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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	91204456
Party	Defendant nTrust Corp.
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE
TRADEMARK TRIAL AND APPEAL BOARD**

Intrust Financial Corporation,)	
)	
Opposer,)	
)	
v.)	Opposition No. 91204456
)	Application Serial No.: 85/250992
nTrust Corp.,)	Mark: NTRUST
)	
Applicant.)	
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Applicant's First Notice of Reliance

Pursuant to Rule 2.122(e) of the Trademark Rules of Practice, 37 C.F.R. §2.122(e), Applicant nTrust Corp. ("nTrust" or "Applicant") hereby gives notice that it introduces as evidence during its trial period and intends to rely upon the attached materials in support of its case:

Category F: Internet Materials re: Definition of Money Transmitter/Transfer Services and Banking Services

Exhibits F 1-5 are printouts from U.S. federal government agencies' websites and related documents that help explain money transmitter or money transfer services - including via means of online peer-to-peer (or person-to-person) payments. These documents demonstrate that such services are provided by non-banks (and thus are not a "banking service" – which is the scope of service covered by most of Intrust Financial Corporation's registrations asserted in this proceeding to oppose nTrust's trademark application).

In accordance with Trademark Rule 704.08(b) for Internet Materials and *Safer, Inc. v. OMS Investments Inc.*, 94 U.S.P.Q.2d 1031, 1039 (TTAB 2010), Exhibits F-1, F-2 and F-3

display the date accessed and printed, and its source (URL). Exhibit F-4 is a webpage version of a report posted on the FederalReserve.gov website; this web page version indicates the date accessed and printed and its source URL. Also part of this Exhibit F-4 is a PDF version of the same report which is downloadable via the link from the top right of the web page (to the right of “July 2011”); this PDF version of the report does not print with the source URL or date accessed, but was printed the same date as the web page version was accessed. nTrust therefore provides both the web page and PDF versions of the report. Exhibit F-5 is a PDF version of a report posted on the FederalReserve.gov website at the following URL, <http://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201503.pdf>. There is currently only a PDF version of the report available, so the report does not print with the source URL or date accessed, however, the PDF version of the report is downloadable via the link shown on the first page of Exhibit F-5 (under the “Publications” header), which indicates the date the PDF version was accessed and printed.

Exhibits F-1, F-2 and F-3 are further admissible – and Exhibits F-4 and F-5 are admissible - because they are website printouts of government publications or reports, and are considered self-authenticating, and thus, require no extrinsic evidence of authenticity as a condition of admissibility. *See Safer, Inc.*, 94 U.S.P.Q.2d at 1039; 37 C.F.R. § 2.122(e) (stating printed publications and official records whose authenticity is established under the Federal Rules of Evidence may be introduced in evidence with a notice of reliance); *Williams v. Long*, 585 F. Supp. 2d 679, 686-89 (D. Md. 2008) (holding information published by governmental body on website is self-authenticating under Federal Rules of Evidence); *Hispanic Broad. Corp. v. Educ. Media Found.*, 2003 U.S. Dist. LEXIS 24804, at *5 n.5 (C.D. Cal. Oct. 30, 2003) (same).

Ex. No.	Description
F-1	Printout from Federal Financial Institutions Examination Council IT Handbook online Infobase – portion entitled “Online Person-to-person (P2P), Account-to-Account (A2A) Payments and Electronic Cash” – printed from ithandbook.ffiec.gov website on March 23, 2015
F-2	Online news printout from FDIC website, dated Summer 2011, entitled “Person-to-Person Payments by Smartphone and Mobile Computer Add Convenience and Pose Risks” – printed from FDIC.gov website on March 23, 2015
F-3	Printout from website of Financial Crimes Enforcement Network (FinCEN), a bureau of the Treasury, showing the definition of “Money Services Business” – printed from fincen.gov website on March 18, 2015
F-4	Webpage and PDF printout of report entitled “Report to the Congress on the Use of the Automated Clearinghouse System for Remittance Transfers to Foreign Countries” and full report entitled same, dated July 2011 – printed from FederalReserve.gov website on March 23, 2015
F-5	Webpage printout and PDF printout of report entitled “Consumers and Mobile Financial Services 2015,” dated March 2015 – printed from FederalReserve.gov website on March 30, 2015

Category G: Internet Materials Showing Non-Banks Are Providing Electronic Money

Transfer and Person-to-Person Payment Services

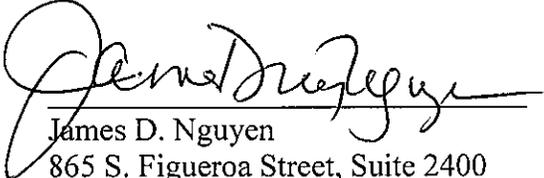
Exhibits G 1-14 are news articles and/or press releases printed from websites; they demonstrate that non-banks have announced or are announcing that they provide the same type of financial services listed in nTrust’s trademark application – in particular, money transmitter or money transfer services, including through online peer-to-peer or person-to-person means – and thus, those are not “banking services” (which is the scope of service covered by most of Intrust Financial Corporation’s registrations asserted in this proceeding to oppose nTrust’s trademark application). These website printouts of publications and articles are self-authenticating, and thus, require no extrinsic evidence of authenticity as a condition of admissibility. *See Safer, Inc.*, 94 U.S.P.Q.2d at 1039; 37 C.F.R. § 2.122(e).

Ex. No.	Description
G-1	April 17, 2014 online article entitled “Wal-Mart takes on money transfer companies with new service” - printed from Reuters.com website on April 22, 2014
G-2	April 17, 2014 online article entitled “The real reasons why Walmart and Facebook are entering the money transfer space” – printed from Pando.com website on April 22, 2014
G-3	November 17, 2014 online article entitled “Apple Pay, in-person deals to drive mobile payment use” - printed from Marketwatch.com website on November 19, 2014
G-4	November 21, 2014 online article entitled “WorldRemit bring mobile money transfer services to US” – printed from MobilePaymentsToday.com website on December 9, 2014
G-5	October 16, 2014 Apple press release entitled “Apple Pay Set to Transform Mobile Payments Starting October 20” – dated October 16, 2014 but printed from Apple.com website on March 24, 2015

Ex. No.	Description
G-6	March 11, 2014 Starbuck online news post entitled “Digital Tipping and ‘Shake to Pay’ are New with Starbucks Enhanced App for iPhone” – printed from Starbucks.com website on March 24, 2015
G-7	December 5, 2014 Starbucks online news post entitled “Starbucks Launches Mobile Order & Pay in Portland; National Introduction in 2015” – printed from Starbucks.com website on March 24, 2015
G-8	November 17, 2014 online article entitled “Snapchat, Square want to make it easy for you to send cash” – printed from CNET.com website on March 4, 2015
G-9	November 18, 2014 online article entitled “Snapchat launches Snapcash money transfer service” – printed from Telegraph Media Group Limited website at www.telegraph.co.uk on March 4, 2015
G-10	February 17, 2015 online article entitled “Billion-dollar London money transfer startup TransferWise is coming to the US” – printed from businessinsider.com website on March 4, 2015
G-11	February 17, 2015 online article entitled “TransferWise launches money-transfer service in the U.S.” – printed from marketwach.com website on March 4, 2015
G-12	October 6, 2014 online article entitled “Facebook ‘planning money transfer service’” – printed from Telegraph Media Group Limited website at www.telegraph.co.uk on March 4, 2015
G-13	February 4, 2015 online article entitled “Find The Top Money Transfer Services” – printed from investopedia.com website on March 4, 2015
G-14	March 17, 2015 online article entitled “Facebook Announces a Payments Feature for Its Messenger App” – printed from nytimes.com website on March 18, 2015

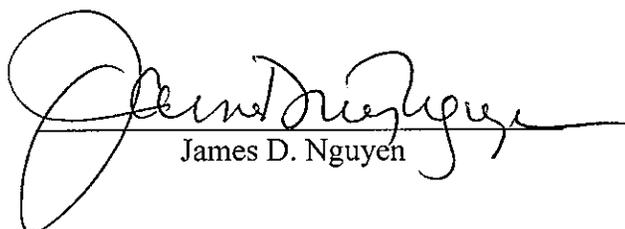
Dated: March 31, 2015

Davis Wright Tremaine LLP
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CERTIFICATE OF SERVICE

This certifies that a true and correct copy of this document (Applicant's First Notice of Reliance) is being served by depositing the same in the United States mail, first class, postage prepaid, and directed to Opposer's attorneys, William P. Matthews and Michael J. Norton of Foulston Siefkin LLP at 1551 N. Waterfront Parkway, Suite 100, Wichita Kansas 67206 on March 31, 2015


James D. Nguyen

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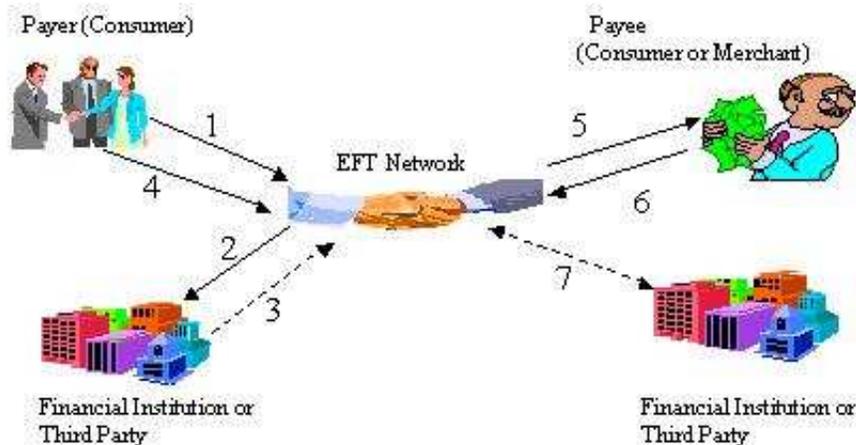
Online Person-to-person (P2P), Account-to-Account (A2A) Payments and Electronic Cash

Other electronic payments include person-to-person, account-to-account, electronic cash, and electronic benefit transfers. These payment instruments are usually associated with an established consumer deposit account and facilitate consumer access to recurring or one-time debit and credit transactions and a variety of federal, state, and local government benefit programs.

Online P2P or e-mail payments typically use traditional payment networks to transfer funds electronically from one consumer to another. Though these payments are named for their ability to send funds among individuals online, the majority of P2P payments are Internet purchases at online auctions or small businesses. In most cases, P2P transfers use existing retail payment systems to add and withdraw funds from accounts. The simplest case is when the person making a payment and the receiver maintain accounts at the same bank. This type of payment is called an "on-us" transaction. They are settled by posting accounting entries on the books of one financial institution. P2P transfers also may occur outside the traditional payment networks and, in their simplest form, may take place as an exchange of cash between two individuals. As technology advances, the transfer of funds through the use of proximity devices, such as mobile telephones and personal digital assistants (PDAs), is likely.

Exhibit F-1

Most P2P services charge to the receiver of the funds a fee that varies depending upon various factors, including payment method and the sender's credit history. Payments made with funds that originated from either ATM or ACH transactions are less expensive than payments made with funds originated from credit cards. P2P systems may offer to the receiver an opportunity to obtain funds through a check and for an additional fee.



Legend: Solid lines represent the flow of information and dashed lines represent the flow of funds.

Figure 11: Online P2P Clearing and Settlement

Online P2P payments typically occur using the process described in Figure 11. The sender of the funds must have an account with the P2P service provider (Step 1). Depending upon the service, the funds may come from an existing credit card or transaction account or may be drawn from a previous balance with the online P2P payment provider (Step 2 and Step 3). The sender can designate the e-mail address of the intended funds recipient (Step 4). The P2P network transfers the funds to the receiver's account as an "on-us" transaction. Once the funds reach the receiver's account, notice of the transaction is sent through e-mail to the receiver (Step 5). The receiver of the funds must join the service if it does not already have an account (Step 6). The online P2P payment service can disburse the funds from the receiver's P2P account through an ACH payment, a check payment, an EFT credit, prepaid card, or a credit to a credit card account (Step 7).

Account-to-account (A2A) payments are similar to P2P payments. They involve the transfer of funds from one customer's account to another account at either the same or another financial institution. Like P2P payments, A2A transfers can be initiated through the customer's Internet banking service, a biller's payment Web site, or by telephone instruction from the customer. Unlike P2P transfers, consumers must access an existing retail payment account (deposit account) at a financial institution in an A2A transaction. To complete a transaction, the customer must know the recipient's account number or some other identifier. A2A payments can be effected on the ACH or ATM networks. On the ACH networks, funds are cleared and settled within two to three days. The ATM networks may allow same-day funds availability although settlement may not occur for two or three days. Same-day transfers using the ATM networks are usually less expensive than traditional wire transfers.

P2P payments are a growing segment of the A2A market. The success of the P2P online auction model is attributed to the consumers' demand for convenient and reliable P2P transactions. P2P

payments may include transaction accounts and may be conducted through the use of proximity devices such as mobile telephones or PDAs. P2P payments are expected to grow as more reliable and convenient payment methods are introduced.

Financial institutions and retailers are also developing electronic cash-payment instruments. Similar to P2P payments, individuals can transfer electronic cash value to other individuals or businesses, generally through the Internet. Consumers can use the cash payment instruments for purchases at retailers' Web sites or they can transfer cash to other individuals through e-mail. Pre-funded accounts that consumers can use for online auction payments are among the most recent applications. In these applications, individuals use a credit card or signature-based debit card number to pre-fund the Web certificate or electronic account, and recipients redeem the value from the issuer.

Electronic Benefits Transfer (EBT)

EBT systems allow recipients of government benefits to authorize transfers from their benefits accounts to health care providers and retailers. The federal government and several states routinely use these accounts to issue food stamps and other benefits. The government distributes all food stamp benefits using this technology and, while the average transaction value is low, total transaction volumes are significant. The institution holding the account authenticates transactions using PIN technology. EBT programs now use cards with either magnetic-strip or microchip technology. Since cards using chip technology have larger storage capacities than cards with a magnetic strip, they can handle more complex transactions. Security measures can be encoded on the card strip or microchip as well to help prevent unauthorized use.

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General Spending Reloadable Cards

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Emerging Retail Payment Technologies

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Summer 2011

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Person-to-Person Payments by Smartphone and Mobile Computer Add Convenience and Pose Risks

Suppose you need to reimburse a friend for lunch but you forgot your checkbook and you don't have enough cash in your wallet. You can always get money from an ATM or promise to pay your friend back some other time, but there's another option becoming increasingly common, especially for people on the run. It's the ability to send a payment using a mobile device such as a smartphone or a "tablet" computer.



This person-to-person or "P2P" payment service is offered by some banks and non-banks as an alternative to using cash, checks, debit cards or credit cards. P2P payment services have grown and are appealing to a wide range of consumers attracted to the ability to send and receive money using a mobile device, but as with any form of payment, you've got to understand the costs and the potential risks.

How can you protect yourself when choosing and using a P2P payment service?

Remember that bank P2P services can provide clearer legal protections. First, it's important to know what consumer protection laws might — or might not — apply. Every P2P provider will have a "user agreement" that should describe its fees, consumer protections, dispute-resolution procedures, and other details required by federal or state rules.

The P2P services offered by banking institutions have the same federal consumer protections that you get when using your credit or debit card if the payment is funded by linking it to your credit card or checking account, respectively. That means, for example, that if someone steals your smartphone and uses it to transfer money you may have limited or no liability for that unauthorized transaction provided you report the problem in a timely manner.

In contrast, mobile payment services from non-banks may not be subject to the same federal or state laws that would protect you if you were using a bank to provide the service. The protections you will have can vary depending on the terms of the service provider's contract, how the user's account is funded, and other factors.

Luke Brown, an Associate Director in the FDIC's Depositor and Consumer Protection Division, warned, "Don't presume that the terms and protections for all mobile payment services are the same because some can have high

Exhibit F-2

fees and consumer-unfriendly policies. You should shop for the best deal with the strongest consumer protections.”

Be aware that security remains an issue. A recent study by a private company said that many mobile financial applications failed to safeguard consumers’ personal and sensitive information stored on mobile devices. The firm found that it could obtain information such as usernames, passwords, and PIN numbers from mobile phones used in financial transactions. In the wrong hands, this information could subject a consumer to serious consequences and financial losses.

Understand how P2P works. While each P2P service may function a little differently, here’s generally how it works. First, you would set up a P2P payment account with your bank or a non-bank service provider, such as your cell phone company. Depending on the service, the payment could be funded in several ways, perhaps by linking it to an existing checking account, credit card, prepaid card, mobile phone account or a special account just for P2P.

Some providers allow customers to only exchange funds with people who use the same P2P service, but others will transmit funds to anyone with a deposit account. In the case of the latter, you may need to provide the recipient’s account number and bank routing number in order to initiate a transaction — and that is information that people who are not relatives or close friends may be reluctant to disclose. However, many P2P providers are starting to use other alternatives, such as an e-mail address or cell phone number. Also, in most cases, a fee per transaction will be charged to the sender or the recipient.

Compare several P2P service providers before you sign up. “The bank where you have your checking account is one place to start, but there are numerous other companies that provide these services and will work with your bank to set it up,” noted Jeff Kopchik, an FDIC Senior Policy Analyst who specializes in technology issues.

It can be helpful to research what other consumers have said about their experiences with a P2P provider. “The Internet provides easy access to consumer reviews and a wealth of other information that can help consumers identify unsatisfactory experiences,” said Rob Drozdowski, a Senior Technology Specialist with the FDIC. “So stay clear of services with questionable reviews and unusually high numbers of consumer complaints.”

Manage your P2P money wisely. It’s important to monitor your balance to be sure it has enough to cover the transactions you are likely to make. Luke W. Reynolds, Acting Associate Director of the FDIC’s Community Affairs Branch, noted that because consumers can use P2P services to pay for purchases on the Internet, “one concern is that the speed of a P2P transaction — perhaps just a couple of clicks to send a payment — can make it easy to make impulse purchases when surfing the Web.” But he also said, “whether you write a check or make an electronic payment, you should exercise fiscal discipline when making purchases and record each P2P transaction to avoid overdrawing your account.”

To learn more, contact your bank, your Internet or cell-phone service provider, or one of the numerous P2P companies. If you have questions about the deposit insurance coverage of a P2P account at an FDIC-insured institution, call 1-877-ASK-FDIC (1-877-275-3342) and ask to speak to a deposit insurance specialist.

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Money Services Business - The term "money services business" includes any [person](#) doing business, whether or not on a regular basis or as an organized business concern, in one or more of the following capacities:

- (1) Currency dealer or exchanger.
- (2) Check casher.
- (3) Issuer of traveler's checks, money orders or stored value.
- (4) Seller or redeemer of traveler's checks, money orders or stored value.
- (5) Money transmitter.
- (6) U.S. Postal Service.

An activity threshold of greater than \$1,000 per person per day in one or more transactions applies to the definitions of: currency dealer or exchanger; check casher; issuer of traveler's checks, money orders or stored value; and seller or redeemer of travelers' checks, money orders or stored value. The threshold applies separately to each activity -- if the threshold is not met for the specific activity, the [person](#) engaged in that activity is not an MSB on the basis of that activity.

No activity threshold applies to the definition of money transmitter. Thus, a person who engages as a business in the transfer of funds is an MSB as a money transmitter, regardless of the amount of money transmission activity.

Notwithstanding the previous discussion, the term "money services business" does not include:

- A bank, as that term is defined in 31 CFR 1010.100(d) (formerly 31 CFR 103.11(c)), or
- A person registered with, and regulated or examined by, the Securities and Exchange Commission or the Commodity Futures Trading Commission.

For the complete regulatory definition of "money services business", see 31 CFR 1010.100(ff) (formerly 31 CFR 103.11(uu)).

Note: Each money services business (MSB) is a [financial institution](#). For the regulatory definition of "financial institution," see 31 CFR 1010.100(t) (formerly 31 CFR 103.11(n)).

Exhibit F-3

Other Reports to the Congress

Report to the Congress on the Use of the Automated Clearinghouse System for Remittance Transfers to Foreign Countries

July 2011 [PDF About/Docs/To Congress](#)[Preface: Implementing the Dodd-Frank Act#1](#)[FedGlobal ACH Payments#5](#)[Executive Summary#2](#)[Lessons Learned and Potential Recommendations#6](#)[Background#3](#)[Appendix: FedGlobal Services Country-by-Country#7](#)[Automated Clearinghouse System#4](#)

Preface: Implementing the Dodd-Frank Act

The Board of Governors of the Federal Reserve System (the Board) is responsible for implementing numerous provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act). The Dodd-Frank Act requires, among other things, that the Board produce reports to the Congress on a number of potential reform topics.

See the Board's website for an overview of the Dodd-Frank Act regulatory reform effort

(www.federalreserve.gov/newsevents/reform_about.htm) and a list of the implementation initiatives recent Board as well as several of the most significant initiatives that the Board expects to address in the future (www.federalreserve.gov/newsevents/reform_milestones.htm).

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Executive Summary

Section 1073 of the Dodd-Frank Act directs the Board to provide biennial reports to the Congress for 10 years covering (1) the status of the automated clearinghouse (ACH) as the Board's progress in complying with the requirements of section 1073(b) of the act, which directs the Board to work with the Federal Reserve Banks (Reserve Bank Department of the Treasury to expand the use of the ACH system and other payment mechanisms for remittance transfers to foreign countries, and (2) an analysis of adopted international ACH transfer rules and formats, the efficacy of increasing adoption rates, and potential recommendations to increase adoption.^{1#1} The Board worked with and the U.S. Treasury to develop this report.

This first report is intended to provide a baseline by giving a brief overview of remittance transfers and the methods available to transmit these payments, with a specific network. The report discusses the ACH system and outlines the legal and regulatory framework and formats relevant for international ACH transfers. The report also examines Reserve Banks' international ACH service, called FedGlobal ACH Payments (FedGlobal), and describes some of the lessons learned from establishing this service and potential recommendations.^{2#12}

International ACH transfers are still a relatively new phenomenon for depository institutions and their customers.^{3#13} Most U.S. depository institutions process international checks on behalf of their customers. Consumers also often use nonbank money transmitters rather than depository institutions for sending remittance transfers. Thus, neither the demand side has extensive experience with international ACH transfers.

Over the past 12 years of providing FedGlobal services, the Reserve Banks have gained a better understanding of the associated challenges and complexities associated with compliance, format conversions between countries, the business case for depository institutions, marketing, education, and the needs of the unbanked. The Reserve Bank implemented changes to address some of these issues, such as adding an option to send remittance transfers to receivers without deposit accounts at depository institution (account-to-receiver services) to several potentially high-traffic destination countries, expanding the foreign exchange conversion options, and working with the industry to assist in regulatory compliance and develop conversion standards between domestic and foreign payment formats. Because many of these changes have only recently been implemented, however, it is too soon to assess their overall impact.

In addition, the Reserve Banks intend to continue to work on other challenges in an effort to increase adoption of international ACH transfers. First, the Reserve Banks pursue opportunities that maximize their access to multiple countries to increase the reach of FedGlobal services. This effort is intended to help improve the business case for depository institutions to use these services through broader accessibility. Second, the Reserve Banks will continue to reach out to depository institutions and encourage marketing to consumers. Third, the Reserve Banks will continue to assess opportunities to deploy account-to-receiver service offerings. Fourth, the Federal Reserve and the Reserve Banks will work collaboratively to assess and encourage the use of international ACH transfers for remittances. Lastly, the Federal Reserve may be able to facilitate additional depository institutions with respect to the risks and compliance requirements for sending and receiving international ACH transfers.

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Background

[Jump to](#)

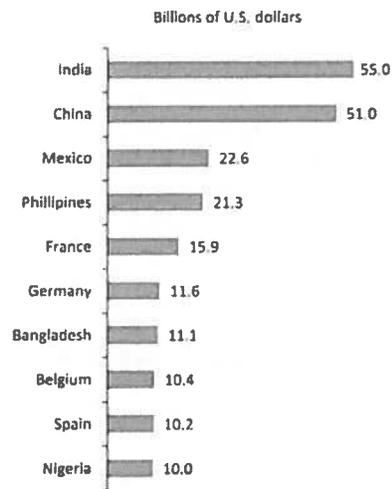
A remittance transfer under section 919(g)(2) of the Electronic Fund Transfer Act (EFTA), as amended by section 1073 of the Dodd-Frank Act, includes an electronic transfer of funds requested by a consumer located in any state to a person in a foreign country that is initiated by a remittance transfer provider.^{4#14} As explained in the Board's proposed rule to implement section 919, the statute applies to both person-to-person and person-to-business remittance transfers.^{5#15} The majority of sources that examine remittance transfers, however, typically exclude transactions that are intended to support person-to-business transactions and focus on person-to-person payments of relatively low value that are intended for another natural person.^{6#16}

[Methods / Remittances](#)

In practice, remittance transfers are often payments originated by expatriates, typically workers who send money to their families in their home countries regularly. In many cases, payments may be transmitted on a regular basis. The World Bank reported that, in 2010, worldwide remittance flows exceeded \$440 billion, primarily by many of the 21

international migrants. From that amount, recipients in developing countries received \$325 billion, which represents a 6 percent increase from the 2009 level.^{7#17} However, of remittance transfers, including unrecorded flows through formal and informal channels, is believed to be significantly larger. The World Bank estimates that recorded flows have been nearly three times the amount of official aid and almost as large as foreign direct investment flows to developing countries. [Figure 1#Figure1_TopRemittance-receivingCountries-7F885272r](#) shows the top 10 countries where remittance recipients are located, and [Figure 2#Figure2_TopRemittance-sendingCountry-7F887808r](#) shows the top 10 countries where remittances are originated.

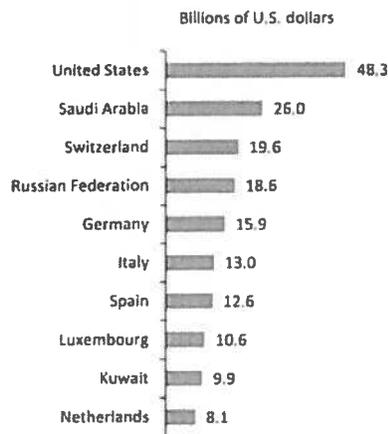
[Figure 1#Figure1_TopRemittance-receivingCountries-7F885272r](#) Figure 1. Top remittance-receiving countries, 2010



[Return to text#Figure1_TopRemittance-receivingCountries-7F885272r](#)

Source: World Bank, *Migration and Factbook 2011*.

[Figure 2#Figure2_TopRemittance-sendingCountry-7F887808r](#) Figure 2. Top remittance-sending countries, 2010

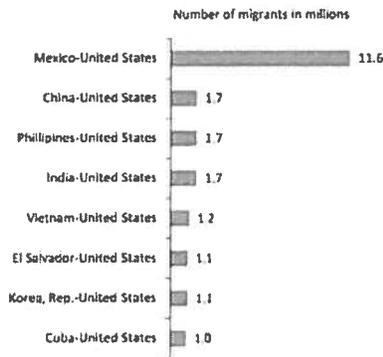


[Return to text#Figure2_TopRemittance-sendingCountry-7F887808r](#)

Source: World Bank, *Migration and Factbook 2011*.

As one of the most important destinations of global migration, the United States is the largest estimated source of international remittances. The opportunity to send or bring home is one of the important motivations for migration. [Figure 3#Figure3_TopMigrationCorridors2010-7F889170r](#) shows the top U.S. migration corridors based upon the migrants.

[Figure 3#Figure3_TopMigrationCorridors2010-7F889170r](#) Figure 3. Top migration corridors, 2010



[Return to text#Figure3_TopMigrationCorridors2010-7F889170r](#)

Source: World Bank, *Migration and Factbook 2011*.

The Bureau of Economic Analysis (BEA) estimates that migrants' remittances originating from the United States totaled about \$48 billion in 2009.^{8#f8} Nearly \$38 billion was personal transfers by foreign-born residents of the United States to households abroad. The balance, about \$10 billion, reflected the compensation of employees who worked in the United States for less than one year. For 2009, the BEA estimates that about two-thirds of remittance transfers went to countries in the Western Hemisphere, one-quarter went to the Pacific, and the rest went to countries in Europe and Africa.^{9#f9}

The corridors of migration and value of remittance flows by country can provide helpful data in assessing possible remittance transfer opportunities for ACH.^{10#f10} In February 2014, the Federal Reserve Banks recently launched a new service that encompasses the largest migration corridor, Mexico, and one other from the top list of migration corridors, El Salvador. The service targets remittance transfers as an account-to-receiver service to Mexico and other Latin American countries.^{11#f11} This service has taken years to develop and implement. Providing viable services to support remittances can be complex and challenging, especially when formal and informal channels already exist and the migrant population has historical relationships with depository institutions for remittance transfers or other basic banking functions.

Methods for Sending Remittance Transfers

U.S. consumers have a number of possible channels for sending remittance transfers, and the method chosen may depend on a variety of factors, including convenience, destination country availability, and sender's and recipient's access to deposit accounts at depository institutions.

Historically, consumers have largely chosen to send remittance transfers through money transmitters. A money transmitter engages in the transmission of funds domestically and internationally outside of conventional depository institutions.^{12#f12} Money transmitters can be used for payments to some businesses as well as for money transfers to individuals. They include networks such as Western Union and MoneyGram, Internet payment systems such as PayPal, and other electronic systems that engage in the business of transmitting funds.

Money transmitters commonly facilitate the transmission of money through brick-and-mortar agent locations, by telephone, or through an Internet website. A money transmitter may operate through its own office or through an agent, such as a grocery store or neighborhood convenience store, in locations that are heavily populated by migrants. By using these store locations, money transmitters often have extensive collection and distribution networks in the countries in which they operate. Money transmitters usually price their services based on the both the locations of the sender and receiver and the amount of the payment. The transfers are generally referred to as cash-to-cash remittances.

Although less common, individuals may also send remittance transfers using services provided by depository institutions, primarily through international wire transfers.^{13#f13} Wire transfer is an available option when both the sender and receiver have access to deposit accounts at depository institutions. Wire transfer fees are usually flat fees that may vary by destination country but not usually by the amount of the transfer. Although wire transfers are the prominent method used by depository institutions to send funds internationally, recently depository institutions have had the option of transmitting remittance transfers through the ACH system. International ACH transfer services through depository institutions are generally referred to as account-to-account remittances whereby both the originator and receiver of the transfer hold deposit accounts at depository institutions that are depository institutions in the destination country. However, some services are emerging with account-to-receiver options where the receiver does not need a deposit account at a depository institution in the destination country.

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Automated Clearinghouse System

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The ACH system is a funds transfer system that provides for the clearing and settlement of batched electronic transfers for participating depository institutions. Domestically, the ACH system is primarily governed by the rules and guidelines published by the National Automated Clearing House Association (NACHA).^{14#f14} ACH transfers are either credit or debit transfers, typically of relatively low value, that are made between deposit accounts at depository institutions and are either recurring or one-time transfers.^{15#f15} Recurring ACH transfers typically occur on a set schedule and are preauthorized by the individual or entity whose account is being credited or debited. Recurring credit transfers include payroll direct deposit payments, while recurring debit transfers include mortgage and other bill payments. One-time ACH transfers are authorized at the time the payment is initiated and include consumer payments made by check that are converted to ACH debit transfers and consumer payments originated using the Internet (e.g., through or biller payment sites). [Legal and Framework#:](#)

The originator of an ACH transfer generally authorizes its depository institution to send a payment instruction. The depository institution combines the payment instructions from its other customers and sends them to an ACH operator—the Reserve Bank's FedACH or The Clearing House's Electronic Payments Network—for processing. The ACH operator will then sort and deliver the payment instructions to the appropriate receiving depository institutions and complete the interbank settlement process. The depository institutions then post the payments, either credits or debits, to the receivers' accounts. Today, almost all depository institutions receive ACH transfers on behalf of their customers, and nearly 87 percent of depository institutions originate ACH transfers.

The fees charged to depository institutions for ACH transfers may vary by ACH operator but are usually based on a per-item fee for each transfer within the batch. The fees charged to depository institutions do not vary by the value of the transfer. The fees charged to individuals or other persons sending or receiving the ACH transfer, however, are subject to the ACH operator's policies.

variability based on the depository institutions that originate or receive these payments

The ACH system supports both domestic and international credit and debit transfers.^{18#f18} In 2010, more than 15 billion credit and debit transfers worth nearly \$32 trillion the ACH network.^{19#f19} Over the past 10 years, the number of ACH transfers has increased nearly 11 percent per year, although this growth has declined significantly. A substantial portion of the growth had been attributed to the ability of consumers to initiate one-time payments over the telephone or Internet and the ability of companies to make consumer payments by check to ACH debits. International ACH transfers are a very small fraction of the overall ACH network. In 2010, the ACH operators processed 1.2 million international ACH transfers valued at \$46 billion—much less than 1 percent of the overall ACH network volume and value.^{20#f20}

International ACH transfers are made through an interface with other countries' national payments systems. This interface between two national payments systems is accomplished through an "originating gateway operator" in the originator's country and a "receiving gateway operator" in the receiver's country. Both the originating and receiving gateway operators are participants in their respective national payments systems and capable of clearing and settling payments in their respective systems. In the United States, they can be a depository institution or, with the appropriate agreements in place, an ACH operator.

Today, the Reserve Banks are the only U.S. ACH operator providing gateway operator services to other countries.^{21#f21} The involvement of the Reserve Banks in international transfers dates back over 10 years. In January 1998, the Committee on the Federal Reserve in the Payments Mechanism issued a report outlining observations and recommendations on its examination of retail payment services provided by Reserve Banks to depository institutions.^{22#f22} In its report, the committee noted that the lack of a robust cross-border infrastructure could limit the potential growth of the ACH system and that the ACH system was not well adapted to international payments. The committee recommended that the Reserve Banks enhance their infrastructure to support cross-border ACH transfers and work with the industry to develop robust ACH cross-border capabilities.^{23#f23}

International ACH transfers are aimed at a range of cross-border payments. Important international ACH transfers include government payments such as social security payments, business transactions such as vendor payments, and consumer transactions such as bill payments and remittance transfers.^{24#f24} As a batch-payment system, the ACH system is designed to carry a range of payments, supporting high volumes and leveraging economies of scale.

The fees charged to depository institutions for international ACH transfers are typically higher, but similar in structure to domestic ACH transfers. Also similar to domestic ACH transfers, fees charged by depository institutions to customers can vary widely and can depend on local business practices.

Legal and Regulatory Framework

Various aspects of ACH transfers are governed by federal or state law. The Electronic Fund Transfer Act (implemented through Regulation E, 12 CFR 205), establishes liabilities, and responsibilities of consumers who use ACH credit or ACH debit services and of financial institutions that offer those services. The Expedited Funds Availability Act (implemented through Regulation CC, 12 CFR 229) governs the availability of funds deposited to transaction accounts through ACH credit transfers. Article 4A of the Uniform Commercial Code (a uniform state law) governs ACH credit transfers that are not otherwise covered by the Electronic Fund Transfer Act (largely business-to-business transfers). In addition, U.S. Treasury Department rules govern all federal government transactions through the ACH (31 CFR 210).

