a retailer. The retailer has a depository relationship with another financial institution. After processing the retailer’s deposit, that institution (i.e., the “collecting bank”) presents the original paper check, through the Federal Reserve, local clearinghouse or directly for same-day settlement, to your institution for payment.

#### 6a.2) Substitute Check / IRD

Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as substitute checks / IRDs (Image Replacement Documents). A substitute check drawn on your institution and received in your inclearings and “on-us” correspondent deposit stream will contain a “4” in position 44 (the External Processing Code field) of the MICR line to indicate that it is a substitute check and not the original paper check.

Note: This is a subset of item **6a** above. If your institution outsources check processing to another organization, please be sure to report data in this question according to the method by which your processor receives checks from a clearing agent or collecting institution.

► Example: Your customer writes a check to pay his physician. The physician’s office has a depository relationship with another financial institution and uses a remote image capture product to deposit the check electronically and truncate the original check. That financial institution (i.e., the “collecting bank”) creates a substitute check and presents it through the Federal Reserve, local clearinghouse or directly for same-day settlement, to your institution for payment.

#### 6b) Image Exchange

Checks drawn on your institution for which you are not the “bank of first deposit” and that you or your processor receive as images. This includes Checks in Image Cash Letters (**6b.1** below) or Image on Demand (**6b.2** below).

Note: This is a subset of item **6** above. If your institution outsources check processing to another organization, please be sure to report checks in this question according to the method by which your processor receives checks from a clearing agent or collecting institution.

➡ Image Exchange = Checks in Image Cash Letters (**6b.1**) + Image on Demand (**6b.2**).

#### 6b.1) Checks in Image Cash Letters

Image exchange items received in an image cash letter (e.g., ECPi, ICL). Include images that you or your processor receive in a continuous stream from a clearing agent or collecting institution.

Note: This is a subset of item **6b** above. Report the number of checks you or your processor receive in image cash letters, not the number of image cash letter files. If your institution outsources check processing to another organization, please be sure to report data in this question according to the method by which your processor receives checks from a clearing agent or collecting institution.

► Example: Your customer writes a check to pay his rent. The landlord has a depository relationship with another financial institution. That institution captures an image of the check in the branch and deposits it with your institution as part of a correspondent processing relationship through an image cash letter (ICL) transmission. The bank of first deposit truncates the paper check in the branch.

#### 6b.2) Other Checks Received via Image Exchange (i.e., Image on Demand)

Image exchange items that are available on demand from a shared archive but for which presentment is made via an electronic file only, without accompanying images or paper.

Do Not Include: Checks in Image Cash Letters (**6b.1** above) which are also available on demand from an archive.

Note: This is a subset of item **6b** above. If your institution outsources check processing to another organization, please be sure to report data according to the method by which your processor receives checks from a clearing agent or collecting institution.

► Example: Your customer writes a check to pay for groceries. The grocery store has a depository relationship with another financial institution. That institution presents the check for payment through an image exchange network in which your institution also participates. You receive an electronic file that contains information regarding the check (i.e., MICR information, amount, etc.), but the image is not included in the transmission, but is available for you to retrieve from a shared archive on demand.

## Check Deposits

### 7) Deposited Checks

All checks deposited at your institution. This includes checks that are drawn on your institution (i.e., "On-Us" Checks for Which You are the "Bank of First Deposit," **2b** above and "On-Us" Checks Deposited by Correspondent Customers, **2a.2** above) and checks drawn on other financial institutions (i.e., transit checks). Deposited checks include, but are not limited to, the following:

- Checks deposited in your branches.
- Checks received from other internal departments (e.g., wholesale or retail lockbox, currency / coin vault operations, and loan payments processing operations).
- Checks deposited by corporate clients (typically in the evening) directly to your item processing operations (e.g., pre-encoded or un-encoded deposits or remote capture deposits).
- Checks deposited by correspondent banking customers.

Note: Include checks itemized in **7a** and **7b** below. The volumes you report in this section are not necessarily payments by your accountholders. If you perform branch or ATM capture, report these volumes under **7b**.

☞ Deposited Checks = Image Check Deposits (**7a**) + Paper Checks Deposited (**7b**).

#### 7a) Image Check Deposits

Checks deposited by means of the customer's capturing and transmitting an image of each check for deposit. The paper check is truncated by the customer at the point of capture / deposit.

Do Not Include: ACH check conversion entries, paper check deposits, or deposits made by consumers or commercial depositors.

Note: This is a subset of item **7** above.

► Example: A customer writes a check to pay for her physician. She may or may not have a depository relationship with your institution. The physician's office, which does have a depository relationship with your institution, captures the image of the check and transmits the image to your institution for deposit. You are the bank of first deposit for this check.

☞ Image Check Deposits = Checks Deposited by Consumer or Commercial Depositors via Client Image Capture (**7a.1**) + Correspondent Checks Deposited via Image Capture / Cash Letter (**7a.2**).

##### 7a.1) Checks Deposited by Consumer or Commercial Depositors via Client Image Capture

Checks deposited by customers (other than correspondent customers) by means of the customer's capturing and transmitting an image of each check for deposit. The paper check is truncated by the customer at the point of capture/deposit.

Do Not Include: ACH check conversion entries, paper check deposits, deposited checks for which your institution performs image capture at a branch, ATM, or other processing center, or checks deposited by correspondent customers.

Note: This is a subset of item **7a** above.

► Example: A customer writes a check to pay her physician. She may or may not have a depository relationship with your institution. The physician's office, which does have a depository relationship with your institution, captures the image of the check and transmits the image to your institution for deposit. You are the bank of first deposit for this check.

#### 7a.2) Correspondent Checks Deposited via Image Capture / Cash Letter

Checks deposited by a correspondent customer (i.e., a financial institution) by means of the customer's capturing and transmitting an image of each check for deposit. The paper check is truncated by the customer at the point of capture/deposit. If you report "No" to item 1 above, report "0" here.

Do Not Include: ACH check conversion entries, paper check deposits, or deposits made by consumers or commercial depositors.

Note: This is a subset of item **7a** above. If you reported "No" on item 1 above, report "0" here.

► Example: A customer writes a check to pay her babysitter. The babysitter deposits the check at another financial institution, which happens to be your correspondent customer. As a correspondent bank, your institution holds balances for this financial institution in a due-to account and performs check clearing services on its behalf. This financial institution captures an image of the check and deposits it via image cash letter transmission to your institution for processing. You may or may not be the paying bank for this item.

#### 7b) Paper Checks Deposited

Paper checks deposited at your institution. These items can be received from several deposit channels (e.g., branch, lockbox, etc.). Include deposited checks for which your institution performs image capture at a branch, ATM, or other location.

Do Not Include: ACH check conversion entries or checks deposited as images.

Note: This is a subset of item **7** above.

► Example: Your customer deposits his paycheck drawn on another financial institution at an ATM located at your branch. The ATM captures an image of the check, which is truncated at that time. The image is cleared via image exchange. Because the check was deposited at the ATM as paper, it should be reported here and not in item **7a**.

➡ Paper Checks Deposited = Paper Checks Deposited by Consumer or Commercial Depositors (**7b.1**) + Correspondent Checks Deposited via Paper Check / Cash Letter (**7b.2**).

#### 7b.1) Paper Checks Deposited by Consumer or Commercial Depositors

Paper checks deposited by customers (other than correspondent customers). These items can be received from several deposit channels (e.g., branch, lockbox, etc.).

Do Not Include: ACH check conversion entries, checks deposited as images, or checks deposited by correspondent customers.

Note: This is a subset of item **7b** above.

► Example: A local convenience store accepts a check from its customer. The convenience store deposits the paper check at one of your institution's local branches. An image of the check is captured in the branch and cleared via image exchange. Because the check was deposited by the customer as a paper check in the branch, it should be reported here and not in item **7a.1**.

#### 7b.2) Correspondent Checks Deposited via Paper Check / Cash Letter

Paper checks deposited by a correspondent customer (i.e., a financial institution). If you report "No" to item 1 above, report "0" here.

Do Not Include: ACH check conversion entries, checks deposited as images, or checks deposited by consumers or commercial depositors.

Note: This is a subset of item **7b** above. If you reported "No" on item 1 above, report "0" here.

► Example: Your institution processes checks for another institution as part of a correspondent banking relationship. This institution takes in paper check deposits at its branches. In order to clear those paper checks, your correspondent customer deposits them at your institution in a paper cashletter for subsequent processing.

## Outgoing Check Returns

### 8) Outgoing Returned Checks

All checks drawn on your institution that you return unpaid, whether to another institution (**8a** below) or to your customer (**8b** below).

Do Not Include: Checks drawn on another FI returned to you unpaid (**9a** below).

▶ Example: Your customer writes a check that is deposited (at your institution or another) and presented for payment. Your customer's account has insufficient funds and no overdraft protection. You return the check unpaid.

⇒ Outgoing Returned Checks = Checks You Return Unpaid to the Collecting Institution (**8a**) + On-Us" Checks You Return Unpaid to a Consumer or Commercial Depositor (**8b**).

#### 8a) Checks You Return Unpaid to the Collecting Institution

Checks drawn on your institution for which another institution is "bank of first deposit" (**2a** above) that you return unpaid. These checks are drawn on your institution but are returned to another institution unpaid.

Note: This is a subset of item **8** above.

▶ Example: Your customer writes a check that is deposited at another institution and presented for payment. Your customer's account has insufficient funds and no overdraft protection. You return the check unpaid to the collecting bank.

⇒ Checks You Return Unpaid to the Collecting Institution = Outgoing Paper Returns (**8a.1**) + Outgoing Image Returns (**8a.2**).

##### 8a.1) Outgoing Paper Returns

Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" (**2a** above) that you return unpaid and send as original paper or substitute check / IRD to your clearing agent or the collecting institution.

Note: This is a subset of item **8a** above.

▶ Example: Your customer writes a check that is deposited at another institution and is presented to you via image exchange for payment. Your customer's account has insufficient funds and no overdraft protection. You or your processor returns the item unpaid to the collecting bank as a substitute check / IRD.

##### 8a.2) Outgoing Image Returns

Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" (**2a** above) that you return unpaid and send electronically to your clearing agent or the collecting institution.

Note: This is a subset of item **8a** above.

▶ Example: Your customer writes a check that is deposited at another institution and is presented to you via image exchange for payment. Your customer's account has insufficient funds and no overdraft protection. You or your processor returns the item unpaid to the collecting bank as an image.

#### 8b) "On-Us" Checks You Return Unpaid to a Consumer or Commercial Depositor

All "On-Us" Checks for Which You are the "Bank of First Deposit" (**2b** above) that you return unpaid. These are a subset of items charged back to depositing customers. Some institutions call these "charge backs."

Do Not Include: Checks that you return to another institution or checks drawn on another institution returned to you unpaid.

Note: This is a subset of item **8** above. The number and value (\$) reported in item **8b** should match the number and value (\$) reported in item **9b** below. Include checks you return to the customer in real-time (i.e., at the teller line when they attempt to make a deposit).

▶ Example: Your customer writes a check to his landlord, who also happens to be your customer. The landlord deposits the check at one of your branches. The account on which the check is drawn (the tenant's account) has insufficient funds and no overdraft protection. You return the check unpaid.

## Incoming Check Returns

### 9) Incoming Returned Checks

All checks deposited at your institution that are returned to you by the paying financial institution. This includes transit checks that are returned to you unpaid by another institution (**9a** below) and "On-Us" Checks You Return Unpaid to a Consumer or Commercial Depositor (**9b** below). Some institutions call these "return deposited checks."

Do Not Include: Checks drawn on your institution that you return unpaid to another FI (**8a** above).