In addition, the rights and obligations of the participants in the U.S. ACH network are governed by a standard set of operating rules published and maintained by NACHA. The NACHA rules apply to the participants by means of a network of agreements binding the ACH operators, participating depository institutions, and originators and receivers of ACH transfers. ACH operators specify in their agreements with participating depository institutions that the institutions are bound by the NACHA rules, with certain exceptions that are set forth in the operator's agreements.^{27#f27}

The NACHA rules cover domestic ACH transfers from origination to receipt. The rules also apply to international ACH payments that are originated from U.S. depository institutions and delivered to U.S. receiving institutions via the ACH network. NACHA's operating rules include provisions regarding the format for ACH transactions, the obligation of originators to provide accurate information, the warranties made by participating U.S. depository institutions; and, subject to the requirements of the aforementioned laws and regulations, protections for consumers who receive transactions.

In the context of international ACH transfers, the NACHA rules have limited application to those portions of an international transaction that occur outside the United States. The relationship between a U.S. gateway operator and a foreign gateway operator is structured by agreement, and the relationship between the foreign gateway operator and the receiving depository institutions that originate or receive international payments is governed by foreign laws and regulations and by agreements among the foreign entities. The payment received from a foreign country to a deposit account in the United States becomes subject to the NACHA rules only when the U.S. gateway operator receives the payment through the U.S. ACH network.

The NACHA rules establish certain requirements that would apply to any ACH operator or depository institution that assumes the role of a gateway operator to or from a foreign country.^{28#f28} In the case of inbound transactions, the originating gateway operator in the foreign country receives the entry from the originating foreign institution through its system or payment network and then transmits the entry to the receiving gateway operator in the United States. The receiving gateway operator then transmits the entry to the depository institution in the United States that holds the receiver's account.

For outbound transactions, the process is reversed. A U.S. depository institution transmits the entry to the originating gateway operator in the United States, which then transmits the entry to the receiving gateway operator for further transmission to the receiver's depository institution. The U.S. originating gateway operator warrants to the sending U.S. depository institution and any U.S. ACH operator involved in the entry that it has edited and processed the entry in accordance with the NACHA rules.^{29#f29}

Depository institutions, like all individuals in the United States, also must comply with the Treasury Department's Office of Foreign Assets Control (OFAC) requirements. OFAC compliance is an obligation of depository institutions by operation of federal law and regulation. OFAC maintains and regularly updates the List of Specially Designated Blocked Persons (SDN). All U.S. persons are prohibited from dealing with the individuals and entities appearing on the list and must block all property of these individuals and entities that comes into their possession.

As applied to the ACH transfer system, OFAC compliance characteristically involves the use of automated information processing tools to identify transactions that may be prohibited under OFAC regulations. For domestic ACH transfers, the requirement to perform due diligence to ensure that the payments comply with OFAC regulations is primarily considered to be the responsibility of the originating depository institution with respect to an originator and the receiving depository institution with respect to a receiver.^{32#f32} For international ACH transfers, OFAC compliance rests with the U.S. depository institution that originates or receives the payment. For example, the originating U.S. depository institution bears the compliance burden for an outbound transaction, and the receiving U.S. depository institution bears the compliance burden for an inbound transaction.^{33#f33}

In addition to OFAC requirements, depository institutions that handle international payments must operate programs to comply with laws, regulations, best practices, and industry expectations centered on anti-money-laundering, counterterrorist financing, and anti-corruption laws and policies. (See, for example, the Bank Secrecy Act (BSA) of 1933 and the Patriot Act of 2001.)^{34#f34}

The federal banking agencies have established and communicated their supervisory expectations regarding the BSA requirements for depository institutions' international payments in the *FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual*.^{35#f35} The manual includes a detailed discussion of the application of the BSA and anti-money-laundering (AML) principles to ACH payments, including international ACH payments. The discussion reviews the BSA and AML risks associated with international ACH payments.

examples of ways in which depository institutions can mitigate those risks, and specifies the procedures federal banking examiners follow when reviewing a depository international ACH activity for compliance with the BSA ^{36#136}. The manual also includes a corresponding discussion about international ACH compliance expectations OFAC sanctions ^{37#137}.

In the development of their policies and procedures, U.S. depository institutions are also encouraged to consider the recommendations of the Financial Action Task Force an intergovernmental body that develops and promotes policies, both at national and international levels, to combat money laundering and terrorist financing. FATF mor progress in implementing necessary measures, reviews money-laundering and terrorist-financing techniques and countermeasures, and promotes the adoption and imple appropriate measures globally.

Additionally, in September 2006, the Office of the Comptroller of the Currency (OCC) issued a bulletin discussing general risk-management expectations for depository conduct ACH activity ^{38#138}. The OCC bulletin outlines a number of risk-management practices for a depository institution's ACH activity, including ways to manage a risk, compliance risk, third-party service providers, transaction risk, and information-security and technology risks.

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Formats

The NACHA operating rules specify common formats, referred to as standard entry classification codes, and standards associated with those formats for ACH transfers. formats and standards under the NACHA operating rules allow for interoperability among ACH operators as well as for bilateral or multilateral ACH transaction exchan ACH is highly efficient in no small part because depository institutions and ACH operators employ the NACHA formats with minimal variation or customization.

For international ACH transfers, NACHA adopted in September 2009 a new standard entry classification code, called the International ACH Transaction or IAT. The IAT international ACH transfers and does not distinguish between consumer, business, or government transactions. The IAT code replaced two prior codes--consumer cross-corporate cross-border payment--that were determined to be inadequate for OFAC and regulatory compliance purposes. ^{39#139} The IAT classification code, as well as the codes, allows depository institutions and ACH operators to easily identify these payments to facilitate any special handling requirements.

In particular, the IAT format facilitates the transmission of specific data elements, such as the full name and address of all parties involved in the transfer, that are require wire transfers under the U.S. Treasury Department's "Travel Rule," which implements provisions of the Bank Secrecy Act ^{40#140}. ACH transactions are excluded from tl definitions of "funds transfer" and "transmittal of funds" and therefore are exempt from the Travel Rule's recordkeeping requirements ^{41#141}. Nevertheless, the inclusion information in the IAT format is intended to ensure that all parties to an international ACH transfer have the information necessary to identify each of the participants in the transfer and to make OFAC screening a more effective tool against money laundering and terrorist financing ^{42#142}.

Although the new IAT format became effective under the NACHA operating rules in September 2009, the inclusion of the new format in software supporting ACH origi has lagged significantly. Given that only a very small portion of depository institutions are sending international ACH transfers, not all vendors updated their software to functionality supporting the IAT format on the effective date. At the time, software vendors largely focused on the ability to receive the IAT format rather than the abilit some depository institutions continue to report format access as a barrier to originating international ACH transfers.

In addition to challenges faced with access to the new format, the interoperability of IAT stops at the U.S. border. The U.S. gateway operator and its counterpart in the fc to establish a method for exchanging files so that the payment message can be processed by each respective payment system. Either the sending or receiving gateway op (intermediary) needs to translate between the respective formats for the countries involved. This translation can be complex, as each format requires a line-by-line mappi interoperability and straight-through processing. The mapping can also be costly, as it requires proprietary software to be developed for each format pair.

To facilitate this mapping process, the Federal Reserve Bank of Atlanta joined with U.S. and foreign depository institutions, international clearing and settlement service other interested parties to form the International Payments Framework Association (IPFA). The IPFA is a nonprofit membership association comprising 29 members rep Canada, Europe, Japan, South Africa, the United Kingdom, and the United States whose purpose is to create a framework for bridging national formats for non-urgent in transfers. IPFA establishes rules, standards, and operating procedures for the exchange of these payments.

The first effort by IPFA was to create rules that would facilitate a bridge between the IAT format for ACH credit transfers and the payment format, ISO 20022, which su retail networks within the single euro payments area (also known as SEPA), under the SEPA credit transfer scheme. The next step underway is to leverage the framewor United States and SEPA in order to add other countries--such as Brazil, Canada, and South Africa--that want to exchange payments with the United States or SEPA ACI

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FedGlobal ACH Payments

The Reserve Banks, through FedGlobal, launched their first commercial international ACH service with Canada in 1999 ^{43#143}. The service began as a pilot program for commercial ACH transfers from the United States to Canada and became a production service in December 2001. Subsequent to the Canadian service, the Reserve Bank individual services to Europe, Mexico, Panama, and Latin America, covering 34 countries in total. ^{44#144} In 2010, the Reserve Banks processed 1.3 million international accounting for about 20 percent of the total volume of international payments being cleared and settled through the U.S. ACH network ^{45#145}.

While the characteristics of each of the FedGlobal services differ slightly, there are common elements to all the services. FedGlobal conforms to the requirements discus and Regulatory Framework" and "Formats" sections. In addition, as a gateway operator, the Reserve Banks have outlined recommendations in their FedGlobal Services t for U.S. depository institutions participating in international ACH transfers ^{46#146}. The recommendations encourage participating depository institutions to have a compl compliance program with policies and procedures designed to ensure compliance with the Bank Secrecy Act and with U.S. laws, regulations, and bank supervisory polic money-laundering, antiterrorism-financing, know-your-customer policies and procedures, customer-identification programs, data security and data privacy, OFAC requi mandatory consumer protections. The recommendations support adherence to these policies and procedures and suggest due diligence with respect to all persons, entitie: data and follow up on any compliance issues. Lastly, the recommendations encourage monitoring, recording, and reporting of suspicious activity for international ACH t

For several FedGlobal services--Canada, Europe, Mexico (account-to-account), and Panama--both the originator and receiver of the ACH transfer generally have deposi depository institutions. To originate the ACH transfer, the originator would access the ACH network through the services offered by his or her depository institution, wh in-person branch or Internet options for originating the payment instruction. The ACH transfer would flow as outlined earlier between the respective depository institutic operators to the foreign recipient's deposit account at his or her depository institution. The foreign recipient would have access to the funds based on local rules for avail deposited in his or her account. For some consumers, account-to-account ACH transfers are a practicable means of sending remittance transfers home. In many instances receivers of remittance transfers do not have deposit accounts in their home countries. Consequently, account-to-account ACH transfers typically support government an payments. For example, account-to-account ACH transfers to Mexico consist almost exclusively of government social security and other benefit payments ^{47#147}. Only :

depository institutions offer the account-to-account service to Mexico, and of those, only 25 percent send payments in an average month.

In contrast, for FedGlobal's Latin American service, the receiver does not need a deposit account at a depository institution. The Latin American service was introduced significant change for international ACH transfers in support of remittance transfers. The service is intended to serve the increasing number of Latin American migrants accounts at depository institutions in the United States.^{43#(48)} In this service, the international ACH transfer must be originated from a deposit account in the United States may be sent to a specifically approved depository institution or a trusted third-party provider in the foreign country where the receiver may pick up the funds in cash with account at the receiving institution. The account-to-receiver option requires supplemental information about the receiver, a unique password, and a way to ensure proper the receiver picks up the funds. For example, the receiver must provide a valid government identification card that includes his or her date of birth, as well as the unique the funds. The account-to-receiver delivery option, in particular, is designed to facilitate remittance transfers. To date, just over 30 U.S. depository institutions have enrolled account-to-receiver service for their customers.

In addition, many international ACH transfers need to undergo a foreign exchange conversion.^{49#(49)} FedGlobal accommodates fixed-to-variable and fixed-to-fixed foreign conversions for outbound payments.^{50#(50)} The Reserve Banks only settle in U.S. dollars. Thus, the foreign exchange transaction is managed either by the originating U.S. institution, if they choose, or by the foreign gateway operator through its agreements with foreign depository institutions. The foreign gateway operator may have established relationships to perform the foreign exchange transaction or arranged for the receiving depository institutions to perform the foreign exchange transaction. Under the current depository institutions do not have to arrange for the foreign exchange transaction (unless they choose to), providing flexibility and greater accessibility, especially to smaller depository institutions.

Table 1 shows the available FedGlobal payment delivery and foreign exchange options for the destinations currently served.

Table 1. FedGlobal foreign exchange and delivery options

Payment destinations ^{1#(11)}	Foreign exchange options			Delivery options	
	Fixed-to-fixed U.S. dollar	Fixed-to-fixed FX ^{2#(12)}	Fixed-to-variable	Account-to-account	Account-to-receiver
Canada	•			•	
Europe	•	•	•	•	
Mexico		•	•	•	•
Panama	•			•	
Latin America	•				•

1. See note 44 for a list of countries included in each service. [Return to table 1#\(11\)](#)

2. See text note 50 for an explanation of FX. For Mexico, FX is only available for the account-to-account delivery option. [Return to table 1#\(12\)](#)

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Lessons Learned and Potential Recommendations

Over the past 12 years of providing FedGlobal services, the Reserve Banks have gained insight into the opportunities and challenges of offering international ACH transfer services. Banks have identified shortcomings and perceived limitations of international ACH services and have implemented changes in attempt to address these issues, such as account-to-receiver option for remittance transfers to several potentially high-traffic destination countries, expanding the foreign exchange conversion options, and working with enhance formats and develop conversion standards between domestic and foreign formats. In each of these examples, the changes have only recently taken effect, so it is their overall impact. At the same time, the Reserve Banks are aware of additional challenges, including the general complexity that arises from differences in countries' payment infrastructures, and efforts that may be necessary to increase adoption of international ACH transfers.^{51#(51)} The Reserve Banks have taken leadership roles in such as the International Payments Framework Association, move forward.

Importantly, international ACH transfers generally and remittances in particular are still a relatively new phenomenon among depository institutions and their customers. U.S. depository institutions processed international wire transfers or checks on behalf of their customers through international correspondent banks. Consumers sending also would more often seek out money transmitters, as discussed earlier. Thus, neither the supply nor the demand side has extensive experience with international ACH transfers.

Depository institutions have indicated reluctance to use FedGlobal due to the lack of ubiquitous global reach. Depository institutions may not want to invest in infrastructure payment method that reaches only certain countries, especially if their current international correspondent arrangements access a broad range of countries. Lack of ubiquitous concern for consumers if FedGlobal is not connected to their destination country. Ubiquity issues were especially acute when FedGlobal began with one country, Canada Mexico. Since then, the Reserve Banks have largely pursued multicountry access through a hub model where the Reserve Banks contract with one gateway operator that international ACH transfers to multiple countries. The European service and account-to-receiver options that began in 2010 reach 22 and 11 countries, respectively. The helped establish greater economies of scale, simplify legal arrangements, and reduce the complexity and cost of adding countries to the service. Reserve Banks plan to explore opportunities that maximize their access to multiple countries to increase the reach of FedGlobal services. As part of this process, the Reserve Banks will continue to assess service offering the business-case economics to determine the feasibility and future viability of the service.^{52#(52)}

Depository institutions may also be reluctant to offer international ACH transfer services if they would affect the profitability of other business lines, by, for example, displacing margin international wire transfer volume to lower-margin ACH volume. Each institution would need to assess the effect of originating international ACH transfers on its revenues.

Consumers, meanwhile, may be unaware of international ACH transfer services and may have limited options for accessing international ACH transfer services if few depository institutions are offering the services. Today, around 410 U.S. depository institutions—or about 4 percent of depository institutions that originate ACH transfers—have enrolled FedGlobal service to send ACH transfers to one or more of the cross-border payment destinations, but only 33 percent of them originate payments in a typical month.^{53#(53)} mentioned previously, some vendors that provide ACH software to depository institutions have not yet upgraded their software to accommodate the IAT format. The Fed not have much information regarding the level of marketing and outreach by institutions that offer the service to their customers and the community more broadly. The Fed continue to reach out to depository institutions to encourage greater adoption of FedGlobal services and to encourage education and marketing by institutions.

Another significant adoption constraint is that many consumers who send and receive remittance transfers do not have access to deposit accounts at depository institutions. access to international ACH transfers required that the sender and receiver both have deposit accounts at depository institutions. Consumers in the United States and abroad unbanked for a range of reasons, including language, cultural, and economic barriers. The new account-to-receiver service to Latin America, however, has partially addressed by allowing international ACH transfer access to receivers of remittance transfers that are unbanked.

In addition, the U.S. Treasury continues to focus on financial access issues and is working to integrate its effort in this area with existing federal programs that serve low

income individuals. The Treasury's goal is to coordinate across programs and maximize its opportunities to promote financial access for unbanked and underbanked population. Bank On USA, which is expected to begin in 2012, aims to provide safe, low-cost accounts for unbanked residents. The Treasury program is based largely on programs that are collaborations between depository institutions, local governments, financial regulators, and community-based organizations to promote access for the traditional financial services through depository institutions. The Reserve Banks will continue to assess opportunities to deploy account-to-receiver service offerings. The U.S. Treasury will also work collaboratively to assess and encourage the use of international ACH transfers for remittances.

Lastly, for depository institutions, regulatory compliance continues to be a leading concern. The availability of the Reserve Banks' international ACH service, which began in 1999, has largely coincided with an increased focus on regulatory compliance and the prevention of money laundering and criminal financing. Thus, depository institutions' cautious approach to offering international ACH transfers to their customers due to compliance-risk concerns. It may take additional time for institutions to become accustomed to the option (versus wire transfers through international correspondent banks) and to assess fully how to comply with legal requirements. The Federal Reserve may be able to dialogue with depository institutions with respect to the risks and compliance requirements for sending and receiving international ACH transfers.

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Appendix: FedGlobal Services Country-by-Country

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Mexican Service

[Mexican Service#6](#)

[Latin American Service#7](#)

[Canadian Service#8](#)

[European Service#9](#)

[Panama Service#10](#)

In 2001, the United States and Mexico launched the Partnership for Prosperity initiative, which was designed to foster economic development. One of its objectives of this initiative was to lower the cost of cross-border remittance payments from individuals in the United States to individuals in Mexico. Developing a FedACH service to Mexico was intended to advance this objective while also supporting public policy goals to bring more low-income individuals into the formal banking system of each country. The U.S. Treasury's Financial Management Service provided further impetus for a FedACH service to Mexico when it sought to convert around 28,000 monthly Social Security checks to Mexico into electronic transfers made over the ACH network.

Beginning in late 2003, the Reserve Banks and Banco de México (Mexico's central bank) initiated a service to provide a channel for government transfers via ACH from the United States to Mexico. In 2004, the option for depository institutions to send commercial ACH transfers was introduced. The government commercial transfers to Mexico are processed through FedACH as the U.S. gateway operator and exchanged with Banco de México as Mexico's gateway operator, which then distributes to depository institutions in the Mexican payments system. In Mexico, the payments are distributed through the SPEI payment mechanism; almost any bank account in the country. The transfers are converted from U.S. dollars to Mexican pesos and are not limited to a specific value. The service provides variable currency value exchange option but also allows U.S. depository institutions to manage directly their own foreign exchange.

When the commercial service began in 2004, the number of banked consumers in Mexico was quite low by international standards, inhibiting service adoption and usage. A larger financial inclusion effort to encourage participation in the formal financial system, the Reserve Banks collaborated with representatives of the Mexican government, Banco de México and the Institute of Mexicans Abroad in the Mexican Foreign Ministry. The effort sought to inform Mexicans living in the United States that depository institutions offer affordable remittance transfers to Mexico and other financial services products.

In an effort to market the ACH service, the Reserve Banks, in collaboration with the Banco de México, worked to create awareness and reduce barriers to adoption. The creation of the "Directo a México" brand name so that U.S. depository institutions could readily offer customers a branded service for transfers to Mexico. Reserve Bank branded, customizable, bilingual promotional materials, including a marketing poster, brochure, and dedicated website, to depository institutions to attract customers. They also included many coordinated promotions between local depository institutions, community groups, the Reserve Banks, the Federal Deposit Insurance Corporation, Mexico, Banco de México, and the Mexican development bank Bansefi in cities with high migrant populations.

In 2010, the Reserve Banks processed about 375,000 payments valued near \$196 million under FedGlobal's Mexican account-to-account services.

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Latin American Service

The Latin American service, which only provides account-to-receiver transfers, was launched in 2010. The impetus for this service was to help overcome the challenge of payments to receivers without deposit accounts. The account-to-receiver service allows funds to be picked up by unbanked receivers. The payments are originated from a depository institution in the United States, but the ACH transfer may be picked up in cash at select locations upon presentation of proper identification and a unique pass

This functionality was initially developed in collaboration with the Banco de México and adapted to additional destinations in Central and South America--Argentina, Brazil, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Peru and Uruguay--by the Reserve Banks. These payments are distributed in U.S. dollars or local currency in the destination country. The service supports U.S. dollar to U.S. dollar transfers and the fixed-to-variable currency value exchange option. By agreement, all fees are paid by the sender. The fees assessed by the Reserve Banks are considerably higher than the fees for account-to-account ACH transfers due to the unique costs associated with account-to-receiver (to-cash) transfers. These costs include maintaining distribution networks, compliance screening and monitoring, and the costs associated with maintaining cash available. This service is also branded in the United States under the name *GlobeNow*.

For the nine months of operation in 2010, the volume and value of international ACH transfers through the Latin American service were negligible.

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Canadian Service

Business payments were the target of the Canadian Service, which was the Reserve Banks' first effort toward developing an international ACH service. It was first offered in 1999 with credit and debit payments to Canadian account holders. Government pension payments were introduced in 2006.

Payments in the Canadian service remain limited to one direction--from the United States to Canada. This is largely because most Canadian depository institutions participate in the banking system through their branches or subsidiaries and do not require a gateway to make payments into the United States.

Business-to-business payments continue to comprise the largest share of payments in the Canadian service along with a smaller percentage of consumer-to-business payments.

some person-to-person payments. The service offers the option of U.S. dollar to U.S. dollar transfers to accounts denominated in that currency and the fixed-to-variable 1 conversion option for U.S. to Canadian dollar payments. The use of the Canadian service for remittance transfers is minimal.

In 2010, the Reserve Banks processed about 815,000 payments valued near \$921 million under the FedGlobal Canadian service.

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European Service

The current European service began in 2010 and allows bidirectional payments between the United States and 22 countries of SEPA--Austria, Belgium, Cyprus, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. Payments from the United States to Europe can be originated in U.S. dollars and reach European bank accounts in euros, British pounds, or U.S. dollars where those U.S. exist. The European service also featured the first usage of the Reserve Banks' option to allow U.S. depository institutions to manage directly their own foreign exchange countries.

In practice, the service carries largely business-to-business payments. Some of the countries served in this arrangement could eventually be a target for remittance payments.

For the three months of operation in 2010, the volume and value of international ACH transfers through the European service were negligible.

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Panama Service

The Reserve Banks began a payments service to Panama in 2004. The service originally processed only pension payments from the United States to Panama, where a number of U.S. government retirees are located. Panama is the largest recipient of international payments from the U.S. Office of Personnel Management, which sends a payment to the country annually. Because Panama uses the U.S. dollar for its national currency, all payments are sent and received in U.S. dollars. In 2009, commercial and retail payments from Panama were introduced to allow individuals and corporations to utilize the channel as well.

In 2010, the Reserve Banks processed to Panama about 86,000 payments valued near \$95 million, of which the vast majority was government benefit payments.

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1. Pub L. No. 111-203, 124 Stat. 2065 (2010). [Return to text#11r](#)

2. The Reserve Banks' Retail Payments Office centrally manages the Reserve Banks' check and ACH services, including the FedGlobal service. [Return to text#12r](#)

3. The term "depository institution" includes commercial banks, savings institutions, or credit unions. [Return to text#13r](#)

4. EFTA section 919(g)(2) defines "remittance transfer provider" to mean any person or financial institution that provides remittance transfers to a consumer in the normal course of its business, whether or not the consumer is such person or financial institution. EFTA section 903(8) defines "financial institution" to mean a bank, savings institution, or credit union, or any other person that directly or indirectly holds an account belonging to a consumer.

5. See 76 FR 29954 (May 23, 2011), proposed commentary to section 205.30(c). [Return to text#14r](#)

6. The International Monetary Fund collaborated recently with the World Bank and a select group of compilers from 16 countries around the world (Luxembourg Group) to unify the methodology and compilation of data on remittance transfers. The *International Transactions in Remittances: Guide for Compilers and Users* (RCG). The RCG was officially released in June 2009 and is available at www.imf.org/external/np/ista/bop/2008/rcg/pdf/outline.pdf. [Return to text#15r](#)

7. World Bank (2011), *Migration and Remittances Factbook 2011*, 2nd ed. (Washington, DC: World Bank). <http://siteresources.worldbank.org/INTLAC/Resources/Factbook2011-2book.pdf> [Return to text#16r](#)

8. The phrase used by BEA is "gross outflows of personal transfers by foreign-born residents in the United States to households abroad plus gross outflows of compensation of employees." [Return to text#17r](#)

9. Congressional Budget Office (2011), *Migrants' Remittances and Related Economic Flows* (Washington, DC: CBO, February), www.cbo.gov/ftpdocs/120xx/doc12053/02-24-Remittances_chartbook.pdf. [Return to text#18r](#)

10. The Pew Hispanic Center's recent report, *U.S. Hispanic Country-of-Origin Counts for Nation, Top 30 Metropolitan Areas* (<http://pewhispanic.org/reports/report.php?ReportID=142>) (<http://pewhispanic.org/reports/report.php?ReportID=142>) that Hispanics of Mexican, Puerto Rican, and Cuban origin or descent remain the nation's three largest Hispanic country-of-origin groups, according to the 2010 U.S. Census. However, according to the 2010 U.S. Census, the Guatemalan and Colombian Hispanic subgroups were the fastest growing subgroups during the past decade. The Reserve Banks' FedGlobal service offering includes remittance transfers to Colombia, El Salvador, and Guatemala.

11. For Mexico, the Reserve Banks also have an international ACH service that transfers funds between deposit accounts at depository institutions (referred to as account-to-account services) from the United States to Mexico. An account-to-account service for Mexico was launched in 2003 for government payments and in 2004 for commercial payments. [Return to text#11r](#)

12. In some cases, depository institutions have partnered with money transmitters to offer services. [Return to text#12r](#)

13. Western Union and MoneyGram provide consumer-to-consumer money transfer services that enable individuals to send money around the world through a network of approximately 445,000 and 227,000 agent locations, respectively. Individuals can send or receive money through the following money transfer services: in person, online, telephone, account-based, or mobile money. PayPal was founded in 1998 and allows individuals to send and receive payments online. Accounts can be funded or defunded using services provided by depository institutions, such as ACH transfers and card payments. In some cases, money transfer products other than traditional funds transfers to consumers as a vehicle to deliver funds to a person located abroad. For example, consumers may send funds to recipients abroad using reloadable prepaid cards that can be used for sale. Additionally, other card-based products permit the cardholder to send funds using his or her debit or credit card to the pay-out location of the recipient. [Return to text#13r](#)

14. A wire transfer system means a system through which an unconditional order to a depository institution to pay a fixed or determinable amount of money to a beneficiary upon receipt, or on a day stated in the order, is transmitted through the network between depository institutions, or on the books of a depository institution (12 CFR 233.2(cc)). [Return to text#14r](#)

15. NACHA and its operating rules are discussed more fully later in the report. [Return to text#15r](#)

16. According to data from the *2010 Federal Reserve Payments Study* (www.frbservices.org/files/communications/pdf/press/2010_payments_study.pdf) (PDF) (http://www.frbservices.org/files/communications/pdf/press/2010_payments_study.pdf) the average value of an ACH transfer was \$1,947 in 2006. In contrast, wires transfers are typically high-dollar, individual (not batched) credit transactions that settle between depository institutions immediately. Wire transfer fees are typically higher than ACH fees for depository institutions. A similar division between low-value, non-urgent batched payment systems and a high-value, urgent credit transfer system exists in many countries. [Return to text#16r](#)

17. In some cases, depository institutions have established bilateral clearing and settlement arrangements for ACH transfers that would not be processed by either operator. [Return to text#17r](#)

18. Today, the Reserve Banks only offer international ACH debit transfers outbound to Canada. [Return to text#18r](#)

19. The 2010 ACH network volume and value figures represent both commercial and government payments. Transfer volume cleared and settled between a defined set of depository institutions that bypasses an ACH operator and value figures may be found at <http://admin.nacha.org/userfiles/Year-End%202010%2B2%20.pdf> (PDF) (<http://admin.nacha.org/userfiles/Year-End%202010%2B2%20.pdf>). [Return to text#19r](#)

20. ACH operators processed 2.1 million international ACH debit transfers and 4.1 million international ACH credit transfers in 2010 valued at \$9.5 billion and \$36.6 billion, respectively. Prior to NACHA's new SEC code for international ACH transfers that were international in nature were initiated as domestic transactions in the U.S. ACH network and settled internationally through correspondent banking relationships, making it difficult to identify the international nature of the transfers. [Return to text#20r](#)

21. The Reserve Banks process international ACH transfers through the Federal Reserve Bank of Atlanta, which serves as the gateway operator. See the Reserve Banks' Operating Circular 4 for additional information (http://www.frbservices.org/files/regulations/pdf/operating_circular_4_010111.pdf). [Return to text#21r](#)

Today, depository institutions also act as gateway operators for their customers. [Return to text#21r](#)

22. The committee was appointed by Chairman Greenspan in October 1996 to examine the payment services provided by the Reserve Banks to depository institutions in recognition of the rapid changes occurring in the financial technology sectors. The committee report, issued in January 1998, can be found at www.federalreserve.gov/boarddocs/press/general/1998/19980105/19980105.pdf (PDF) (<http://www.federalreserve.gov/boarddocs/press/general/1998/19980105/19980105.pdf>). [Return to text#22r](#)

23. At that time, the Federal Reserve Bank of New York had relationships with only a relatively small number of foreign central banks and correspondent banks to process international direct deposits for some government pay [text#f23r](#).
24. The U.S. Treasury's Financial Management Service uses the Reserve Banks to send and receive international payments on behalf of U.S. government agencies and instrumentalities for monthly recurring benefit payment and miscellaneous payments in nearly 200 countries. The Reserve Banks process U.S. government payments both through FedGlobal as well as a proprietary service that specifically supports the needs of the U.S. governm [text#f24r](#).
25. NACHA manages the development, administration, and governance of the ACH network for participating depository institutions. Further information about NACHA, its membership, and its rulemaking processes can be found [text#f25r](#).
26. Transfers not handled by an ACH operator may not be subject to the NACHA rules, depending on the agreements between the institutions that are parties to the transfer. [text#f26r](#).
27. The Reserve Banks' agreement is Operating Circular 4, which is available at [text#f27r](#).
28. The rights and obligations of a gateway operator are detailed in agreements between the gateway operator and the depository institutions that use the operator's services. These agreements may vary the provisions of NACHA rules that otherwise be applicable to the gateway operator. [text#f28r](#).
29. If the originating gateway operator is a U.S. depository institution, it also assumes the responsibilities and warranties of a receiving depository institution under NACHA rules. [text#f29r](#).
30. Information on OFAC regulations can be found on the OFAC website at [text#f30r](#).
31. If a potential OFAC "hit" is identified, OFAC rules require a depository institution to resolve the potential hit through its own efforts or in consultation with OFAC. If a payment involves a verified OFAC hit, the depository institution must block the proceeds of the payment by placing those funds into a segregated, interest-bearing account. [text#f31r](#).
32. OFAC has clarified the application of its rules for domestic and international ACH transactions and provided more detailed guidance on international ACH. Refer to Interpretive Note 041214-FACRL-02 at [text#f32r](#).
33. For inbound transactions, OFAC guidance also requires the receiving U.S. gateway operator to screen the transactions and identify potential "hits" by flagging them. The receiving depository institution is then under a duty to block property as appropriate. The gateway operator also must send a daily report to OFAC listing all of the potential hits for that day. Depository institutions acting as gateway operators on behalf of their customers, if their customers' transactions before initiating an ACH transfer and resolve any potential OFAC "hits." Receiving depository institutions are still responsible for ensuring that the international ACH transactions they receive do not must be blocked under OFAC regulations. [text#f33r](#).
34. Because Reserve Banks are not federally insured institutions that hold deposits for corporations and individuals, they are not subject to some of the specific laws and regulations in this area. Nonetheless, with respect to the transactions that they handle as a gateway operator, the Reserve Banks have adopted policies and procedures designed to meet the requirements of these laws and regulations, including the portions thereof that may not apply to the Banks. [text#f34r](#).
35. The FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual was last revised in April 2010 and can be found at [text#f35r](#).
36. For additional information on an overview of ACH and examination procedures from the FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual, see pages 224 and 232, respectively. [text#f36r](#).
37. For additional information on screening ACH transactions from the FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual, see pages 153-55. [text#f37r](#).
38. The OCC Bulletin 2006-39, *Automated Clearinghouse Activities--Risk Management Guidance* (September 1, 2006), is available at [text#f38r](#).
39. The prior cross-border ACH transfer formats were originally established in 1999. [text#f39r](#).
40. See 31 CFR 1010.410(e) and (f). For convenience, this information is referred to as "Travel Rule" information. [text#f40r](#).
41. 31 CFR 1010.100(w) and (ddd). [text#f41r](#).
42. A key component of the IAT format is the adoption of two optional, single-character fields within the record to convey the results of OFAC screening on the transaction. For inbound IAT entries, the first field is available to convey OFAC screen by a gateway operator, and a secondary screening indicator is available to be used by a correspondent bank or other third-party service provider to convey screening results. The screening indicators assist the institution of an IAT transfer with their compliance obligations. Under IAT standards, a value of "0" indicates that the party conducting the screening has not found a potential blocked party, as identified by OFAC on its list of sanctioned parties. A value of "1" indicates the potential presence of a blocked party. The field is space-filled if no screening has been conducted. [text#f42r](#).
43. At the time, the Reserve Bank service was known as FedACH International Services. The Federal Reserve rebranded the name in 2010 to FedGlobal Payments Service. [text#f43r](#).
44. The European service today includes Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, United Kingdom. The Latin American service includes Argentina, Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, and Uruguay. The Latin American service, which only involves account transfers, is in addition to the account-to-account service for Mexico. [text#f44r](#).
45. Depository institutions processed the balance of international ACH transfer volume. Any U.S. depository institution may act as a gateway operator to send or receive ACH transfers destined to or originating from a foreign country. [text#f45r](#).
46. FedGlobal is a priced service of the Reserve Banks, and Federal Reserve policy creates a strict wall of separation between the provision of priced services to depository institutions and the regulation and supervision of them. Accordingly, FedGlobal staff does not play any role with respect to the supervision and regulation of depository institutions, including evaluation of the compliance posture of an institution. [text#f46r](#).
47. The Reserve Banks' initial focus on processing commercial and government payments into Mexico was influenced by two unrelated developments. In 2001, the Bush Administration launched the "Partnership for Prosperity" government to foster economic development. In addition, the U.S. Treasury's Financial Management Service sought to convert 20,000 monthly Social Security payments to Mexico residents from checks to ACH transfers. This information on this service. [text#f47r](#).
48. The Inter-American Dialogue noted that the percentage of Mexican migrants with a U.S. bank account rose from about 30 percent in 2005 to over 50 percent in 2010, while Colombian migrants with U.S. bank accounts rose from about 95 percent in the same period. See M. Orozco, E. Burgess, and N. Ascoli (2010), *Is There a Match among Migrants, Remittances and Technology?* (Washington DC: Inter-American Dialogue, September 30), [text#f48r](#).
49. All inbound payments are U.S. dollar payments. The FedGlobal service offers U.S. depository institutions several foreign exchange options for outbound payments. The option chosen and specified in the IAT format, however, in the destination country under some circumstances. For example, if the IAT format specifies that the currency at the destination should be U.S. dollars but the receiver's deposit account is denominated in euros, then the receiving institution may, pursuant to instructions from its account holder or pursuant to local rules or practices, convert and post the payment in euros. [text#f49r](#).
50. The fixed-to-variable currency value exchange converts U.S. dollars to a variable amount of destination currency based on a foreign exchange rate, which is typically a base rate that fluctuates with the market and a spread negotiated by the Reserve Banks with each foreign gateway operator. There are two options for the fixed-to-fixed currency value exchange. The first option, which can be used in countries that have U.S. dollar accounts, enables a depository institution to send the transfer in U.S. dollars and for the receiving depository institution to receive the transfer in U.S. dollar denominated accounts. The second version, known as F3X, enables the originating depository institution to send the transfer in U.S. dollars and for the receiving depository institution to receive the transfer in U.S. dollar denominated accounts. [text#f50r](#).
51. Although this report focuses on issues relevant for remittance transfers, corporate ACH transfers have had their own unique challenges, such as the lack of corporate remittance information included with the ACH transfer continue to work to address these outstanding issues. Corporate and government payment volume is essential to support the continued viability of the international ACH transfer services. In particular, government benefit payments in supporting and, in some cases, driving the evolution of the international ACH service. The phenomenon of government involvement is not unique to the international ACH transfer service. The need for electronic government services spurred change and helped the initial development of the current domestic ACH network in the 1970s and 1980s. [text#f51r](#).
52. The Monetary Control Act of 1980 requires that the Federal Reserve establish fees for priced services provided to depository institutions so as to recover, over the long run, all the direct and indirect costs actually incurred by the Reserve Banks that would have been incurred—including financing costs, taxes, and certain other expenses—and the return on equity (profit) that would have been earned if a private business firm had provided the services. [text#f52r](#).
53. Initially, smaller, community-based depository institutions were the first to offer FedGlobal services to their customers, but more recently some of the largest depository institutions as well as regional depository institutions services. In some cases, depository institutions are only offering the FedGlobal services to corporate or institutional customers. [text#f53r](#).
54. See text note 47. [text#f54r](#).
55. In 2010, the Reserve Banks introduced the account-to-receiver service for Mexico and several other countries. This option is discussed under the "Latin American Service" section of the appendix. [text#f55r](#).
56. Banco de México's real time gross settlement system is called SPEI, which is an acronym for Sistema de pagos electrónicos interbancarios, or the Interbanking Electronic Payment System. SPEI is a large-value funds transfer system that participants can make transfers among themselves on behalf of themselves or their customers. Each payment order contains information allowing identification of the sender client and the client to whom the payment should be made. SPEI began operating in August 2004. [text#f56r](#).
57. The National Savings and Financial Services, Bansefi, is a development bank of the Mexican federal government and started operations in 2002. Its predecessor was the National Savings Trust, Patronato del Ahorro Naci promoted savings among the working classes. Since the transformation of PANHAL into Bansefi, savings account ownership has increased from 850,000 to more than 3.1 million in 2005. [text#f57r](#).
58. The FedGlobal Latin American service is a collaboration with Microfinance International Corporation (MFIC), a U.S.-based processor of remittances and other payments, and Banco Rendimento, a Brazilian commercial bank network reaches more than 80 countries and its platform features a robust compliance module. Banco Rendimento is the gateway operator for the service providing settlement and MFIC processes and distributes the payments. [text#f58r](#).
59. TD Bank in Canada served as the Canadian gateway operator until 2006, when the contract was awarded to the Bank of Nova Scotia. [text#f59r](#).
60. In 2003, the Reserve Banks launched a European service with Eurogiro, as the gateway operator, and five pilot European countries. The service only allowed for outbound ACH transfers initially due to compliance concerns. As a result of several service limitations, the service was not successful in attracting volume and was ended in September 2009. In October 2010, the current European service was launched and is a collaboration between the Reserve Banks, one of Europe's largest payment processors, and DZ Bank in Germany acting as the gateway operator. DZ Bank is the shortened name for Deutsche Zentral-Genossenschaftsbank, a commercial depository institution services to the cooperative institutions in that country. [text#f60r](#).
61. The Panama service is a collaboration with Telered, the national payments processor, and the Banco Nacional de Panamá, a commercial bank that also acts as the fiscal agent of the Panamanian government. [text#f61r](#).

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Report to the Congress on the Use of the Automated Clearinghouse System for Remittance Transfers to Foreign Countries

July 2011

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM



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Preface: Implementing the Dodd-Frank Act

The Board of Governors of the Federal Reserve System (the Board) is responsible for implementing numerous provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act). The Dodd-Frank Act requires, among other things, that the Board produce reports to the Congress on a number of potential reform topics.

See the Board's website for an overview of the Dodd-Frank Act regulatory reform effort (www.federalreserve.gov/newsevents/reform_about.htm) and a list of the implementation initiatives recently completed by the Board as well as several of the most significant initiatives that the Board expects to address in the future (www.federalreserve.gov/newsevents/reform_milestones.htm).

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Report to the Congress on the Use of the Automated Clearinghouse System for Remittance Transfers to Foreign Countries

Executive Summary

Section 1073 of the Dodd-Frank Act directs the Board to provide biennial reports to the Congress for 10 years covering (1) the status of the automated clearinghouse (ACH) system as well as the Board's progress in complying with the requirements of section 1073(b) of the act, which directs the Board to work with the Federal Reserve Banks (Reserve Banks) and the Department of the Treasury to expand the use of the ACH system and other payment mechanisms for remittance transfers to foreign countries, and (2) an analysis of adoption rates of international ACH transfer rules and formats, the efficacy of increasing adoption rates, and potential recommendations to increase adoption.¹ The Board worked with the Reserve Banks and the U.S. Treasury to develop this report.

This first report is intended to provide a baseline by giving a brief overview of remittance transfers and the methods available to transmit these payments, with a specific focus on the ACH network. The report discusses the ACH system and outlines the legal and regulatory framework and formats relevant for international ACH transfers. The report also explains in detail the Reserve Banks' international ACH service, called FedGlobal ACH Payments (FedGlobal), and describes some of the lessons learned from establishing this service and potential recommendations.²

International ACH transfers are still a relatively new phenomenon for depository institutions and their

customers.³ Most U.S. depository institutions process international wire transfers or checks on behalf of their customers. Consumers also often use nonbank money transmitters rather than depository institutions for sending remittance transfers. Thus, neither the supply nor the demand side has extensive experience with international ACH transfers.

Over the past 12 years of providing FedGlobal services, the Reserve Banks have gained a better understanding of the associated challenges and complexities associated with regulatory compliance, format conversions between countries, the business case for depository institutions, marketing, education, and the needs of the unbanked. The Reserve Banks have implemented changes to address some of these issues, such as adding an option to send remittance transfers to receivers without deposit accounts at depository institutions (referred to as account-to-receiver services) to several potentially high-traffic destination countries, expanding the foreign exchange conversion options, and working with the industry to enhance formats to assist in regulatory compliance and develop conversion standards between domestic and foreign payment formats. Because many of these changes have only recently taken effect, however, it is too soon to assess their overall impact.

In addition, the Reserve Banks intend to continue to work on other challenges in an effort to increase adoption of international ACH transfers. First, the Reserve Banks plan to continue to pursue opportunities that maximize their access to multiple countries to increase the reach of FedGlobal services. This effort is intended to help improve the business-case economics for depository institutions to use these services through broader accessibility. Second, the Reserve Banks will continue to reach out to depository

¹ Pub L. No. 111-203, 124 Stat. 2065 (2010).

² The Reserve Banks' Retail Payments Office centrally manages the Reserve Banks' check and ACH services, including the FedGlobal service.

³ The term "depository institution" includes commercial banks, savings institutions, or credit unions.

tory institutions and encourage their education and marketing to consumers. Third, the Reserve Banks will continue to assess opportunities to deploy account-to-receiver service offerings. Fourth, the Federal Reserve and the U.S. Treasury will work collaboratively to assess and encourage the use of international ACH transfers for remittances. Lastly, the Federal Reserve may be able to facilitate additional dialogue with depository institutions with respect to the risks and compliance requirements for sending and receiving international ACH transfers.

Background

A remittance transfer under section 919(g)(2) of the Electronic Fund Transfer Act (EFTA), as amended by section 1073 of the Dodd-Frank Act, includes an electronic transfer of funds requested by a consumer located in any state to a person in a foreign country that is initiated by a remittance transfer provider.⁴ As explained in the Board's proposed rule to implement section 919, the statute applies to both person-to-person and person-to-business remittance transfers.⁵ The majority of sources that examine remittance transfers, however, typically exclude transactions that are intended to support person-to-business transactions and focus on person-to-person payments of relatively low value that are intended for another natural person.⁶

In practice, remittance transfers are often payments originated by expatriates, typically workers who send money to their families in their home countries regularly. In many cases, these payments may be transmitted on a regular basis. The World Bank reported that, in 2010, worldwide remittance flows exceeded \$440 billion, primarily by many of the 215 million international migrants. From that amount, recipients

⁴ EFTA section 919(g)(2) defines "remittance transfer provider" to mean any person or financial institution that provides remittance transfers to a consumer in the normal course of its business, whether or not the consumer holds an account with such person or financial institution. EFTA section 903(8) defines "financial institution" to mean a bank, savings institution, or credit union, or any other person that directly or indirectly holds an account belonging to a consumer.

⁵ See 76 FR 29954 (May 23, 2011), proposed commentary to section 205.30(c).

⁶ The International Monetary Fund collaborated recently with the World Bank and a select group of compilers from 16 countries around the world (Luxembourg Group) to unify the methodology and compilation of data on remittances, which resulted in the preparation of the *International Transactions in Remittances: Guide for Compilers and Users* (RCG). The RCG was officially released in June 2009 and is available at www.imf.org/external/np/sta/bop/2008/rcg/pdf/guide.pdf.

Figure 1. Top remittance-receiving countries, 2010



in developing countries received \$325 billion, which represents a 6 percent increase from the 2009 level.⁷ However, the total value of remittance transfers, including unrecorded flows through formal and informal channels, is believed to be significantly larger. The World Bank estimates that recorded remittances have been nearly three times the amount of official aid and almost as large as foreign direct investment flows to developing countries. **Figure 1** shows the top 10 countries where remittance recipients are located, and **figure 2** shows the top 10 countries where remittances are originated.

As one of the most important destinations of global migration, the United States is the largest estimated source of international remittances. The opportunity to send or bring remittances home is one of the important motivations for migration. **Figure 3** shows the top U.S. migration corridors based upon the number of migrants.

⁷ World Bank (2011), *Migration and Remittances Factbook 2011*, 2nd ed. (Washington, DC: World Bank), <http://siteresources.worldbank.org/INTLAC/Resources/Factbook2011-Ebook.pdf>. The World Bank includes cash and in-kind transfers, earnings of temporary workers, and other transactions in its calculations.

Figure 2. Top remittance-sending countries, 2010

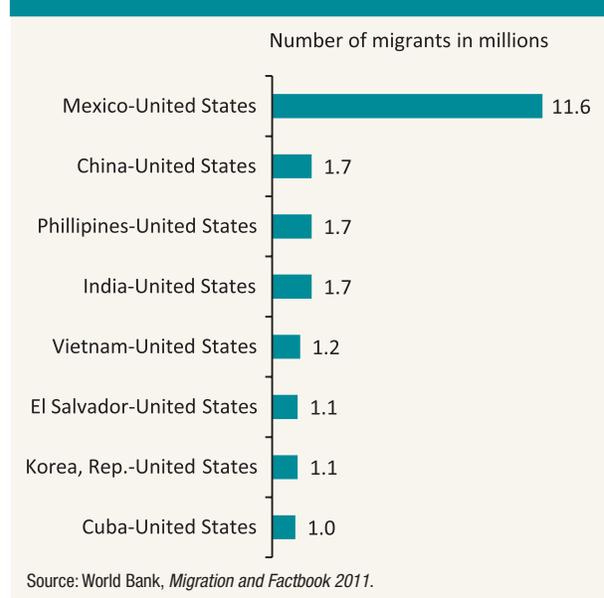
The Bureau of Economic Analysis (BEA) estimates that migrants' remittances originating from the United States totaled about \$48 billion in 2009.⁸ Nearly \$38 billion of that amount was personal transfers by foreign-born residents of the United States to households abroad. The balance, about \$10 billion, reflected the compensation of employees who were in the United States for less than one year. For 2009, the BEA estimates that about two-thirds of remittance transfers went to countries in the Western Hemisphere, one-quarter went to countries in Asia and the Pacific, and the rest went to countries in Europe and Africa.⁹

The corridors of migration and value of remittance flows by country can provide helpful data in assessing possible remittance transfer opportunities for ACH.¹⁰ In fact, the Reserve Banks recently launched

⁸ The phrase used by BEA is "gross outflows of personal transfers by foreign-born residents in the United States to households abroad plus gross outflows of compensation of employees."

⁹ Congressional Budget Office (2011), *Migrants' Remittances and Related Economic Flows* (Washington, DC: CBO, February), www.cbo.gov/ftpdocs/120xx/doc12053/02-24-Remittances_chartbook.pdf.

¹⁰ The Pew Hispanic Center's recent report, *U.S. Hispanic Country-of-Origin Counts for Nation, Top 30 Metropolitan Areas* (<http://pewhispanic.org/reports/report.php?ReportID=142>), states that Hispanics of Mexican, Puerto Rican, and Cuban ori-

Figure 3. Top migration corridors, 2010

a new service that encompasses the largest migration corridor, Mexico, and one other from the top list of migration corridors, El Salvador. The service specifically targets remittance transfers as an account-to-receiver service to Mexico and other Latin American countries.¹¹ This service has taken years to develop and implement. Establishing viable services to support remittances can be complex and challenging, especially when formal and informal channels already exist and the migrant population has historically not used depository institutions for remittance transfers or other basic banking functions.

Methods for Sending Remittance Transfers

U.S. consumers have a number of possible channels for sending remittance transfers, and the method chosen may depend on a variety of factors, including convenience and access, destination country availability, and sender's and recipient's access to deposit accounts at depository institutions.

gin or descent remain the nation's three largest Hispanic country-of-origin groups, according to the 2010 U.S. Census. However, according to the 2010 U.S. Census, the Salvadoran, Dominican, Guatemalan, and Colombian Hispanic subgroups were the fastest growing subgroups during the past decade. The Reserve Banks' FedGlobal service offering includes remittance transfers to Colombia, El Salvador, and Guatemala.

¹¹ For Mexico, the Reserve Banks also have an international ACH service that transfers funds between deposit accounts at depository institutions (referred to as account-to-account services) from the United States to Mexico. The account-to-account service for Mexico was launched in 2003 for government payments and in 2004 for commercial payments.

Historically, consumers have largely chosen to send remittance transfers through money transmitters. A money transmitter engages in the transmission of funds domestically or internationally outside of conventional depository institutions.¹² Money transmitters can be used for payments to some businesses as well as for money transfers to individuals. They include networks such as Western Union and MoneyGram, Internet payment systems such as PayPal, and other electronic systems that engage in the business of transmitting funds.¹³

Money transmitters commonly facilitate the transmission of money through brick-and-mortar agent locations, by telephone, or through an Internet website. A money transmitter may operate through its own office or through an agent, such as a grocery store or neighborhood convenience store, in locations that are heavily populated by migrants. By acting through retail store locations, money transmitters often have extensive collection and distribution networks in the countries in which they operate. Money transmitters usually price the transfer based on both the locations of the sender and receiver and the amount of the payment. The transfers are generally referred to as cash-to-cash remittances.

Although less common, individuals may also send remittance transfers using services provided by depository institutions, primarily through international wire transfers.¹⁴ A wire transfer is an available

option when both the sender and receiver have access to deposit accounts at depository institutions. Wire transfer fees are usually flat fees that may vary based on the destination country but not usually by the amount of the transfer. Although wire transfers are the prominent method used by depository institutions to send funds internationally, more recently depository institutions have had the option of transmitting remittance transfers through the ACH system. International ACH transfer services through depository institutions are generally referred to as account-to-account remittances whereby both the originator and receiver of the transfer hold deposit accounts at depository institutions that are debited and credited for the transfer. However, some services are emerging with account-to-receiver options where the receiver does not need a deposit account at a depository institution in the foreign country.

Automated Clearinghouse System

The ACH system is a funds transfer system that provides for the clearing and settlement of batched electronic transfers for participating depository institutions. Domestically, the ACH system is primarily governed by the rules and guidelines published by the National Automated Clearing House Association (NACHA).¹⁵ ACH transfers are either credit or debit transfers, typically of relatively low value, that are made between deposit accounts at depository institutions and are either recurring or one-time transfers.¹⁶ Recurring ACH transfers typically occur on a set schedule and are preauthorized by the individual or entity whose account is being credited or debited. Recurring credit transfers include payroll direct deposit payments, while recurring debit transfers include mortgage and other bill payments. One-time ACH transfers are authorized at the time the payment is initiated and include consumer payments made by check that are converted to ACH debit transfers and consumer payments originated using the Internet (e.g., through online banking and biller payment sites).

¹² In some cases, depository institutions have partnered with money transmitters to offer services.

¹³ Western Union and MoneyGram provide consumer-to-consumer money transfer services that enable individuals to send money around the world through a network of approximately 445,000 and 227,000 agent locations, respectively. Both companies reach nearly 200 countries and territories. Individuals can send or receive money through the following money transfer services: in person, online, telephone, account-based, or mobile money. PayPal was founded in 1998 and allows businesses and individuals to send and receive payments online. Accounts can be funded or defunded using services provided by depository institutions, such as ACH transfers and card payments. In some cases, money transmitters may also offer products other than traditional funds transfers to consumers as a vehicle to deliver funds to a person located abroad. For example, consumers may send funds to recipients abroad using reloadable prepaid cards that can be used at an ATM or point of sale. Additionally, other card-based products permit the cardholder to send funds using his or her debit or credit card to the pay-out location of the recipient.

¹⁴ A wire transfer system means a system through which an unconditional order to a depository institution to pay a fixed or determinable amount of money to a beneficiary upon receipt, or on a day stated in the order, is transmitted by electronic or other means through the network between depository institutions, or on the books of a depository institution (12 CFR 233.2(cc)).

¹⁵ NACHA and its operating rules are discussed more fully later in the report.

¹⁶ According to data from the *2010 Federal Reserve Payments Study* (www.frbservices.org/files/communications/pdf/press/2010_payments_study.pdf), the average value of an ACH transfer was \$1,947 in 2009. In contrast, wires transfers are typically high-dollar, individual (not batched) credit transactions that settle between depository institutions immediately. Wire transfer fees are typically higher than ACH fees for depository institutions. A similar division between low-value, non-urgent batched payment systems and a high-value, urgent credit transfer system exists in many countries.

The originator of an ACH transfer generally authorizes its depository institution to send a payment instruction. The depository institution combines the payment instruction with payment instructions from its other customers and sends them to an ACH operator—the Reserve Banks’ FedACH or The Clearing House’s Electronic Payments Network—for processing.¹⁷ The ACH operator will then sort and deliver the payment instructions to the appropriate receiving depository institutions and complete the interbank settlement process. The receiving depository institutions then post the payments, either credits or debits, to the receivers’ accounts. Today, almost all depository institutions receive ACH transfers on behalf of their customers, and nearly 87 percent of depository institutions originate ACH transfers.

The fees charged to depository institutions for ACH transfers may vary by ACH operator but are usually based on a per-item fee for each transfer within the batch. The fees charged to depository institutions do not vary by the value of the transfer. The fees charged to individuals or other persons sending or receiving the ACH transfer, however, are subject to wide variability based on the depository institutions that originate or receive these payments.

The ACH system supports both domestic and international credit and debit transfers.¹⁸ In 2010, more than 15 billion credit and debit transfers worth nearly \$32 trillion passed through the ACH network.¹⁹ Over the past 10 years, the number of ACH transfers has increased nearly 11 percent per year, although this growth has declined significantly in recent years. A substantial portion of the growth had been attributed to the ability of consumers to initiate one-time payments over the telephone or Internet and the ability of companies to convert consumer payments made by check to ACH debits. International ACH transfers are a very small fraction of the overall ACH network. In 2010, the ACH operators processed more than 6 million international ACH transfers valued at

\$46 billion—much less than 1 percent of the overall ACH network volume and value.²⁰

International ACH transfers are made through an interface with other countries’ national payments systems. This interface between two national payments systems is commonly accomplished through an “originating gateway operator” in the originator’s country and a “receiving gateway operator” in the receiver’s country. Both the originating and receiving gateway operators are participants in their respective national payments systems and capable of clearing and settling payments in their respective systems. In the United States, the gateway operator can be a depository institution or, with the appropriate agreements in place, an ACH operator.

Today, the Reserve Banks are the only U.S. ACH operator providing gateway operator services to other countries.²¹ The involvement of the Reserve Banks in international ACH transfers dates back over 10 years. In January 1998, the Committee on the Federal Reserve in the Payments Mechanism issued a report outlining observations and recommendations based on its examination of retail payment services provided by Reserve Banks to depository institutions.²² In its report, the committee noted that the lack of a robust cross-border payment infrastructure could limit the potential growth of the ACH system and that the ACH system was not well adapted to international payments. The committee recommended that the Reserve Banks enhance their infrastructure to support cross-border ACH transfers and

¹⁷ In some cases, depository institutions have established bilateral clearing and settlement arrangements for ACH transfers that would not be processed by either operator.

¹⁸ Today, the Reserve Banks only offer international ACH debit transfers outbound to Canada.

¹⁹ The 2010 ACH network volume and value figures represent both commercial and government payments. Transfer volume cleared and settled between a defined set of depository institutions that bypasses an ACH operator is excluded. Additional volume and value figures may be found at <http://admin.nacha.org/userfiles/File/Year-End%202010%282%29.pdf>.

²⁰ ACH operators processed 2.1 million international ACH debit transfers and 4.1 million international ACH credit transfers in 2010 valued at \$9.5 billion and \$36.6 billion, respectively. Prior to NACHA’s new SEC code for international ACH transactions, many ACH transfers that were international in nature were initiated as domestic transactions in the U.S. ACH network and settled internationally through correspondent banking relationships, making it difficult to identify the international volume.

²¹ The Reserve Banks process international ACH transfers through the Federal Reserve Bank of Atlanta, which serves as the gateway operator. See the Reserve Banks’ Operating Circular 4 for additional information (www.frbservices.org/files/regulations/pdf/operating_circular_4_010111.pdf). Today, depository institutions also act as gateway operators for their customers.

²² The committee was appointed by Chairman Greenspan in October 1996 to examine the payment services provided by the Reserve Banks to depository institutions in recognition of the rapid changes occurring in the financial services and technology sectors. The committee report, issued in January 1998, can be found at www.federalreserve.gov/boarddocs/press/general/1998/19980105/19980105.pdf.

work with the industry to develop robust ACH cross-border capabilities.²³

International ACH transfers are aimed at a range of cross-border payments. Important international ACH transfers include government payments such as social security and other benefit payments, business transactions such as vendor payments, and consumer transactions such as bill payments and remittance transfers.²⁴ As a batch-payment system, the ACH is designed to carry a range of payments, supporting high volumes and leveraging economies of scale.

The fees charged to depository institutions for international ACH transfers are typically higher, but similar in structure to domestic ACH transfers. Also similar to domestic transfers, the fees charged by depository institutions to customers can vary widely and can depend on local business practices.

Legal and Regulatory Framework

Various aspects of ACH transfers are governed by federal or state law. The Electronic Fund Transfer Act (implemented through Regulation E, 12 CFR 205), establishes the basic rights, liabilities, and responsibilities of consumers who use ACH credit or ACH debit services and of financial institutions that offer those services. The Expedited Funds Availability Act (implemented through Regulation CC, 12 CFR 229) governs the availability of funds deposited to transaction accounts through ACH credit transfers. Article 4A of the Uniform Commercial Code (a uniform state law) governs ACH credit transfers that are not otherwise covered by the Electronic Fund Transfer Act (largely business-to-business transfers). In addition, U.S. Treasury Department rules govern all federal government transactions through the ACH (31 CFR 210).

In addition, the rights and obligations of the participants in the U.S. ACH network are governed by a standard set of operating rules published and main-

tained by NACHA.²⁵ The rules apply to the participants by means of a network of agreements binding the ACH operators, participating depository institutions, and originators and receivers of ACH transfers.²⁶ The ACH operators specify in their agreements with participating depository institutions that the institutions are bound by the NACHA rules, with certain exceptions that are specified in each operator's agreements.²⁷

The NACHA rules cover domestic ACH transfers from origination to receipt. The rules also apply to international ACH payments that are originated from U.S. depository institutions or are delivered to U.S. receiving institutions via the ACH network. NACHA's operating rules include provisions regarding the format for ACH transactions; the obligations of originators of transactions; the warranties made by participating U.S. depository institutions; and, subject to the requirements of the aforementioned laws and regulations, protections for U.S. consumers who receive transactions.

In the context of international ACH transfers, the NACHA rules have limited application to those portions of an international transaction that occur outside the United States. The relationship between a U.S. gateway operator and a foreign gateway operator is structured by agreement, and the relationship between the foreign gateway operator and the foreign depository institutions that originate or receive international payments is governed by foreign laws and regulations and by agreements among the foreign entities. The payment transfer bound from a foreign country to a deposit account in the United States becomes subject to the NACHA rules only when the U.S. gateway operator receives the payment and clears it through the U.S. ACH network.

The NACHA rules establish certain requirements that would apply to any ACH operator or depository institution that assumes the role of a gateway opera-

²³ At that time, the Federal Reserve Bank of New York had relationships with only a relatively small number of foreign central banks and correspondent banks to process international direct deposits for some government payments.

²⁴ The U.S. Treasury's Financial Management Service uses the Reserve Banks to send and receive international payments on behalf of U.S. government agencies and instrumentalities for monthly recurring benefit payments, foreign payroll, vendor, and miscellaneous payments in nearly 200 countries. The Reserve Banks process U.S. government payments both through FedGlobal as well as a proprietary service that specifically supports the needs of the U.S. government.

²⁵ NACHA manages the development, administration, and governance of the ACH network for participating depository institutions. Further information about NACHA, its membership, and its rulemaking processes can be found at www.nacha.org.

²⁶ Transfers not handled by an ACH operator may not be subject to the NACHA rules, depending on the agreements between the institutions that are parties to the transfer.

²⁷ The Reserve Banks' agreement is Operating Circular 4, which is available at www.frbservices.org/files/regulations/pdf/operating-circular_4_010111.pdf. For international ACH transfers, Operating Circular 4 modifies NACHA rules, in particular, regarding the bank-to-bank warranties. The U.S. Treasury Department's ACH rules specify those provisions of the NACHA rules that do not apply to government ACH transfers (31 CFR 210.2(d)).

tor to or from another country.²⁸ In the case of inbound transactions, the originating gateway operator in the foreign country receives the entry from the originating foreign institution through a messaging system or payment network and then transmits the entry to the receiving gateway operator in the United States. The receiving gateway operator then transmits the entry to the depository institution in the United States that holds the receiver's account.

For outbound transactions, the process is reversed. A U.S. depository institution transmits the entry to the originating gateway operator in the United States, which then transmits the entry to the receiving gateway operator for further transmission to the receiver's depository institution. The U.S. originating gateway operator warrants to the sending U.S. depository institution and any U.S. ACH operator involved in the entry that it has edited and processed the entry in accordance with the NACHA rules.²⁹

Depository institutions, like all individuals in the United States, also must comply with the Treasury Department's Office of Foreign Assets Control (OFAC) requirements.³⁰ OFAC compliance is an obligation of depository institutions by operation of federal law and regulation. OFAC maintains and regularly updates the List of Specially Designated Nationals and Blocked Persons (SDN). All U.S. persons are prohibited from dealing with the individuals and entities appearing on the list and must block all property of these individuals and entities that comes into their possession.

As applied to the ACH transfer system, OFAC compliance characteristically involves the use of automated information processing tools to identify transactions that may involve a SDN.³¹ For domestic ACH transfers, the requirement to perform due diligence to ensure that the payments comply with

OFAC regulations is primarily considered the responsibility of the originating depository institution with respect to an originator and the receiving depository institution with respect to a receiver.³² For international ACH transfers, the burden of OFAC compliance rests with the U.S. depository institution that originates or receives the payment. For example, the originating U.S. depository institution bears the compliance burden for an outbound transaction, and the receiving U.S. depository institution bears the compliance burden for an inbound transaction.³³

In addition to OFAC requirements, depository institutions that handle international payments must operate programs to comply with laws, regulations, best practices, and supervisory expectations centered on anti-money-laundering, counterterrorist financing, and anti-corruption laws and policies. (See, for example, the Bank Secrecy Act (BSA) of 1970 and the USA Patriot Act of 2001.)³⁴

The federal banking agencies have established and communicated their supervisory expectations regarding the BSA requirements for depository institutions' international ACH activity in the *FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual*.³⁵ The manual includes a detailed discussion of the application of the BSA and anti-money-laundering (AML) principles to ACH payments, including international ACH payments. The discus-

²⁸ The rights and obligations of a gateway operator are detailed in agreements between the gateway operator and the depository institutions that use the operator's services. These agreements may vary the provisions of NACHA rules that would otherwise be applicable to the gateway operator.

²⁹ If the originating gateway operator is a U.S. depository institution, it also assumes the responsibilities and warranties of a receiving depository institution under NACHA rules.

³⁰ Information on OFAC regulations can be found on the OFAC website at www.treas.gov/ofac/.

³¹ If a potential OFAC "hit" is identified, OFAC rules require a depository institution to resolve the potential hit through its own efforts or in consultation with OFAC. If a payment involves a verified OFAC hit, the depository institution must block the payment and freeze the proceeds of the payment by placing those funds into a segregated, interest-bearing account.

³² OFAC has clarified the application of its rules for domestic and international ACH transactions and provided more detailed guidance on international ACH. Refer to Interpretive Note 041214-FACRL-GN-02 at www.treas.gov/resource-center/sanctions/Documents/gn121404.pdf. NACHA rules refer to this guidance.

³³ For inbound transactions, OFAC guidance also requires the receiving U.S. gateway operator to screen the transactions and identify potential "hits" by flagging them. The receiving depository institution is then under a duty to resolve the potential hits and block property as appropriate. The gateway operator also must send a daily report to OFAC listing all of the potential hits for that day. Depository institutions acting as gateway operators on behalf of their customers, however, must screen their customers' transactions before initiating an ACH transfer and resolve any potential OFAC "hits." Receiving depository institutions are still responsible for ensuring that the international ACH transactions they receive do not represent property that must be blocked under OFAC regulations.

³⁴ Because Reserve Banks are not federally insured institutions that hold deposits for corporations and individuals, they are not subject to some of the specific laws and regulations in this area. Nonetheless, with respect to the international ACH transactions that they handle as a gateway operator, the Reserve Banks have adopted policies and procedures designed to meet the requirements of these laws and regulations, including the portions thereof that may not apply directly to the Reserve Banks.

³⁵ The *FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual* was last revised in April 2010 and can be found at www.ffiec.gov/bsa_aml_infobase/default.htm.

sion reviews the BSA and AML risks associated with international ACH payments, includes examples of ways in which depository institutions can mitigate those risks, and specifies the procedures federal banking examiners follow when reviewing a depository institution's international ACH activity for compliance with the BSA.³⁶ The manual also includes a corresponding discussion about international ACH compliance expectations with regard to OFAC sanctions.³⁷

In the development of their policies and procedures, U.S. depository institutions are also encouraged to consider the recommendations of the Financial Action Task Force (FATF). FATF is an intergovernmental body that develops and promotes policies, both at national and international levels, to combat money laundering and terrorist financing. FATF monitors members' progress in implementing necessary measures, reviews money-laundering and terrorist-financing techniques and countermeasures, and promotes the adoption and implementation of appropriate measures globally.

Additionally, in September 2006, the Office of the Comptroller of the Currency (OCC) issued a bulletin discussing general risk-management expectations for depository institutions that conduct ACH activity.³⁸ The OCC bulletin outlines a number of risk-management practices for a depository institution's ACH activity, including ways to manage appropriately credit risk, compliance risk, third-party service providers, transaction risk, and information-security and technology risks.

Formats

The NACHA operating rules specify common formats, referred to as standard entry classification codes, and standards associated with those formats for ACH transfers. The uniform formats and standards under the NACHA operating rules allow for interoperability among ACH operators as well as for bilateral or multilateral ACH transaction exchanges.

³⁶ For additional information on an overview of ACH and examination procedures from the *FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual*, see pages 224 and 232, respectively.

³⁷ For additional information on screening ACH transactions from the *FFIEC Bank Secrecy Act/Anti-Money Laundering Examination Manual*, see pages 153–55.

³⁸ The OCC Bulletin 2006-39, *Automated Clearinghouse Activities—Risk Management Guidance* (September 1, 2006), is available at www.occ.gov/news-issuances/bulletins/2006/bulletin-2006-39.html.

The domestic ACH is highly efficient in no small part because depository institutions and ACH operators employ the NACHA formats with minimal variation or customization.

For international ACH transfers, NACHA adopted in September 2009 a new standard entry classification code, called the International ACH Transaction or IAT. The IAT covers all international ACH transfers and does not distinguish between consumer, business, or government transactions. The IAT code replaced two prior codes—consumer cross-border payment and corporate cross-border payment—that were determined to be inadequate for OFAC and regulatory compliance purposes.³⁹ The IAT classification code, as well as the prior cross-border codes, allows depository institutions and ACH operators to easily identify these payments to facilitate any special handling requirements.

In particular, the IAT format facilitates the transmission of specific data elements, such as the full name and address of all parties involved in the transfer, that are required for international wire transfers under the U.S. Treasury Department's "Travel Rule," which implements provisions of the Bank Secrecy Act.⁴⁰ ACH transactions are excluded from the Travel Rule's definitions of "funds transfer" and "transmittal of funds" and therefore are exempt from the Travel Rule's recordkeeping requirements.⁴¹ Nevertheless, the inclusion of the Travel Rule information in the IAT format is intended to ensure that all parties to an international ACH transfer have the information necessary to identify each of the participants involved in handling the transfer and to make OFAC screening a more effective tool against money laundering and terrorist financing.⁴²

³⁹ The prior cross-border ACH transfer formats were originally established in 1999.

⁴⁰ See 31 CFR 1010.410(e) and (f). For convenience, this information is referred to as "Travel Rule" information.

⁴¹ 31 CFR 1010.100(w) and (ddd).

⁴² A key component of the IAT format is the adoption of two optional, single-character fields within the record to convey the results of OFAC screening on the transaction. For inbound IAT entries, the first field is available to convey the results of an OFAC screen by a gateway operator, and a secondary screening indicator is available to be used by a correspondent bank or other third-party service provider to convey screening results. The screening indicators assist the receiving depository institution of an IAT transfer with their compliance obligations. Under IAT standards, a value of "0" indicates that the party conducting the screening has not found a potential blocked party, as identified by OFAC on its list of specially designated nationals. A value of "1" indicates the potential presence of a blocked party. The field is space-filled if no screening has been conducted.