Note: Include checks deposited by correspondent customers that are returned to you unpaid.

► Example: Your customer deposits a check at your institution that may be drawn on an account at your institution or another. The person who wrote the check has insufficient funds and no overdraft protection, so the paying bank (your own institution in the case of an "On-Us" Check) returns the deposited item to you unpaid. You charge the item back to the depositing customer.

☞ Incoming Returned Checks = Transit Checks Returned (**9a**) + On-Us" Checks You Return Unpaid to a Consumer or Commercial Depositor (**9b**).

### 9a) Transit Checks Returned

Checks forwarded presented by you, the collecting institution, that are returned to you unpaid.

Note: This is a subset of item **9** above.

► Example: Your customer deposits a check at your institution that is drawn on another financial institution. The person who wrote the check has insufficient funds and no overdraft protection, so the paying bank returns the deposited check to you, the collecting bank, unpaid. You charge the item back to the depositing customer.

☞ Transit Checks Returned = Incoming Paper Returns (**9a.1**) + Incoming Image Returns (**9a.2**).

#### 9a.1) Incoming Paper Returns

Checks forwarded presented by you, the collecting institution, that are returned to you unpaid and received by you or your processor as original paper checks or substitute checks / IRDs.

Note: This is a subset of item **9a** above.

► Example: Your customer deposits a check at your institution that is drawn on another financial institution. You present the item for payment. However, the person who wrote the check has insufficient funds and no overdraft protection, so the paying bank returns the deposited check to you, the collecting bank, unpaid. The check is returned to you or your processor unpaid in paper format (either as the original paper check or substitute check / IRD).

#### 9a.2) Incoming Image Returns

Checks forwarded presented by you, the collecting institution, that are returned to you unpaid and received electronically by you or your processor from a clearing agent or another institution.

Note: This is a subset of item **9a** above.

► Example: Your customer deposits a check at your institution that is drawn on another financial institution. You present the item for payment. However, the person who wrote the check has insufficient funds and no overdraft protection, so the paying bank returns the deposited check to you, the collecting bank, unpaid. The check is returned to you or your processor unpaid via image exchange.

### 9b) "On-Us" Checks You Return Unpaid to a Consumer or Commercial Depositor (Same as 8b above)

All "On-Us" Checks for Which You are the "Bank of First Deposit" (**2b** above) that you return unpaid. These are a subset of items charged back to depositing customers. Some institutions call these "charge backs."

Do Not Include: Checks that you return to another institution or checks drawn on another institution returned to you unpaid.

Note: The number and value (\$) reported in item **9b** should match the number and value (\$) reported in item **8b** above. Please be sure that item **9** equals the sum of items **9a** and **9b**. Include checks you return to the customer in real-time (i.e., at the teller line when they attempt to make a deposit).

► Example: Your customer writes a check to his landlord, who also happens to be your customer. The landlord deposits the check at one of your branches. The account on which the check is drawn (the tenant's account) has insufficient funds and no overdraft protection. You return the check unpaid.

## Check 21 Exceptions

### 10) Total Check 21 Exceptions

Checks Drawn on Your Institution for Which You are Not the "Bank of First Deposit" (2a above) that you or your processor send back as exceptions for administrative reasons related to the collecting institution's application of image processing. These exceptions may be a result of IQA / IUA or Code Line Data Mismatch (10a below). Also include exception items that were identified by your institution for other image related reasons such as Duplicate Images, or Checks in Duplicate Files (10b below).

▶ Example: Your customer writes a check that is deposited at another financial institution. The check is converted to an image by the collecting bank or its clearing agent. Upon presentment, you or your processor are unable to read the image because of image quality issues (10a below) or you find duplicate checks in the file you return (10b below) that you return as Check 21 Exceptions.

☞ Total Check 21 Exceptions = IQA / IUA or Code Line Data Mismatch Exceptions (10a) + Duplicate Images, or Checks in Duplicate Files (10b).

### 10a) IQA / IUA or Code Line Data Mismatch Exceptions

Checks received as images by your institution that you or your processor send back as exceptions because they fail your institution's Image Quality Analysis (IQA) or Image Usability Analysis (IUA), or because of Code Line Data Mismatch. Code line data mismatch results when the information accompanying the image does not match the actual image sent (e.g., mismatched MICR line detail, check amount, etc.).

Note: This is a subset of item 10 above.

▶ Example: Your customer writes a check that is deposited at another financial institution. The check is converted to an image by the collecting bank or its clearing agent. Upon presentment, you or your processor determine that it is an exception item because the MICR line information accompanying the image does not match the actual image of the check.

### 10b) Duplicate Images, or Checks in Duplicate Files

Checks received as images by your institution that you or your processor identify as exceptions for image related administrative reasons. These exceptions include duplicate images, or checks in duplicate files.

Note: This is a subset of item 10 above.

▶ Example: Your customer writes a check that is deposited at another financial institution. The check is converted to an image by the collecting bank or its clearing agent. The collecting bank mistakenly sends the image cash letter twice to your institution for payment. The number of checks in the duplicate file should be reported here.

## Accountholder Statements

### GENERAL TERMINOLOGY

#### Consumer Account –

A checkable deposit account, for personal use by an individual or household, from which payments can be made. This includes checking accounts, NOW accounts, savings accounts, and money market deposit accounts (MMDA), but excludes certificates of deposit (CDs).

#### Business/Government Account –

A checkable deposit account, owned by an organization (i.e., business, government, or not-for-profit), from which payments can be made. This includes checking accounts, savings accounts, and money market deposit accounts, but excludes certificates of deposit. Include analyzed accounts (i.e., those for which fees can be offset by balances via an earnings credit rate) and non-analyzed accounts. Include small business accounts.

## SURVEY ITEMS

### 11) Total Checkable Deposit Account Statements

All regular monthly statements for account types listed above regardless of delivery method. Be sure to count each statement only once. For example, if you provide a single monthly statement to a depositor with multiple accounts (e.g., checking and MMDA), that constitutes one statement.

Do Not Include: Online statements prepared for accountholders who also receive paper statements. Do not include statements expressly for accounts from which payments cannot be made (e.g., CD).

► Example: Your customer has a money market deposit account on which he writes checks. Each month he receives a paper statement in the mail with images of his cancelled checks. A PDF copy of his statement is also available from your institution's website. Because he has not chosen to suppress paper statement delivery, you would report this statement under item **11b**, Image Statements. If the accountholder had opted to suppress paper delivery and receive his statement only via email or through your website, you would report it instead under item **11d**, Electronic Statements.

☞ Total Checkable Deposit Account Statements = Check Enclosure Statements (**11a**) + Image Statements (**11b**) + Itemized Paper Statements (**11c**) + Electronic Statements (**11d**) + Other Statements (**11e**).

#### 11a) Check Enclosure Statements

Regular monthly statements mailed with paid checks enclosed, either original paper or substitute checks, for return to accountholders.

Do Not Include: Statements that do not include physical checks returned to accountholders.

Note: This is a subset of item **11** above.

► Example: Your customer has a checking account and writes checks. Each month he receives a paper statement in the mail. Included in these statements are the original paper checks he wrote or individual, physical copies of those checks.

#### 11b) Image Statements

Regular monthly statements mailed out that include printed images of paid checks on the statement page.

Do Not Include: Statements where physical checks are returned to customers (**11a** above) or where only line item detail is provided on transactions (**11c** below). Do not include Electronic Statements (**11d** below) or statements classified as "Other" (**11e** below).

Note: This is a subset of item **11** above.

► Example: Your customer has a checking account and writes checks. Each month he receives a paper statement in the mail. The statement he receives does not include physical copies of the checks he wrote. Instead, the images of those checks are printed on the statement pages along with transaction details.

#### 11c) Itemized Paper Statements

Regular monthly statements mailed out with neither enclosed checks, because check-return is not provided as part of the account service or because no checks were paid during the statement cycle, nor check images. Only include statements with itemized transaction details.

Do Not Include: Statements where physical checks are returned to customers or check images are provided. Do not include Electronic Statements (**11d** below) or statements classified as "Other" (**11e** below).

Note: This is a subset of item **11** above.

► Example: Your customer has a checking account and writes checks. She receives her monthly statement in the mail, which only contains transaction level detail on the statement pages. Neither physical checks nor images of checks are included in her statement.

11d) Electronic Statements

Regular monthly statements delivered only via electronic means, such as email or via online access, for which no postage expense is incurred.

Do Not Include: Statements that are physically mailed to customers. Do not include online statements prepared for accountholders who also receive paper statements.

Note: This is a subset of item 11 above. Some institutions refer to these as statements with “suppressed” paper delivery.

► Example: Your customer has a checking account and has opted to “suppress” paper delivery in favor of electronic delivery of her monthly statement. She may view transaction detail online or, perhaps, download it as a PDF file. Your institution no longer mails her a monthly statement.

11e) Other Statements

All other regular monthly statements, such as those delivered via CD-ROM, you did not report in items 11a – 11d above but for which you bear postage expense.

Note: This is a subset of item 11 above. Some institutions refer to these as statements with “suppressed” paper delivery.

► Example: A local dentist has a small business account at your institution. Instead of sending paper statements to her office, your institution mails a CD-ROM each month that contains a statement of account activity. It may or may not contain images of checks.

## ACH Payments

### GENERAL TERMINOLOGY

#### ACH Payments –

Transactions in this category are entries, originated or received by your institution, that are processed through an Automated Clearinghouse platform according to NACHA rules and format conventions. For this study, please follow these guidelines:

ACH Entries include...	ACH Entries do <u>not</u> include...
<ul style="list-style-type: none"> <li>▪ Debits &amp; Credits sent and received</li> <li>▪ On-Ups entries</li> <li>▪ Network entries</li> <li>▪ Returns</li> </ul>	<ul style="list-style-type: none"> <li>▪ Addenda Records</li> <li>▪ Zero-dollar items (e.g. NOCs, Prenotes)</li> <li>▪ Deletes/Reversals</li> </ul>

#### Originating Depository Financial Institution (ODFI) –

The Originating Depository Financial Institution (ODFI) is the financial institution that initiates and warrants electronic payments through the ACH Network (or On-Ups) on behalf of its customers.

#### Receiving Depository Financial Institution (RDFI) –

The RDFI is the financial institution that provides depository account services to individuals and organizations and accepts and posts electronic entries to those accounts.

#### Network ACH Entries –

A Network ACH entry is one that is cleared through a network operator, i.e., the Federal Reserve or EPN. This would **not include** ACH entries cleared directly between your institution and another (i.e., Direct Exchange ACH entries). Please consider all Network ACH entries that result in payments from accounts at your institution, including those for which you are both the ODFI and RDFI (i.e., Network On-Ups ACH entries).

### Network On-Us ACH Entries –

A Network On-Us ACH Entry is one for which you are both the ODFI and RDFI and which is cleared through the Federal Reserve or EPN. Institutions that originate Network On-Us Entries have found it economical or operationally necessary to clear payments between their own accountholders through the network. The alternative would be to identify these entries, separate them from other Network ACH entries, and process them entirely in-house.

### Direct Exchange ACH Entries –

A Direct Exchange ACH entry is one that is exchanged directly between your institution and another. Some institutions call these “Direct Send” entries. Please consider all Direct Exchange ACH entries that result in payments from accounts at your institution.

### In-House On-Us ACH Entries (Cleared within Your Institution and Not through the Fed or EPN) –

An In-House On-Us ACH entry is one for which you are both the ODFI and the RDFI without the use of a network, such as the Federal Reserve or EPN, for clearing or settlement. On-Us entries result in the movement of funds from one account to another within your institution.

## SURVEY ITEMS

### **ACH: Profile**

- 1) Does your institution originate ACH credits?
- 2) Does your institution originate ACH debits?