Although the new IAT format became effective under the NACHA operating rules in September 2009, the inclusion of the new format in software supporting ACH origination and receipt has lagged significantly. Given that only a very small portion of depository institutions are sending international ACH transfers, not all vendors updated their software to include full functionality supporting the IAT format on the effective date. At the time, software vendors largely focused on the ability to receive the IAT format rather than the ability to send. Today, some depository institutions continue to report format access as a barrier to originating international ACH transfers.

In addition to challenges faced with access to the new format, the interoperability of IAT stops at the U.S. border. The U.S. gateway operator and its counterpart in the foreign country need to establish a method for exchanging files so that the payment message can be processed by each respective payment system. Either the sending or receiving gateway operator (or another intermediary) needs to translate between the respective formats for the countries involved. This translation can be complex, as each format requires a line-by-line mapping to ensure full interoperability and straight-through processing. The mapping can also be costly, as it requires proprietary software to be developed for each format pair.

To facilitate this mapping process, the Federal Reserve Bank of Atlanta joined with U.S. and foreign depository institutions, international clearing and settlement service providers, and other interested parties to form the International Payments Framework Association (IPFA). The IPFA is a nonprofit membership association comprising 29 members representing Brazil, Canada, Europe, Japan, South Africa, the United Kingdom, and the United States whose purpose is to create a framework for bridging national formats for non-urgent international credit transfers. IPFA establishes rules, standards, and operating procedures for the exchange of these payments.

The first effort by IPFA was to create rules that would facilitate a bridge between the IAT format for ACH credit transfers and the payment format, ISO 20022, which supports the several retail networks within the single euro payments area (also known as SEPA), under the SEPA credit transfer scheme. The next step underway is to leverage the framework created for the United States and SEPA in order to add other countries—such as Brazil, Canada, and South Africa—that want to exchange payments with the United States or SEPA ACH networks.

FedGlobal ACH Payments

The Reserve Banks, through FedGlobal, launched their first commercial international ACH service with Canada in 1999.⁴³ The service began as a pilot program for outbound commercial ACH transfers from the United States to Canada and became a production service in December 2001. Subsequent to the Canadian service, the Reserve Banks launched individual services to Europe, Mexico, Panama, and Latin America, covering 34 countries in total.⁴⁴ In 2010, the Reserve Banks processed 1.3 million international ACH transfers—accounting for about 20 percent of the total volume of international payments being cleared and settled through the U.S. ACH network.⁴⁵

While the characteristics of each of the FedGlobal services differ slightly, there are common elements to all the services. FedGlobal conforms to the requirements discussed in the “[Legal and Regulatory Framework](#)” and “[Formats](#)” sections (see pages 6 and 8, respectively). In addition, as a gateway operator, the Reserve Banks have outlined recommendations in their FedGlobal Services Origination Manual for U.S. depository institutions participating in international ACH transfers.⁴⁶ The recommendations encourage participating depository institutions to have a compliance officer and a compliance program with policies and procedures designed to ensure compliance with the Bank Secrecy Act and with U.S. laws, regulations, and bank supervisory policies regarding anti-money-laundering, antiterrorism-financing, know-your-customer policies and procedures, customer-identification programs, data secu-

⁴³ At the time, the Reserve Bank service was known as FedACH International Services. The Federal Reserve rebranded the name in 2010 to FedGlobal Payments Service.

⁴⁴ The European service today includes Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and United Kingdom. The Latin American service includes Argentina, Brazil, Columbia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, and Uruguay. The Latin American service, which only involves account-to-receiver ACH transfers, is in addition to the account-to-account service for Mexico.

⁴⁵ Depository institutions processed the balance of international ACH transfer volume. Any U.S. depository institution may act as a gateway operator to send or receive ACH transfers destined to or originating from a foreign country.

⁴⁶ FedGlobal is a priced service of the Reserve Banks, and Federal Reserve policy creates a strict wall of separation between the provision of priced services to depository institutions and the regulation and supervision of those institutions. Accordingly, FedGlobal staff does not play any role with respect to the supervision and regulation of depository institutions, including evaluation of the compliance posture of an institution.

riety and data privacy, OFAC requirements, and mandatory consumer protections. The recommendations support adherence to these policies and procedures and suggest due diligence with respect to all persons, entities, and associated data and follow up on any compliance issues. Lastly, the recommendations encourage monitoring, recording, and reporting of suspicious activity for international ACH transfers.

For several FedGlobal services—Canada, Europe, Mexico (account-to-account), and Panama—both the originator and receiver of the ACH transfer generally have deposit accounts at depository institutions. To originate the ACH transfer, the originator would access the ACH network through the services offered by his or her depository institution, which could include in-person branch or Internet options for originating the payment instruction. The ACH transfer would flow as outlined earlier between the respective depository institutions and gateway operators to the foreign recipient’s deposit account at his or her depository institution. The foreign recipient would have access to the funds based on local rules for availability once deposited in his or her account. For some consumers, account-to-account ACH transfers are a practicable means of sending remittance transfers home. In many instances, however, receivers of remittance transfers do not have deposit accounts in their home countries. Consequently, account-to-account ACH transfers typically support government and commercial payments. For example, account-to-account ACH transfers to Mexico consist almost exclusively of government social security and other benefit payments.⁴⁷ Only about 300 U.S. depository institutions offer the account-to-account service to Mexico, and of those, only 25 percent send payments in an average month.

In contrast, for FedGlobal’s Latin American service, the receiver does not need a deposit account at a depository institution. The Latin American service was introduced in 2010 and is a significant change for international ACH transfers in support of remittance transfers. The service is intended to serve the increasing number of Latin American migrants who hold deposit accounts at depository institutions in the

⁴⁷ The Reserve Banks’ initial focus on processing commercial and government payments into Mexico was influenced by two unrelated developments. In 2001, the Bush Administration launched the “Partnership for Prosperity” with the Mexican government to foster economic development. In addition, the U.S. Treasury’s Financial Management Service sought to convert 28,000 monthly Social Security payments to Mexico residents from checks to ACH transfers. The [appendix](#) has additional information on this service.

United States.⁴⁸ In this service, the international ACH transfer must be originated from a deposit account in the United States, but the funds may be sent to a specifically approved depository institution or a trusted third-party provider in the foreign country where the receiver may pick up the funds in cash without a deposit account at the receiving institution. The account-to-receiver option requires supplemental information about the receiver, a unique password, and a way to ensure proper identification when the receiver picks up the funds. For example, the receiver must provide a valid government identification card that includes his or her date of birth, as well as the unique password to access the funds. The account-to-receiver delivery option, in particular, is designed to facilitate remittance transfers. To date, just over 30 U.S. depository institutions have enrolled to offer the account-to-receiver service for their customers.

In addition, many international ACH transfers need to undergo a foreign exchange conversion.⁴⁹ FedGlobal accommodates fixed-to-variable and fixed-to-fixed foreign exchange conversions for outbound payments.⁵⁰ The Reserve Banks only settle in U.S. dollars. Thus, the foreign exchange transaction is managed either by the originating U.S. depository

⁴⁸ The Inter-American Dialogue noted that the percentage of Mexican migrants with a U.S. bank account rose from about 30 percent in 2005 to over 50 percent in 2010, while Colombian migrants with U.S. bank accounts rose from 60 percent to about 95 percent in the same period. See M. Orozco, E. Burgess, and N. Ascoli (2010), *Is There a Match among Migrants, Remittances and Technology?* (Washington, DC: Inter-American Dialogue, September 30), www.thedialogue.org/PublicationFiles/a%20match%20in%20migrants%20remittances%20and%20technology%20MO_FINAL_11.4.101.pdf.

⁴⁹ All inbound payments are U.S. dollar payments. The FedGlobal service offers U.S. depository institutions several foreign exchange options for outbound payments. The option chosen and specified in the IAT format, however, may not be honored in the destination country under some circumstances. For example, if the IAT format specifies that the currency at the destination should be U.S. dollars but the receiver’s deposit account is denominated in euros, then the receiving depository institution may, pursuant to instructions from its account holder or pursuant to local rules or practices, convert and post the payment in euros.

⁵⁰ The fixed-to-variable currency value exchange converts U.S. dollars to a variable amount of destination currency based on a foreign exchange rate, which is typically a base rate that fluctuates with the market and a spread that has been negotiated by the Reserve Banks with each foreign gateway operator. There are two options for the fixed-to-fixed currency value exchange. The first option, which can be used in countries that have U.S. dollar accounts, enables the originating depository institution to send the transfer in U.S. dollars and for the receiving depository institution to receive the transfer in U.S. dollar denominated accounts. The second version, known as F3X, enables the originating depository institution to manage its own foreign exchange to participating countries. Settlement is conducted outside of the ACH network through a foreign correspondent.

Table 1. FedGlobal foreign exchange and delivery options

Payment destinations ¹	Foreign exchange options			Delivery options	
	Fixed-to-fixed U.S. dollar	Fixed-to-fixed F3X ²	Fixed-to-variable	Account-to-account	Account-to-receiver
Canada	•		•	•	
Europe	•	•	•	•	
Mexico		•	•	•	•
Panama	•			•	
Latin America	•		•		•

¹ See text note 44 for a list of countries included in each service.

² See text note 50 for an explanation of F3X. For Mexico, F3X is only available for the account-to-account delivery option.

institution, if they choose, or by the foreign gateway operator through its agreements with foreign depository institutions. The foreign gateway operator may have established correspondent relationships to perform the foreign exchange transaction or arranged for the receiving depository institutions to perform the foreign exchange transaction. Under the current structure, U.S. depository institutions do not have to arrange for the foreign exchange transaction (unless they choose to), providing flexibility and greater accessibility, especially to smaller U.S. depository institutions.

Table 1 shows the available FedGlobal payment delivery and foreign exchange options for the destinations currently served.

Lessons Learned and Potential Recommendations

Over the past 12 years of providing FedGlobal services, the Reserve Banks have gained insight into the opportunities and challenges of offering international ACH transfers. The Reserve Banks have identified shortcomings and perceived limitations of international ACH services and have implemented changes in attempt to address these issues, such as adding an account-to-receiver option for remittance transfers to several potentially high-traffic destination countries, expanding the foreign exchange conversion options, and working with the industry to enhance formats and develop conversion standards between domestic and foreign formats. In each of these examples, the changes have only recently taken effect, so it is too soon to assess their overall impact. At the same time, the Reserve Banks are aware of additional challenges, including the general complexity that arises from differences in countries' banking rules and payments infrastructures, and efforts that may be necessary to

increase adoption of international ACH transfers.⁵¹ The Reserve Banks have taken leadership roles in helping efforts, such as the International Payments Framework Association, move forward.

Importantly, international ACH transfers generally and remittances in particular are still a relatively new phenomenon among depository institutions and their customers. Historically, most U.S. depository institutions processed international wire transfers or checks on behalf of their customers through international correspondent banks. Consumers sending remittance transfers also would more often seek out money transmitters, as discussed earlier. Thus, neither the supply nor the demand side has extensive experience with international ACH transfers.

Depository institutions have indicated reluctance to use FedGlobal due to the lack of ubiquitous global reach. Depository institutions may not want to invest in infrastructure to support a payment method that reaches only certain countries, especially if their current international correspondent arrangements access a broad range of countries. Lack of ubiquity would also be a concern for consumers if FedGlobal is not connected to their destination country. Ubiquity issues were especially acute when FedGlobal began with one country, Canada, and then added Mexico.

⁵¹ Although this report focuses on issues relevant for remittance transfers, corporate ACH transfers have had their own unique challenges, such as the lack of corporate remittance information included with the ACH transfer, and the Reserve Banks continue to work to address these outstanding issues. Corporate and government payment volume is essential to support the continued viability of the international ACH transfer services. In particular, government benefit payments have helped greatly in supporting and, in some cases, driving the evolution of the international ACH service. The phenomenon of government involvement is not unique to the international ACH transfer service. The need for electronic government payments also originally spurred change and helped the initial development of the current domestic ACH network in the 1970s and 1980s.

Since then, the Reserve Banks have largely pursued multicountry access through a hub model where the Reserve Banks contract with one gateway operator that distributes the international ACH transfers to multiple countries. The European service and account-to-receiver options that began in 2010 reach 22 and 11 countries, respectively. The hub model has helped establish greater economies of scale, simplify legal arrangements, and reduce the complexity and cost of adding countries to the service. Reserve Banks plan to continue to pursue opportunities that maximize their access to multiple countries to increase the reach of FedGlobal services. As part of this process, the Reserve Banks will continue to assess for any new service offering the business-case economics to determine the feasibility and future viability of the service.⁵²

Depository institutions may also be reluctant to offer international ACH transfer services if they would affect the profitability of other business lines, by, for example, diverting higher-margin international wire transfer volume to lower-margin ACH volume. Each institution would need to assess the effect of originating international ACH transfers on its overall costs and revenues.

Consumers, meanwhile, may be unaware of international ACH transfer services and may have limited options for accessing international ACH transfer services if few depository institutions are offering the services. Today, around 410 U.S. depository institutions—or about 4 percent of depository institutions that originate ACH transfers—have enrolled in the FedGlobal service to send ACH transfers to one or more of the cross-border payment destinations, but only 33 percent of them originate payments in a typical month.⁵³ Also, as mentioned previously, some vendors that provide ACH software to depository institutions have not yet upgraded their software to accommodate the IAT format. The Federal Reserve does not have much information regarding the level

of marketing and outreach by institutions that offer the service to their customers and the community more broadly. The Reserve Banks will continue to reach out to depository institutions to encourage greater adoption of FedGlobal services and to encourage education and marketing by institutions.

Another significant adoption constraint is that many consumers who send and receive remittance transfers do not have access to deposit accounts at depository institutions. Until recently, access to international ACH transfers required that the sender and receiver both have deposit accounts at depository institutions. Consumers in the United States and abroad may be unbanked for a range of reasons, including language, cultural, and economic barriers. The new account-to-receiver service to Latin America, however, has partially addressed this constraint by allowing international ACH transfer access to receivers of remittance transfers that are unbanked.

In addition, the U.S. Treasury continues to focus on financial access issues and is working to integrate its effort in this area with existing federal programs that serve low- and moderate-income individuals. The Treasury's goal is to coordinate across programs and maximize its opportunities to promote financial access for unbanked and underbanked populations. One such program, Bank On USA, which is expected to begin in 2012, aims to provide safe, low-cost accounts for unbanked residents. The Treasury program is based largely on existing Bank On programs that are collaborations between depository institutions, local governments, financial regulators, and community-based organizations to promote access for the unbanked to traditional financial services through depository institutions. The Reserve Banks will continue to assess opportunities to deploy account-to-receiver service offerings. The Federal Reserve and the U.S. Treasury will also work collaboratively to assess and encourage the use of international ACH transfers for remittances.

Lastly, for depository institutions, regulatory compliance continues to be a leading concern. The availability of the Reserve Banks' international ACH service, which began commercially in 1999, has largely coincided with an increased focus on regulatory compliance and the prevention of money laundering and criminal financing. Thus, depository institutions may be taking a cautious approach to offering international ACH transfers to their customers due to compliance-risk concerns. It may take additional time for institutions to become accustomed to this option

⁵² The Monetary Control Act of 1980 requires that the Federal Reserve establish fees for priced services provided to depository institutions so as to recover, over the long run, all the direct and indirect costs actually incurred as well as the imputed costs that would have been incurred—including financing costs, taxes, and certain other expenses—and the return on equity (profit) that would have been earned if a private business firm had provided the services.

⁵³ Initially, smaller, community-based depository institutions were the first to offer FedGlobal services to their customers, but more recently some of the largest depository institutions as well as regional depository institutions have started using the services. In some cases, depository institutions are only offering the FedGlobal services to corporate or institutional customers.

(versus wire transfers through international correspondent banks) and to assess fully how to comply with legal requirements. The Federal Reserve may be able to facilitate additional dialogue with depository

institutions with respect to the risks and compliance requirements for sending and receiving international ACH transfers.

Appendix: FedGlobal Services Country-by-Country

Mexican Service

In 2001, the United States and Mexico launched the Partnership for Prosperity initiative, which was designed to foster economic development.⁵⁴ One of its objectives of this initiative was to lower the cost of cross-border remittance payments from individuals in the United States to individuals in Mexico. Developing a FedACH service to Mexico was intended to advance this objective while also supporting public policy goals to bring more low-income individuals into the formal banking system of each country. The U.S. Treasury's Financial Management Service provided further impetus for a FedACH service to Mexico when it sought to convert around 28,000 monthly Social Security checks to Mexico into electronic transfers made over the ACH network.

Beginning in late 2003, the Reserve Banks and Banco de México (Mexico's central bank) initiated a service to provide a channel for government transfers via ACH from the United States to Mexico. In 2004, the option for depository institutions to send commercial ACH transfers was introduced.⁵⁵ The government and commercial transfers to Mexico are processed through FedACH as the U.S. gateway operator and exchanged with Banco de México as Mexico's gateway operator, which then processes the payments and distributes to depository institutions in the Mexican payments system. In Mexico, the payments are distributed through the SPEI payment mechanism and can reach almost any bank account in the country.⁵⁶ The transfers are converted from U.S. dollars to Mexican pesos and are not limited to a specific value. The service provides for a fixed-to-variable currency value exchange option but also allows U.S. deposi-

tory institutions to manage directly their own foreign exchange.

When the commercial service began in 2004, the number of banked consumers in Mexico was quite low by international standards, inhibiting service adoption and usage. As part of a larger financial inclusion effort to encourage participation in the formal financial system, the Reserve Banks collaborated with representatives of the Mexican government, including the Banco de México and the Institute of Mexicans Abroad in the Mexican Foreign Ministry. The effort sought to inform Mexicans living in the United States that depository institutions offer affordable remittance transfers to Mexico and other financial services products.

In an effort to market the ACH service, the Reserve Banks, in collaboration with the Banco de México, worked to create awareness and reduce barriers to adoption. The first step was the creation of the "Directo a México" brand name so that U.S. depository institutions could readily offer customers a branded service for transfers to Mexico. Reserve Banks made available branded, customizable, bilingual promotional materials, including a marketing poster, brochure, and dedicated website, to depository institutions to attract customers. The marketing effort also included many coordinated promotions between local depository institutions, community groups, the Reserve Banks, the Federal Deposit Insurance Corporation, Mexican consulates, Banco de México, and the Mexican development bank Bansefi in cities with high migrant populations.⁵⁷

In 2010, the Reserve Banks processed about 375,000 payments valued near \$196 million under FedGlobal's Mexican account-to-account services.

Latin American Service

The Latin American service, which only provides account-to-receiver transfers, was launched in 2010. The impetus for this service was to help overcome the challenge of sending payments to receivers without deposit accounts. The account-to-receiver service allows funds to be picked up by unbanked receivers. The payments are originated from an account at a

⁵⁴ See text note 47.

⁵⁵ In 2010, the Reserve Banks introduced the account-to-receiver service for Mexico and several other countries. This option is discussed under the "Latin American Service" section of the appendix.

⁵⁶ Banco de México's real time gross settlement system is called SPEI, which is an acronym for Sistema de pagos electronicos interbancarios, or the Interbanking Electronic Payment System. SPEI is a large-value funds transfer system in which participants can make transfers among themselves on behalf of themselves or their customers. Each payment order contains information allowing identification of the sender client and the client to whom the payment should be credited. The system began operating in August 2004.

⁵⁷ The National Savings and Financial Services, Bansefi, is a development bank of the Mexican federal government and started operations in 2002. Its predecessor was the National Savings Trust, Patronato del Ahorro Nacional (PAHNAL), which promoted savings among the working classes. Since the transformation of PANHAL into Bansefi, savings account ownership has increased from 850,000 to more than 3.1 million in 2005.

depository institution in the United States, but the ACH transfer may be picked up in cash at select locations upon presentation of proper identification and a unique password.

This functionality was initially developed in collaboration with the Banco de México and adapted to additional destinations in Central and South America—Argentina, Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Peru and Uruguay—by the Reserve Banks.⁵⁸ These payments are distributed in U.S. dollars or local currency, depending on the destination country. The service supports U.S. dollar to U.S. dollar transfers and the fixed-to-variable currency value exchange option. By agreement, all fees are paid by the sender. The fees assessed by the Reserve Banks are considerably higher than the fees for account-to-account ACH transfers due to the unique costs associated with account-to-receiver (or account-to-cash) transfers. These costs include maintaining distribution networks, compliance screening and monitoring, and the costs associated with maintaining cash available for distribution. This service is also branded in the United States under the name *GlobeNow*.

For the nine months of operation in 2010, the volume and value of international ACH transfers through the Latin American service were negligible.

Canadian Service

Business payments were the target of the Canadian Service, which was the Reserve Banks' first effort toward developing an international ACH service. It was first offered as a pilot program in 1999 with credit and debit payments to Canadian account holders. Government pension payments were introduced in 2006.⁵⁹

Payments in the Canadian service remain limited to one direction—from the United States to Canada. This is largely because most Canadian depository institutions participate in the U.S. banking system

through their branches or subsidiaries and do not require a gateway to make payments into the United States.

Business-to-business payments continue to comprise the largest share of payments in the Canadian service along with a smaller percentage of consumer-to-business payments, payroll, and some person-to-person payments. The service offers the option of U.S. dollar to U.S. dollar transfers to accounts denominated in that currency and the fixed-to-variable foreign exchange conversion option for U.S. to Canadian dollar payments. The use of the Canadian service for remittance transfers is minimal.

In 2010, the Reserve Banks processed about 815,000 payments valued near \$921 million under the FedGlobal Canadian service.

European Service

The current European service began in 2010 and allows bidirectional payments between the United States and 22 countries of SEPA—Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.⁶⁰ Payments from the United States to Europe can be originated in U.S. dollars and reach European bank accounts in euros, British pounds, or U.S. dollars where those U.S. dollar accounts exist. The European service also featured the first usage of the Reserve Banks' option to allow U.S. depository institutions to manage directly their own foreign exchange for participating countries.

In practice, the service carries largely business-to-business payments. Some of the countries served in this arrangement could eventually be a target for remittance payments.

⁵⁸ The FedGlobal Latin American service is a collaboration with Microfinance International Corporation (MFIC), a U.S.-based processor of remittances and other payments, and Banco Rendimento, a Brazilian commercial bank. MFIC's distribution network reaches more than 80 countries and its platform features a robust compliance module. Banco Rendimento is the gateway operator for the service providing settlement and MFIC processes and distributes the payments among its network.

⁵⁹ TD Bank in Canada served as the Canadian gateway operator until 2006, when the contract was awarded to the Bank of Nova Scotia.

⁶⁰ In 2003, the Reserve Banks launched a European service with Eurogiro, as the gateway operator, and five pilot European countries. The service only allowed for outbound ACH transfers initially due to compliance concerns with inbound transfers. As a result of several service limitations, the service was not successful in attracting volume and was ended in September 2009. In October 2010, the current European service was launched and is a collaboration between the Reserve Banks and Equens, one of Europe's largest payment processors, and DZ Bank in Germany acting as the gateway operator. DZ Bank is the shortened name for Deutsche Zentral-Genossenschaftsbank, a commercial depository institution that also offers services to the cooperative institutions in that country.

For the three months of operation in 2010, the volume and value of international ACH transfers through the European service were negligible.

Panama Service

The Reserve Banks began a payments service to Panama in 2004.⁶¹ The service originally processed only pension payments from the United States to Panama, where a relatively large number of U.S. gov-

⁶¹ The Panama service is collaboration with Telered, the national payments processor, and the Banco Nacional de Panamá, a commercial bank that also acts as the fiscal agent of the Panamanian government.

ernment retirees are located. Panama is the largest recipient of international payments from the U.S. Office of Personnel Management, which sends about 75,000 benefit payments to the country annually. Because Panama uses the U.S. dollar for its national currency, all payments are sent and received in U.S. dollars. In 2009, commercial credit payments to and from Panama were introduced to allow individuals and corporations to utilize the channel as well.

In 2010, the Reserve Banks processed to Panama about 86,000 payments valued near \$95 million, of which the vast majority was government benefit payments.

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March 26, 2015

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This report presents findings from the Federal Reserve Board's fourth survey on consumers' use of mobile financial services, conducted in December 2014. It also comp

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March 25, 2014

[Maximilian D. Schmeiser](#), Matthew B. Gross, David E. Buchholz, and Alejandra Lopez-Fernandini

This report presents findings from the Federal Reserve Board's third annual survey on consumers' use of mobile financial services, conducted in December 2013. It also 2011 and 2012.

[Consumers and Mobile Financial Services \(PDF\) | HTML](#)

March 27, 2013

Matthew B. Gross, Alexandra M. Rock, and [Maximilian D. Schmeiser](#)

This report presents findings from the Federal Reserve Board's second survey on consumers' use of mobile financial services, conducted in November 2012. It also com December 2011.

[Use of Financial Services by the Unbanked and Underbanked and the Potential for Mobile Financial Services Adoption \(PDF\) | HTML](#)

September 24, 2012

Matthew B. Gross, Jeanne M. Hogarth, and [Maximilian D. Schmeiser](#), of the Board's Division of Consumer and Community Affairs prepared this article with assistance fr Heidersbach.

The increased use of mobile devices coupled with the evolution of technologies that enable consumers to conduct financial transactions using mobile phones has the pot service technologies may also help foster access and inclusion in the mainstream financial system for unbanked or underbanked consumers. Using data collected throug examines the characteristics of unbanked and underbanked consumers, their current use of mobile financial services, and the potential for mobile banking and payments

[Consumers and Mobile Financial Services \(PDF\) | HTML](#)

March 14, 2012

Matthew B. Gross, Jeanne M. Hogarth, and [Maximilian D. Schmeiser](#)

Mobile devices have increasingly become tools for consumers to use for banking, payments, budgeting, and shopping. The Federal Reserve Board is interested in the ef technology to expand access to financial services for previously underserved populations. This report presents findings from an online survey, conducted in December 2012. It also examines how consumers use mobile financial services and make financial decisions.

Last update: March 26, 2015

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Exhibit F-5



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Preface

The survey and report were prepared by the Consumer and Community Development Research Section of the Federal Reserve Board's Division of Consumer and Community Affairs (DCCA).

DCCA directs consumer- and community-related functions performed by the Board, including conducting research on financial services policies and practices and their implications for consumer financial stability, community development, and neighborhood stabilization.

DCCA staff members Alexandra Brown, Sam Dodini, Arturo Gonzalez, Ellen Merry, and Logan Thomas prepared this report. Valuable comments

and feedback on the design of the survey and drafting of this report were provided by DCCA staff members Mario Arthur-Bentil, Anna Alvarez Boyd, David Buchholz, Allen Fishbein, Jeff Larrimore, Alejandra Lopez-Fernandini, Barbara Robles, and Jenny Schuetz, as well as by Federal Reserve System staff members Andrea Brachtesende, Marianne Crowe, Susan Pandy, and Maximilian D. Schmeiser.

Mention or display of a trademark, proprietary product, or firm in the report does not constitute an endorsement or criticism by the Federal Reserve System and does not imply approval to the exclusion of other suitable products or firms.

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Executive Summary

Mobile phones have increasingly become tools that consumers use for banking, payments, budgeting, and shopping. Given the rapid pace of developments in the area of mobile finance, the Federal Reserve Board began conducting annual surveys of consumers' use of mobile financial services in 2011. The survey examines trends in the adoption and use of mobile banking, payments, and shopping behavior and how the emergence of mobile financial services affects consumers' interaction with financial institutions.

This report presents findings from the 2014 survey, fielded in December, which focused on consumers' use of mobile technology to access financial services and make financial decisions. Where applicable, the findings from the current survey are also compared with the findings from the 2011, 2012, and 2013 surveys. Topics include consumer access to bank services using mobile phones ("mobile banking"), consumer payment for goods and services using mobile phones ("mobile payments"), and consumer shopping decisions facilitated by use of mobile phones. Details about the survey, its methodology, and limitations can be found in the body of the report and in a methodological appendix.

Key Findings

Key findings of the 2014 survey include:

- **Mobile phones are in widespread use.**
 - Eighty-seven percent of the U.S. adult population has a mobile phone, consistent with 2013.
 - Seventy-one percent of mobile phones are smartphones (Internet-enabled), up from 61 percent a year earlier.
- **The ubiquity of mobile phones is changing the way consumers access financial services.**
 - Thirty-nine percent of all mobile phone owners with a bank account have used mobile banking in the 12 months prior to the survey, up from 33 percent in 2013 and 29 percent in 2012.
 - Fifty-two percent of smartphone owners with a bank account have used mobile banking in the 12 months prior to the survey, up from 51 percent a year earlier.
 - Among those mobile phone users with bank accounts who do not currently use mobile banking, 11 percent think that they will probably or definitely use it within the next 12 months, down from 12 percent a year earlier.
 - The most common use of mobile banking is to check account balances or recent transactions (94 percent of mobile banking users).
 - Among mobile banking users, transferring money between an individual's own accounts (61 percent) and receiving an alert (e.g., a text message, push notification, or e-mail) from their bank (57 percent) are the second- and third-most common uses of mobile banking.
 - Fifty-one percent of mobile banking users have deposited a check using their mobile phone in the 12 months prior to the survey, up from 38 percent in 2013.
 - Among mobile banking users, the frequency of use has increased slightly, from a median of four times per month in 2013 to five times per month in 2014. This frequency was five times per month in 2012.
 - Residents of more rural areas have a lower incidence of mobile banking use than residents of more urban areas.
- **Mobile phones are also changing the way consumers make payments.**
 - Twenty-two percent of all mobile phone owners reported having made a mobile payment in the 12 months prior to the survey, up from 17 percent in 2013 and 15 percent in 2012.

- The share of smartphone users who reported having made a mobile payment in the 12 months prior to the survey has increased to 28 percent, up from 24 percent in both 2013 and 2012.
- Among mobile payment users with smartphones, the most common type of mobile payment was bill payment through an online system or mobile app (68 percent, up from 66 percent in 2013).
- Thirty-nine percent of all mobile payment users with smartphones have made a point-of-sale payment using their mobile phone in the 12 months prior to the survey, in line with the 39 percent reporting such payments in 2013.
- Of mobile payment users with smartphones who made point-of-sale mobile payments, 31 percent did so by scanning a barcode or QR code displayed on their phone's screen at check out (down from 39 percent in 2013), while 22 percent used an app that did not require tapping their mobile phone or scanning a barcode (up from 17 percent in 2013).
- Residents of more rural areas have a lower incidence of mobile payments use than residents of more urban areas.
- **A preference for other methods of banking and making payments, as well as concerns about security, continue to be the main impediments to the adoption of mobile financial services cited by some consumers.**
 - Of those not using mobile banking, the primary reason respondents cited was a belief that their banking needs were being met without the use of mobile banking (86 percent).
 - The primary reason non-mobile payment users gave for not using mobile payments was that they believe it is easier to pay with cash or credit/debit cards (75 percent).
 - Concern about the security of the technology was a common reason given for not using mobile banking or mobile payments (62 percent and 59 percent, respectively, of non-users).
- **Smartphones are changing the way people shop and make financial decisions.**
 - Forty-seven percent of smartphone users have comparison shopped with their phone while at a retail store, and 33 percent have used their phone to scan a product's barcode to find the best price for the item.
 - Of those consumers who used their phones to comparison shop in a retail store, 69 percent have changed where they purchased a product as a result of the information they found.
 - Forty-two percent of smartphone users have used their phone to browse product reviews or get product information while shopping at a retail store, and 79 percent of them changed the item they purchased based on this information.
 - Sixty-three percent of mobile banking users have checked their account balance on their phone before making a large purchase in the previous 12 months leading up to the survey, and over half (53 percent) of them decided not to purchase an item as a result of their account balance or credit limit.
 - Twenty-nine percent of all mobile phone users and 38 percent of smartphone users have used their phone to track purchases and expenses.
- **Mobile phones are prevalent among unbanked and underbanked consumers.**
 - The share of consumers who are unbanked is 13 percent, and the share who are underbanked is 14 percent.
 - Sixty-seven percent of the unbanked have access to a mobile phone, 65 percent of which are smartphones.
 - Ninety percent of the underbanked have access to a mobile phone, 73 percent of which are smartphones.
 - Forty-eight percent of underbanked consumers had used mobile banking in the 12 months prior to the survey.

Introduction

In 2011, the Federal Reserve Board’s Division of Consumer and Community Affairs conducted its first Survey of Consumers’ Use of Mobile Financial Services. Since that time, the adoption of mobile financial services has continued to increase, along with the range of services offered. As part of its ongoing efforts to monitor developments in the mobile financial services arena and to gain insights into consumers’ usage of, and attitudes toward, mobile financial services, the Board has continued to conduct the survey annually.¹ The fourth survey, conducted in December 2014, included a random sample of respondents to the previous survey in 2013, as well as a random sample of new respondents. The subsample of respondents who voluntarily completed both the 2013 and 2014 waves of the survey allows for the analysis of changes in behavior over the past year among these individuals.

Survey Background

The original survey instrument and subsequent waves of the survey were designed in consultation with a mobile financial services advisory group made up of key Federal Reserve System staff with relevant consumer research and payments backgrounds. The 2012, 2013, and 2014 survey samples were all composed of a mix of a randomly selected respondents to the previous year’s survey and new survey respondents.

The 2014 survey was again administered by GfK, an online consumer research company, on behalf of the Board. The survey was conducted using a sample of adults ages 18 and over from KnowledgePanel[®], a proprietary, probability-based web panel of more than 50,000 individuals from randomly sampled households; the sample was designed to be represen-

¹ See the “Consumers and Mobile Financial Services” reports series for previous years’ survey findings. Results of the 2011, 2012, and 2013 surveys (published in March 2012, 2013, and 2014, respectively) are available at www.federalreserve.gov/communitydev/mobile_finance_publications.htm.

Table 1. Key survey response statistics: Main interview

	Number sampled for main survey	Qualified completes	Completion rate
2013 re-interviews	2,308	1,489	64.5%
Fresh cases	2,657	1,436	54.0%
Total primary sample	4,965	2,925	58.9%

tative of the U.S. population. After pretesting, the data collection for the survey began on December 5, 2014, and concluded on December 21, 2014.

For the results presented in the main body of this report, the sample was drawn following the method used for the 2012 and 2013 surveys. As shown in [table 1](#), e-mails were sent to 2,308 randomly selected respondents to the 2013 survey and 2,657 randomly selected respondents from the remaining members of KnowledgePanel[®]. The respondents completed the survey in approximately 12 minutes (median time). Of the 2,925 respondents, 1,489 had responded to the 2013 survey one year before, while 1,436 were new survey respondents drawn from the general population.² Further details on the survey methodology are included in [appendix 1](#).

As with any survey method, Internet panels can be subject to biases resulting from undercoverage or nonresponse and, in this case, potential underrepresentation of adults who may be uncomfortable with technology. Not everyone in the United States has access to the Internet, and there are demographic (income, education, age) and geographic (urban and rural) differences between those who do have access and those who do not. These concerns are addressed by GfK providing Internet access to respondents who

² The 2014 survey also included an oversample of respondents from rural areas. For comparability with prior years of the survey, the oversample was not used in computing the results in the main body of this report; therefore, respondents from the oversample are not included in [table 1](#). However, selected statistics based on the oversample are included in [box 1](#). Additional information on the sample is provided in [appendix 1](#).

do not have it in order to include the portion of the population that does not have Internet access in KnowledgePanel[®], and using sample weights to ensure that the Internet usage and key demographics of the sample population matches the adult U.S. population. See appendix 1 for a more detailed discussion. While care has been taken to ensure the survey results are generalizable to the adult U.S. population, the usual caveats regarding surveys nevertheless apply.

The full survey questionnaire is presented in appendix 2 and the responses to all the categorical survey questions are presented in appendix 3 in the order that the questions were asked of respondents. Tables of summary statistics for the respondent demographics by mobile phone usage are also included as tables C.66 to C.69. Beginning at table C.70, cross-tabulations are presented of consumers' use of mobile phones, mobile banking, and mobile payments by age, race, gender, education, and income.

The following sections of this report summarize key findings from the Federal Reserve Board's survey of consumers conducted by GfK, with a focus on how consumers use mobile phones to conduct their banking, make payments, enhance information gathering while shopping, and manage their finances. The numbers cited in this report are derived from the Board survey unless otherwise noted. All data were weighted to yield estimates for the U.S. adult population. Only questions pertaining to these topics are discussed in the report; however, the complete survey questionnaire and the results of the entire survey are summarized in appendix 2 and appendix 3.

Consumer Access to Mobile Phones

As of December 2014, 87 percent of the U.S. population ages 18 and above owned or had regular access to a mobile phone. While the percent of the adult population with mobile phones has remained constant over the previous two years, an increasing proportion of those own smartphones: this survey's 71 percent smartphone ownership rate among those with mobile phones is a substantial increase over the 61 percent rate reported in 2013,³ 52 percent rate in 2012, and 44 percent rate in 2011.

³ Throughout this report, percentages are calculated as a share of all those who were asked a question, including those who did not respond. Results on phone ownership from the Board's 2013 survey are very similar to those from the Pew Research Center for that year. In the June 2013 *Smartphone Ownership*—

Table 2. Smartphone usage by race/ethnicity
Percent, except as noted

Race/ethnicity	Smartphone usage			
	2011	2012	2013	2014
White, non-Hispanic	41	50	57	68
Black, non-Hispanic	47	54	63	66
Other, non-Hispanic	45	54	76	83
Hispanic	55	60	72	82
2+ races, non-Hispanic	43	59	64	65
Total	44	52	61	71
Number of respondents	2,002	2,291	2,341	2,603

Note: The denominator is all respondents with a mobile phone.

Rates of mobile phone usage remain high and consistent across demographic and socioeconomic groups. The prevalence of mobile phones demonstrates the extent to which they have become engrained in modern culture. Mobile phone usage is approximately 91 percent for persons ages 18 to 44, and declines only slightly to 87 percent for persons ages 45 to 59 and to 80 percent for persons ages 60 and over. Smartphone adoption is also higher among younger generations, with the differences being more pronounced among age groups: 84 percent of those ages 18 to 29 and 86 percent of those ages 30 to 44 who own a mobile phone have a smartphone, while 67 percent of mobile phone owners ages 45 to 59 and 47 percent of mobile phone owners ages 60 and over have a smartphone.

Mobile phone ownership varies slightly by race and ethnicity, with non-Hispanic whites, Hispanics, and non-Hispanic blacks having rates of 88 percent, 85 percent, and 83 percent, respectively. However, adoption of smartphones varies in a somewhat more pronounced way: 82 percent of Hispanic mobile phone users have a smartphone, compared to 68 percent of non-Hispanic whites and 66 percent of non-Hispanic blacks (table 2).

2013 Update, the Pew Research Center reported that 91 percent of U.S. adults owned a mobile phone and 61 percent of adults with a mobile phone (or 56 percent of adults overall) had a smartphone. (See http://pewinternet.org/~media/Files/Reports/2013/PIP_Smartphone_adoption_2013_PDF.pdf.) The 2013 Federal Deposit Insurance Corporation (FDIC) Survey of Unbanked and Underbanked Households provides measures of mobile and smartphone access at the household level. In 2013, its estimates showed that 83 percent of households owned or had regular access to a mobile phone and 67 percent of households with a mobile phone (or 56 percent of households overall) had a smartphone. (See www.fdic.gov/householdsurvey/2013report.pdf.)

Mobile phone and smartphone usage does vary with the level of household income. In households earning less than \$25,000 per year, 74 percent of adults have a mobile phone of some type, and 53 percent have a smartphone. Use of both mobile phones and smartphones increases with income, reaching 95 percent and 85 percent, respectively, for adults in households earning more than \$100,000 per year.

The relatively high prevalence of mobile phone and smartphone use among younger generations, minorities, and those with low levels of income—groups that are more likely to be unbanked or underbanked—makes mobile phones a potential platform for expanding financial access and inclusion.

In 2014, the share of consumers who were unbanked rose to 13 percent from 10 percent in 2013.⁴ The share of consumers who would be described as underbanked—defined as having a bank account but also using an alternative financial service such as a money order, check cashing service, pawn shop loan, auto title loan, paycheck advance/deposit advance, or a payday loan—was 14 percent in 2014.⁵

Among individuals who are unbanked, 67 percent have access to a mobile phone and 65 percent of these are smartphones. Smartphone ownership has been increasing among the unbanked. The share of the unbanked with access to a mobile phone was 69 percent in 2013 and 59 percent in 2012, approximately half of which were smartphones.

Among the underbanked, 90 percent have a mobile phone, 73 percent of which are smartphones. Further, 48 percent of the underbanked with mobile phones reported using mobile banking in the 12 months prior to the survey, while 32 percent reported making mobile payments.

⁴ In 2011 and 2012, the wording of the bank account question was “Do you or does your spouse/partner currently have a checking, savings, or money market account?” In 2013 and 2014, the wording of the bank account question changed slightly from the prior years to explicitly reference “bank or credit union” accounts: “Do you or does your spouse/partner currently have some type of bank or credit union account such as a checking, savings, or money market account?”

⁵ Due to changes in the way this question was asked, the 2014 figures for underbanked households may not be comparable to results from earlier years. Most notably, relative to the 2013 report, “money order” was added to the list of alternative financial services used by underbanked households, and “payroll card” was removed.

Trends in the Utilization of Mobile Banking and Payments

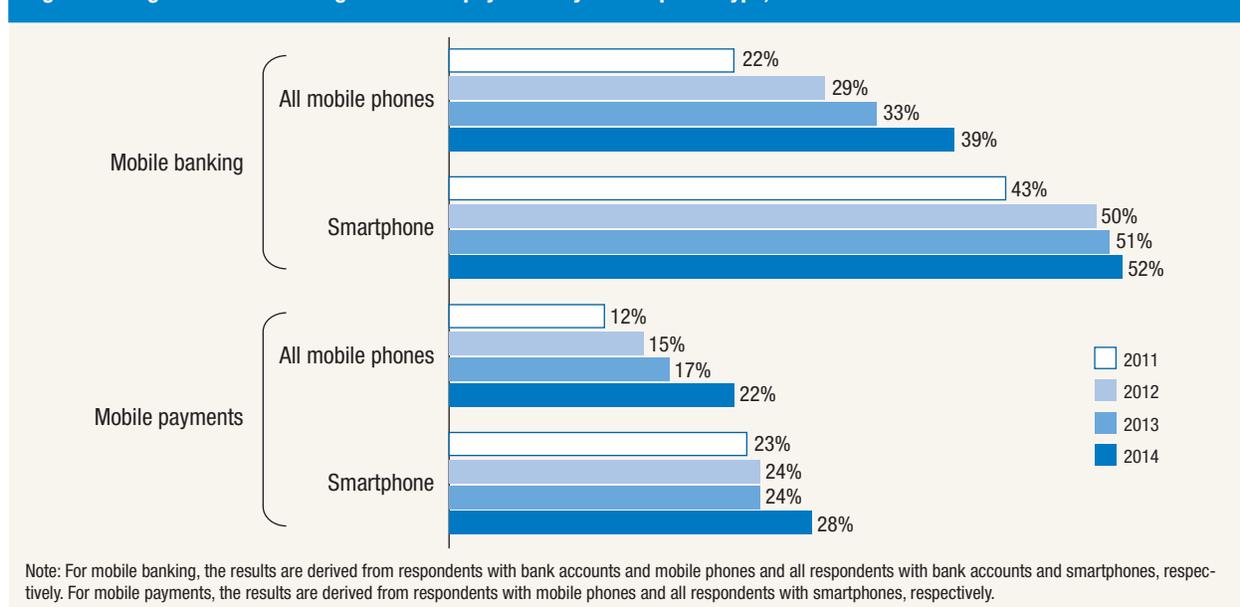
Services that allow consumers to obtain financial account information and conduct transactions with their financial institution (“mobile banking”) and that allow consumers to make payments, transfer money, or pay for goods and services (“mobile payments”) have become increasingly prevalent. Over the past several years, these services have become available at a broader range of institutions and the types of services continue to evolve. With increased dissemination of technology and a broadening array of options, consumer adoption of mobile financial services has risen. In the 2011 survey, for instance, 22 percent of mobile phone users with bank accounts and 43 percent of smartphone users with bank accounts reported that they had used mobile banking in the previous 12 months.⁶ These proportions have increased in each year of the survey. In the 2014 survey, the prevalence of mobile banking continued to increase, reaching 39 percent of mobile phone users with bank accounts and 52 percent of smartphone users with bank accounts (figure 1).

Use of mobile payments has also increased. In 2011, 12 percent of mobile phone users and 23 percent of smartphone users reported using mobile payments. By 2014, usage of mobile payments had increased to 22 percent for mobile phone users and increased to 28 percent for smartphone users. The steady increases in the adoption rate among all mobile phone users, but more gradual rise in the adoption rate among smartphone users, suggest that smartphone adoption substantially contributed to the increased use of mobile payments.

A continuing impediment to adoption of either mobile banking or mobile payments appears to be consumers’ limited demand for them: many consumers said their needs were already being met without mobile banking or payments, that they were comfortable with non-mobile options, and that they did not see a clear benefit from using either service. In addition, around one in five (22 percent) of those with mobile phones and bank accounts indicated they do

⁶ Here, the figures for mobile banking in the 2011 survey are expressed as percentages of mobile phone users with bank accounts. These figures differ slightly from those published in the 2011 report, which were calculated as a percent of all mobile phone users. Similarly, other estimates in the text may differ from the figures presented in appendix 3 or from estimates published in earlier reports because a subsample of the respondents was used for the calculation.

Figure 1. Usage of mobile banking and mobile payments by mobile phone type, 2011–14



not know if their bank or credit union offers mobile banking, which may be consistent with a lack of interest in these services among a portion of the population. That said, the share who do not know if mobile banking is available from their bank decreased from 28 percent in the 2013 survey, and the share that said their bank does not offer the service decreased as well—from 6 percent in 2013 to 4 percent in 2014. These results suggest an increase in availability and consumer awareness of mobile banking services.

Concerns about the security of mobile banking and mobile payment technologies are also frequently

cited as reasons why consumers chose not to adopt these technologies. Consumers appear to be more cognizant of the need to protect the personal information stored on their phones, as they are increasingly using passwords to protect their smartphones. The share of smartphone owners who password protect their phone increased to 69 percent in 2014, from 61 percent in 2013 and 54 percent in 2012.⁷

⁷ At least one major mobile phone operating system has changed its default settings to require users to set a password unless they opt out. This change in default setting could also increase the incidence of password protection.

Box 1. Use of Mobile Financial Services among Rural Respondents

Mobile financial services may offer convenience or access in different ways to different subpopulations. One group that could especially benefit from mobile services is rural residents. Because rural residents may have to travel longer distances to visit financial institutions compared to urban consumers, mobile banking services may be particularly convenient. However, there are also countervailing factors that could make usage less likely. To learn more, the 2014 survey included an oversample of residents in rural areas.

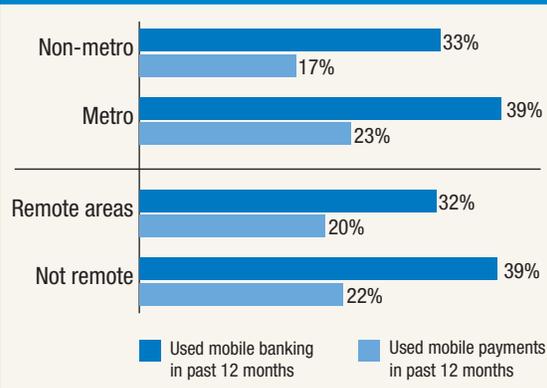
Thirty-three percent of residents in non-metropolitan (non-metro) areas reported using mobile banking services in the prior 12 months, compared with 39 percent of respondents in metropolitan (metro) areas. Similarly, a smaller percentage (17 percent) of non-metro respondents reported using mobile payments in the prior 12 months relative to respondents in metro areas (23 percent).

This commonly used metropolitan/non-metropolitan distinction, however, has some limitations as a way to identify rural areas. In particular, non-metro areas include some places that are connected to urbanized areas and have a diversity of access to financial services. To provide an alternate measure of usage of mobile financial services for rural respondents, the survey results were also analyzed using a more narrow definition, measuring as “remote areas” only the respondents who live in small towns and rural areas with low commuting flows to urban places.¹ Fairly similar patterns persisted using this definition: 32 percent used mobile banking in remote rural areas, compared to 39 percent for everyone else, and 20 percent of those from remote rural areas used mobile payments, compared to 22 percent of the rest of respondents (figure A).

If, by either measure, rural residents appear to use mobile financial services at least somewhat less than those in non-rural areas, why would this be?

¹ This alternate measure uses Rural-Urban Commuting Area (RUCA) codes, developed by the Department of Agriculture. The “Remote areas” correspond to small towns (less than 2,500 people) and rural areas with low urban commuting in RUCA code categories 7.0, 7.2, 8.0, 8.2, 9.0, 10.0, 10.2, and 10.3. (See www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx.) The companion category “Not remote” includes most portions of metropolitan and micropolitan areas, as well as small towns and rural areas that have a substantial secondary commuting flow (30–50 percent) to urban areas. This narrower definition of rural areas is very similar to a definition developed by the WWAMI Rural Health Research Center (<http://depts.washington.edu/uwruca/ruca-maps.php>). See appendix 1 for additional information on the sampling methods used for the primary sample and rural oversample included in this analysis.

Figure A. Mobile banking and mobile payments, by geography



Results from this survey point to some combination of differing technology, access to broadband services, services offered by financial institutions, and consumer awareness of those services.

Non-metro residents are slightly less likely than metro residents—84 versus 88 percent—to own a mobile phone, but considerably less likely to own a smartphone—54 versus 63 percent. They are also less likely to report near-constant access. When asked to characterize their Internet access on a mobile phone through wifi or a wireless network, 57 percent of non-metro respondents described it as “nearly always available,” compared to 64 percent of respondents in metro areas (table A).² This relative lack of smartphone ownership and constant mobile Internet access may make use of certain mobile services less attractive or perhaps not possible.

When it comes to mobile banking, the supply of services also appears to differ. When asked whether mobile banking was offered by their financial institution, 65 percent of respondents in non-metro areas said yes, compared to 75 percent in metro areas (figure B). A higher share (30 percent) of respondents in non-metro areas also reported not knowing if mobile banking was offered by their financial institution, compared to 21 percent in urban areas. Whether this represents a lack of interest by rural consumers or simply a lack of awareness, it would seem that fewer rural residents have access to

(continued on next page)

² Nearly 1.3 million people in rural areas lacked access to mobile broadband in 2012, and rural residents generally face greater challenges with mobile coverage than urban residents. See https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf.

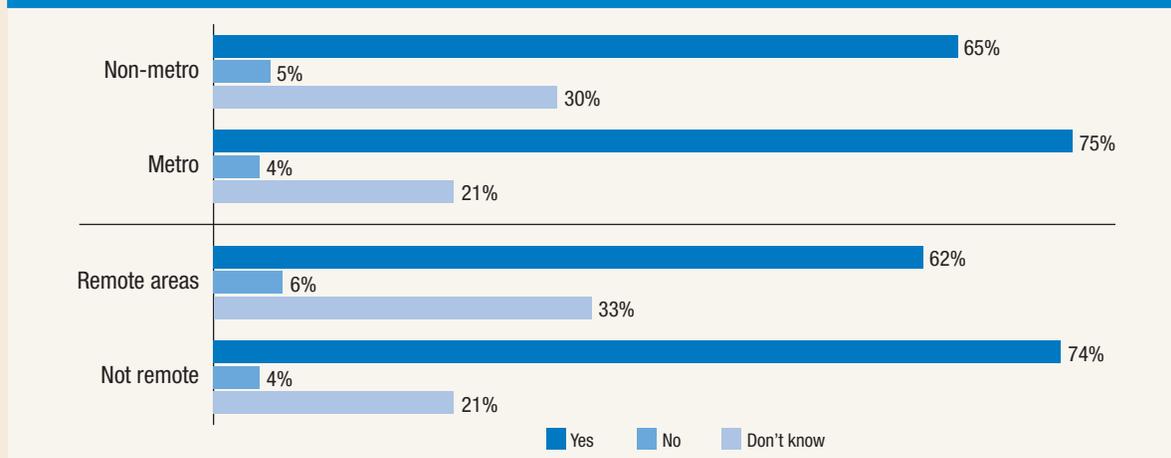
Box 1. Use of Mobile Financial Services among Rural Respondents—continued

Table A. Internet access on mobile phone through wifi or a wireless network (3G, 4G, LTE) is...

	Almost always available	Not always available, but is available at convenient locations	Available only at locations that require extra effort or planning to get to	Not available	I do not need access to the Internet on my mobile phone
Non-metro	57%	12%	2%	10%	20%
Metro	64%	8%	1%	7%	18%
Remote areas	59%	10%	1%	10%	19%
Not remote	63%	9%	1%	8%	18%

Note: Here and elsewhere in this report, totals may not add to 100 percent due to rounding and question non-response.

Figure B. Bank or credit union offers mobile banking, by geography



mobile banking or are aware of available mobile banking services relative to residents of more urban areas.

Demographic differences between residents of metro and non-metro areas also may be a factor in any observed differences in the use of technology or the adoption of mobile financial services across areas.³ In addition, preferences regarding technology use may be correlated with residential location apart from these other demographic factors.

³ For example, estimates from the 2013 American Community Survey show that the median age of the population in non-metro areas is higher than in metro areas. Mobile banking use is lower among older consumers, as noted in this report.

Overall, respondents from non-metro areas are as likely to be “banked” as metro area respondents—86 versus 87 percent, respectively—but somewhat less likely to use either mobile banking services or mobile payments. The lower usages may be associated with lower availability of or consumers’ knowledge about mobile banking services by their financial institution, lower levels of smartphone adoption, and less continuous mobile broadband access. They could also be attributed to other factors, including differences between urban and rural residents in preferences, demographic characteristics, or demand for these services. These results indicate that the promise of mobile technology as a way to bridge some challenges of living in rural areas may have not yet been fully realized.

Accessing Financial Services

Survey respondents were given a set of screening questions that asked if they had access to a bank account, the Internet, and a mobile phone. They were further asked about the various ways in which they access their financial accounts. Of the 87 percent of American consumers who have a checking, savings, or money market account, the majority use some form of technology to interact with their financial institution.

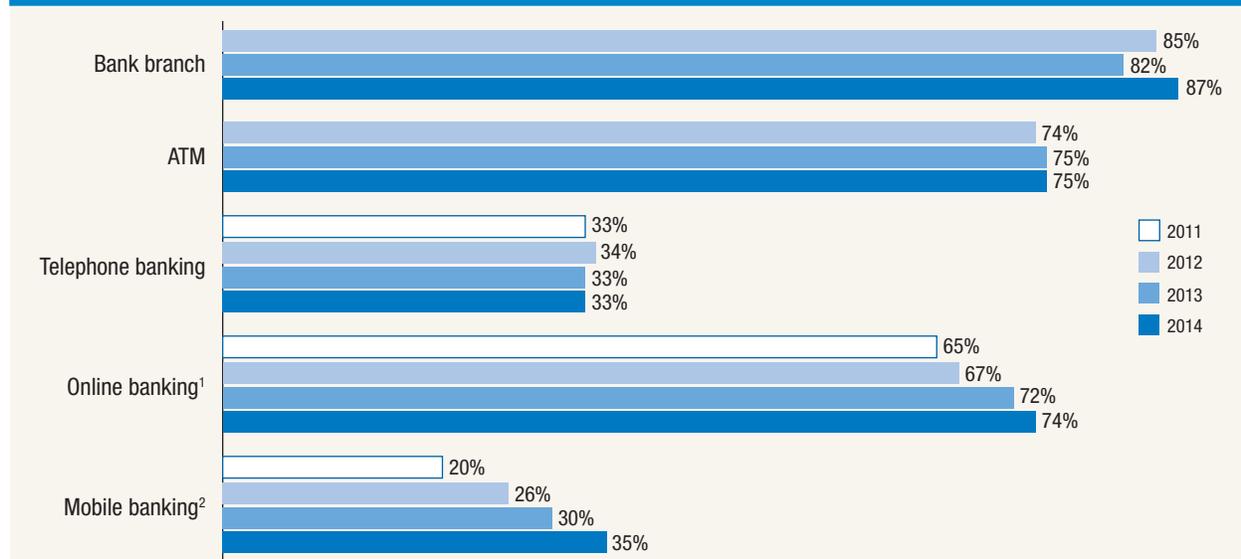
As shown in figure 2, the most common way of interacting with a financial institution remains in-person at a branch, with 87 percent of consumers who have a bank account reporting that they had visited a branch and spoken with a teller in the 12 months prior to the survey. The second-most common means of access in the previous 12 months was

using an automated teller machine (ATM) at 75 percent, followed by online banking at 74 percent.⁸ One-third of all consumers with bank accounts used telephone banking, while 35 percent used mobile banking, up from 30 percent the previous year.⁹ (For

⁸ The definition of online banking changed slightly between the 2012 and 2013 surveys. For the 2011 and 2012 surveys the definition was “Online banking involves checking your account balance and recent transactions, transferring money, paying bills, or conducting other related transactions with your bank or credit card company using the Internet.” For the 2013 and 2014 surveys, the definition was “Online banking involves checking your account balance and recent transactions, transferring money, paying bills, or conducting other related transactions with your bank or credit union using the Internet.”

⁹ The relative prevalence of channel usage in the Board’s Mobile Survey is similar to results from the 2013 FDIC Survey of Unbanked and Underbanked Households. Of the households with bank accounts that reported accessing their accounts in the

Figure 2. Usage of different means of accessing banking services, 2011–14



Note: Percentages are of all respondents with a checking, savings, or money market account for each banking channel, regardless of mobile phone ownership or access to the Internet. Questions about usage of bank branches and ATMs were not included on the 2011 survey.

1. For online banking, respondents who reported that they did not have regular access to the Internet other than that provided by GfK were not asked the online banking question in the 2011–2013 surveys. In the 2014 survey, all respondents with bank accounts were asked the question about online banking, which raised the measure for 2014 to 74 percent—2 percentage points higher than if these respondents had been excluded as in prior years.

2. For mobile banking, the percentages here may differ from the incidence rates elsewhere in this report because the latter are computed for those with mobile phones and bank accounts.

additional information on the use of various banking channels by mobile banking users, see [box 2](#).)

Mobile Banking

The Federal Reserve survey defines mobile banking as “using a mobile phone to access your bank or credit union account. This can be done either by accessing your bank or credit union’s web page through the web browser on your mobile phone, via text messaging, or by using an app downloaded to your mobile phone.”¹⁰

Adoption Rates

The adoption of mobile banking has continued to increase in the past year. When asked about usage in the previous 12 months, 39 percent of mobile phone users with a bank account reported that they used mobile banking, a proportion that has been steadily climbing ([figure 1](#)). Mobile banking among smartphone users with a bank account is substantially higher at 52 percent, up modestly from earlier surveys. The higher incidence of mobile banking adoption among smartphone users suggests that as smartphone adoption continues to increase, mobile banking usage may also increase.

A significant fraction of mobile banking users have only recently adopted the technology. Although the majority of mobile banking users reported that they started using it more than one year ago, 15 percent reported that they adopted mobile banking in the last six months, and 12 percent reported that they adopted mobile banking between six and twelve months ago. Among those consumers with mobile phones who do not currently use mobile banking,

previous 12 months, 79 percent used a bank teller; 70 percent used an ATM/kiosk; 55 percent used online banking; 26 percent used telephone banking; and 23 percent used mobile banking. Comparing these FDIC figures to the results from the 2013 Mobile Survey, the relative ranking of the channels is the same across the two surveys, but the incidence of use is higher in the Mobile Survey for all channels. The incidence of online banking and of households with Internet access are notably higher in the 2013 Mobile Survey than in the FDIC survey. This may be due to differences in the survey methodology. The FDIC survey is conducted by phone and in person. The Mobile Survey is conducted via an online panel.

¹⁰ The definition of mobile banking in the 2011 and 2012 surveys differed slightly from the definition above. In the earlier surveys, mobile banking was defined as using “a mobile phone to access your bank account, credit card account, or other financial account. This can be done either by accessing your bank’s web page through the web browser on your mobile phone, via text messaging, or by using an application downloaded to your mobile phone.”

11 percent reported that they will “probably” or “definitely” use mobile banking in the following 12 months.

Although previous surveys suggest that the reported adoption intentions of the respondents do not perfectly reflect subsequent behavior, there is an association between the planned use of mobile banking and subsequent adoption. Using the panel of respondents to both the 2013 and 2014 Board surveys, it is possible to compare the reported mobile banking adoption intention over the next 12 months from the 2013 survey to the reported use of mobile banking in the 2014 survey. Of those consumers who reported in 2013 that they would “definitely” or “probably” adopt mobile banking in the following 12 months, only 28 percent had, in fact, adopted mobile banking one year later. Nonetheless, this is a higher proportion than those who said they did not expect their activity to change. Among those who indicated that they “probably will not” and “definitely will not” adopt mobile banking, 15 percent and 2 percent, respectively, had adopted mobile banking in 2014.

In total, 11 percent of those who reported that they were not mobile banking users in 2013 reported being mobile banking users in 2014.¹¹ However, 14 percent of those who were mobile banking users in 2013 reported that they had not used mobile banking in 2014.¹² Among panel respondents overall, mobile banking usage increased from 33 percent of mobile phone users with bank accounts in 2013 to 35 percent in 2014.

For the group of respondents in the 2013 survey who believed they “definitely” or “probably” would use mobile banking in the coming year, the most notable difference between those who actually did adopt mobile banking by the 2014 survey and those who did not was that the adopters were more likely to own a smartphone. Of this likely-to-adopt group, 42 percent with smartphones in 2014 used mobile banking, while 3 percent with feature phones used mobile banking. In both the panel and cross-sectional data, smartphone users were more likely to engage in mobile banking than non-smartphone users.

In every year of the survey, older consumers have consistently been less likely to use mobile banking

¹¹ This group represents 6 percent of panel respondents who were mobile phone users in both years.

¹² This group represents 4 percent of panel respondents who were mobile phone users in both years.

Box 2. Channel Use among Mobile Banking Users

Mobile banking can provide convenient access to some banking services. However, consumers may still need or want to use other banking channels. For example, a visit to an automated teller machine (ATM) or branch may be necessary to withdraw cash, and visiting a branch or talking with a customer service representative may be preferred ways of resolving a problem. Respondents to the survey were asked about their use of five banking channels (branch, ATM, telephone, online banking, and mobile banking), and the answers provide a fuller picture of how mobile banking users interact with their bank or credit union.

Users of mobile banking services generally access them frequently, but not to the exclusion of other kinds of bank services. In general, mobile banking users reported using multiple channels to conduct banking business: 82 percent reported using four or five of these channels; only 2 percent used one or two channels. In the prior 12 months, 95 percent of mobile banking users also used online banking, 92 percent used an ATM, 85 percent visited a branch and spoke with a teller, and 36 percent used telephone banking (table A).

Most mobile banking users (90 percent) reported accessing mobile banking in the preceding month, and the median number of uses for those who used it in that month was five. Similarly, among mobile banking users who accessed online banking, 97 percent used online banking in the prior month,

and the median number of uses of online banking was six. The FDIC has noted that many banks have required their customers to be enrolled in online banking before they can enroll in mobile banking, and some mobile banking features, such as setting up payees for bill payment and enrolling in alerts, may require an online setup.¹ These types of bank policies would contribute to the high level of online banking use we observed among mobile banking users. For mobile banking users who accessed ATMs and bank branches, the likelihood of having used those channels in the past month was lower (85 and 72 percent, respectively), and the median number of uses was lower as well (three for ATM and two for branch). These responses suggest that many mobile banking users use online and mobile banking quite consistently for their banking needs, and access other bank channels on a periodic basis.

In a separate question, respondents were asked to rank the three main ways they interact with their bank or credit union. Twenty-one percent of mobile banking users ranked the mobile channel first—a lower share than those who chose online banking (35 percent) or ATM (30 percent), but a higher share than for the branch (13 percent) or telephone banking (1 percent).² Tallying the share of mobile banking users who ranked each of the channels in their top three, the ATM channel had the largest share (80 percent), followed by online banking (73 percent), mobile banking (60 percent), branch (56 percent), and telephone banking (17 percent).

Taken together, these estimates indicate that while mobile banking users are utilizing technological platforms at a high rate and on a consistent basis, they have also maintained connections to their banks through the more traditional branch and ATM channels.

Table A. Channel access among mobile banking users
Percent, except as noted

	MB users who used channel in the past 12 months	MB users who used channel in the past month ¹	Median frequency of channel use past month ²
Mobile banking	100	90	5
Online banking	95	97	6
ATM	92	85	3
Branch/teller	85	72	2
Telephone banking	36	68	2

¹ Of those who used channel in the past 12 months.

² Of those who used channel in the past month.

¹ For the full FDIC white paper “Assessing the Economic Inclusion Potential of Mobile Financial Services,” see www.fdic.gov/consumers/community/mobile/Mobile-Financial-Services.pdf.

² The 2013 FDIC National Survey of Unbanked and Underbanked Households reported the primary banking method for households who used mobile banking and accessed their account in the last 12 months as follows: online banking (50 percent), mobile banking (25 percent), ATM/Kiosk (15 percent), bank teller (7 percent), and telephone banking (2 percent). For the full report on the survey, see www.economicinclusion.gov/surveys/2013household/documents/2013_FDIC_Unbanked_HH_Survey_Report.pdf.

than have younger consumers (table 3). For those with a mobile phone and a bank account, results from the 2014 survey indicate that mobile banking use is 60 percent for those in the 18-to-29 age range and 54 percent for those in the 30-to-44 age group. By comparison, only 13 percent of individuals ages

60 or older reported having used mobile banking. Usage has generally increased from year to year for all age groups.

Consistent with the data from previous surveys, minorities continue to be more likely to use mobile

Table 3. Use of mobile banking in past 12 months by age
Percent, except as noted

Age group	2011	2012	2013	2014
18–29	45	54	63	60
30–44	29	37	43	54
45–59	12	21	25	32
60+	5	10	9	13
Total	22	29	33	39
Number of respondents	1,859	2,180	2,187	2,437

Note: Percentages are of those in each group who have a mobile phone and a bank account.

banking than non-Hispanic whites. In particular, Hispanic mobile phone users with bank accounts show a higher rate of use of mobile banking (53 percent) relative to mobile phone users with bank accounts overall (39 percent) (table 4).

Among those with a mobile phone and bank account, mobile banking use is more common for those with higher levels of education. Usage for those with a college degree or some college (44 percent) is greater than for those with a high school degree or less (29 percent). In addition, mobile banking usage for those mobile phone users with bank accounts with household incomes of \$40,000 and above (41 percent) is greater than for those with incomes below \$40,000 (34 percent).

Common Mobile Banking Activities

Among those who reported using mobile banking in 2014, the most common mobile banking activity was checking financial account balances or transaction inquiries, with 94 percent of mobile banking users hav-

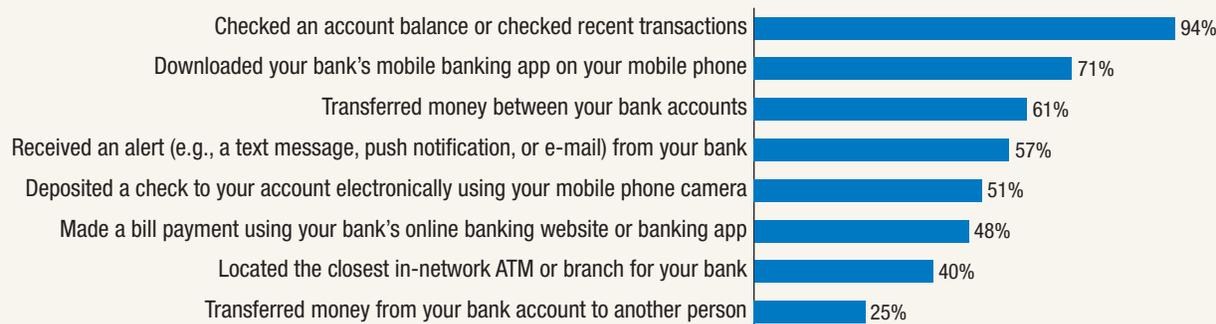
Table 4. Use of mobile banking in the past 12 months by race/ethnicity
Percent, except as noted

Race/ethnicity	2011	2012	2013	2014
White, non-Hispanic	19	26	30	34
Black, non-Hispanic	35	39	42	43
Other, non-Hispanic	23	31	35	48
Hispanic	29	36	45	53
2+ races, non-Hispanic	21	36	31	41
Total	22	29	33	39
Number of respondents	1,859	2,180	2,187	2,437

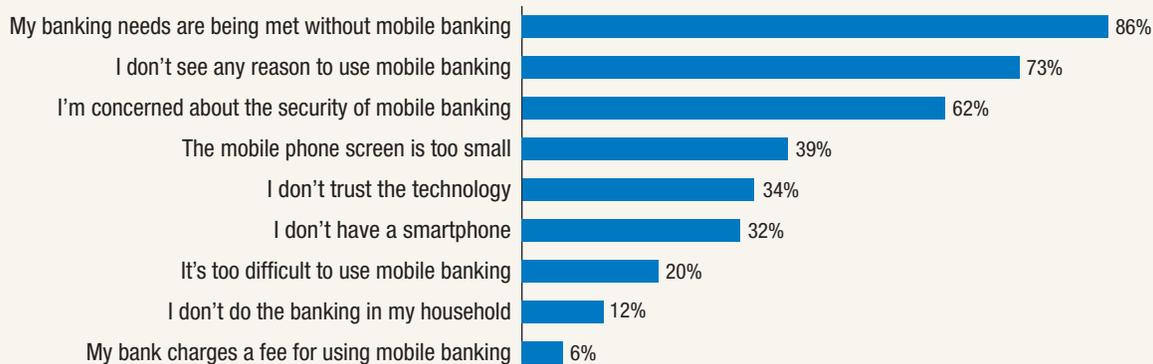
Note: Percentages are of those in each group who have a mobile phone and a bank account.

ing performed this function in the 12 months prior to the survey (figure 3). This was followed by transferring money between accounts, performed by 61 percent of users. In addition, 57 percent of mobile banking users received an alert from their financial institution through a text message, push notification, or e-mail. Depositing a check to an account electronically using a mobile phone camera (known as remote deposit capture) and making an online bill payment from a bank account using a mobile phone were the next most common activities (done by 51 percent and 48 percent of mobile banking users, respectively). Mobile banking users appear to be using mobile applications to conduct their banking transactions, as 71 percent of mobile banking users have installed their bank's application on their phones.