### **ACH: Network Entries**

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

#### 3) ACH Credits Your Institution Originates Through the Fed or EPN

All Network ACH Credit entries for which you are the ODFI. Include returns. Include Network On-Us Credit entries for which you are both the ODFI and RDFI. See above for definition of “Network” entry.

Do Not Include:

- ACH entries received from other institutions
- Debit ACH entries originated
- Direct Exchange Entries, such as ACH Credits Your Institution Originates Directly to Another Institution (5 below)
- In-House On-Us Entries, such as In-House On-Us Credits Your Institution Originates (7 below)
- Addenda records
- Zero-dollar entries

► Example: Your corporate customer pays its employees electronically through the ACH. Your institution originates the credit entries on behalf of your customer and sends them through your chosen network operator, i.e., the Fed or EPN.

#### 4) ACH Debits Your Institution Receives Through the Fed or EPN

All Network ACH Debit entries for which you are the RDFI. Include returns. Include Network On-Us Debit entries for which you are both the ODFI and RDFI. See above for definition of "Network" entry.

Do Not Include:

- ACH entries sent to other institutions
- Credit ACH entries received
- Direct Exchange Entries, such as ACH Debits Your Institution Receives Directly from Another Institution (**6** below)
- In-House On-Us Entries, such as In-House Debits Your Institutions Originates (**8** below)
- Addenda records
- Zero-dollar entries

▶ Example: Your customer has set up direct debit of his checking account for recurring monthly bill payments. His billers, (e.g., utilities, insurance companies, credit card issuers, etc.) originate debit entries through other financial institutions (i.e., ODFIs) that you receive and post to your customer's account.

## **ACH: Direct Exchange Entries**

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

#### 5) ACH Credits Your Institution Originates Directly to Another Institution

All Direct Exchange ACH Credit entries for which you are the ODFI. Include returns. See above for definition of "Direct Exchange" entry.

Do Not Include:

- ACH entries received from other institutions
- Debit ACH entries originated
- Network Entries originated, such as ACH Credits Your Institution Originates Through the Fed or EPN (**3** above)
- In-House On-Us Entries, such as In-House On-Us Credits Your Institution Originates (**7** below)
- Addenda records
- Zero-dollar entries

▶ Example: Your corporate customer pays its employees electronically through the ACH. Your institution originates the credit entries on behalf of your customer. Some of its employees bank at institutions with which you have established direct exchange relationships in order to forego clearing fees from the Fed or EPN. You originate payroll payments via direct exchange to the employees who bank at these institutions.

#### 6) ACH Debits Your Institution Receives Directly from Another Institution

All Direct Exchange ACH debit entries for which you are the RDFI. Include returns. See above for definition of "Direct Exchange" entry.

Do Not Include:

- ACH entries sent to other institutions
- Credit ACH entries received
- Network Entries received, such as ACH Debits Your Institution Receives Through the Fed or EPN (**4** above)
- In-House On-Us Entries, such as In-House On-Us Debits Your Institution Originates (**8** below)
- Addenda records
- Zero-dollar entries

▶ Example: Your customer has set up direct debit of his checking account for recurring monthly bill payments. His billers, (e.g., utilities, insurance companies, credit card issuers, etc.) originate debit entries through other financial institutions (i.e., ODFIs). Some of those institutions have direct exchange relationships with your institution in order to forego clearing fees from the Fed or EPN. You receive debit entries from these institutions and post them to your customer's account.

## ACH: In-House On-Us Entries

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

### 7) In-House On-Us Credits Your Institution Originates

All ACH credit entries not cleared through the Federal Reserve or EPN for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution.

Do Not Include:

- ACH entries sent to or received from other institutions
- In-House On-Us Debits Your Institution Originates (**8** below)
- Addenda records
- Zero-dollar entries
- If possible, offset entries or entries used to post non-ACH payments to your DDA system using the ACH platform

Note: "Your institution" includes all affiliates.

► Example: Your corporate customer pays its employees electronically through the ACH using your institution as its ODFI. Some of its employees have deposit accounts at your institution. To credit the accounts of those employees, you originated In-House On-Us Credit entries and forego clearing fees from the Fed or EPN.

### 8) In-House On-Us Debits Your Institution Originates

All ACH debit entries not cleared through the Federal Reserve or EPN for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution.

Do Not Include:

- ACH entries sent to or received from other institutions
- In-House On-Us Credits Your Institution Originates (**7** above)
- Addenda records
- Zero-dollar entries
- If possible, offset entries or entries used to post non-ACH payments to your DDA system using the ACH platform.

Note: "Your institution" includes all affiliates.

► Example: Your corporate customer, a cable company, collects monthly payments from its customers by originating ACH debit entries using your institution as its ODFI. Some of those customers also have deposit accounts at your institution. To debit the accounts of those customers, you originate In-House On-Us Debit entries and forego clearing fees from the Fed or EPN.

# Debit Card Transactions

## GENERAL TERMINOLOGY

### Debit Card Transactions –

All purchase and bill pay transactions made with debit cards, open-loop prepaid cards, or ATM cards used for POS transactions. These transactions can be authenticated by either a Personal Identification Number (PIN) or by a signature. Transactions may originate either at a physical point of sale (POS), via telephone, via the Internet, etc. For this study, please follow these guidelines:

Debit Card Transactions include...	Debit Card Transactions do <u>not</u> include...
<ul style="list-style-type: none"><li>▪ Transactions made with Visa, MasterCard, Discover, or American Express branded cards and cleared over dual-message networks. These are typically called Signature-based or Offline debit card transactions.</li><li>▪ POS transactions made with debit cards and cleared over a single-message network. These are typically called PIN-based or Online debit card transactions</li><li>▪ Open-loop general purpose prepaid debit card transactions</li><li>▪ Open-loop gift card transactions</li><li>▪ Payroll card transactions by the cardholder</li><li>▪ Electronic Benefit Transfer (EBT) card transactions</li><li>▪ Transactions originated in other countries</li></ul>	<ul style="list-style-type: none"><li>▪ ATM withdrawals</li><li>▪ Credit Card transactions</li><li>▪ Transfers by a corporate customer to fund its employees' payroll card accounts</li></ul>

### Open-loop –

All network-branded cards that can be used at merchants or billers that accept the network brand (e.g., Visa, MasterCard, Discover, American Express, Interlink, Maestro, STAR, PULSE, NYCE, etc.).

### Open-loop General Purpose Prepaid Debit Cards –

These network-branded cards are consumer funded and can be used at the point of sale, for bill pay transactions, or to withdraw cash from an ATM. These cards are often marketed to underbanked consumers as a checking account alternative.

### Open-loop Gift Cards –

These network-branded cards are consumer funded and can be used at the point of sale or for bill pay transactions. They cannot be used to withdraw cash from an ATM.

### Payroll Cards –

These cards are funded by the cardholder's employer and can be used at the point of sale, for bill pay transactions, or to withdraw cash from an ATM.

## SURVEY ITEMS

1) Do you issue open-loop prepaid debit cards where the cardholder's signature can be used to authorize transactions?

These open-loop prepaid debit cards include general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards that carry the Visa, MasterCard, Discover, or American Express brands.

Note: If your answer to this question is "No," please report "0" for item **3a.2** below.

▶ Example: Your institution issues a prepaid Visa gift card. The card may or may not be reloadable. In this scenario, you would answer "Yes" to this question.

2) Do you issue open-loop prepaid debit cards where the cardholder's PIN can be used to authorize transactions?

These open-loop prepaid debit cards include general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards that are PIN-authenticated and can be used at the point of sale.

Note: If your answer to this question is "No," please report "0" for item **3b.2** below.

▶ Example: Your institution issues electronic benefit transfer (EBT) cards to recipients of federal or state assistance programs. When the cardholder uses the card, he enters a personal identification number (PIN) to authorize the transaction. In this scenario, you would report "Yes" to this question.

3) Total Debit Card Transactions (Offline and Online)

All point-of-sale (POS), bill pay transactions, and card-not-present transactions made with a debit card linked to a deposit account, open-loop prepaid debit cards, or ATM cards (used for POS transactions) for which you are the card issuing institution. Include both consumer and business card transactions. Include **3a** and **3b** below.

Do Not Include: ATM withdrawals or credit card transactions.

▶ Example: Your customer buys groceries with her debit card by entering her PIN at the checkout line. Later that day, she uses a Visa gift card issued by your institution to purchase clothes at a department store. When using the gift card, she signs a sales receipt to authorize the transaction. Both transactions should be included.

☞ Total Debit Card Transactions (Offline and Online) = Offline (Signature-Based) Debit and Signature-Based Open-Loop Prepaid Transactions (**3a**) + Online (PIN-Based) Debit and PIN-Based Open-Loop Prepaid Debit Card Transactions (**3b**).

3a) Offline (Signature-Based) Debit and Signature-Based Open-Loop Prepaid Transactions

All debit card transactions that carry the Visa, MasterCard, Discover, or American Express brands for which you are the card issuing institution. This includes signature-debit transactions linked to a deposit account (**3a.1** below) and signature-based prepaid debit (**3a.2** below). Include both consumer and business debit card transactions.

Do Not Include: ATM withdrawals, PIN-based debit (**3b** below), or credit card transactions.

Note: This is a subset of item **3** above.

▶ Example: Your customer buys lunch with his debit card and authorizes the transaction by signing for the purchase. Later that day, he uses a Visa gift card issued by your institution to rent a movie and signs a sales receipt as well. Both transactions should be included.

☞ Offline (Signature-Based) Debit and Signature-Based Open-Loop Prepaid Transactions = Offline (Signature-Based) Debit Card Transactions (**3a.1**) + Signature-Based Open-Loop Prepaid Transactions (**3a.2**).

3a.1) Offline (Signature-Based) Debit Card Transactions

All debit card transactions that carry the Visa, MasterCard, Discover, or American Express brands for which you are the card issuing institution and where funds are debited from your customer's deposit account.

Do Not Include: ATM withdrawals, PIN-based debit (**3b** below), prepaid debit, or credit card transactions.

Note: This is a subset of item **3a** above.

▶ Example 1: Your customer buys groceries with her Visa Check card. When asked, "credit or debit," she selects "credit" and signs a sales receipt to authorize payment from her checking account. The transaction is authorized over VisaNet.

▶ Example 2: Your customer purchases an item on an Internet website but does not sign anything. The transaction is authorized over VisaNet. This is sometimes called a "card-not-present" transaction.

### 3a.2) Signature-Based Open-Loop Prepaid Transactions

All prepaid debit card transactions that carry the Visa, MasterCard, Discover, or American Express brands for which you are the card issuing institution. Include signature-based transactions on general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards. If you report “No” to item 1 above, report “0” here.

Do Not Include: ATM withdrawals, PIN-based debit (**3b** below), debit transactions linked to a deposit account, or credit card transactions.

Note: This is a subset of item **3a** above. If you report “No” to item 1 above, report “0” here.

► Example: A consumer receives an America Express gift card issued by your institution for her birthday. She uses the gift card at the department store and signs a sales receipt to authorize the transaction.

### 3b) Online (PIN-Based) POS Transactions and PIN-Based Open-Loop Prepaid Transactions

All PIN-based debit and prepaid debit card transactions for which you are the card issuing institution. This includes PIN-authenticated transactions made either by PIN-enabled debit cards linked to a deposit account, PIN-enabled open-loop prepaid debit cards, or by ATM cards used at the point of sale. Also include “PINless” debit transactions for bill pay transactions that are cleared and settled through a regional EFT network.

Do Not Include: ATM withdrawals, signature-based debit (**3a** above), or credit card transactions.

Note: This is a subset of item **3** above.