Among all mobile banking users, the frequency of mobile banking use has increased slightly over the past year. The median reported usage increased from four times per month in 2013 to five times per month

Figure 3. Using your mobile phone, have you done each of these in the past 12 months? (Among mobile banking users)

Note: The number of respondents who were mobile banking users was 829.

Figure 4. Please tell us if each of the reasons below are why you do not use mobile banking

Note: The number of respondents was 945.

in 2014. Median usage for those with bank accounts who reported using mobile banking in 2011 and 2012 was also five times per month.

Among mobile bankers, there is variation in how frequently people use mobile banking services, and what types of activities they engage in. A relatively small share of mobile bankers (6 percent) indicated that they had used mobile banking in the previous year but had not used mobile banking in the previous month. These low-intensity users have a lower likelihood of engaging in all types of mobile banking activities, relative to mobile banking users overall. Like all mobile banking users, the most common task for low-intensity users is checking account balances or recent transactions (84 percent). Forty-three percent of the low-intensity users have downloaded their bank's mobile banking app—a sizeable share, but lower than the 71 percent of all mobile banking users who have done so. A greater proportion of low-intensity mobile banking users are non-Hispanic white (78 percent) compared to all mobile banking users (62 percent). Further, a greater proportion of low-intensity mobile banking users are ages 45 or older (49 percent), relative to all mobile banking users (31 percent).

In contrast, high-intensity users—defined here as mobile banking users who have conducted mobile banking tasks more than 10 times during the month prior to the 2014 survey—tend to conduct all mobile banking tasks at the same or higher rates than the larger group.¹³ In particular, high-intensity users

reported making bill payments using their bank's online banking website or banking app and transferring money between their own accounts at higher rates than all mobile banking users. Overall, high-intensity users are demographically similar to the larger group of mobile banking users but include slightly greater shares of younger and black or Hispanic mobile banking users.

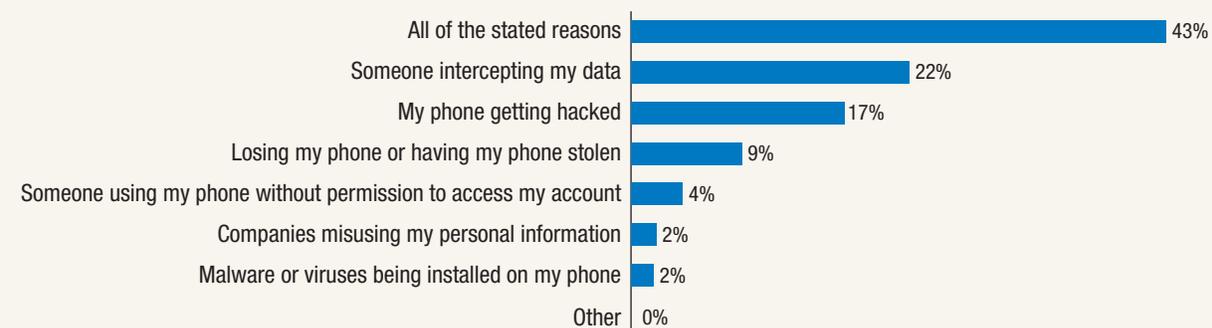
Reasons for Using—or Not Using—Mobile Banking

Convenience continues to be the most common reason consumers give for adopting mobile banking. Indeed, 35 percent of consumers indicated that the convenience was the main reason they started using mobile banking. Thirty-three percent of consumers said getting a smartphone was the main reason for using mobile banking. A further 20 percent of consumers indicated that the timing of their adoption of mobile banking was driven by their bank starting to offer the service.

Among those consumers with mobile phones and bank accounts who do not currently use mobile banking, several reasons for not using the service predominated—namely, they believed that their banking needs were being met without mobile banking (86 percent), they did not see any reason to use mobile banking (73 percent), and they were concerned about security (62 percent) (figure 4). The small size of the mobile phone screen was cited by 39 percent of consumers as the reason they do not

¹³ For the purposes of this report, “high-intensity” users are identified as those respondents who have used mobile banking within the year prior to the 2014 survey and have used mobile banking more frequently than 75 percent of all mobile banking

users, which corresponds to a frequency greater than 10 times in the month prior to the 2014 survey. Based on this definition, high-intensity users represent 22 percent of mobile banking users in the 2014 survey.

Figure 5. Which one of the following security aspects are you most concerned with?

Note: The number of respondents was 600.

use mobile banking. This was followed by a lack of trust in the technology (34 percent) and not having a smartphone (32 percent) as reasons for not using mobile banking. Less commonly cited reasons included the difficulty associated with using mobile banking (20 percent) and not doing the banking in the household (12 percent). The incidence of reasons for not using mobile banking was generally consistent between the 2013 and 2014 surveys. However, in the 2014 survey, concerns about the security of mobile banking decreased from 69 percent in 2013. Also, fewer respondents reported that the small size of the mobile phone screen (44 percent in 2013) and not having a smartphone (44 percent in 2013) were reasons why they had not used mobile banking.

Consumers who expressed concerns about the security of mobile banking were asked to specify what aspect was of greatest concern (figure 5). Some reported fears of data interception (22 percent), phone “hacking” (17 percent), and lost or stolen phones (9 percent). While additional specific concerns were noted by small numbers of respondents, the most common response was that they were concerned with all of those security risks occurring (43 percent).

When consumers who do not use mobile banking were asked what mobile banking activities they would be interested in performing if their concerns were addressed, their responses largely mirrored those of current users. Checking financial account balances or recent transactions was the most commonly cited (32 percent), followed by downloading their bank’s mobile banking app (21 percent), transferring money between accounts (20 percent), receiv-

ing alerts from their bank (19 percent), locating the closest in-network ATM or branch (18 percent), depositing checks electronically (17 percent), and making bill payments (15 percent). However, 59 percent of those who do not use mobile banking indicated that they had no interest in performing any mobile banking activities even if their concerns were addressed.

Mobile Payments

For purposes of this survey, mobile payments are defined as “purchases, bill payments, charitable donations, payments to another person, or any other payments made using a mobile phone. You can do this either by accessing a web page through the web browser on your mobile device, by sending a text message (SMS), or by using a downloadable app on your mobile device. The amount of the payment may be applied to your phone bill (for example, Red Cross text message donation), charged to your credit card, deducted from a prepaid card, or withdrawn directly from your bank account.”

Adoption Rates

Mobile payments continue to be less common than mobile banking. Based on the responses to the broad definition of mobile payments listed above, 22 percent of those with access to a mobile phone reported that they made a mobile payment in the 12 months prior to the survey, up from 17 percent in 2013, 15 percent in 2012, and 12 percent in 2011. Rates of mobile payment usage are somewhat higher among smartphone users. The share of smartphone users

Table 5. Use of mobile payments in the past 12 months by age

Percent, except as noted

Age group	2011	2012	2013	2014
18–29	20	26	28	34
30–44	16	18	21	31
45–59	8	9	13	16
60+	5	8	7	7
Total	12	15	17	22
Number of respondents	2,002	2,291	2,341	2,603

Note: Percentages are of those in each group who have a mobile phone.

who reported having made a mobile payment in the previous 12 months increased to 28 percent, up from 24 percent in 2013 and 2012, and 23 percent in 2011.

Of current mobile payment users, 16 percent had started using mobile payments in the prior six months, while 13 percent began using mobile payments six to twelve months prior to the survey. A further 21 percent reported that they started using mobile payments in the prior one to two years, and 26 percent reported that they began using mobile payments more than two years prior to the survey. Twenty-two percent of users are unable to recall when they began using mobile payments.

Younger consumers are more likely to make mobile payments (table 5). Of those with a mobile phone in 2014, 34 percent of individuals ages 18 to 29 and 31 percent of individuals ages 30 to 44 had made mobile payments. By comparison, only 7 percent of those ages 60 or over reported making mobile payments. This pattern of use by age has been evident across all four years of the survey.

Among those owning a mobile phone, minorities are more likely to make mobile payments (table 6). In 2014, 34 percent of non-Hispanic blacks with mobile phones and 32 percent of Hispanics with mobile phones had made mobile payments, while only 17 percent of non-Hispanic whites reported making mobile payments. The pattern of minorities making mobile payments at a higher rate than white, non-Hispanic consumers has persisted over time.

There is no clear relationship between mobile payment usage and income or education level among those who own a mobile phone.

Table 6. Use of mobile payments in the past 12 months by race/ethnicity

Percent, except as noted

Race/ethnicity	2011	2012	2013	2014
White, non-Hispanic	10	13	12	17
Black, non-Hispanic	14	18	34	34
Other, non-Hispanic	15	17	16	24
Hispanic	20	18	26	32
2+ races, non-Hispanic	9	13	31	23
Total	12	15	17	22
Number of respondents	2,002	2,291	2,341	2,603

Note: Percentages are of those in each group who have a mobile phone.

Common Mobile Payment Activities

Focusing only on those smartphone owners who reported that they had made a mobile payment in the prior 12 months, the most common mobile payment activity was paying bills (68 percent), followed by making online or in-app purchases (54 percent). The next most common activities reported by mobile payment users were paying for a product or service at a store (39 percent) and transferring money directly to another person in the United States (36 percent). Receiving money from another person using a mobile phone (31 percent) and using an app to receive loyalty or reward points (30 percent) were also relatively common activities for mobile payment users with smartphones. Less common activities were paying for parking, a taxi, or public transit using a mobile phone (16 percent), making a payment by text message (11 percent), and sending a remittance overseas (9 percent). (See box 3 for a research note on measuring the use of mobile payments and mobile banking.)

Although using a mobile phone to pay for a retail purchase at the point-of-sale (POS) is less common than paying bills or making an online or in-app purchase, it is becoming less rare of an occurrence. Developments in technology, the entrance of new market participants, and increased familiarity with mobile payments may be contributing to this trend. As noted above, in 2014, 39 percent of all mobile payments users with smartphones made POS purchases with their mobile phone in the 12 months prior to the survey—a figure in line with the 39 percent who reported such payments in 2013. However, among those POS users, less than half (41 percent) had made a POS payment in the preceding month,

Box 3. Research Note: Measuring the Use of Mobile Payments and Mobile Banking

Over the four years that the Federal Reserve has been conducting this survey, respondents have consistently been asked to gauge whether they had used mobile banking or mobile payments in the preceding 12 months based on general descriptions of these mobile financial services. Responses to those questions provide a baseline for how usage has changed over the course of the survey. However, the number of respondents reporting that they use mobile banking and mobile payments based on the general descriptions is lower than the number reporting that they engage in specific banking or payment activities. This indicates that actual usage may be somewhat higher than the general questions would indicate, and may indicate that more specific questions may prompt respondents to remember details about their usage in a different way. These results also illustrate the challenges for both researchers and respondents in how to categorize mobile banking and payment activities as technologies continue to emerge and evolve and as consumers move from exploration to adoption of new ways of using their smartphones.

For example, mobile payment users were identified by a general question about whether they have engaged in any mobile payments activities over the past 12 months.¹ In addition, mobile phone users were asked whether they had used their phone for particular mobile payments tasks. Some respondents who answered “no” to the mobile payments question indicated they have done one or more of these mobile payments tasks, implying the share of people making mobile payments may be higher than the measure of mobile payments users based on the general definition. In the 2014 survey, 28 percent of smartphone owners were identified as

¹ For the explanation of mobile payments provided to respondents, see page 14.

mobile payments users based on their response to the general question. By comparison, 47 percent of smartphone owners reported completing at least one mobile payments task, regardless of their answer to the general question about mobile payments.²

Figure A shows the share of respondents with a smartphone who reported completing mobile payments tasks, grouped by whether they indicated they used mobile payments. The lighter bars represent respondents who said they had used a particular form of mobile payment but had answered “no” to the more general question about whether they had used any form of mobile payment.

A similar pattern is evident with the questions on mobile banking. Thirty-nine percent of those with mobile phones and bank accounts reported using mobile banking in the prior 12 months based on the general question. By comparison, 50 percent of respondents with mobile phones and bank accounts reported completing one or more specific mobile banking tasks, regardless of their answer to the general question about mobile banking.

These results illustrate that technology adoption can be viewed as a continuum, both in terms of the types and frequency of activities involved and in terms of how respondents view and report their activities. The majority of respondents were consistent in providing responses indicating they were either users or non-users of these services in their answers to both the general questions and the

(continued on next page)

² For all those with mobile phones, including both feature phones and smartphones, 22 percent reported making mobile payments based on the general definition and 36 percent reported completing at least one mobile payments task, regardless of their answer to the general question about mobile payments.

and less than a quarter had made more than two such payments.

Scanning a QR code displayed on a mobile phone is the most common method that consumers use to make mobile payments at the point of sale, used by 31 percent of those mobile payment users with smartphones who had made mobile POS payments.¹⁴ While this remains the most common POS mobile

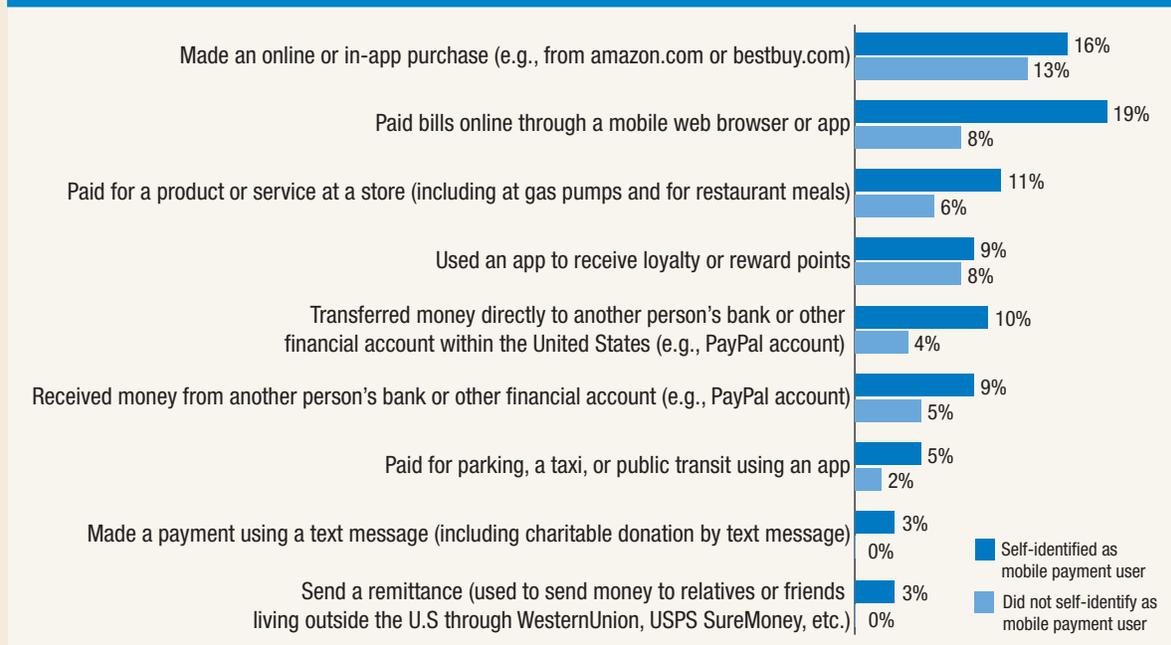
¹⁴ A Quick Response (QR) code is a type of barcode that quickly transfers information to a device when scanned. Some mobile payment applications use QR codes displayed on the user’s smartphone screen to communicate the payment credentials to merchants when scanned at the POS.

payment, it is a decrease from 39 percent a year ago. The next most common POS methods were making a payment using a mobile app that does not require scanning a barcode or tapping their device (22 percent), and making a payment by waving or tapping

Respondents who answered that, using their mobile phone, they had “Paid for a product or service at a store (including at gas pumps and for restaurant meals)” were asked a follow up question (question 39) asking about ways of paying in a store. The follow up question listed four ways of paying with a phone, including “Other (Please Specify).” However, 58 percent of those who were asked this follow up question refused the question or did not select any of these four options.

Box 3. Research Note: Measuring the Use of Mobile Payments and Mobile Banking—continued

Figure A. Mobile payment tasks for smartphone users, by mobile payment self-identification



specific task questions, although there was less consistency in the responses for mobile payments use than for mobile banking use.³ Those respondents

³ Overall, 73 percent of smartphone owners provided consistent responses on the mobile payments questions: 25 percent self-identified as mobile payments users in response to the general question and also reported at least one mobile payments task, while 49 percent self-identified as not using mobile payments based on the general question and reported no mobile payments tasks. Overall, 86 percent of those with mobile phones and bank accounts provided consistent responses to the mobile banking questions: 38 percent self-identified as mobile banking users in response to the general question and reported at least one mobile banking task, while 48 percent self-identified as not using

who provided seemingly anomalous answers did report less frequent use of the specific services cited than respondents who said “yes” to the general question as well as the more specific ones. For this reason, it is possible that some consumers are “dabblers” in mobile services but do not consider themselves more general users of the technology. It is also possible that different questions simply prompted different responses or that some respondents misremembered and answered incorrectly.

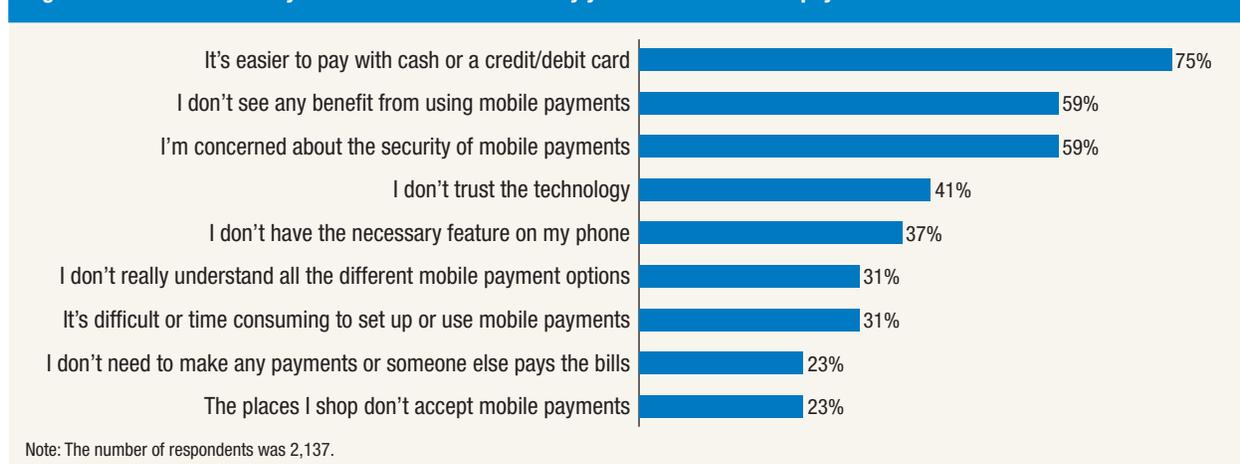
mobile banking based on the general question and reported no mobile banking tasks.

their mobile phone at the POS terminal (14 percent).¹⁵

¹⁵ The most commonly reported mobile payments services used in the last year were PayPal (43 percent), Starbucks (11 percent), Google Wallet (9 percent), and Apple Pay (5 percent). Forty-three percent of those who were asked the question about mobile payment services (question 42) refused to provide an answer. This question was asked of all those with smartphones who had made a mobile payment in the last year. Because the answer choices did not include options such as “Other” or “Do

Mobile payments are most commonly funded using debit cards (55 percent), credit cards (51 percent), directly from a bank account (41 percent), or from an account at a non-financial institution such as PayPal (15 percent). Only 8 percent of mobile payment users reported that they used a prepaid debit card, and 4 percent had the charge directly applied to their

not know,” refusing to answer would have been a likely response for those who have not used these services.

Figure 6. Please tell us if any of the reasons below are why you do not use mobile payments

phone bill. The type of payment used to fund the mobile purchase has implications for the consumer protections that the payer is afforded on the transaction, as different payment sources are covered by different consumer regulations and regulatory agencies.¹⁶

Among all mobile payments users, the median reported frequency of using mobile payments was two times in the month prior to the survey. As with mobile banking, there is variation among mobile payments users in how frequently they use the service and in types of activities. Twenty-seven percent of mobile payments users reported they had used mobile payments in the past 12 months but not in the month prior to the survey. Like the overall group of mobile payments users, the most common mobile payment activity reported by these low-intensity users was paying bills (31 percent).

Eighteen percent of mobile payments users reported that they had used mobile payments more than five times in the month prior to the survey. Compared to all mobile payment users, these high-intensity mobile payment users had higher rates of engaging in all mobile payments activities and tended to engage in a few mobile payment activities at much higher rates.¹⁷ High-intensity users more frequently made an online

or in-app purchase, paid their bills online through a mobile web browser or app, paid for a product or service at a store, and transferred money directly to another person's bank or other financial account.

Reasons for Using—or Not Using—Mobile Payments

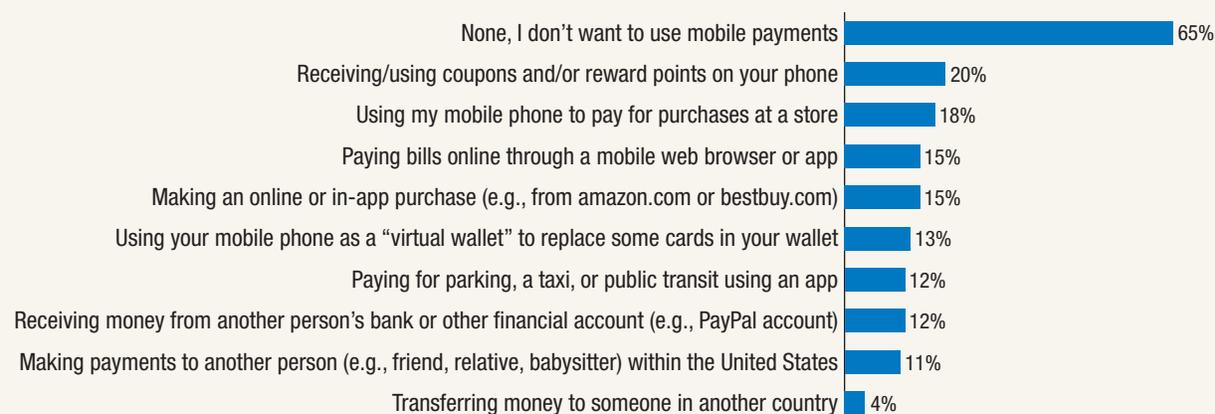
Getting a smartphone is the most common reason given by consumers who have newly adopted mobile payment activity (34 percent). Convenience is the second-most common reason people started using mobile payments (29 percent). The ability to make mobile payments becoming available to them was cited by 16 percent of users, while 9 percent indicated that they began using mobile payments because they became comfortable with the security.

Among those who do not use mobile payments, the main reason they have not adopted the technology is that they prefer to use other means of making payments: 75 percent reported that it is easier to pay with other methods. Fifty-nine percent did not see a benefit from using mobile payments; the same proportion cited security concerns (figure 6). The incidence of reasons for not using mobile payments was generally consistent between the 2013 and 2014 surveys. However, in the 2014 survey, concerns about the security of mobile payments decreased from 63 percent in 2013. Also, fewer respondents reported that not having the necessary features on their phone (46 percent in 2013), not understanding mobile payment options (37 percent in 2013), and the places they shopped not accepting mobile payments (27 per-

¹⁶ For further details on how existing consumer regulations relate to the various methods for making mobile payments, see Stephanie Martin (2012), "Statement before the Committee on Financial Services Subcommittee on Financial Institutions and Consumer Credit U.S. House of Representatives" (Washington: Federal Reserve Board, June), www.federalreserve.gov/newsevents/testimony/martin20120629a.pdf.

¹⁷ For the purposes of this report, "high-intensity" mobile payments users are identified as those respondents who have used mobile payments within the year prior to the 2014 survey and have used mobile payments more frequently than 75 percent of

all mobile payments users, which corresponds to a frequency greater than five times in the month prior to the 2014 survey.

Figure 7. Activities you would be interested in doing if concerns about mobile payments were addressed

Note: The number of respondents was 2,137.

cent in 2013) were reasons why they had not used mobile payments.

For those worried about the security of mobile payments, the concerns roughly mirror those about mobile banking. The main fears associated with mobile payments include the interception of payment information (21 percent), phone "hacking" (13 percent), lost or stolen phones (10 percent), misuse of personal information (3 percent), and malware or viruses installed on their phone (2 percent). As with mobile banking, the most common response was that respondents were concerned with all of those security risks (51 percent).

When consumers who do not use mobile payments were asked to indicate all the mobile payment activities they would have an interest in using if their concerns were addressed, 65 percent indicated that they simply had no interest in using mobile payments even if their concerns were addressed. This is similar to the responses regarding mobile banking, indicating that some consumers simply have no interest in utilizing the new technology under any circumstances. Of the potential activities of interest to others, receiving/using coupons on their phone was the most commonly cited (20 percent), followed by using a mobile phone to pay for purchases at a store (18 percent) (figure 7).

When those with a smartphone who did not report making POS payments were asked if they plan to use their mobile phone to make a payment in a store in the next 12 months, 5 percent said they "definitely will" and 16 percent said they "probably will." The majority of smartphone users said that they "prob-

ably will not" (44 percent) or "definitely will not" (35 percent) use their phone to make an in-store payment.

Mobile Security

One of the main reservations consumers have with adopting mobile banking and mobile payments is concern about the security of the technology. Despite the increased prevalence of mobile banking and mobile payments, a significant share of consumers believe the technology to be unsafe or do not know how safe it is (see box 4 for a discussion of industry developments in securing mobile payments). Among all mobile phone users, 25 percent believed that people's personal information is "somewhat unsafe" when using mobile banking and 19 percent believed that it is "very unsafe." A further 15 percent of mobile phone users simply did not know how safe it is to use mobile banking. Only 7 percent said it is "very safe" to use mobile banking (table 7).

When mobile phone users were asked how safe they believe people's personal financial information is when they use a mobile phone to pay for a purchase at a store, 28 percent said it was "somewhat unsafe" and 21 percent said it was "very unsafe." As with mobile banking, there exists significant uncertainty about the security of POS mobile payments, with 15 percent saying they "don't know" whether people's personal financial information is safe when making such a payment. The share of consumers who said that POS mobile payments were "very safe" was only 5 percent, while 30 percent said that it was "somewhat safe" (table 8).

Box 4. Industry Developments in Securing Mobile Payments

Interest and adoption of mobile payment services may be poised for growth as a number of developments in technology and security take hold in the mobile financial marketplace. In this and preceding surveys, concerns about the security of mobile payment technologies are frequently cited by non-users as reasons for not using mobile payments. Consumers have also cited, to a lesser extent, the lack of necessary features on their phone and the lack of acceptance of mobile payments at places where they shop as reasons for not using mobile payments.¹ Recent efforts to enhance the security of mobile payment transactions and to apply emerging technologies to a payments context could shape consumers' attitudes about and use of mobile payments in the coming years.

This survey's results confirm that security concerns are on the minds of many consumers. The payments industry is taking steps to enhance transaction security at various points in the process, including by working toward conversion to EMV (named after its founders Europay, MasterCard, and Visa), a standard payment specification for authorizing credit and debit chip-card transactions. (This technology is also referred to as "chip and pin" or "chip and signature.") In order to accept in-person EMV transactions, merchants install EMV-compliant checkout terminals in their stores, and card issuers provide consumers with new cards containing microchips that meet the EMV standard. To encourage merchants and card issuers to adopt this technology, the card networks have set a deadline of October 2015, after

¹ In the 2014 survey, 37 percent of non-mobile payments users cited the lack of necessary features on their phone and 23 percent cited the lack of acceptance of mobile payments at places where they shop as reasons for not using mobile payments.

which they intend to shift liability for fraudulent transactions to the party that is not EMV-compliant. While not a mobile-specific development, EMV conversion ought to decrease the forms of certain types of payment fraud, and could influence consumer preferences over time.

Increasingly, smartphone manufacturers are also equipping devices with hardware and software to provide more payment options—such as Near Field Communications (NFC) antennas to interact with in-store check-out NFC-enabled terminals—and security features—such as fingerprint authentication technology. Many new EMV terminals are likely to also support NFC technology. Security-minded consumers may have more confidence making a mobile payment from a device that uses multiple layers of security, complies with EMV standards, and/or offers new or additional features. While these efforts are largely undertaken by the private sector, an October 2014 Executive Order establishing EMV as the standard for federal government payments may reinforce private actions.²

The changes in the marketplace may ultimately better protect customers' data by reducing the amount of data accessed and stored by merchants. New payment card technology that replaces the real card number with a substitute value (also known as a token) may also make it more difficult to use card information—on mobile devices or in other forms—fraudulently. If successful, these efforts could improve consumer confidence in newer payments technology in general, possibly affecting the related use of mobile payments.

² See www.whitehouse.gov/the-press-office/2014/10/17/fact-sheet-safeguarding-consumers-financial-security.

In addition, there is a dichotomy in perceived security among users and non-users of mobile banking services. Among mobile phone owners who do not

use mobile banking, only 3 percent rated the overall security of mobile banking as "very safe," while 24 percent rated it "somewhat safe." Nineteen per-

Table 7. How safe do you believe people's personal information is when they use mobile banking?

Percent, except as noted

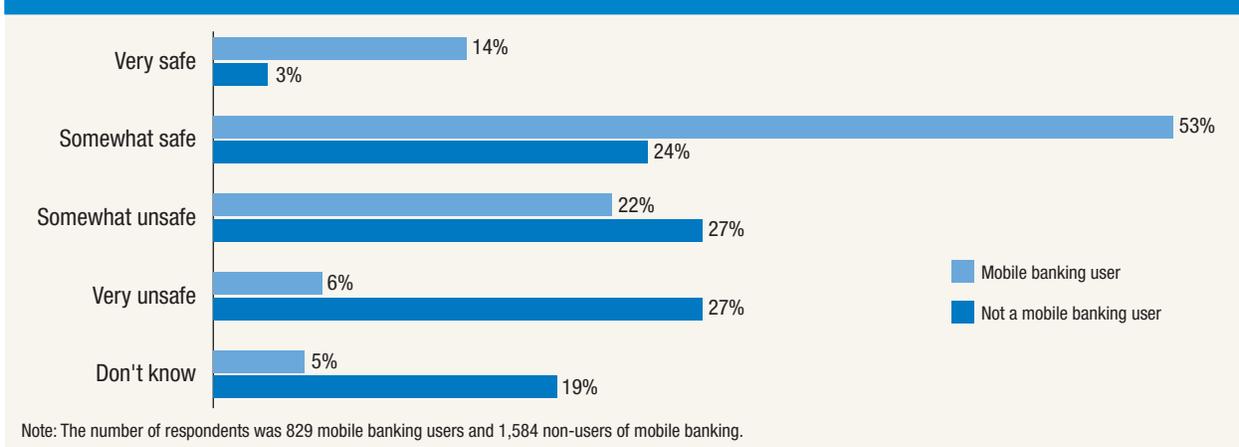
	2013	2014
Very safe	6	7
Somewhat safe	32	34
Somewhat unsafe	25	25
Very unsafe	18	19
Don't know	17	15
Number of respondents	2,341	2,603

Table 8. How safe do you believe people's personal information is when they use a mobile phone to pay for a purchase at a store?

Percent, except as noted

	2013	2014
Very safe	4	5
Somewhat safe	30	30
Somewhat unsafe	27	28
Very unsafe	19	21
Don't know	18	15
Number of respondents	2,341	2,603

Figure 8. How safe do you believe people's personal information is when they use mobile banking?



cent of non-users indicated that they “don’t know” how safe it is to use mobile banking. Mobile banking users, however, rated mobile banking as “very safe” (14 percent) or “somewhat safe” (53 percent) in

maintaining their personal information. Only 5 percent of mobile banking users indicated that they “don’t know” how safe mobile banking is at protecting their personal information (figure 8).

How Mobile Phones Affect Shopping Behavior

Interest in Mobile Services

Mobile phone users expressed significant interest in expanding the range of functions they could perform with their phones. Consumers were asked to select the types of activity they would be interested in performing with their mobile phones, assuming the function were made available to them (figure 9). Some consumers appear to be open to greater use of their phones as a tool to get the best prices in their shopping activities: 24 percent expressed an interest in using their mobile phones to compare prices while shopping; 26 percent indicate that they would like to receive and manage discount offers and coupons; and 24 percent would like to receive location-based offers. They also expressed an interest in using their phones to store gift cards or track loyalty/reward points (19 percent) and to manage their personal finances (13 percent).

Although consumers might be willing to use their phones to improve shopping experiences, many are resistant to sharing their current location and per-

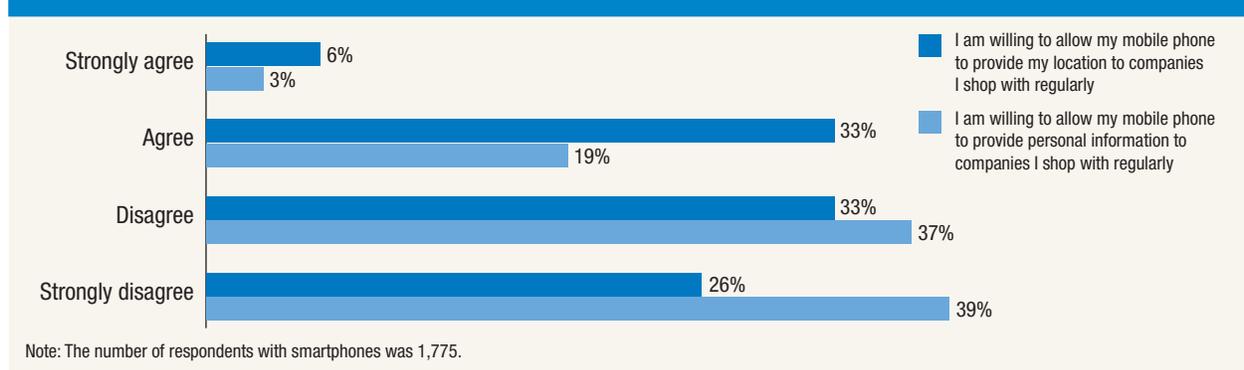
sonal information with companies they shop with regularly (figure 10). Smartphone users were asked about their level of agreement with the statement “I am willing to allow my mobile phone to provide my location to companies I shop with regularly so that they can offer me discounts, promotions, or services based on where I am.” There appears to be significant discomfort with providing one’s location to companies, as 33 percent indicated that they “disagree” and 26 percent “strongly disagree.”

Consumers reported being even less willing to allow their phones to be used to provide companies with their personal information in order to receive targeted discounts, promotions, and offers. When smartphone owners were asked about their level of agreement with the statement “I am willing to allow my mobile phone to provide personal information such as my sex, age, friends, and shopping history to companies I shop with regularly so that they can offer me targeted discounts, promotions, or services,” 37 percent chose “disagree” and 39 percent chose “strongly disagree.”

Figure 9. Share of respondents that already do or would like to use mobile phones for any the following purposes



Figure 10. Willingness to allow mobile phones to provide information



In-Store Product Research and Price Comparison

Consumers are using their mobile phones to comparison shop and obtain product information while in retail stores. The prevalence of smartphones with barcode scanning software and Internet access has altered consumer behavior in the retail environment. With this technology, consumers can compare prices across retailers while in a store or online, or locate an item that is out of stock. Retailers have coined the term “showrooming” to describe the practice of consumers going to retail stores to examine products and then purchasing them online.