► Example: Your customer buys clothes with his Visa Check card and authorizes the transaction by entering his PIN. Later that day, he uses an Electronic Benefits Transfer (EBT) card provided by the government (for which you are the card issuer) to purchased groceries. Both transactions should be included.

➡ Online (PIN-Based) Debit and PIN-Based Open-Loop Prepaid Debit Card Transactions = Online (PIN-Based) POS Transactions (**3b.1**) + PIN-Based Open-Loop Prepaid Transactions (**3b.2**).

#### 3b.1) Online (PIN-Based) POS Transactions

All PIN-based debit card transactions for which you are the card issuing institution and where funds are debited from your customer’s deposit account. This includes PIN-authenticated transactions made either by PIN-enabled debit cards or by ATM cards used at the point of sale. Also include “PINless” debit transactions linked to a deposit account for bill pay transactions that are cleared and settled through a regional EFT network.

Do Not Include: ATM withdrawals, signature-based debit (**3a** above), prepaid debit, or credit card transactions.

Note: This is a subset of item **3b** above.

► Example: Your customer buys groceries with his debit card. When asked, “credit or debit,” he selects “debit” and enters his PIN to authorize payment from his checking account. The transaction is cleared and settled through Interlink, Maestro, STAR, PULSE, NYCE or a regional EFT network.

#### 3b.2) PIN-Based Open-Loop Prepaid Transactions

All PIN-based prepaid transactions for which you are the card issuing institution. Include only PIN-based transactions made by PIN-enabled prepaid cards including general purpose prepaid (i.e., prepaid debit cards), gift, payroll, and electronic benefit transfer (EBT) cards. Also include “PINless” prepaid debit transactions for bill pay transactions that are cleared and settled through a regional EFT network. If you report “No” to item 2 above, report “0” here.

Do Not Include: ATM withdrawals, signature-based debit (**3a** above), PIN-based debit card transactions linked to a deposit account (**3b.1** above), or credit card transactions.

Note: This is a subset of item **3b** above. If you report “No” to item 2 above, report “0” here.

► Example: A consumer receives payroll card issued by your institution from his employer. When the cardholder makes purchases with this payroll card, he enters a PIN to authorize the transaction.

## Debit Card Cash Back

4) Do the values (\$) you reported in questions 3 through 3b.2 (above) include the amount of cash received for cash back transactions at the point of sale?

5) Total Cash Back Transactions

All debit card and prepaid card transactions for which you are the card issuing institution and the customer receives cash back at the point of sale. This includes both signature-based cash back and PIN-based cash back transactions. For cash back (\$), only include the amount of cash your cardholders receive at the POS.

Do Not Include: ATM withdrawals, credit card transactions, or the amount paid for goods and services.

Note: This is a subset of item **3** above.

► Example: Your customer uses her debit card at the grocery store. She enters her PIN to authorize the transaction and also requests cash back. The transaction and the amount of cash she receives, excluding the amount she paid for her groceries, should be reported here.

## ATM Withdrawals

### GENERAL TERMINOLOGY

ATM Withdrawals –

Cash withdrawals made by your customer at your ATM or a “foreign” ATM. For this study, please follow these guidelines:

ATM Withdrawals include...	ATM Withdrawals do <u>not</u> include...
<ul style="list-style-type: none"> <li>▪ All cash withdrawals by your customers (including withdrawals made in other countries)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cash withdrawals or other transactions by cardholders other than your customers</li> <li>▪ Deposit Transactions</li> <li>▪ Inquiries</li> <li>▪ Funds Transfers</li> <li>▪ Statement Prints</li> <li>▪ Purchases (stamps, tickets, etc.)</li> <li>▪ Any other non-withdrawal transaction</li> </ul>

“Foreign” ATM Withdrawals –

Cash withdrawals made by your customer at an ATM operated by another financial institution or ATM operator.

### SURVEY ITEMS

1) ATM Withdrawals (Your Customer, Any ATM)

All cash withdrawals made by your customers from any ATM, including those at your ATMs (**1a** below) or at “foreign” ATMs (**1b** below). A “foreign” ATM is an ATM operated by another financial institution or ATM operator.

Do Not Include: Withdrawals by another institution's customers, deposit transactions, or other non-withdrawal transactions (e.g., inquiries, statement print-out, purchases of stamps, tickets, etc.)

► Example: Your customer uses her Visa Check card to withdraw cash from an ATM located in a grocery store but owned and operated by your institution. Later that day she makes a second ATM withdrawal from an ATM owned and operated by a bank across town. Both transactions should be counted.

☞ ATM Withdrawals = On-Us ATM Withdrawals (**1a**) + Your Customer, “Foreign” ATM Withdrawals (**1b**).

1a) On-Us ATM Withdrawals (Your Customer, Your ATM)

All cash withdrawals made by your customers at your ATMs. Include withdrawals made by your customers at fee-free ATM networks in which you participate.

Do Not Include: Withdrawals by cardholders other than your customers, withdrawals by your customers at “foreign” ATMs, or non-withdrawal transactions by your customers.

Note: This is a subset of item 1 above. Please count only withdrawals by your customers at your ATMs.

► Example: Your customer uses her Visa Check card to withdraw cash from an ATM located in a grocery store but owned and operated by your institution.

1b) Your Customer, “Foreign” ATM

All cash withdrawals made by your customers at “foreign” ATMs.

Do Not Include: Any transactions at your ATMs, whether by your customer or another cardholder, or any non-withdrawal transactions by your customers.

Note: This is a subset of item 1 above. Please count only withdrawals by your customers at ATMs operated by financial institutions or ATM operators.

► Example: Your customer uses her Visa Check card to withdraw cash from an ATM located in a grocery store and owned and operated by another institution.

Appendix B:  
DI Study Survey Instrument (Short Form)

# The Federal Reserve Payments Study

## **SHORT FORM**

**About the study...** The Federal Reserve Payments Study is a confidential national survey of financial institutions about payments and withdrawals from deposit accounts. The "Short Form" measures data about check, ACH, and debit card payments as well as cash withdrawals from ATMs that post to deposit accounts during March and April, 2010. Data from your response will contribute to estimates of the national number of payments made by these transaction methods. The Federal Reserve will compare the results of this study to those of similar studies in 2001, 2004, and 2007 to document how the U.S. payments system is changing.

**Why participate...** As a participant you will receive access to confidential online reports that compare your payments volumes to that of the industry and your peers. Because the study is a random sample survey, your response is particularly important as it represents other organizations that were not selected for the study. If you cannot report an item, enter "NR." If you do not have volume of the type being measured, enter "0." A partial response is preferable to no response at all.

**How to respond...** You may respond by any of three methods. Please respond by \*\*\*\*\*.

Online: Visit [www.paymentsstudy.com](http://www.paymentsstudy.com) and use your secure institution ID and password:

Institution ID: \*\*\*\*\*

Password: \*\*\*\*\*

Fax: (866) 829-9419

Mail: Use the enclosed postage paid envelope or send your survey to:  
*Federal Reserve Payments Study c/o LRG; 98 Cutter Mill Road; Great Neck, NY 11021.*

**Questions...** You are welcome to call us at (866) 829-8881.

### Check Payments

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 15 of the *Institution Profile* section on page 5. "Your institution" refers to the entire enterprise including all affiliates.

1) Do you process checks for another financial institution as part of a correspondent banking relationship? As a "correspondent bank," your institution holds balances for another financial institution in a due-to account and performs check clearing services on its behalf.

Yes  
 No  
 Don't Know

2) All Checks Drawn on Your Institution (Enter "NR" for any item you cannot report or "0" if you have no volume.)

**Include:** All checks (and/or "share drafts") drawn on your institution. These include inclearings and "on-us" deposited checks. Include controlled disbursement checks, if applicable. Include checks you subsequently return unpaid (i.e., outgoing returns).

	March	April
Number of Checks		

**Do Not Include:** Checks drawn on other institutions (i.e., transit checks). Be sure to exclude non-check documents, such as deposit slips, G/L tickets, etc., if possible.

3) Were you able to exclude non-check documents from the volumes reported in item 2 above? Non-Check documents are "other" items processed on check sorters, e.g., batch headers, general ledger tickets, cash-in or cash-out tickets, deposit tickets, etc.

Yes  
 No  
 Don't Know

## Check Payments (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 15 of the *Institution Profile* section on page 5. **“Your institution” refers to the entire enterprise** including all affiliates.

4) Does your institution outsource check processing to another organization (i.e., “your processor”)?

- Yes** (Please be sure to report **5 and 5a** according to the method by which your processor receives checks from a clearing agent or collecting institution.)
- No**
- Don't Know**

5) Do you (or your processor) receive images of checks drawn on your institution from collecting institutions or their clearing agents? These are “interbank” items for which you are the paying institution and not the bank of first deposit.

- Yes**
- No** (Skip to 6)
- Don't Know**

5a) If yes, what percent of these checks did you receive as images?

Percent received as image	March	April

## ACH Entries

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 15 of the *Institution Profile* section on page 5. **“Your institution” refers to the entire enterprise** including all affiliates.

6) Does your institution originate ACH credits?

- Yes**
- No**
- Don't Know**

7) Does your institution originate ACH debits?

- Yes**
- No**
- Don't Know**

### Network ACH Entries

A Network ACH entry is one that is cleared through a network operator, i.e., the Fed or EPN. This would **not include** ACH entries cleared directly between your institution and another (i.e., Direct Exchange ACH entries). Please consider all Network ACH entries that result in payments from accounts at your institution, including those for which you are both the ODFI and RDFI (i.e., Network On-Ups ACH entries).

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

8) ACH Credits Your Institution Originates Through the Fed or EPN

(Enter “NR” for any item you cannot report or “0” if you have no volume.)

**Include:** All Network ACH Credit entries for which you are the ODFI. Include returns. Include Network On-Ups Credit entries for which you are both the ODFI and RDFI. See above for definition of “Network” entry.

**Do Not Include:** ACH entries received from other institutions; debits originated; Direct Exchange Entries, such as ACH Credits Your Institution Originates Directly to Another Institution; In-House On-Ups Entries, such as In-House On-Ups Credits Your Institution Originates (**10** below); addenda records; or zero-dollar entries.

Number of Entries	March	April

# ACH Entries (cont.)

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 15 of the *Institution Profile* section on page 5. **“Your institution” refers to the entire enterprise** including all affiliates.

## 9) ACH Debits Your Institution Receives

Through the Fed or EPN

**Include:** All Network ACH Debit entries for which you are the RDFI. Include returns. Include Network On-Ups Debit entries for which you are both the ODFI and RDFI. See above for definition of “Network” entry.

**Do Not Include:** ACH entries sent to other institutions; credits received; Direct Exchange Entries, such as ACH Debits Your Institution Receives Directly from Another Institution; In-House On-Ups Entries, such as In-House Debits Your Institution Originates (11 below); addenda records; or zero-dollar entries.

(Enter “NR” for any item you cannot report or “0” if you have no volume.)

	March	April
Number of Entries		

## In-House On-Ups ACH Entries (Cleared within Your Institution and Not through the Fed or EPN)

An In-House On-Ups ACH entry is one for which you are both the ODFI and the RDFI without the use of a network, such as the Fed or EPN, for clearing or settlement. On-Ups entries result in the movement of funds from one account to another within your institution.

**SEC Codes to Include:** ARC, BOC, CCD, CIE, CTX, IAT, POP, POS, PPD, RCK, SHR, TEL, TRC, WEB, XCK

**SEC Codes to Exclude:** ACK, ADV, ATX, COR, DNE, ENR, MTE, RET, TRX

## 10) In-House On-Ups Credits Your Institution Originates

**Include:** All ACH credit entries not cleared through the Fed or EPN for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution.