Among smartphone owners, 47 percent said that they have used their mobile phone to comparison shop on the Internet while at a retail store, and 33 percent

have used a barcode scanning application for price comparisons. Consumers are also using their smartphones to obtain product information: 31 percent have scanned a QR code in a newspaper, magazine, or billboard advertisement to obtain information about a product, and 42 percent have used their phone to get product reviews or product information while shopping at a retail store.

Many consumers who use their smartphone to comparison shop reported that they altered their decisions as a result: 69 percent who have comparison shopped in a store reported that they changed where they made a purchase after comparing prices, and 79 percent reported that they changed what they purchased as a result of reading product reviews on their smartphone while at a retail store.

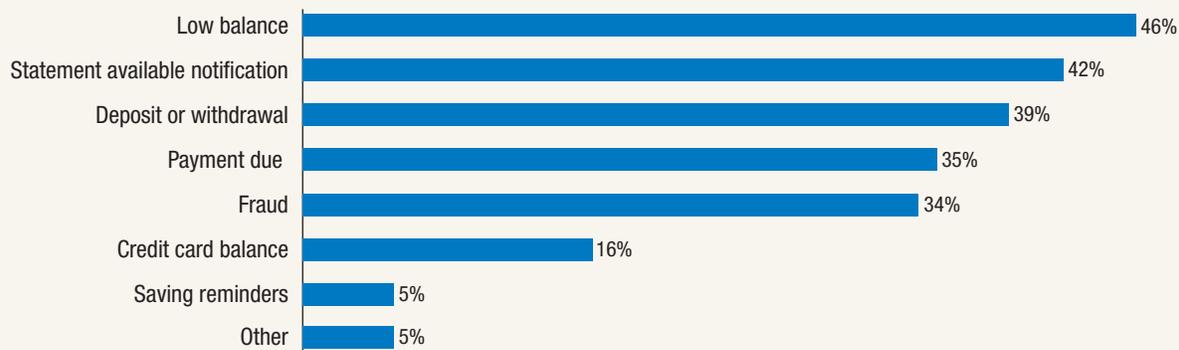
Use of Mobile Phones in Financial Decisionmaking

As the use of mobile banking increases, mobile phones are increasingly becoming tools for managing personal finances and controlling spending. For example, 63 percent of mobile banking users with smartphones report using their mobile phone to check account balances or available credit before making a large purchase in the 12 months prior to the survey. Of those who checked their balance or available credit, 53 percent reported that they decided not to buy an item because of the amount of money in their bank account or the amount of available credit. Many consumers have near-constant access to their mobile phones, and these results illustrate that

these devices have the potential to provide “just-in-time information” that can influence consumer financial behavior.

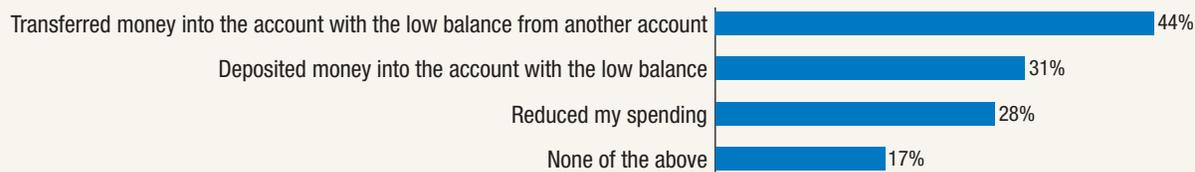
In addition, mobile phones can provide readily accessible and timely prompts that may help consumers make different, and perhaps smarter, financial decisions. The actions consumers take in response to the receipt of text message or e-mail notices from their financial institutions demonstrate some of the potential effects of this technology for encouraging consumers to engage in different financial behaviors that may prove to have beneficial outcomes.

Figure 11. Do you receive each of the following kinds of alerts?



Note: The number of respondents who were mobile banking users was 459. Respondents may receive alerts from their financial institution via push notification, text message, or e-mail.

Figure 12. Thinking of the most recent low-balance alert you received, which of the following actions did you take after receiving the alert?



Note: The number of respondents who were mobile banking users was 211.

More than half (57 percent) of people who use mobile banking receive alerts from their bank (figure 11). Nearly all mobile banking users who received a low-balance alert from their bank reported taking some action in response: transferring money into the

account with the low-balance (44 percent), reducing their spending (28 percent), or depositing additional money into the account (31 percent) (figure 12). Only 17 percent reported taking no action in response to receiving a low-balance alert.

Conclusion

As smartphones become more common and more versatile, they can play an increasingly large role in the interactions between consumers and financial service providers, retailers, and other businesses. The near-constant presence of mobile phones in consumers' lives also makes them a potentially useful tool for the delivery of just-in-time financial information or as an aid in decisionmaking. Given the prevalence of mobile phones—particularly smartphones—among minorities, low-income individuals, and younger persons, mobile technology has the potential to empower consumers and expand access to financial services for underserved populations. However, consumers will need to understand and weigh the perceived benefits and potential risks to their security and privacy presented by the use of this evolving technology.

The use of mobile banking has increased substantially in the past year and appears likely to continue to increase as more consumers use smartphones or recognize the convenience of this service, and as more financial institutions offer mobile banking. The

most common tasks for mobile banking users continue to be checking account balances and transferring funds. Use of the remote deposit capture feature continues to grow steadily. The use of mobile payments, broadly defined, also increased from 2013 to 2014. Paying bills online and making online or in-app purchases are the most common mobile payment activities, followed by making a POS payment. Among mobile payments users with smartphones, the use of mobile phones to make payments at the POS is essentially unchanged from the 2013 survey.

The main factors limiting consumer adoption of mobile banking and payments are a preference for using other methods for banking or making payments and security concerns. In terms of the value proposition to consumers, the significant number of mobile users who reported an interest in using their phones to receive discounts, coupons, and promotions or to track rewards and loyalty points suggests that tying these services to a mobile payment service may increase the attractiveness of mobile phones as a means of payment.

Appendix 1: Technical Appendix on Survey Methodology

In order to create a nationally representative probability-based sample, GfK's KnowledgePanel® has selected respondents based on both random digit dialing and address-based sampling (ABS). Since 2009, new respondents have been recruited using ABS. To recruit respondents, GfK sends out mailings to a random selection of residential postal addresses. Out of 100 mailings, approximately 14 households respond to GfK and express an interest in joining the panel. Of those who express an interest in joining, around 64 percent complete the process and become members of the panel.¹⁸ If the person contacted is interested in participating but does not have a computer or Internet access, GfK provides him or her with a laptop and Internet. Panel respondents are continuously lost to attrition and added to replenish the panel, so the recruitment rate and enrollment rate may vary over time.

For the 2014 mobile survey, a total of 6,892 KnowledgePanel® members received e-mail invitations to complete the survey, including both the primary sample and a rural oversample. The primary sample included a random selection of 2,308 out of the 2,657 KnowledgePanel® respondents who participated in the Board's 2013 mobile survey and an additional 2,657 randomly selected KnowledgePanel® respondents who did not participate in the Board's previous survey. (See table 1 in main text.) From these two components of the primary sample, a total of 2,925 people (excluding breakoffs) responded to the e-mail request to participate and completed the survey, yielding a final stage completion rate of 58.9 percent. The recruitment rate for the primary sample, reported by GfK, was 14.6 percent and the profile rate was 64.0 percent, for a cumulative response rate of 5.5 percent. Answers from these respondents were used to compute statistics presented in the main body of the report, as well as in the tables in appendix 3.

¹⁸ For further details on the KnowledgePanel® sampling methodology and comparisons between KnowledgePanel® and telephone surveys see www.knowledgenetworks.com/accuracy/spring2010/disogra-spring10.html.

The 2014 survey also included an oversample of respondents residing in rural areas as defined by Rural Urban Commuting Area (RUCA) codes.¹⁹ Respondents were selected for inclusion in the rural oversample if the ZIP code for their residence was classified as being in RUCA codes 7.0-10.3. Because RUCA codes are assigned at the Census tract level, ZIP codes meeting this criteria were identified based on the crosswalk available from the Center for Rural Health at the University of North Dakota. (See ruralhealth.und.edu/ruca.) All members of KnowledgePanel® residing in rural areas based on this definition, but not already included in one of the other two samples, received an invitation to respond to the survey. Of these additional 1,927 KnowledgePanel® members who received invitations as a part of the rural oversample, 1,298 people (excluding breakoffs) responded to the e-mail request to participate and completed the survey, yielding a final stage completion rate of 67.4 percent for the oversample. The recruitment rate for the rural oversample, reported by GfK, was 14.4 percent and the profile rate was 63.3 percent, for a cumulative response rate of 6.1 percent. Answers from these respondents were combined with answers from the other two samples and used to compute statistics presented in box 1 of the report.

To enhance the completion rate, GfK sent e-mail reminders to non-responders on days three and ten of the field period. GfK maintains an ongoing modest incentive program to encourage KnowledgePanel® members to participate. Incentives take the form of raffles and lotteries with cash and other prizes. KnowledgePanel® members who were a part of the rural oversample in the 2014 survey were offered an additional \$5 incentive for completion of the survey.

Significant resources and infrastructure are devoted to the recruitment process for the KnowledgePanel®

¹⁹ Information on RUCA codes is available from the U.S. Department of Agriculture's Economic Research Service. (See www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx.)

so that the resulting panel can properly represent the adult population of the United States. Consequently, the raw distribution of KnowledgePanel® mirrors that of the U.S. adults fairly closely, barring occasional disparities that may emerge for certain sub-groups due to differential attrition rates among recruited panel members.

The selection methodology for general population samples from the KnowledgePanel® ensures that the resulting samples behave as an equal probability of selection method (EPSEM) samples. This methodology starts by weighting the entire KnowledgePanel® to the benchmarks secured from the latest March supplement of the Current Population Survey (CPS) along several dimensions. This way, the weighted distribution of the KnowledgePanel® matches that of the U.S. adults. Typically, the geo-demographic dimensions used for weighting the entire KnowledgePanel® include gender, age, race/ethnicity, education, Census region, household income, home ownership status, metropolitan area status, and Internet access.

Using the above weights as the measure of size (MOS) for each panel member, in the next step a probability proportional to size (PPS) procedure is used to select study specific samples. Since this survey includes a rural oversample, the departure caused by this oversample from an EPSEM design are corrected by adjusting the corresponding design weights accordingly with the CPS benchmarks serving as reference points.

Once the sample has been selected and fielded, and all the study data are collected and made final, a post-stratification process is used to adjust for any survey non-response as well as any non-coverage or under- and over-sampling resulting from the study-specific sample design. The following variables were used for the adjustment of weights for this study: gender, age, race/ethnicity, education, Census region, residence in a metropolitan area, access to the Internet, and residence in a rural area according to the definition used for the rural oversample. Demographic and geographic distributions for the non-institutionalized, civilian population ages 18 and over from the March 2014 CPS are used as benchmarks in this adjustment. For the geographic distribution of residence in a rural setting, the full set of members of KnowledgePanel® was used to generate the benchmark since the CPS does not provide statistics on rural status according to the criteria used to select the oversample.

Although weights allow the sample population to match the U.S. population based on observable characteristics, similar to all survey methods, it remains possible that non-coverage or non-response results in differences between the sample population and the U.S. population that are not corrected using weights.

There are several reasons that a probability-based Internet panel was selected as the method for this survey rather than an alternative survey method. The first reason is that these types of Internet surveys have been found to be representative of the population.²⁰ The second reason is that the ABS Internet panel allows the same respondents to be re-interviewed in subsequent surveys with relative ease, as they remain in the panel for several years. The third reason is that Internet panel surveys have numerous existing data points on respondents from previously administered surveys, including detailed demographic and economic information. This allows for the inclusion of additional information on respondents without increasing respondent burden. Lastly, collecting data through an ABS Internet panel survey is cost effective, and can be done relatively quickly.

There are possible questions about the extent to which results from an online survey of technology use can be interpreted as being representative of the technology use of the U.S. population. As with any survey method, Internet panels can be subject to biases resulting from undercoverage or nonresponse and, in this case, potential underrepresentation of adults who are physically or cognitively impaired or who may prefer not to use some forms of technology. Not everyone in the United States has access to the Internet and there are demographic (income, education, age) and geographic (urban and rural) differences between those who do have access and those who do not. These concerns are partially corrected by GfK providing Internet access to respondents who do not have it in order to include the portion of the population that does not have Internet access in KnowledgePanel®. They are further corrected by the use of post-stratification weights to ensure that the Internet usage and key demographics of the weighted sample population matches the entire U.S. population. That said, participation in this type of survey

²⁰ David S. Yeager, Jon A. Krosnick, LinChiat Chang, Harold S. Javitz, Matthew S. Levendusky, Alberto Simpser, and Rui Wang (2011), "Comparing the Accuracy of RDD Telephone Surveys and Internet Surveys Conducted with Probability and Non-Probability Samples," *Public Opinion Quarterly*, vol. 75(4), pp. 709–47.

may require a certain level of skill and interest in responding online, which could limit coverage of some groups, particularly among those in the population who are less likely to use computers or the Internet. As a result, to the extent that these differences

cannot be incorporated into the sample weights, technology usage among survey respondents may differ along key dimensions from that of the overall U.S. population.

Appendix 2: Survey of Consumers' Use of Mobile Financial Services 2014—Questionnaire

Below is a reproduction of the survey instrument in its entirety. The bracketed text are programming instructions that (1) indicate whether or not a question is single choice [SP] or multiple choice [MP] and (2) represent any skip pattern used to reach that question and which questions should be grouped together on a page. The respondents only saw the questions and response options; they did not see the program code.

[DISPLAY]

OMB Control Number: 7100-0359

Expiration Date: 04/30/2017

For more information, [click here](#).

The Federal Reserve Board is interested in learning more about how people manage their finances, shop, and make payments. We are also interested in how people interact with financial institutions, and how mobile phones and other technology facilitate these interactions. The information collected in this survey will be used for research, analysis, and policymaking. A dataset containing anonymized responses may also be released publicly on the Federal Reserve Board's website. We appreciate your participation in this survey.

To begin, we are going to ask a few questions about the types of financial products and services that you use.

[PROGRAM INSTRUCTION]

[If "For more information..." clicked, display this text in a new tab or window]

The Federal Reserve may not conduct or sponsor, and an organization is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Public reporting burden for this information collection is estimated to average 0.18 hours, including the time to gather data in the required form and to review instructions and complete the information collection. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Secretary, Board of Governors of the Federal Reserve System, 20th and C Streets, NW, Washington, DC 20551, and to the Office of Management and Budget, Paperwork Reduction Project (7100-0359), Washington, DC 20503.

Banking Section

[SP][SAME AS Q1 IN S16674]

1. Do you or does your spouse/partner currently have some type of bank or credit union account such as a checking, savings, or money market account?
 - a. Yes
 - b. No

[SP, IF Q1 = B][SAME AS Q2 IN S16674]

2. Have you or your spouse/partner ever had some type of bank or credit union account such as a checking, savings, or money market account?
 - a. Yes
 - b. No

[SP]

- 4a. A prepaid debit card, also known as a general purpose prepaid card, is loaded with money and can be used to make payments in stores and online. It works much like a debit card except that it is not connected to a traditional bank account. A prepaid debit card is NOT a credit card.

Have you used a prepaid debit card in the past 12 months?

- a. Yes
- b. No

[SP]

5. Remittances are used to send money to relatives or friends living outside the U.S. For example money can be sent through a bank, WesternUnion, or an app on your mobile phone.

Have you sent a remittance in the past 12 months?

- a. Yes
- b. No

[SP]

- 5a. In the past 12 months, have you used a money order, check cashing service, pawn shop loan, auto title loan, paycheck advance/deposit advance, or a pay-day loan?

- a. Yes
- b. No

[IF Q1 = A; DISPLAY; SHOW ON THE SAME SCREEN AS Q16]

In this section we would like to ask you about how you interact with your bank or credit union.

[IF Q1 = A; NUMBER BOXES; RANGE: 1-3; UNIQUE VALUES; SHOW ON SAME SCREEN AS DISPLAY]

16. What are the three main ways you (or your spouse/partner) interact with your bank or credit union when you use your accounts? Use number 1 for most often, 2 for 2nd most often, 3 for 3rd most often used. (You can stop numbering below if all the ways you interact with your bank or credit union are covered in less than three responses).
- a. ATM/Cash machine
 - b. A teller in person at a branch
 - c. Mail
 - d. Phone – Talking or using touchtone service
 - e. Over the Internet using a computer/tablet
 - f. Mobile phone app, mobile web browser, or SMS/text message
 - g. Family member, friend, or neighbor does the banking for me
 - h. Other (please specify):[TXT]_____

[SP, IF Q1 = A]

6. Have you visited a bank branch and spoken with **a teller or a bank employee** in the past 12 months?
- a. Yes
 - b. No

[IF Q6=A; NUMBER BOX; RANGE: 0-99]

7. In the past **month**, about how many times have you visited a branch and spoken with a teller or a bank employee? If none enter "0". _____times in the past month

[SP, IF Q1=A]

8. Which of the following best describes the location of your bank or credit union branch that you typically visit when you need to speak with a teller or bank employee?
- a. I visit a branch close to my home, work, school or other place I go to frequently.
 - b. I must go out of my way or travel for a while to visit a branch.
 - c. I am not able to visit a branch because my bank does not have a branch in my area.
 - d. I do not need to visit a branch.

[IF Q8= A OR B; NUMBER BOX; RANGE: 0-999]

9. About how long does it take you to travel to the branch you typically visit (one way)? _____ minutes

[SP, IF Q1 = A]

10. Have you used an **ATM** for any banking transactions in the past 12 months?

- a. Yes
- b. No

[IF Q10=A; NUMBER BOX; RANGE: 0-99]

11. In the past **month**, about how many times have you used an **ATM** for banking transactions? If none enter "0". _____times in the past month

[SP, IF Q1=A]

12. Which of the following best describes the location of the **ATM** that you typically use for banking transactions?

- a. I use an **ATM** close to my home, work, school or other place I go to frequently.
- b. I must go out of my way or travel for a while to access the **ATM**.
- c. I am not able to use an **ATM** for banking transactions because there is not an **ATM** in my area.
- d. I do not use an **ATM**.

[IF Q12=A OR B; NUMBER BOX; RANGE: 0-999]

13. About how long does it take you to travel to the **ATM** you typically visit (one way)? _____ minutes

[SP, IF Q1 = A]

14. **Telephone banking** is when you access your account by calling a phone number that your bank has provided. You interact with the system using either voice commands, your phone's numeric keypad, or speaking with a live customer service representative. It does not include accessing your bank using the internet or apps on your mobile phone.

Have you used telephone banking in the past 12 months, either with a land-line phone or your mobile phone?

- a. Yes
- b. No

[IF Q14=A; NUMBER BOX; RANGE: 0-99]

15. In the past **month**, about how many times have you used **telephone banking** to access your account? If none enter "0". _____times in the past month

[DISPLAY] [SAME AS S16674]

In this section we'll ask a few questions about your use of the Internet. Right now we are just interested in your use of the Internet **on a computer** (desktop, laptop) or **tablet**. Later on we will ask about use of the Internet on mobile phones.

[SP]

17. Do you currently have regular access to the internet, either at your home or outside your home (e.g., at school, work, public library, etc.) that is not provided by GfK, formerly Knowledge Networks?
- Yes
 - No

[SP]

18. Which of the following best describes how easy it is for you to access the Internet on a desktop, laptop, or tablet (e.g., iPad)?
- Access is almost always available.
 - Access is not always available, but is available at locations that are convenient for me (e.g., home, work, school).
 - Access is available only at locations that require extra effort or planning to get to.

[SP, IF Q1=A]

19. **Online banking** involves checking your account balance and recent transactions, transferring money, paying bills, or conducting other related transactions with your bank or credit union using the Internet.

Have you used online banking on a desktop, laptop, or tablet (e.g., iPad) computer in the past 12 months?

- Yes
- No

[IF Q19=A; NUMBER BOX; RANGE: 0-99]

20. In the past **month**, about how many times have you used online banking on a desktop, laptop, or tablet (e.g., iPad) computer? If none enter "0".
_____times in the past month

Screener Question on Mobile Phone Usage

[DISPLAY][SHOW ON SAME SCREEN AS Q18]

In this section we would like to ask you about your use of mobile phones (cell phones).

[SP, PROMPT, TERMINATE IF SKIPPED]

21. Do you own or have regular access to a mobile phone (cell phone)?
- Yes ▶ [MOBILE = "YES"]
 - No ▶ [MOBILE = "NO"]

DOV: MOBILE

1: "YES"

2: "NO"

[SP, IF MOBILE = "YES"]

22. A **smartphone** is a mobile phone with features that may enable it to access the web, send e-mails, download apps, and interact with computers. Smartphones include the iPhone, BlackBerry, as well as Android and Windows Mobile-powered devices.

Is your mobile phone a smartphone?

- a. Yes
- b. No

[SP, IF Q22 = A]

23. Which type of smartphone do you have?

- a. Android
- b. BlackBerry
- c. iPhone
- d. Windows Mobile
- e. Amazon Fire
- f. Other
- g. Don't know

[SP, IF MOBILE = "YES"]

24. How confident are you in your ability to understand and navigate the technology and features of your mobile phone?

- a. Very confident
- b. Somewhat confident
- c. Not confident

[SP, IF Q22 = A]

25. Do you password protect your smartphone? Please count using a PIN, drawing a pattern, fingerprint or facial recognition, and other methods of securing your phone as password protection.

- a. Yes
- b. No

[SP, IF MOBILE= "YES"]

27. Which of the following best describes how easy it is for you to access the internet on your mobile phone through either WiFi or a wireless network (3G, 4G, LTE)?
- Access is almost always available.
 - Access is not always available, but is available at locations that are convenient for me (e.g., home, work, school).
 - Access is available only at locations that require extra effort or planning to get to.
 - Access is not available.
 - I do not need access to the Internet on my mobile phone.

Mobile Banking Users

[MOBILE = "YES" AND Q1 =A]

[DISPLAY; SHOW ON THE SAME SCREEN AS Q28 and Q29]

Mobile banking uses a mobile phone to access your bank or credit union account. This can be done either by accessing your bank or credit union's web page through the web browser on your mobile phone, via text messaging, or by using an app downloaded to your mobile phone.

[SP, MOBILE = "YES" AND Q1 =A; SHOW ON THE SAME SCREEN AS Q29]

28. Does your bank or credit union offer mobile banking?
- Yes
 - No
 - Don't know

[SP, MOBILE = "YES" AND Q1 =A; SHOW ON THE SAME SCREEN AS Q28]

29. Have you used **mobile banking** in the past 12 months?
- Yes ▶ [MOBILEBANK = "YES"]
 - No ▶ [MOBILEBANK = "NO"]

DOV: MOBILEBANK

1 "YES"

2 "NO"

[SP, IF MOBILE = "NO"]

30. Do you plan to use mobile banking in the next 12 months?
- Definitely will use

- b. Probably will use
- c. Probably will not use
- d. Definitely will not use

[MOBILE = “YES” and Q1=A; GRID; SP ACROSS]

[SHOW THIS TEXT INSTEAD OF DEFAULT INSTRUCTIONS: Please answer yes or no to each option]

32. Using your **mobile phone**, have you done each of the following in the past 12 months.

	1 Yes	0 No
a. Downloaded your bank’s mobile banking app on your mobile phone		
b. Checked an account balance or checked recent transactions		
c. Made a bill payment using your bank’s online banking website or banking app		
d. Received an alert (e.g., a text message, push notification, or e-mail) from your bank		
e. Transferred money between your bank accounts		
f. Transferred money from your bank account to another person		
g. Deposited a check to your account electronically using your mobile phone camera		
h. Located the closest in-network ATM for your bank		

[IF MOBILEBANK= “YES”; NUMBER BOX; RANGE: 0-999]

33. In the past **month**, how many times have you personally used mobile banking? If none, enter “0.” _____ times in the last month.

[SP, IF MOBILEBANK= “YES”; SHOW ON SAME SCREEN AS Q33]

34. When did you start using mobile banking?
- a. In the last 6 months
 - b. 6 to 12 months ago
 - c. 1 to 2 years ago
 - d. More than 2 years ago
 - e. I don’t remember

[SP, IF MOBILEBANK= “YES”]

35. What was the **main** reason why you started using mobile banking when you did?
- a. I got a smartphone
 - b. My bank started offering the service
 - c. There is no bank branch or ATM near my home or work
 - d. I became comfortable with the security of mobile banking
 - e. I liked the convenience of mobile banking

- f. To receive fraud alerts or check my account for fraudulent transactions
- g. Other (please specify):[TXT]_____

Mobile Payments Users

[MOBILE = “YES”]

[DISPLAY; SHOW ON SAME SCREEN AS Q36]

Mobile payments are purchases, bill payments, charitable donations, payments to another person, or any other payments made using a mobile phone. You can do this either by accessing a web page through the web browser on your mobile device, by sending a text message (SMS), or by using a downloadable app on your mobile device. The amount of the payment may be applied to your phone bill (for example, Red Cross text message donation), charged to your credit card, deducted from a prepaid card, or withdrawn directly from your bank account.

[SP, MOBILE = “YES”]

36. Have you made a mobile payment in the past 12 months?
- a. Yes ▶ [MOBILEPAY = “YES”]
 - b. No ▶ [MOBILEPAY = “NO”]

DOV: MOBILEPAY

1 “YES”

2 “NO”

[SP, MOBILE = “YES”; GRID; SP ACROSS]

[SHOW THIS TEXT INSTEAD OF DEFAULT INSTRUCTIONS: Please answer yes or no to each option]

37. Using your **mobile phone**, have you done each of the following in the past 12 months?

PROGRAMMING NOTE: CODE “Yes” AS 1, “No” AS 0, AND REFUSED AS -1.

	1 Yes	0 No
a. Transferred money directly to another person’s bank or other financial account within the United States (e.g., Paypal account) b. Send a remittance (used to send money to relatives or friends living outside the U.S through WesternUnion, USPS SureMoney, etc.) c. Received money from another person’s bank or other financial account (e.g., Paypal account) d. Paid for a product or service at a store (including at gas pumps and for restaurant meals) e. Paid for parking, a taxi, or public transit using an app f. Paid bills online through a mobile web browser or app g. Made a payment using a text message (including charitable donation by text message) h. Used an app to receive loyalty or reward points i. Made an online purchase or in-app purchase (e.g., from amazon.com or bestbuy.com)		

[IF MOBILEPAY = “YES”; NUMBER BOX; RANGE: 0-99]

38. In the past **month**, how many times have you used your mobile phone to make any type of mobile payment? If none, please enter “0.” _____times in the last month.

[IF Q37d=“YES”; GRID; SP ACROSS; SHOW ON SAME SCREEN AS Q40]

[SHOW THIS TEXT INSTEAD OF DEFAULT INSTRUCTIONS: Please answer yes or no to each option]

39. When you have used your mobile phone to pay for something **at a store in the past 12 months**, have you used your phone in each of these different ways?

PROGRAMMING NOTE: CODE “Yes” AS 1, “No” AS 0, AND REFUSED AS -1.

	1 Yes	0 No
a. Waved or tapped my mobile phone to pay at check out (e.g., Google Wallet or Apple Pay) b. Scanned a barcode or QR code using your mobile phone to make a mobile payment (e.g., Starbucks app) c. Used a mobile app that doesn’t require tapping the phone to pay at check out or scanning a barcode to pay for a purchase (e.g., Square Wallet) d. Other (please specify): [txt] _____		

[IF Q37d = “YES”; NUMBER BOX; RANGE: 0-99; SHOW ON SAME SCREEN AS Q39]

40. In the past **month**, about how many times have you used your mobile phone to pay for a product or service at a store? If none, please enter “0.” _____times in the last month.

[MP, IF MOBILEPAY = “YES”]

41. When making mobile payments, which of the following payment methods do you use?

- a. Credit card
- b. Debit card
- c. Prepaid debit card
- d. Bank account
- e. Charge to your phone bill
- f. Account at a non-financial institution (e.g., PayPal)
- g. Other (please specify):[TXT]_____

[MP, IF MOBILEPAY = “YES” AND Q22= A]

42. Have you used any of the following mobile payment services in the past 12 months?
- a. Starbucks mobile payments
 - b. Google Wallet
 - c. Square Wallet
 - d. Apple Pay
 - e. Deluxe eCheck
 - f. Amazon’s Firefly
 - g. CardNay
 - h. PayPal
 - i. LevelUp
 - j. Dwolla
 - k. Softcard
 - l. Tabbedout

[SP, IF MOBILEPAY= “YES”; SHOW ON SAME SCREEN AS Q44]

43. When did you start using mobile payments?
- a. In the last 6 months
 - b. 6 to 12 months ago
 - c. 1 to 2 years ago
 - d. More than 2 years ago
 - e. I don’t remember

[SP, IF MOBILEPAY= “YES”; SHOW ON SAME SCREEN AS Q43]

44. What was the **main** reason why you started using mobile payments when you did?
- a. I got a smartphone
 - b. The ability to make mobile payments became available
 - c. I became comfortable with the security of mobile payments

- d. I liked the convenience of mobile payments
- e. A store I visit started offering the service
- f. To take advantage of loyalty or rewards points and discounts
- g. Other (please specify):[TXT]_____

Non-Mobile Banking Users

[IF MOBILEBANK="NO" and Q28 = A]

[DISPLAY; SHOW ON SAME PAGE AS Q45]

We would like to ask you about some of your reasons for not using mobile banking.

[IF MOBILEBANK= "NO" AND MOBILE= "YES" AND Q28 = A]

[GRID; SP ACROSS; SHOW ON SAME PAGE AS DISPLAY]

[SHOW THIS TEXT INSTEAD OF DEFAULT INSTRUCTIONS: Please answer yes or no to each option]

45. Please tell us if each of the reasons below are why you do not use mobile banking.

PROGRAMMING NOTE: CODE "Yes" AS 1, "No" AS 0, AND REFUSED AS -1.

	1 Yes	0 No
a. I'm concerned about the security of mobile banking		
b. My banking needs are being met without mobile banking		
c. I don't see any reason to use mobile banking		
d. The mobile phone screen is too small		
e. I don't have a smartphone		
f. My bank charges a fee for using mobile banking		
g. I don't do the banking in my household		
h. I don't trust the technology		
i. It's too difficult to use mobile banking		

[SP, IF Q45a = "Yes"]

46. You mentioned that security was one of your top concerns with mobile banking; which one of the following security aspects are you **most** concerned with?

- a. My phone getting hacked
- b. Someone using my phone without permission to access my account
- c. Someone intercepting my data
- d. Losing my phone or having my phone stolen
- e. Malware or viruses being installed on my phone
- f. Companies misusing my personal information

- g. All of the above
- h. Other (please specify):[TXT]_____

[MP, IF MOBILEBANK= “NO” AND Q28=A]

47. Assuming that the concerns that you have about using mobile banking were addressed, would you be interested in doing any of the following activities with your mobile phone?
- a. Download your bank’s mobile banking app
 - b. Check an account balance or check recent transactions
 - c. Make bill payments using your bank’s online banking website or app
 - d. Receive alerts (e.g., text message, push notification, or e-mail) from your bank
 - e. Deposit a check electronically using your mobile phone camera
 - f. Transfer money between your bank accounts
 - g. Transfer money from your bank account to another person
 - h. Locate the closest in-network ATM or branch for your bank
 - i. None, I don’t want to use mobile banking **[Exclusive]**

[MP, IF Q28=B OR Q28=C]

48. You mentioned that your bank does not offer mobile banking or you are not sure if you bank offers it. If your bank or credit union were to offer mobile banking, would you be interested in doing any of the following activities with your mobile phone?
- a. Download your bank’s mobile banking app
 - b. Check an account balance or check recent transactions
 - c. Make bill payments using your bank’s online banking website or app
 - d. Receive alerts (e.g., text message, push notification, or e-mail) from your bank
 - e. Deposit a check electronically using your mobile phone camera
 - f. Transfer money between your bank accounts
 - g. Transfer money from your bank account to another person
 - h. Locate the closest in-network ATM or branch for your bank
 - i. None, I don’t want to use mobile banking **[Exclusive]**

Non-Mobile Payments Users

[IF MOBILEPAY = “NO”]

[DISPLAY; shown on the same page as Q49]

We would like to ask you about some of your reasons for not using mobile payments

[IF MOBILEPAY = “NO” AND MOBILE = “YES”]

[GRID; SP ACROSS]

[SHOW THIS TEXT INSTEAD OF DEFAULT INSTRUCTIONS: Please answer yes or no to each option]

49. Please tell us if any of the reasons below are why you do not use mobile payments.

PROGRAMMING NOTE: CODE “Yes” AS 1, “No” AS 0, AND REFUSED AS -1.

	1 Yes	0 No
a. I'm concerned about the security of mobile payments		
b. It's easier to pay with cash or a credit/debit card		
c. I don't see any benefit from using mobile payments		
d. The places I shop don't accept mobile payments		
e. I don't have the necessary feature on my phone		
f. I don't trust the technology		
g. It's difficult or time consuming to set up or use mobile payments		
h. I don't need to make any payments or someone else pays the bills		
i. I don't really understand all the different mobile payment options		

[SP, IF Q49a = “YES”]

50. You mentioned that security was one of your top concerns with mobile payments; which **one** of these security aspects are you most concerned with?

- a. My phone getting hacked
- b. Someone intercepting my payment information or other data
- c. Losing my phone or having my phone stolen
- d. Malware or viruses being installed on my phone
- e. Companies misusing my personal information
- f. All of the above
- g. Other (please specify):[txt]_____

[MP, IF MOBILEPAY = “NO”]

51. Assuming that the reason(s) why you do not currently use mobile payments was addressed, would you be interested in doing any of the following activities with your mobile phone?

- a. Making payments to another person (e.g., friend, relative, babysitter) within the United States
- b. Transferring money to someone in another country
- c. Using my mobile phone to pay for purchases at a store
- d. Paying for parking, a taxi, or public transit using an app

- e. Paying bills online through a mobile web browser or app
- f. Using your mobile phone as a “virtual wallet” to replace some cards in your wallet
- g. Making an online or in-app purchase (e.g., from amazon.com or bestbuy.com)
- h. Receiving money from another person’s bank or other financial account (e.g., Paypal account)
- i. Receiving/using coupons and/or reward points on your phone
- j. None, I don’t want to use mobile payments **[Exclusive]**

[SP, IF Q37d= “NO”]

52. You indicated that you have not made a mobile payment in a store in the last 12 months. Do you plan to use your mobile phone to make a payment in a store in the next 12 months?
- a. Definitely will use
 - b. Probably will use
 - c. Probably will not use
 - d. Definitely will not use

Mobile Financial Services Security Questions

[MOBILE = “YES” FOR QUESTIONS 53 THROUGH 54]

[DISPLAY, SHOW IT ON THE SAME SCREEN WITH Q53 TO Q54]

Please rate your perception of the level of security for each of the following mobile financial services from Very Safe to Very Unsafe.