**Do Not Include:** ACH entries sent to or received from other institutions, In-House On-Ups Debits Your Institution Originates (11 below), addenda records, or zero-dollar entries. If possible, be sure to exclude offset entries or entries used to post non-ACH payments to your DDA system using the ACH platform.

(Enter “NR” for any item you cannot report or “0” if you have no volume.)

	March	April
Number of Entries		

**Note:** “Your institution” includes all affiliates.

## 11) In-House On-Ups Debits Your Institution Originates

**Include:** All ACH debit entries not cleared through the Fed or EPN for which you are both the ODFI and RDFI for the purpose of moving funds from one account to another at your institution.

**Do Not Include:** ACH entries sent to or received from other institutions, In-House On-Ups Credits Your Institution Originates (10 above), addenda records, or zero-dollar entries. If possible, be sure to exclude offset entries or entries used to post non-ACH payments to your DDA system using the ACH platform.

(Enter “NR” for any item you cannot report or “0” if you have no volume.)

	March	April
Number of Entries		

**Note:** “Your institution” includes all affiliates.

## 12) Does your institution either originate credits directly to another institution

or receive debits directly from another institution? Some institutions call these “Direct Exchange” or “Direct Send” entries. The entries are not cleared through a network operator (i.e., Fed or EPN), but are cleared directly between two depository institutions. Please consider all Direct Exchange ACH entries that result in payments from accounts at your institution.

- Yes
- No
- Don't Know

## Debit Card Transactions

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 15 of the *Institution Profile* section on page 5. **“Your institution” refers to the entire enterprise** including all affiliates.

### 13) Total Debit Card Transactions (Offline and Online)

**Include:** All point-of-sale (POS) or bill pay transactions made either by debit cards linked to a deposit account, open-loop prepaid debit cards, or ATM cards used at the point of sale for which you are the card issuing institution. Include both consumer and business card transactions. Include signature- and PIN-based transactions.

**Do Not Include:** ATM withdrawals or credit card transactions.

	March	April
Number of Trx	<input type="text"/>	<input type="text"/>

## ATM Withdrawals

*Please Do Not Round.*

**Note:** If you have excluded data for any affiliate, please indicate this exclusion in item 15 of the *Institution Profile* section on page 5. **“Your institution” refers to the entire enterprise** including all affiliates.

### 14) ATM Withdrawals (Your Customer, Any ATM)

**Include:** All cash withdrawals made by your customers from any ATM, including those at your ATMs (“on-us”) or “foreign” ATMs. A “foreign” ATM is an ATM operated by another financial institution or ATM operator.

**Do Not Include:** Withdrawals by another institution's customers, deposit transactions, or other non-withdrawal transactions (e.g., inquiries, statement print-out, purchases of stamps, tickets, etc.).

	March	April
Number of Wthdrwls	<input type="text"/>	<input type="text"/>

# Institution Profile

This is an enterprise-wide survey... According to our records, transaction volume data from the following affiliated institutions should be included in your response (unless you indicate their exclusion below).

Throughout this survey instrument, "your institution" refers to the entire enterprise including all affiliates.

Please contact us at (866) 829-8881 if you have any questions or concerns about the items on this page.

15) Please indicate if any of these affiliates are excluded from your response.

Name	City	State	Approximate Total Deposit Balances (in millions of dollars)*	Which data are missing?			
				Check	ACH	Debit Card	ATM
<Affiliate name>	<City>	<ST>	<Total Deposits (MM)>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\* Deposit information as of September 2009

16) Please list any affiliates not identified above that are included in your response.

Name	City	State

17) Do you or any of your affiliates employ overnight sweep accounts for consumer (i.e., retail) accounts? In order to make national estimates, we use your institution's deposit balances as a sizing measure. Understanding if your institution uses a retail sweeps program will help to inform our estimates. In a retail sweep, financial institutions move unused funds from checkable deposit accounts to special purpose MMDA subaccounts and return the funds to checkable deposit accounts only as needed to cover payments. This practice does not adversely impact the accountholder, but allows the institution to reduce nonearning assets.

- Yes
- No
- Don't Know

If you have any comments about the data you reported on this "short form" survey, please record them below:

Appendix C:  
DI Study Registration Form

# Respondent Registration Form

The *Federal Reserve Payments Study* is a national survey of depository institutions about payments and withdrawals from transaction accounts. The survey gathers data about check, ACH, and debit card payments as well as ATM withdrawals during March-April, 2010. Your response is strictly confidential.

You may register any time. If we have not heard from you by February 12<sup>th</sup> we will call to make sure the survey has been received. Please indicate a primary contact who will be responsible for coordinating your institution's response. If you are unable to provide a single point of contact, please identify a contact for each section of the survey.

To Register... You may return this registration form in the enclosed envelope or fax it to (866) 829-9419.

...or register securely online: [www.paymentsstudy.com](http://www.paymentsstudy.com) [Institution ID: \*\*\*\*\* Password: \*\*\*\*\*]

- ▶ **Option 1 (*Preferred*): Your Study Coordinator**  
*A single point of contact helps to simplify the survey process and ensures the highest quality response.*  
**PLEASE PRINT (\* Required field)**

\*First Name: \_\_\_\_\_

\*Last Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Street: \_\_\_\_\_

City, State ZIP: \_\_\_\_\_

\*Phone: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_      Fax: (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

\*E-mail: \_\_\_\_\_

- Option 2: Multiple Survey Contacts**  
*Please use this option only if you are unable to identify a single point of contact to coordinate your reply.*  
**PLEASE PRINT (\* Required field)**

	CHECK	ACH	DEBIT CARD	ATM
*First Name:	_____	_____	_____	_____
*Last Name:	_____	_____	_____	_____
Title:	_____	_____	_____	_____
Organization:	_____	_____	_____	_____
Street:	_____	_____	_____	_____
City, State ZIP:	_____	_____	_____	_____
*Phone:	_____	_____	_____	_____
Fax:	_____	_____	_____	_____
*E-mail:	_____	_____	_____	_____

Appendix D:  
CSS Survey Instrument (Full)

# CSS Long Survey Instrument

1. Does this image have a *Payee Line field* (i.e., the line indicating to whom the check is written) and an amount?  
 Yes  
 No – (next image)
2. Is there a smaller picture of another check embedded within the image?  
 Yes – (prompts Q3)  
 No – (skips to Q4)
3. Does the following sentence appear to the left of that image, “This is a LEGAL COPY of your check. You can use it the same way you would use the original check.”?  
 Yes  
 No
4. Are any of these words on the front of the check?  
 Cashier's Check, Official Check, or Certified Check  
 Money Order or Postal Money Order  
 Gift Certificate  
 Savings's Bond, Traveler's Check  
 WIC Check  
 None of the above

## Payer (wrote the check)

5. Does the *Payer name or address* have any of these? (Check all that apply)  
 One or more persons' full names (John Smith, John and Mary Smith, John Smith, Inc.)  
 Inc., LLC, LTD, Co., NA, Corp., Corporation, Trust, Trustee, Company, Services, .com, Association, PC  
 Church, Temple  
 Bank, Credit Union, Insurance  
 Funds, Mutual, Mutual Fund, Mutual Company, Investments, Investment Company, Investor's Fund  
 Initials of Business or Association (e.g. NAACP, AT&T)  
 State of, City of, County of, Town of, Township of, Bureau of, Municipality  
 State Treasury, State Treasurer, County Treasurer, County Commissioner, County Controller  
 US Treasury, Federal Reserve Bank, Federal Home Loan  
 IRS, Internal Revenue Service, State Tax, County Tax, Tax Commissioner, Tax Collector  
 Court of, District of  
 USPS, Post Office, United States Postal Service  
 Port Authority, Water Authority, Power Authority, Transit Authority, Department of  
 School, High School, Elementary, University, College  
 Apartment number (apt. #) NOT Suite # or Building #  
 Mail code (e.g., MC-648, BIN#)  
 Accounts Payable, Acct. Payable  
 Other business indicator  
 NO -- None of the above

6. Based on the *Payer name and address and the characteristics of the check*, can you definitively categorize the *Payer* as any of these?  
 Consumer (i.e., not a business or government)  
 Government (common examples of payer addresses will contain the words State of, City of, County of, Town of, Township of, Bureau of, Municipality, State Treasury, State Treasurer, County Treasurer, County Commissioner, County Controller, Port Authority, Water Authority, Power Authority, Transit Authority, Department of)  
 Business  
 Not Consumer – either business or government  
 Not Government – either business or consumer  
 Cannot determine
7. *Payer's ZIP code:*  
| | | | | - | | | |  
 Zip code not present

## Payee (paid by the check)

8. Does the *Payee Line* (i.e., the line indicating to whom the check is written) or the front of the check itself include an address for the *Payee*?  
 Yes  
 No
9. Does the *Payee name (or address, if present)* have any of these? (Check all that apply)  
 One or more persons' full names (John Smith, John and Mary Smith, John Smith, Inc.)  
 Cash  
 Inc., LLC, LTD, Co., NA, Corp., Corporation, Trust, Trustee Company, Services, .com, Association  
 Church, Temple  
 Bank, Credit Union, Insurance  
 Initials of Business or Association (e.g. NAACP, AT&T)  
 State of, City of, County of, Town of, Township of, Bureau of, Municipality  
 IRS, Internal Revenue Service, State Tax, County Tax, Tax Commissioner, Tax Collector, US Treasury  
 Court of, District of  
 USPS, Post Office, United States Postal Service  
 Port Authority, Water Authority, Power Authority, Transit Authority, Department of  
 School, High School, Elementary, University, College  
 Dr., Doctor, MD, DDS, DVM, PC, Specialist, -ologist  
 Apartment number (apt. #) NOT Suite # or Building #  
 Mail code (e.g., MC-648, BIN#)  
 Accounts Receivable, Acct. Receivable  
 Other business indicator  
 NO -- None of the above



20. **On the back, is the *Payee* endorsement perpendicular or parallel to the writing on the front of the check?**

- Perpendicular
- Parallel
- Cannot find *Payee* endorsement

21. **Do the words "Absent(ee)" or "Absent Endorsed," "ABS END GUAR," "ABS END GTD," "Credit to Payee," "CR to Payee," or "Lack End GTD" appear anywhere on the back of the check?**

- Yes
- No

22. **Input the number (typically 9 digits) found on the back of the check that exists between > and < symbols. In the event that more than one set of > < symbols appear, first look for the endorsement with a bank name associated with it and enter that number. If each set has a bank name associated with it, then choose the set that has the earliest date. The date will appear next to or just below the number between the > < symbols.**

> | | | | | | | | | | <

- Number not present

### Categorizing Payee

23. **Is the payee the same person as the payer:**

- Yes
- No

24. **Based on the *Payee* name/address and endorsement, can you definitively categorize the *Payee* as any of these?**

- Consumer
- Government
- Business
- Not Consumer – either business or government
- Not Government – either business or consumer
- Cannot determine

25. **If *Payee* is business or government, mark which type:**

- Power, gas, phone, cable or internet service provider
- Bank, credit union, credit card company, financing company, mortgage company, leasing company, or insurance company
- Apartment complex, condos
- Supermarket or Drugstore
- Convenience store

- Retail Store, retail service shop, or cataloger
- Restaurant, bar, diner, fast food, etc.
- Subscription, membership organization, club, etc.
- Charitable organization, church
- State of, City of, County of, Town of, Township of, Bureau of, Municipality
- US Treasury, IRS, Internal Revenue Service, State Tax, County Tax, Tax Commissioner, Tax Collector
- Court
- USPS, Post Office, United States Postal Service
- Port Authority, Water Authority, Power Authority, Transit Authority, Department of
- School, High School, Elementary, University, College
- Medical (e.g., hospital, doctor's office, etc.)
- NOT a business or government
- Other business indicator
- Cannot determine

Appendix E:  
CSS Survey Instrument (Short)



Appendix F:  
EPS Survey Instruments

# The Federal Reserve 2010 Electronic Payments Study



## General Purpose Credit Card

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment  
transactions in the United States

# General Purpose Credit Card

Please Do Not Round.

Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below

**Include:** All point-of-sale (POS) or bill pay transactions made with a credit card or charge card. Include consumer and business card transactions.

**Do Not Include:** Debit card or prepaid transactions.

## 1) CY2009 General purpose credit card transactions

Number

Value (\$)

1a) Gross authorizations (incl. 1a.1 Denials & 1a.2 Pre-authorizations)

**Less:** 1a.1) Denials

**Less:** 1a.2) Pre-authorization only

1b) Net, authorized & settled transactions (= 1a - 1a.1 - 1a.2)

**Less:** 1b.1) Cash back at the point-of-sale

**Less:** 1b.2) Adjustments and returns

**Less:** 1b.3) Cash advances at ATMs

1c) Net, purchase transactions (= 1b - 1b.1 - 1b.2 - 1b.3)

Number	Value (\$)
<b>1b:</b>	<b>1b:</b>

## Card present vs. not present

1d) Divide your response to 1b) Net, authorized & settled transactions between the following categories (1d.1 + 1d.2 + 1d.3 should equal 1b above):

1d.1) Card present transactions

1d.2) Card NOT present transactions: e-Commerce

1d.3) Card NOT present transactions: Mail & telephone order

Number

Value (\$)

Number	Value (\$)

## Credit vs. charge transactions

1e) Divide your response to 1b) Net, authorized & settled transactions between the following categories (1e.1 + 1e.2 should equal 1b above):

1e.1) Credit card transactions

1e.2) Charge card transactions for which the entire balance must be paid off at regular intervals (e.g., monthly)

Number

Value (\$)

Number	Value (\$)

## Business transactions

1f) Report the number and value of 1b) Net, authorized & settled transactions made from business owned accounts (e.g., transactions made on T&E, procurement, and small business credit cards)

Number

Value (\$)

Number	Value (\$)

Continued

Contactless transactions

Number

Value (\$)

1g) Report the number and value of 1b) Net, authorized & settled transactions authorized via contactless (e.g., RFID / "tap & go" cards or fobs)

--	--

Transaction value distribution

1h) Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 1h.1-4 should equal 1b above):

Number

Value (\$)

- 1h.1) Transactions authorized <\$5.00 in total value
- 1h.2) Transactions authorized \$5.00 to \$14.99 in total value
- 1h.3) Transactions authorized \$15.00 to \$24.99 in total value
- 1h.4) Transactions authorized >\$24.99 in total value


Number of cards outstanding

1i) Report both active and total cards outstanding (For active cards include cards with any transaction activity during CY2009)

Active  
(in CY2009)

Total

- 1i.1) *Credit cards* outstanding
- 1i.2) *Charge cards* outstanding


1j) For the above cards outstanding, report the total with contactless capabilities (e.g., RFID / "tap & go" cards or fobs)

--	--

Historical Data

CY2008

Number

Value (\$)

2) CY2008 Net, authorized & settled transactions (2008 equivalent to 1b)

--	--

CY2007

Number

Value (\$)

3) CY2007 Net, authorized & settled transactions (2007 equivalent to 1b)

--	--

*Continued*

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Private Label Credit Cards - Processor

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment  
transactions in the United States

# Private Label Credit Card – Processor

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** All consumer and business point-of-sale and bill payment transactions made with a private label credit or charge card (i.e., not network branded, Visa or MasterCard transactions) for which you are the transaction processor

**Do Not Include:** Network branded (e.g., Visa, MasterCard) credit card, prepaid card, or debit card transactions. Also, do not include transactions for which you are the receivables owner but not the transaction processor

## Closed-loop processing

Yes:

No:

1) Do you process closed-loop prepaid card transactions for your private label credit card customers?

[ ]

[ ]

If Yes, please do not report your closed-loop prepaid numbers with the private label credit card numbers.

## Receivables ownership

Own  
Receivables

Process  
Transactions

2) Which of the following describes your private label credit card processing services:

[ ]

[ ]

2a) If you only own receivables, please list your processor(s):

--

## 3) CY2009 Private label credit card transactions

Number

Value (\$)

3a) Gross authorizations (incl. 3a.1 Denials & 3a.2 Pre-authorizations)

**Less:** 3a.1 Denials

**Less:** 3a.2 Pre-authorization only

3b) Net, authorized & settled transactions (= 3a - 3a.1 - 3a.2)

**Less:** 3b.1 Cash back at the point-of-sale

**Less:** 3b.2 Adjustments and returns

**Less:** 3b.3 Cash advances at ATMs

3c) Net, purchase transactions (= 3b - 3b.1 - 3b.2 - 3b.3)

Number	Value (\$)
<b>3b:</b>	<b>3b:</b>

*Continued*

**Card present vs. not present**

3d) Divide your response to 3b) Net, authorized & settled transactions between the following categories:

3d.1 Card present transactions

3d.2 Card NOT present transactions: e-Commerce

3d.3 Card NOT present transactions: Mail & telephone order

Number	Value (\$)

**Business transactions**

3e) Report the number and value of 3b) Net, authorized & settled transactions made from business owned accounts (e.g., transactions made on T&E, procurement, and small business cards)

Number	Value (\$)

**Contactless transactions**

3f) Report the number and value of 3b) Net, authorized & settled transactions authorized via contactless (e.g., RFID / "tap & go" cards or fobs)

Number	Value (\$)

**Transaction value distribution**

3g) Divide your response to 3b) Net, authorized & settled transactions between the following categories (the sum of 3g.1-4 should equal 3b above):

3g.1) Transactions authorized <\$5.00 in total value

3g.2) Transactions authorized \$5.00 to \$14.99 in total value

3g.3) Transactions authorized \$15.00 to \$24.99 in total value

3g.4) Transactions authorized >\$24.99 in total value

Number	Value (\$)

**Number of cards outstanding**

3h) Report both active and total cards outstanding (For active cards include cards with any transaction activity during CY2009)

3h.1) For the above cards outstanding, report the total with contactless capabilities (e.g., RFID / "tap & go" cards or fobs)

Active (in CY2009)	Total

*Continued*

Historical Data

CY2008

Number

Value (\$)

4) CY2008 Net, authorized & settled transactions (2008 equivalent to 3b)

--	--

CY2007

Number

Value (\$)

5) CY2007 Net, authorized & settled transactions (2007 equivalent to 3b)

--	--

Comments:

--

# The Federal Reserve 2010 Electronic Payments Study



## Private Label Credit Card - Retailer

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment  
transactions in the United States

# Private Label Credit Card - Retailer

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** All consumer and business point-of-sale and bill payment transactions made with a private label credit or charge card (i.e., not network branded Visa / MasterCard etc.) for which you are the transaction processor.

**Do Not Include:** Network branded (e.g., Visa, MasterCard) credit card, prepaid card, or debit card transactions. Also, do not include data associated with transactions for which you are the receivables owner but not the transaction processor.

**Note:** We are surveying both in-house and outsourced private label card issuers / processors. To ensure that we do not double count your organization's volume, please tell us if you outsource your processing or receivables ownership (questions 1 & 2 below):

## Transaction processing

1) Transaction processing: Please indicate if you outsource some or all of your private label card transaction processing to a third party.

100% In-house	Partially Outsourced	Fully Outsourced
[ ]	[ ]	[ ]

1a) If fully or partially outsourced please indicate the name of the processor

1b) If you outsourced your processing or receivables ownership for part of 2009, please note the dates for which data are included (i.e., the period of time in '09 that you did not outsource)

From ('09):  To ('09):

## Receivables ownership

2) Receivables ownership:

100% In-house	Partially Outsourced	Fully Outsourced
[ ]	[ ]	[ ]

2a) If receivables ownership is outsourced (i.e., outstandings are owned by a different organization) please indicate the company name of the receivables owner

## Closed-loop prepaid cards

3) Do you offer closed-loop prepaid cards? (e.g., gift cards)

Yes: [ ] No: [ ]

3a) If Yes, please tell us if you process closed-loop prepaid cards in-house or through an outsourced processor:

100% In-house	Partially Outsourced	Fully Outsourced
[ ]	[ ]	[ ]

3b) If fully or partially outsourced please indicate the company name of the processor

If you answered Fully Outsourced to question 1 above for your transaction processing, your survey is complete. Thank you for participating.

If you answered In-house or Partially Outsourced to question 1 above for your transaction processing please complete the rest of the survey reporting transaction data only for the in-house processed portion of your portfolio.

*Continued*

4) CY2009 Private label credit card transactions

4a) Gross authorizations (incl. 4a.1 Denials & 4a.2 Pre-authorizations)

**Less:** 4a.1) Denials

**Less:** 4a.2) Pre-authorization only

4b) Net, authorized & settled transactions (= 4a - 4a.1 - 4a.2)

**Less:** 4b.1) Cash back at the point-of-sale

**Less:** 4b.2) Adjustments and returns

**Less:** 4b.3) Cash advances at ATMs

4c) Net, purchase transactions (= 4b - 4b.1 - 4b.2 - 4b.3)

Number

Value (\$)

4b:	4b:

Card present vs. not present

4d) Divide your response to 4b) Net, authorized & settled transactions between the following categories (4d.1 + 4d.2 + 4d.3 = 4b):

4d.1 Card present transactions

4d.2 Card NOT present transactions: e-Commerce

4d.3 Card NOT present transactions: Mail & telephone order

Number

Value (\$)


Business transactions

4e) Report the number and value of 4b) Net, authorized & settled transactions made from business owned accounts (e.g., transactions made on T&E, procurement, and small business cards)

Number

Value (\$)

--	--

Contactless transactions

4f) Report the number and value of 1b) Net, authorized & settled transactions authorized via contactless (e.g., RFID / "tap & go" cards or fobs)

Number

Value (\$)

--	--

*Continued*

**Transaction value distribution**

4g) Divide your response to 4b) Net, authorized & settled transactions between the following categories (the sum of 4g.1-4 should equal 4b above):

- 4g.1) Transactions authorized <\$5.00 in total value
- 4g.2) Transactions authorized \$5.00 to \$14.99 in total value
- 4g.3) Transactions authorized \$15.00 to \$24.99 in total value
- 4g.4) Transactions authorized >\$24.99 in total value

Number	Value (\$)

**Number of cards outstanding**

4h) Report both active and total cards outstanding (For active cards include cards with any transaction activity during CY2009)

- 4h.1) For the above cards outstanding, report the total with contactless capabilities (e.g. RFID / "tap & go" cards or fobs)

Active (in CY2009)	Total

**Historical Data**

**CY2008**

5) CY2008 Net, authorized & settled transactions (2008 equivalent to 4b)

Number	Value (\$)

**CY2007**

6) CY2007 Net, authorized & settled transactions (2007 equivalent to 4b)

Number	Value (\$)

**Comments:**

# The Federal Reserve 2010 Electronic Payments Study



## Offline (Signature) Debit Card

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment  
transactions in the United States

# Offline (Signature) Debit Card

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** All point-of-sale (POS) or bill pay transactions made with an offline (dual message authorization) debit card linked to a deposit account. Include both consumer and business card transactions.

**Do Not Include:** PIN debit, electronic benefit transfer (EBT), prepaid, ATM or credit card transactions.

## 1) CY2009 Offline debit transactions

Number

Value (\$)

1a) Gross authorizations (incl. 1a.1 Denials & 1a.2 Pre-authorizations)

**Less:** 1a.1 Denials

**Less:** 1a.2 Pre-authorization only

1b) Net, authorized & settled transactions (= 1a - 1a.1 - 1a.2)

**Less:** 1b.1 Cash back at the point-of-sale

**Less:** 1b.2 Adjustments and returns

1c) Net, purchase transactions (= 1b - 1b.1 - 1b.2)

Number	Value (\$)
<b>1b:</b>	<b>1b:</b>

## Card present vs. not present

1d) Divide your response to 1b) Net, authorized & settled transactions between the following categories (1d.1 + 1d.2 + 1d.3 should equal 1b above):

1d.1 Card present transactions

1d.2 Card NOT present transactions: e-Commerce

1d.3 Card NOT present transactions: Mail & telephone order

Number

Value (\$)

Number	Value (\$)

## Contactless transactions

1e) Report the number and value of 1b) Net, authorized & settled transactions authorized via contactless (e.g., RFID / "tap & go" cards or fobs)

Number

Value (\$)

Number	Value (\$)

## Business transactions

1f) Report the number and value of 1b) Net, authorized & settled transactions made from business owned accounts (e.g., transactions made on T&E, procurement, and small business cards)

Number

Value (\$)

Number	Value (\$)

*Continued*

**Transaction value distribution**

1g) Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 1g.1-4 should equal 1b above):

- 1g.1) Transactions authorized <\$5.00 in total value
- 1g.2) Transactions authorized \$5.00 to \$14.99 in total value
- 1g.3) Transactions authorized \$15.00 to \$24.99 in total value
- 1g.4) Transactions authorized >\$24.99 in total value

Number	Value (\$)

**Number of cards outstanding**

3h) Report both active and total cards outstanding (For active cards include cards with any transaction activity during CY2009)

- 3h.1) For the above cards outstanding, report the total with contactless capabilities (e.g. RFID / "tap & go" cards or fobs)

Active (in CY2009)	Total

**Historical Data**

**CY2008**

2) CY2008 Net, authorized & settled transactions (2008 equivalent to 1b)

Number	Value (\$)

**CY2007**

3) CY2007 Net, authorized & settled transactions (2007 equivalent to 1b)

Number	Value (\$)

**Comments:**

# The Federal Reserve 2010 Electronic Payments Study



## Online (PIN) Debit Card

Survey Period:  
Calendar Year 2009

A survey of the number and dollar value of electronic payment transactions in the United States

# Online (PIN) Debit Card

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** All point-of-sale (POS) or bill pay transactions made with an online (single message) debit card linked to a deposit account. Include both consumer and business card transactions. Include online debit transactions made without PIN authorization (i.e., PIN-less debit). Please include only PIN (online) debit transactions that carry your network brand. I.e., do not include reciprocal or gateway transactions that are not routed on your brand.

**Do Not Include:** Signature (offline) debit, prepaid, electronic benefits transfer or credit card transactions. Please exclude ATM withdrawals unless specifically requested. Per above, do not include reciprocal or gateway transactions that are not routed on your brand.

1) CY2009 Online (PIN) transactions	Number	Value (\$)
1a) Gross authorizations (incl. 1a.1 Denials)		
<b>Less:</b> 1a.1 Denials		
1b) Net, authorized & settled transactions (= 1a - 1a.1)	<b>1b:</b>	<b>1b:</b>
<b>Less:</b> 1b.1 Cash back at the point-of-sale		
<b>Less:</b> 1b.2 Adjustments and returns		
1c) Net, purchase transactions (= 1b - 1b.1 - 1b.2)		

## Business transactions

Number

Value (\$)

1d) Report the number and value of 1b) Net, authorized & settled transactions made from business owned accounts (e.g., transactions made on T&E, procurement, and small business cards)

--	--

## Contactless transactions

Number

Value (\$)

1e) Report the number and value of 1b) Net, authorized & settled transactions authorized via contactless (e.g., RFID / "tap & go" cards or fobs)

--	--

## Transaction value distribution

1f) Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 1f.1-4 should equal 1b above):

Number

Value (\$)

- 1f.1) Transactions authorized <\$5.00 in total value
- 1f.2) Transactions authorized \$5.00 to \$14.99 in total value
- 1f.3) Transactions authorized \$15.00 to \$24.99 in total value
- 1f.4) Transactions authorized >\$24.99 in total value


*Continued*

Number of cards outstanding

1g) Report both active and total cards outstanding (For active cards include cards with any transaction activity during CY2009)

1g.1) For the above cards outstanding, report the total with contactless capabilities (e.g., RFID / "tap & go" cards or fobs)

Active  
(in CY2009)

Total


2) CY2009 PIN-less Debit transactions

Please report the portion of 1) CY2009 Online (PIN) transactions that are PIN-less debit transactions: online debit transactions processed without PIN authorization.

Number

Value (\$)

2a) Gross authorizations (incl. 2a.1 Denials)

**Less:** 2a.1 Denials

2b) Net, authorized & settled transactions (= 2a - 2a.1)

**Less:** 2b.1 Adjustments and returns

2c) Net, purchase transactions (= 2b- 2b.1)


Historical Data

CY2008

Number

Value (\$)

3) CY2008 Net, authorized & settled transactions (2008 equivalent to 1b)

--	--

CY2007

Number

Value (\$)

4) CY2007 Net, authorized & settled transactions (2007 equivalent to 1b)

--	--

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Open-Loop Prepaid Card

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment  
transactions in the United States

# Open-Loop Prepaid Card

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** All point-of-sale (POS) or bill pay transactions made with an open-loop (network branded) prepaid card. (Note: If you are reporting on behalf of an EFT network, please include only prepaid transactions that carry your network brand. I.e., do not include reciprocal or gateway transactions that are not routed on your brand).

**Do Not Include:** Closed-loop prepaid card, debit card or credit card transactions. Please exclude ATM withdrawals from transaction figures unless specifically requested. Do not include non-network branded transactions.

**Please note:** Any fees charged to the cards (e.g., monthly transaction fees, etc.) are not considered to be transactions and should be excluded.

## 1) CY2009 Open-loop prepaid transactions

Number

Value (\$)

1a) Gross authorizations (incl. 1a.1 Denials & 1a.2 Pre-authorizations)

**Less:** 1a.1) Denials

**Less:** 1a.2) Pre-authorization only

1b) Net, authorized & settled transactions (= 1a - 1a.1 - 1a.2)

**Less:** 1b.1) Cash back at the point-of-sale

**Less:** 1b.2) Adjustments and returns

1c) Net, purchase transactions (= 1b - 1b.1 - 1b.2)

Number	Value (\$)
<b>1b:</b>	<b>1b:</b>

*Continued*

### Transactions by prepaid card type

1d) Divide your response to 1b) Net, Authorized & Settled Transactions between the following categories (the sum of 1d.1-10 should equal 1b above)

1d.1) General purpose prepaid cards (Reloadable, prepaid "debit" cards that allow ATM cash withdrawals; typically marketed directly to consumers as a checking account alternative)

Number	Value (\$)

1d.2) Gift cards (Non-reloadable Visa, MasterCard, American Express, Discover or other network branded prepaid cards marketed as a gift-giving alternative to cash, checks and gift certificates)

--	--

1d.3) Medical cards (Cards issued to provide point-of-sale access to Flexible Spending and Health Savings Accounts funds and avoid the need for insurers to issue reimbursement checks)

--	--

1d.4) Money transfer (Reloadable, prepaid "debit" cards provided to money transfer recipients to access remittance funds at the point-of-sale or ATM; typically marketed as an alternative to wire service money transfers)

--	--

1d.5) Employee expense disbursement (Cards issued to disburse funds for up-front employee expenses, such as travel per diems)

--	--

1d.6) Customer refund & incentive cards (Cards issued to disburse refunds for returned merchandise and customer incentives such as rebates)

--	--

1d.7) Employee incentive cards (Non-reloadable, prepaid cards issued to disburse employee bonuses and incentive compensation other than base wages)

--	--

1d.8) Payroll Cards (Reloadable, prepaid "debit" cards issued to disburse employee wages; typically marketed to employers as a means to replace paper check or cash wage disbursements to unbanked employees)

--	--

1d.9) Government (Prepaid cards issued to disburse local, state, and federal government payments such as welfare (EBT, etc.), social security, unemployment, and disaster relief. Cards are typically issued as an electronic alternative to cash and check disbursements)

--	--

1d.10) Other

--	--

1d.11) If Other please describe the card types:

--

### Transaction value distribution

1e) Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 1e.1-4 should equal 1b above):

1e.1) Transactions authorized <\$5.00 in total value

Number	Value (\$)

1e.2) Transactions authorized \$5.00 to \$14.99 in total value

--	--

1e.3) Transactions authorized \$15.00 to \$24.99 in total value

--	--

1e.4) Transactions authorized >\$24.99 in total value

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*Continued*

**Card funding**

1f) Please report the number of load transactions and value of funds loaded onto open-loop cards in CY2009 by the following categories:

- 1f.1) Initial Loads
- 1f.2) Reloads
- 1f.3) Other credits/loads

Number	Value (\$)

**ATM Usage**

1g) Please report the number and value of approved ATM cash withdrawals in CY2009

Number	Value (\$)

**Cards issued**

1h) Please list the number of cards by type (see question 1d above for definitions)

- 1h.1) General purpose prepaid cards
- 1h.2) Gift cards
- 1h.3) Medical cards
- 1h.4) Money transfer
- 1h.5) Employee expense disbursement
- 1h.6) Customer refund & incentive cards
- 1h.7) Employee incentive cards
- 1h.8) Payroll Cards
- 1h.9) Government
- 1h.10) Other

Single Use	Reloadable

*Continued*

Historical Data

CY2008 Open-loop prepaid transactions

Number

Value (\$)

2) CY2008 Net, authorized & settled transactions (CY2008 equivalent to 1b)

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CY2007 Open-loop prepaid transactions

Number

Value (\$)

3) CY2007 Net, authorized & settled transactions (CY 2007 equivalent to 1b)

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Comments:

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# The Federal Reserve 2010 Electronic Payments Study



## Closed-Loop Prepaid Card

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# Closed-Loop Prepaid Card

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** All point-of-sale (POS) or bill pay transactions made with closed-loop (private label) prepaid cards.

**Do Not Include:** Open-loop (network branded) prepaid, debit card or credit card transactions. Please exclude ATM withdrawals from transaction reporting unless specifically requested.

**Please Note:** Any fees charged to the cards (e.g., monthly fees, dormancy fees etc.) are not considered to be transactions and should be excluded.

## 1) CY2009 Closed-loop prepaid transactions

Number

Value (\$)

1a) Gross authorizations (incl. 1a.1 Denials & 1a.2 Pre-authorizations)

**Less:** 1a.1) Denials

**Less:** 1a.2) Pre-authorization only

1b) Net, authorized & settled transactions (= 1a - 1a.1 - 1a.2)

**Less:** 1b.1) Cash back at the point-of-sale

**Less:** 1b.2) Adjustments and returns

1c) Net, purchase transactions (= 1b - 1b.1 - 1b.2)

Number	Value (\$)
<b>1b:</b>	<b>1b:</b>

*Continued*

### Transactions by prepaid card type

1d) Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 1d.1-8 should equal 1b above):

1d.1) Gift cards (Private label [e.g., merchant or shopping center branded] prepaid cards marketed as gift-giving alternatives to cash, checks and gift certificates or as loyalty cards with payment capabilities)

Number

Value (\$)

--	--

1d.2) Transit cards (Cards issued for toll and fare payment on transportation systems such as rail, bus, subway and tollways.)

--	--

1d.3) Employee expense disbursement (Cards issued to disburse funds for up-front employee expenses, such as travel per diems)

--	--

1d.4) Customer refund & incentive cards (Cards issued to disburse refunds for returned merchandise and customer incentives such as rebates)

--	--

1d.5) Employee incentive cards (Non-reloadable, prepaid cards issued to disburse employee bonuses and incentive compensation other than base wages)

--	--

1d.6) Payroll Cards (Reloadable, prepaid "ATM" cards issued to disburse employee wages; typically marketed as a means to replace paper check or cash wages to unbanked employees. Note: closed loop applications provide access to wages via ATM or check cashing agencies)

--	--

1d.7) Government (Prepaid cards issued to disburse local, state, and federal government payments. Cards are typically issued as an electronic alternative to cash and check disbursements)

--	--

1d.8) Other

--	--

1d.9) If Other please describe the card types:

--

### Transaction value distribution

1e) Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 1e.1-4 should equal 1b above):

1e.1) Transactions authorized <\$5.00 in total value

Number

Value (\$)

--	--

1e.2) Transactions authorized \$5.00 to \$14.99 in total value

--	--

1e.3) Transactions authorized \$15.00 to \$24.99 in total value

--	--

1e.4) Transactions authorized >\$24.99 in total value

--	--

*Continued*

**Card funding**

1f) Please report the number of load transactions and value of funds loaded onto closed-loop cards in CY2009 by the following categories:

- 1f.1) Initial Loads
- 1f.2) Reloads
- 1f.3) Other credits/loads

Number	Value (\$)

**ATM Usage**

Please report the number and value of approved ATM cash withdrawals for CY2009:

- 1g) Approved ATM cash withdrawals

Number	Value (\$)

**Cards issued**

1h) Please list the number of cards by type (see question 1d above for definitions):

- 1h.1) Gift cards
- 1h.2) Transit cards
- 1h.3) Employee expense disbursement
- 1h.4) Customer refund & incentive cards
- 1h.5) Employee incentive cards
- 1h.6) Payroll cards
- 1h.7) Government cards
- 1h.8) Other

Single Use	Reloadable

**Historical Data**

**CY2008 Closed-loop prepaid transactions**

- 2) CY2008 Net, authorized & settled transactions (equivalent to 1b)

Number	Value (\$)

**CY2007 Closed-loop prepaid transactions**

- 3) CY 2007 Net, authorized & settled transactions (equivalent to 1b)

Number	Value (\$)

*Continued*

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Person-to-Person (P2P) Payments & Money Transfers

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# P2P Payments & Money Transfers

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts or a US agent location processed during the calendar years (CY) requested below**

**Include:** Transactions originated from and received by a consumer or consumer owned (i.e., not a business or government owned) account.

**Do Not Include:** Payments or money transfers originated from or received by business or government accounts. Account-to-account transfers for which both the originating and receiving accounts are owned by the same accountholder (i.e., balance transfer).

## 1) CY2009 transactions

Number

Value (\$)

1) Total person-to-person transactions

--	--

## 2) Transaction value distribution

Divide your response to 1) Total person-to-person transactions between the following categories (the sum of 2a-2d should equal 1 above):

Number

Value (\$)

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value


## 3) Clearing system

Please report the payment methods you use to transmit payment between consumer accounts. Divide your response to 1) Total person-to-person transactions between the following categories (the sum of 3a-e should equal 1 above):

Number

Value (\$)

3a) Credit card / offline debit networks

3b) EFT / online debit networks

3c) ACH

3d) Book transfer (i.e., a payment cleared via internal accounting transfer)

3e) Other


3e.1) If Other please describe:

--

*Continued*

#### 4) Origination channel

Divide your response to 1) Total person-to-person transactions between the following categories based upon the channel used to originate payment (the sum of 4a-d should equal 1 above):

4a) Website

4b) Mobile phone (via an application, browser or text message)

4c) In-person (via agent location, kiosk or ATM)

4d) Other

Number

Value (\$)

Number	Value (\$)

4d.1) If Other please describe:

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – Online Bill Payment

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# Online Bill Payment

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** Bill payment transactions originated through a financial institution or other intermediary's online bill payment portal (i.e., bank online bill payments) and directly via biller websites (i.e., biller direct bill payments)

**Note:** In the case where a batch of bills are settled through a single combined payment to the biller (i.e., check and list payments) please include transaction totals for the individual bills within the batch. Do not include (double count) batch transaction and dollar value totals and individual bill totals.

## 1) CY2009 Online bill payment transactions

Number

Value (\$)

1a) Bank / intermediary online bill payment transactions

1b) Biller direct online bill payment transactions

Number	Value (\$)

## 2) Transaction value distribution – Bank online bill payment

Divide your response to 1a) Bank / intermediary online bill payment transactions between the following categories (the sum of 2a-2d should equal 1a above):

Number

Value (\$)

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value

Number	Value (\$)

## 3) Transaction value distribution – Biller direct bill payment

Divide your response to 1b) Biller direct online bill payment transactions between the following categories (the sum of 3a-3d should equal 1b above):

Number

Value (\$)

3a) Transactions authorized <\$5.00 in total value

3b) Transactions authorized \$5.00 to \$14.99 in total value

3c) Transactions authorized \$15.00 to \$24.99 in total value

3d) Transactions authorized >\$24.99 in total value

Number	Value (\$)

*Continued*

#### 4) Settlement system - Bank online bill payment

For bank online bill payments please report the payment methods you use to transmit payment to billers for settlement. Divide your response to 1a) Bank / intermediary online bill payment transactions between the following categories (the sum of 4a-4c should equal 1a above):

- 4a) ACH
- 4b) Check
- 4c) Other

Number	Value (\$)

4c.1) If Other please describe:

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – Walk-in Bill Payment

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# Walk-in Bill Payment

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** Bill payment transactions made in-person that your organization receives or processes on behalf of billers. Include only transactions made at locations (e.g., kiosk, ATM, agent, or retailer) other than those operated by the biller.

**Do Not Include:** Online, mail or telephone bill payments. Do not include in-person bill payments made at locations operated by the biller.

**Note:** In the case where a batch of bills are settled through a single combined payment to the biller (i.e., check and list payments) please include transaction totals for the individual bills within the batch. Do not include (double count) batch transaction and dollar value totals and individual bill totals.

## 1) CY2009 Walk-in bill payment transactions

Number

Value (\$)

1) Total walk-in bill payment transactions

--	--

## 2) Transaction value distribution

Divide your response to 1) Total walk-in bill payment transactions between the following categories (the sum of 2a-d should equal 1 above):

Number

Value (\$)

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value


## 3) Settlement system

Please report the payment methods you use to transmit payment to billers for settlement of in-person bill payments received on their behalf. Divide your response to

1) Total walk-in bill payment transactions between the following categories (the sum of 3a-c should equal 1 above):

Number

Value (\$)

3a) ACH

3b) Check

3c) Other


3c.1) If Other please describe:

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Comments:

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# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – Private Label ACH

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# Private Label ACH Debit Card

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** Transactions on private label (merchant branded) payment cards for which the ACH system is used to settle daily card transactions, whether individually or on an aggregated basis, from a cardholder deposit account linked to the card account (i.e., decoupled debit transactions).

**Do Not Include:** Transactions on prepaid cards or transactions on payment cards through which credit is routinely extended to cardholders for more than one business day before an attempt is made to settle with cardholders.

## 1) CY2009 transactions

Number

Value (\$)

1a) Gross Authorizations (incl. 1a.1 Denials & 1a.1 Pre-authorizations)

**Less:** 1a.1) Denials

**Less:** 1a.2) Pre-authorizations only

1b) Net, authorized & settled transactions (= 1a - 1a.1 - 1a.2)

**Less:** 1b.1) Cash back at the point-of-sale

**Less:** 1b.2) Adjustments and returns

1c) Net, Purchase Transactions (= 1b - 1b.1 - 1b.2)

Number	Value (\$)
<b>1b:</b>	<b>1b:</b>

## 2) Transaction value distribution

Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 2a-2d should equal 1b above):

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value

Number

Value (\$)

Number	Value (\$)

## 3) Number of cards outstanding

3) Report both active and total cards outstanding (For active cards include cards with any transaction activity during CY2009)

Active  
(in CY2009)

Total

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*Continued*

#### 4) Merchant settlement

Divide your response to 1b) Net, authorized & settled transactions between the following categories based upon how funds are transferred into merchants' bank accounts to settle for purchases (the sum of 3a-c should equal 1b above):

Number

Value (\$)

4a) ACH

4b) Wire

4c) Other

Number	Value (\$)

4c.1) If Other please describe:

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – Deferred Payments

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# Deferred Payments

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** Point-of-sale transactions for which your organization provides credit or an installment payment plan to buyers; report transaction and dollar value totals based upon the initial purchase transaction made to the merchant.

**Do Not Include:** Loan repayments or installment payments on layaway items made subsequent to the initial purchase transaction.

## 1) CY2009 transactions

Number

Value (\$)

1) Total purchases

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## 2) Transaction value distribution

Divide your response to 1) Total purchases between the following categories (the sum of 2a-2d should equal 1 above):

Number

Value (\$)

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value


## 3) Merchant settlement

Divide your response to 1) Total purchases between the following categories based upon how funds are transferred into merchants' accounts to settle for purchases (3a-3c should equal 1 above):

Number

Value (\$)

3a) ACH

3b) Wire

3c) Other


3c.1) If Other please describe:

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Comments:

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# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – Secure Online Payments

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# Secure Online Payments

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** eCommerce point-of-sale transactions where the buyer is redirected from the merchant to their financial institution's online bill payment system to originate payment

## 1) CY2009 transactions

Number

Value (\$)

1) Total transactions

--	--

## 2) Transaction value distribution

Divide your response to 1) Total transactions between the following categories (the sum of 2a-2d should equal 1 above):

Number

Value (\$)

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value


Comments:

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# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – e-Commerce PIN Debit

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

# eCommerce PIN Debit Payments

*Please Do Not Round.*

**Please enter totals only for transactions originated from US domiciled accounts processed during the calendar years (CY) requested below**

**Include:** Point-of-sale and bill payment transactions for eCommerce purchases made with an online (PIN) debit card where PIN entry is facilitated via a webpage or peripheral device attached to the payer's computer.

**Do Not Include:** eCommerce transactions via online (PIN) debit card authorized without PIN entry (i.e., PIN-less debit). Also do not include signature debit or credit card transactions.

## 1) CY2009 transactions

Number

Value (\$)

1a) Gross Authorizations (incl. 1a.1 Denials & 1a.2 Pre-authorizations)

**Less:** 1a.1) Denials

**Less:** 1a.2) Pre-authorizations only

1b) Net, authorized & settled transactions (= 1a - 1a.1 - 1a.2)

**Less:** 1b.1) Cash back at the point-of-sale

**Less:** 1b.2) Adjustments and returns

1c) Net, Purchase Transactions (= 1b - 1b.1 - 1b.2)

Number	Value (\$)
<b>1b:</b>	<b>1b:</b>

## 2) Transaction value distribution

Divide your response to 1b) Net, authorized & settled transactions between the following categories (the sum of 2a-2d should equal 1b above):

2a) Transactions authorized <\$5.00 in total value

2b) Transactions authorized \$5.00 to \$14.99 in total value

2c) Transactions authorized \$15.00 to \$24.99 in total value

2d) Transactions authorized >\$24.99 in total value

Number

Value (\$)

Number	Value (\$)

Comments:

# The Federal Reserve 2010 Electronic Payments Study



## Emerging Payments – RFID Far Field Payments

Survey Period:  
Calendar Year 2009

A survey of the number and dollar  
value of electronic payment transactions in  
the United States