[SP, SHOW ON THE SAME SCREEN AS Q54]

53. How safe do you believe people’s personal information is when they use mobile banking?
- a. Very safe
 - b. Somewhat safe
 - c. Somewhat unsafe
 - d. Very unsafe
 - e. Don’t know

[SP, SHOW ON THE SAME SCREEN AS Q53]

54. How safe do you believe people’s personal information is when they use a mobile phone to pay for a purchase at a store?
- a. Very safe
 - b. Somewhat safe

- c. Somewhat unsafe
- d. Very unsafe
- e. Don't know

[SP, GRID; IF MOBILE = "YES"]

55. Would you like to or do you already use your mobile phone for any of the following purposes?

	1 I already do	2 I would like to	3 I am unlikely to
a. Track your finances, purchases, or expenses			
b. Organize, track and store gift cards, memberships, loyalty and reward points			
c. Compare prices when shopping			
d. Receive and manage discount offers and coupons			
e. Receive offers and promotions based on your location			

[SP, IF Q22=A]

[DISPLAY][SHOW ON THE SAME SCREEN AS Q56 AND Q57]

For the following two questions please rate how much you agree or disagree with the statement on a scale from strongly agree to strongly disagree.

[SP, IF Q22=A]

[SHOW ON THE SAME SCREEN AS Q57]

56. I am willing to allow my mobile phone to provide my location to companies I shop with regularly so that they can offer me discounts, promotions, or services based on where I am.
- a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree

[SP, IF Q22=A]

[SHOW ON THE SAME SCREEN AS Q56]

57. I am willing to allow my mobile phone to provide personal information such as my sex, age, friends, and shopping history to companies I shop with regularly so that they can offer me targeted discounts, promotions, or services.
- a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree

Shopping Behavior Questions

[IF MOBILE= "YES" AND Q22=A]

[DISPLAY][SHOW ON SAME SCREEN AS Q58]

In this section we would like to ask you about your shopping habits.

[SP, IF MOBILE= "YES" AND Q22=A][SHOW ON SAME SCREEN AS Q59]

58. Have you ever used your mobile phone to comparison shop over the Internet while at a retail store?
- Yes
 - No

[SP, IF MOBILE= "YES" AND Q22=A][SHOW ON SAME SCREEN AS Q58]

59. Have you ever used a barcode scanning app on your mobile phone while shopping at a retail store to find the best price for an item?
- Yes
 - No

[SP, IF Q58 = A OR Q59 = A]

61. Has using your mobile phone to compare prices while you were shopping at a retail store ever changed where you made your purchase?
- Yes
 - No

[SP, IF MOBILE= "YES" AND Q22=A][SHOW ON SAME SCREEN AS Q62]

60. Have you ever scanned a QR code (similar to a barcode) in a retail store, newspaper, magazine, or billboard advertisement to obtain information about a product on your mobile phone?
- Yes
 - No

[SP, IF MOBILE= "YES" AND Q22=A][SHOW ON SAME SCREEN AS Q60]

62. Have you ever used your mobile phone to browse product reviews or get product information while shopping at a retail store? This could be done by, for example, googling the product on your mobile browser or scanning a QR code.
- Yes
 - No

[SP, IF Q62 = A]

63. Has reading product reviews on your mobile phone while shopping at a retail store ever changed which item you ended up purchasing?
- Yes
 - No

[SP, IF MOBILEBANK = "YES" AND Q22 = A]

64. In the past 12 months, have you used your mobile phone to check your account balance or available credit before making a large purchase?
- Yes
 - No

[SP, IF Q64 = A]

65. Thinking of the most recent time that you checked your account balance or available credit before making a large purchase, did you decide not to buy that particular item because of the amount of money left in your account or the amount of your available credit?
- Yes
 - No

Financial Management (Saving, Budgeting) Questions**[MP, IF Q32 = D]**

66. You previously mentioned that you receive text message, push notifications, or e-mail alerts from your financial institution. Do you receive each of the following kinds of alerts?
- Low balance
 - Payment due
 - Saving reminders
 - Fraud
 - Credit card balance
 - Deposit or withdrawal
 - Statement available notification
 - Other (please specify):[txt]_____

[MP, IF Q66= A]

67. Thinking of the most recent low-balance alert you received, which of the following actions did you take after receiving the alert?
- Transferred money into the account with the low balance from another account

- b. Deposited money into the account with the low balance
- c. Reduced my spending
- d. None of the above **[Exclusive]**

Appendix 3: Consumer Responses to Survey Questionnaire

Table C.1. Do you or does your spouse/partner currently have some type of bank or credit union account such as a checking, savings, or money market account?

Percent, except as noted

Q1	
Refused	0.3
Yes	87.0
No	12.7
Number of respondents	2,925

Table C.2. Have you or your spouse/partner ever had some type of bank or credit union account such as a checking, savings, or money market account?

Percent, except as noted

Q2	
Refused	1.2
Yes	30.5
No	68.3
Number of respondents	233

Table C.3. Have you used a prepaid debit card in the past 12 months?

Q4a	
Refused	0.1
Yes	19.8
No	80.1
Number of respondents	2,925

Table C.4. Have you sent a remittance in the past 12 months?

Percent, except as noted

Q5	
Refused	0.3
Yes	7.4
No	92.3
Number of respondents	2,925

Table C.5. In the past 12 months, have you used a money order, check cashing service, pawn shop loan, auto title loan, paycheck advance/deposit advance, or a payday loan?

Percent, except as noted

Q5a	
Refused	0.3
Yes	16.7
No	83.0
Number of respondents	2,925

Table C.6. What are the three main ways you (or your spouse/partner) interact with your bank or credit union when you use your accounts? Use number 1 for most often, 2 for 2nd most often, 3 for 3rd most often used.

Percent, except as noted

Q16	1	2	3
Refused/no rank	0.8	6.8	16.9
ATM/cash machine	30.0	25.1	17.7
A teller in person at a branch	25.9	24.6	23.9
Mail	1.8	4.1	7.7
Phone – talking or using touchtone service	2.2	8.6	12.2
Over the Internet using a computer/tablet	30.0	20.6	12.0
Mobile phone app, mobile web browser, or SMS/text message	7.5	8.7	7.4
Family member, friend, or neighbor does the banking for me	1.5	1.4	2.0
Other	0.4	0.3	0.3
Number of respondents	2,685		

Table C.7. Have you visited a bank branch and spoken with a teller or a bank employee in the past 12 months?

Percent, except as noted

Q6	
Refused	0.2
Yes	87.3
No	12.5
Number of respondents	2,685

Table C.8. In the past month, about how many times have you visited a branch and spoken with a teller or a bank employee? If none enter "0".

Q7	
Refused (percent)	0.3
Total respondents with zero uses (percent)	23.3
Mean number of uses (at least one use)	2.9
Median number of uses (at least one use)	2.0
Number of respondents	2,389

Table C.9. Which of the following best describes the location of your bank or credit union branch that you typically visit when you need to speak with a teller or bank employee?

Percent, except as noted

Q8	
Refused	0.2
I visit a branch close to my home, work, school, or other place I go to frequently	85.0
I must go out of my way or travel for a while to visit a branch	7.0
I am not able to visit a branch because my bank does not have a branch in my area	2.3
I do not need to visit a branch	5.5
Number of respondents	2,685

Table C.10. About how long does it take you to travel to the branch you typically visit (one way)?

Q9	
Refused (percent)	0.2
Mean number of minutes	10.3
Median number of minutes	8.0
Number of respondents	2,484

Table C.11. Have you used an ATM for any banking transactions in the past 12 months?

Percent, except as noted

Q10	
Refused	0.2
Yes	75.2
No	24.6
Number of respondents	2,685

Table C.12. In the past month, about how many times have you used an ATM for banking transactions? If none enter "0".

Q11	
Refused (percent)	0.6
Total respondents with zero uses (percent)	15.0
Mean number of uses (at least one use)	3.9
Median number of uses (at least one use)	3.0
Number of respondents	1,977

Table C.13. Which of the following best describes the location of the ATM that you typically use for banking transactions?

Percent, except as noted

Q12	
Refused	0.4
I use an ATM close to my home, work, school, or other place I go to frequently	75.0
I must go out of my way or travel for a while to access the ATM	4.0
I am not able to use an ATM for banking transactions because there is not an ATM in my area	0.6
I do not use an ATM	20.0
Number of respondents	2,685

Table C.14. About how long does it take you to travel to the ATM you typically use (one way)?

Q13	
Refused (percent)	0.5
Mean number of minutes	8.4
Median number of minutes	5.0
Number of respondents	2,073

Table C.15. Have you used telephone banking in the past 12 months, either with a land-line phone or your mobile phone?

Percent, except as noted

Q14	
Refused	0.3
Yes	32.7
No	67.0
Number of respondents	2,685

Table C.16. In the past month, about how many times have you used telephone banking to access your account? If none enter "0".

Q15	
Refused (percent)	0.3
Total respondents with zero uses (percent)	27.1
Mean number of uses (at least one use)	3.8
Median number of uses (at least one use)	2.0
Number of respondents	815

Table C.17. Do you currently have regular access to the Internet, either at your home or outside your home (e.g., at school, work, public library, etc.) that is not provided by GfK, formerly Knowledge Networks?

Percent, except as noted

Q17	
Refused	0.4
Yes	88.0
No	11.6
Number of respondents	2,925

Table C.18. Which of the following best describes how easy it is for you to access the Internet on a desktop, laptop, or tablet (e.g., iPad)?

Percent, except as noted

Q18	
Refused	1.4
Access is almost always available	83.5
Access is not always available, but is available at locations that are convenient for me (e.g., home, work, school)	11.1
Access is available only at locations that require extra effort or planning to get to	4.0
Number of respondents	2,925

Table C.19. Have you used online banking on a desktop, laptop, or tablet (e.g., iPad) computer in the past 12 months?

Percent, except as noted

Q19	
Refused	0.6
Yes	73.7
No	25.7
Number of respondents	2,685

Table C.20. In the past month, about how many times have you used online banking on a desktop, laptop, or tablet (e.g., iPad) computer? If none enter "0".

Q20	
Refused (percent)	0.1
Total respondents with zero uses (percent)	5.0
Mean number of uses (at least one use)	9.1
Median number of uses (at least one use)	5.0
Number of respondents	2,026

Table C.21. Do you own or have regular access to a mobile phone (cell phone)?

Percent, except as noted

Q21	
Yes	86.8
No	13.2
Number of respondents	2,925

Table C.22. Is your mobile phone a smartphone?

Percent, except as noted

Q22	
Refused	0.3
Yes	70.9
No	28.8
Number of respondents	2,603

Table C.23. Which type of smartphone do you have?

Percent, except as noted

Q23	
Android	47.7
BlackBerry	1.1
iPhone	44.1
Windows Mobile	1.8
Amazon Fire	0.3*
Other	3.2
Don't know	1.9
Number of respondents	1,775

* Fewer than 10 responses were received for this option.

Table C.24. How confident are you in your ability to understand and navigate the technology and features of your mobile phone?

Percent, except as noted

Q24	
Refused	0.5
Very confident	54.0
Somewhat confident	33.5
Not confident	12.0
Number of respondents	2,603

Table C.25. Do you password protect your smartphone?

Percent, except as noted

Q25	
Refused	0.6
Yes	69.2
No	30.2
Number of respondents	1,775

Table C.26. Which of the following best describes how easy it is for you to access the Internet on your mobile phone through either WiFi or a wireless network (3G, 4G, LTE)?

Percent, except as noted

Q27	
Refused	0.7
Access is almost always available	63.0
Access is not always available, but is available at locations that are convenient for me (e.g., home, work, school)	9.1
Access is available only at locations that require extra effort or planning to get to	1.3
Access is not available	7.4
I do not need access to the Internet on my mobile phone	18.6
Number of respondents	2,603

Table C.27. Does your bank or credit union offer mobile banking?

Percent, except as noted

Q28	
Refused	0.4
Yes	74.0
No	4.1
Don't know	21.5
Number of respondents	2,437

Table C.28. Have you used mobile banking in the past 12 months?

Percent, except as noted

Q29	
Refused	1.2
Yes	38.7
No	60.1
Number of respondents	2,437

Table C.29. Do you plan to use mobile banking in the next 12 months?

Percent, except as noted

Q30	
Definitely will use	1.2
Probably will use	9.8
Probably will not use	45.4
Definitely will not use	43.7
Number of respondents	1,584

Table C.30. Using your mobile phone, have you done each of the following in the past 12 months?

Percent, except as noted

Q32	
No/refused to all	46.6
Downloaded your bank's mobile banking app on your mobile phone	30.2
Checked an account balance or checked recent transactions	44.9
Made a bill payment using your bank's online banking website or banking app	21.0
Received an alert (e.g., a text message, push notification, or e-mail) from your bank	28.5
Transferred money between your bank accounts	26.8
Transferred money from your bank account to another person	10.4
Deposited a check to your account electronically using your mobile phone camera	20.1
Located the closest in-network ATM or branch for your bank	20.2
Number of respondents	2,437

Note: This question was asked of those with a mobile phone and a bank account and includes those who did not identify themselves as having used mobile banking in the previous 12 months.

Table C.31. In the past month, about how many times have you personally used mobile banking?

Q33	
Refused (percent)	3.5
Total respondents with zero uses (percent)	6.4
Mean number of uses (at least one use)	10.0
Median number of uses (at least one use)	5.0
Number of respondents	829

Table C.32. When did you start using mobile banking?

Percent, except as noted

Q34	
Refused	5.1
In the last 6 months	14.6
6 to 12 months ago	11.6
1 to 2 years ago	27.6
More than 2 years ago	36.3
I don't remember	4.7
Number of respondents	829

Table C.33. What was the main reason why you started using mobile banking when you did?

Percent, except as noted

Q35	
Refused	0.1
I got a smartphone	32.5
My bank started offering the service	19.8
There is no bank branch or ATM near my home or work	3.5
I became comfortable with the security of mobile banking	5.7
I liked the convenience of mobile banking	34.6
To receive fraud alerts or check my account for fraudulent transactions	0.9*
Other (please specify):	3.1
Number of respondents	829

* Fewer than 10 responses were received for this option.

Table C.34. Have you made a mobile payment in the past 12 months?

Percent, except as noted

Q36	
Refused	0.7
Yes	21.7
No	77.6
Number of respondents	2,603

Table C.35. Using your mobile phone, have you done each of the following in the past 12 months?

Percent, except as noted

Q37	
No/refused to all	64.5
Transferred money directly to another person's bank or other financial account within the United States (e.g., Paypal account)	10.8
Send a remittance (used to send money to relatives or friends living outside the U.S through WesternUnion, USPS SureMoney, etc.)	2.2
Received money from another person's bank or other financial account (e.g., Paypal account)	9.9
Paid for a product or service at a store (including at gas pumps and for restaurant meals)	12.9
Paid for parking, a taxi, or public transit using an app	4.8
Paid bills online through a mobile web browser or app	19.7
Made a payment using a text message (including charitable donation by text message)	2.8
Used an app to receive loyalty or reward points	12.0
Made an online or in-app purchase (e.g., from amazon.com or bestbuy.com)	20.9
Number of respondents	2,603

Note: This question was asked of those with a mobile phone and includes those who did not identify themselves as having used mobile payments in the previous 12 months.

Table C.36. In the past month, about how many times have you used your mobile phone to make any type of mobile payment? If none please enter "0".

Q38	
Refused (percent)	1.6
Total respondents with zero uses (percent)	26.6
Mean number of uses (at least one use)	4.9
Median number of uses (at least one use)	3.0
Number of respondents	455

Table C.37. When you have used your mobile phone to pay for something at a store in the past 12 months, have you used your phone in each of these different ways?

Percent, except as noted

Q39	
No/refused to all	57.8
Waved or tapped my mobile phone to pay at check out (e.g., Google Wallet or Apple Pay)	11.6
Scanned a barcode or QR code using your mobile phone to make a mobile payment (e.g., Starbucks app)	28.6
Used a mobile app that doesn't require tapping the phone to pay at check out or scanning a barcode to pay for a purchase (e.g., Square Wallet)	18.6
Other	1.7
Number of respondents	283

Table C.38. In the past month, about how many times have you used your mobile phone to pay for a product or service at a store? If none please enter "0".

Q40	
Refused (percent)	12.0
Total respondents with zero uses (percent)	50.1
Mean number of uses (at least one use)	4.7
Median number of uses (at least one use)	3.0
Number of respondents	283

Table C.39. When making mobile payments, which of the following payment methods do you use?

Percent, except as noted

Q41	
Refused	2.0
Credit card	51.2
Debit card	55.0
Prepaid debit card	7.6
Bank account	40.7
Charge to your phone bill	4.2
Account at a non-financial institution (e.g., PayPal)	15.4
Other	3.1
Number of respondents	455

Table C.40. Have you used any of the following mobile payment services in the past 12 months?

Percent, except as noted

Q42	
Refused	42.3
Starbucks mobile payments	10.9
Google Wallet	9.0
Square Wallet	1.6*
Apple Pay	4.9
Deluxe eCheck	0.9*
Amazon Firefly	2.9*
CardNav	1.1*
PayPal	43.1
LevelUp	0.8*
Dwolla	0.0
Softcard	0.6*
Tabbedout	0.0
Number of respondents	428

* Fewer than 10 responses were received for this option.

Table C.41. When did you start using mobile payments?

Percent, except as noted

Q43	
Refused	2.5
In the last 6 months	15.9
6 to 12 months ago	13.1
1 to 2 years ago	20.9
More than 2 years ago	25.6
I don't remember	21.9
Number of respondents	455

Table C.42. What was the main reason why you started using mobile payments when you did?

Percent, except as noted

Q44	
Refused	4.5
I got a smartphone	33.7
The ability to make mobile payments became available	15.5
I became comfortable with the security of mobile payments	8.7
I liked the convenience of mobile payments	29.1
A store I visit started offering the service	2.3
To take advantage of loyalty or rewards points and discounts	2.6
Other (please specify):	3.5
Number of respondents	455

Table C.43. Please tell us if each of the reasons below are why you do not use mobile banking.

Percent, except as noted

Q45	
No/refused to all	4.8
I'm concerned about the security of mobile banking	62.1
My banking needs are being met without mobile banking	85.8
I don't see any reason to use mobile banking	73.0
The mobile phone screen is too small	39.4
I don't have a smartphone	32.3
My bank charges a fee for using mobile banking	6.5
I don't do the banking in my household	12.5
I don't trust the technology	34.3
It's too difficult to use mobile banking	19.9
Number of respondents	945

Table C.44. You mentioned that security was one of your top concerns with mobile banking; which one of the following security aspects are you most concerned with?

Percent, except as noted

Q46	
Refused	0.5
My phone getting hacked	17.1
Someone using my phone without permission to access my account	4.1
Someone intercepting my data	22.3
Losing my phone or having my phone stolen	8.9
Malware or viruses being installed on my phone	1.8
Companies misusing my personal information	2.0*
All of the above	42.9
Other (please specify):	0.4*
Number of respondents	600

* Fewer than 10 responses were received for this option.

Table C.45. Assuming that the concerns that you have about using mobile banking were addressed, would you be interested in doing any of the following activities with your mobile phone?

Percent, except as noted

Q47	
Refused	0.5
Download your bank's mobile banking app	21.3
Check an account balance or check recent transactions	32.2
Make bill payments using your bank's online banking website or app	14.9
Receive alerts (e.g., text message, push notification, or e-mail) from your bank	19.3
Deposit a check electronically using your mobile phone camera	17.4
Transfer money between your bank accounts	20.3
Transfer money from your bank account to another person	11.3
Locate the closest in-network ATM or branch for your bank	18.2
None, I don't want to use mobile banking	59.2
Number of respondents	945

Table C.46. You mentioned that your bank does not offer mobile banking or you are not sure if your bank offers it. If your bank or credit union were to offer mobile banking, would you be interested in doing any of the following activities with your mobile phone?

Percent, except as noted

Q48	
Refused	0.3
Download your bank's mobile banking app	8.1
Check an account balance or check recent transactions	15.0
Make bill payments using your bank's online banking website or app	6.2
Receive alerts (e.g., text message, push notification, or e-mail) from your bank	7.1
Deposit a check electronically using your mobile phone camera	6.7
Transfer money between your bank accounts	6.6
Transfer money from your bank account to another person	3.4
Locate the closest in-network ATM or branch for your bank	6.9
None, I don't want to use mobile banking	79.0
Number of respondents	650

Table C.47. Please tell us if any of the reasons below are why you do not use mobile payments.

Percent, except as noted

Q49	
No/refused to all	8.4
I'm concerned about the security of mobile payments	59.4
It's easier to pay with cash or a credit/debit card	75.3
I don't see any benefit from using mobile payments	59.4
The places I shop don't accept mobile payments	23.2
I don't have the necessary feature on my phone	37.0
I don't trust the technology	41.0
It's difficult or time consuming to set up or use mobile payments	31.0
I don't need to make any payments or someone else pays the bills	23.4
I don't really understand all the different mobile payment options	31.2
Number of respondents	2,137

Table C.48. You mentioned that security was one of your top concerns with mobile payments; which one of these security aspects are you most concerned with?

Percent, except as noted

Q50	
Refused	0.2
My phone getting hacked	13.1
Someone intercepting my payment information or other data	20.7
Losing my phone or having my phone stolen	10.0
Malware or viruses being installed on my phone	1.7
Companies misusing my personal information	2.7
All of the above	51.0
Other (please specify):	0.6*
Number of respondents	1,286

* Fewer than 10 responses were received for this option.

Table C.49. Assuming that the reason(s) why you do not currently use mobile payments was addressed, would you be interested in doing any of the following activities with your mobile phone?

Percent, except as noted

Q51	
Refused	1.0
Making payments to another person (e.g., friend, relative, babysitter) within the United States	11.2
Transferring money to someone in another country	4.3
Using my mobile phone to pay for purchases at a store	17.7
Paying for parking, a taxi, or public transit using an app	12.3
Paying bills online through a mobile web browser or app	15.0
Using your mobile phone as a "virtual wallet" to replace some cards in your wallet	12.5
Making an online or in-app purchase (e.g., from amazon.com or bestbuy.com)	14.7
Receiving money from another person's bank or other financial account (e.g., Paypal account)	11.6
Receiving/using coupons and/or reward points on your phone	19.8
None, I don't want to use mobile payments	65.5
Number of respondents	2,137

Table C.50. You indicated that you have not made a mobile payment in a store in the last 12 months. Do you plan to use your mobile phone to make a payment in a store in the next 12 months?

Percent, except as noted

Q52	
Refused	0.2
Definitely will use	3.6
Probably will use	11.2
Probably will not use	37.7
Definitely will not use	47.2
Number of respondents	2,300

Table C.51. How safe do you believe people's personal information is when they use mobile banking?

Percent, except as noted

Q53	
Refused	0.9
Very safe	6.7
Somewhat safe	33.6
Somewhat unsafe	24.7
Very unsafe	19.0
Don't know	15.1
Number of respondents	2,603

Table C.52. How safe do you believe people's personal information is when they use a mobile phone to pay for a purchase at a store?

Percent, except as noted

Q54	
Refused	0.9
Very safe	5.2
Somewhat safe	29.7
Somewhat unsafe	27.8
Very unsafe	21.0
Don't know	15.4
Number of respondents	2,603

Table C.53. Would you like to or do you already use your mobile phone for any of the following purposes?

Percent, except as noted

Q55	Refused	I already do	I would like to	I am unlikely to
Track your finances, purchases or expenses	1.0	28.5	13.2	57.2
Organize, track and store gift cards, memberships, loyalty and reward points	1.2	13.3	19.3	66.3
Compare prices when shopping	1.2	29.7	24.3	44.8
Receive and manage discount offers and coupons	1.1	23.0	25.5	50.3
Receive offers and promotions based on your location	1.2	17.5	23.8	57.5
Number of respondents	2,603			

Table C.54. I am willing to allow my mobile phone to provide my location to companies I shop with regularly so that they can offer me discounts, promotions, or services based on where I am.

Percent, except as noted

Q56	
Refused	1.1
Strongly agree	6.2
Agree	33.5
Disagree	32.9
Strongly disagree	26.4
Number of respondents	1,775

Table C.55. I am willing to allow my mobile phone to provide personal information such as my sex, age, friends, and shopping history to companies I shop with regularly so that they can offer me targeted discounts, promotions, or services.

Percent, except as noted

Q57	
Refused	1.0
Strongly agree	3.4
Agree	19.4
Disagree	37.0
Strongly disagree	39.3
Number of respondents	1,775

Table C.56. Have you ever used your mobile phone to comparison shop over the Internet while at a retail store?

Percent, except as noted

Q58	
Refused	0.9
Yes	46.5
No	52.6
Number of respondents	1,775

Table C.57. Have you ever used a barcode scanning app on your mobile phone while shopping at a retail store to find the best price for an item?

Percent, except as noted

Q59	
Refused	0.8
Yes	32.8
No	66.4
Number of respondents	1,775

Table C.58. Has using your mobile phone to compare prices while you were shopping at a retail store ever changed where you made your purchase?

Percent, except as noted

Q61	
Refused	0.4
Yes	68.6
No	31.0
Number of respondents	894

Table C.59. Have you ever scanned a QR code (similar to a barcode) in a retail store, newspaper, magazine, or billboard advertisement to obtain information about a product on your mobile phone?

Percent, except as noted

Q60	
Refused	1.2
Yes	30.8
No	68.0
Number of respondents	1,775

Table C.60. Have you ever used your mobile phone to browse product reviews or get product information while shopping at a retail store? This could be done by, for example, googling the product on your mobile browser or scanning a QR code.

Percent, except as noted

Q62	
Refused	1.4
Yes	42.2
No	56.5
Number of respondents	1,775

Table C.61. Has reading product reviews on your mobile phone while shopping at a retail store ever changed which item you ended up purchasing?

Percent, except as noted

Q63	
Refused	0.1
Yes	78.7
No	21.3
Number of respondents	712

Table C.62. In the past 12 months, have you used your mobile phone to check your account balance or available credit before making a large purchase?

Percent, except as noted

Q64	
Refused	0.2
Yes	63.4
No	36.4
Number of respondents	798

Table C.63. Thinking of the most recent time that you checked your account balance or available credit before making a large purchase, did you decide not to buy that particular item because of the amount of money left in your account or the amount of your available credit?

Percent, except as noted

Q65	
Refused	0.7
Yes	53.1
No	46.2
Number of respondents	462

Table C.64. You previously mentioned that you receive text message, push notification, or e-mail alerts from your financial institution. Do you receive each of the following kinds of alerts?

Percent, except as noted

Q66	
Refused	1.9
Low balance	42.4
Payment due	32.8
Saving reminders	4.6
Fraud	32.2
Credit card balance	14.7
Deposit or withdrawal	36.7
Statement available notification	39.7
Other	7.1
Number of respondents	629

Table C.65. Thinking of the most recent low-balance alert you received, which of the following actions did you take after receiving the alert?

Percent, except as noted

Q67	
Refused	0.2
Transferred money into the account with the low balance from another account	41.0
Deposited money into the account with the low balance	29.7
Reduced my spending	28.2
None of the above	20.2
Number of respondents	256

Summary Statistics for Demographics

Table C.66. Summary statistics for demographics: Full sample

	Weighted		Unweighted	
	Mean	Standard deviation	Mean	Standard deviation
Age	47.0650	17.2240	52.3371	16.9816
Male	0.4824	0.4998	0.5183	0.4998
Female	0.5176	0.4998	0.4817	0.4998
18–29	0.2140	0.4102	0.1323	0.3389
30–44	0.2532	0.4349	0.1993	0.3996
45–60	0.2684	0.4432	0.2882	0.4530
Ages over 60	0.2644	0.4411	0.3802	0.4855
Less than high school	0.1237	0.3293	0.0646	0.2459
High school degree	0.2963	0.4567	0.2745	0.4464
Some college	0.2874	0.4526	0.2868	0.4524
Bachelor's degree or higher	0.2925	0.4550	0.3740	0.4840
White, non-Hispanic	0.6552	0.4754	0.7665	0.4231
Black, non-Hispanic	0.1153	0.3195	0.0800	0.2713
Other, non-Hispanic	0.0777	0.2677	0.0687	0.2530
Hispanic	0.1518	0.3589	0.0848	0.2786
2 or more races, non-Hispanic	0.0128	0.1123	0.0294	0.1690
Less than \$25,000	0.2164	0.4119	0.1590	0.3657
\$25,000–\$39,999	0.1543	0.3613	0.1398	0.3469
\$40,000–\$74,999	0.1651	0.3713	0.1689	0.3747
\$75,000–\$99,999	0.2306	0.4213	0.2537	0.4352
Greater than \$100,000	0.2335	0.4231	0.2786	0.4484
Married	0.5105	0.5000	0.5959	0.4908
Not married	0.4895	0.5000	0.4041	0.4908
Metropolitan	0.8439	0.3630	0.8373	0.3692
Northeast	0.1821	0.3860	0.1867	0.3897
Midwest	0.2135	0.4098	0.2284	0.4199
South	0.3707	0.4831	0.3600	0.4801
West	0.2337	0.4233	0.2250	0.4176
Employed	0.5664	0.4957	0.5525	0.4973
Unemployed, in labor force	0.0850	0.2789	0.0547	0.2274
Not in labor force	0.3487	0.4766	0.3928	0.4885
Observations	2,925			

Table C.67. Summary statistics for demographics: All mobile phone users (feature and smartphone)

	Weighted		Unweighted	
	Mean	Standard deviation	Mean	Standard deviation
Age	46.1954	16.9504	51.6815	16.8657
Male	0.4818	0.4998	0.5167	0.4998
Female	0.5182	0.4998	0.4833	0.4998
18–29	0.2226	0.4161	0.1364	0.3433
30–44	0.2656	0.4417	0.2098	0.4072
45–60	0.2692	0.4436	0.2908	0.4542
Ages over 60	0.2426	0.4287	0.3630	0.4810
Less than high school	0.1059	0.3078	0.0553	0.2286
High school degree	0.2838	0.4509	0.2620	0.4398
Some college	0.2945	0.4559	0.2897	0.4537
Bachelor's degree or higher	0.3158	0.4649	0.3930	0.4885
White, non-Hispanic	0.6664	0.4716	0.7722	0.4195
Black, non-Hispanic	0.1096	0.3125	0.0772	0.2670
Other, non-Hispanic	0.0747	0.2630	0.0676	0.2511
Hispanic	0.1492	0.3563	0.0830	0.2759
2 or more races, non-Hispanic	0.0108	0.1033	0.0288	0.1673
Less than \$25,000	0.1839	0.3875	0.1348	0.3416
\$25,000–\$39,999	0.1499	0.3570	0.1348	0.3416
\$40,000–\$74,999	0.1697	0.3754	0.1690	0.3749
\$75,000–\$99,999	0.2408	0.4277	0.2647	0.4413
Greater than \$100,000	0.2556	0.4363	0.2966	0.4568
Married	0.5300	0.4992	0.6135	0.4870
Not married	0.4700	0.4992	0.3865	0.4870
Metropolitan	0.8530	0.3542	0.8444	0.3625
Northeast	0.1898	0.3922	0.1894	0.3919
Midwest	0.2034	0.4026	0.2197	0.4142
South	0.3731	0.4837	0.3665	0.4819
West	0.2337	0.4232	0.2244	0.4172
Employed	0.6114	0.4875	0.5843	0.4929
Unemployed, in labor force	0.0782	0.2685	0.0515	0.2210
Not in labor force	0.3105	0.4628	0.3642	0.4813
Observations	2,603			

Table C.68. Summary statistics for demographics: Smartphone users

	Weighted		Unweighted	
	Mean	Standard deviation	Mean	Standard deviation
Age	42.4617	15.4502	47.8068	16.0438
Male	0.4865	0.5000	0.5217	0.4997
Female	0.5135	0.5000	0.4783	0.4997
18–29	0.2652	0.4416	0.1707	0.3764
30–44	0.3223	0.4675	0.2642	0.4410
45–60	0.2531	0.4349	0.3020	0.4592
Ages over 60	0.1593	0.3661	0.2631	0.4404
Less than high school	0.0778	0.2679	0.0394	0.1947
High school degree	0.2611	0.4393	0.2287	0.4201
Some college	0.3023	0.4594	0.2946	0.4560
Bachelor’s degree or higher	0.3588	0.4798	0.4372	0.4962
White, non-Hispanic	0.6403	0.4801	0.7487	0.4339
Black, non-Hispanic	0.1028	0.3037	0.0761	0.2652
Other, non-Hispanic	0.0847	0.2785	0.0744	0.2624
Hispanic	0.1723	0.3777	0.1008	0.3012
2 or more races, non-Hispanic	0.0098	0.0986	0.0270	0.1623
Less than \$25,000	0.1376	0.3446	0.0969	0.2959
\$25,000–\$39,999	0.1347	0.3415	0.1149	0.3190
\$40,000–\$74,999	0.1739	0.3791	0.1645	0.3708
\$75,000–\$99,999	0.2489	0.4325	0.2659	0.4419
Greater than \$100,000	0.3049	0.4605	0.3577	0.4795
Married	0.5431	0.4983	0.6248	0.4843
Not married	0.4569	0.4983	0.3752	0.4843
Metropolitan	0.8680	0.3386	0.8575	0.3497
Northeast	0.1836	0.3873	0.1803	0.3845
Midwest	0.1909	0.3931	0.2096	0.4071
South	0.3785	0.4851	0.3752	0.4843
West	0.2470	0.4314	0.2349	0.4241
Employed	0.6878	0.4635	0.6715	0.4698
Unemployed, in labor force	0.0803	0.2719	0.0552	0.2285
Not in labor force	0.2318	0.4221	0.2732	0.4457
Observations	1,775			

Table C.69. Summary statistics for demographics: Feature phone users

	Weighted		Unweighted	
	Mean	Standard deviation	Mean	Standard deviation
Age	55.4315	16.9421	60.0537	15.5039
Male	0.4695	0.4994	0.5049	0.5003
Female	0.5305	0.4994	0.4951	0.5003
18–29	0.1166	0.3211	0.0622	0.2417
30–44	0.1272	0.3333	0.0927	0.2902
45–60	0.3081	0.4620	0.2659	0.4421
Ages over 60	0.4482	0.4976	0.5793	0.4940
Less than high school	0.1762	0.3813	0.0902	0.2867
High school degree	0.3403	0.4741	0.3341	0.4720
Some college	0.2771	0.4478	0.2805	0.4495
Bachelor’s degree or higher	0.2063	0.4049	0.2951	0.4564
White, non-Hispanic	0.7274	0.4455	0.8207	0.3838
Black, non-Hispanic	0.1276	0.3338	0.0805	0.2722
Other, non-Hispanic	0.0510	0.2202	0.0537	0.2255
Hispanic	0.0939	0.2919	0.0451	0.2077
2 or more races, non-Hispanic	0.0133	0.1145	0.0329	0.1786
Less than \$25,000	0.2996	0.4584	0.2183	0.4133
\$25,000–\$39,999	0.1870	0.3901	0.1780	0.3828
\$40,000–\$74,999	0.1599	0.3667	0.1780	0.3828
\$75,000–\$99,999	0.2183	0.4133	0.2610	0.4394
Greater than \$100,000	0.1352	0.3422	0.1646	0.3711
Married	0.4994	0.5003	0.5890	0.4923
Not married	0.5006	0.5003	0.4110	0.4923
Metropolitan	0.8147	0.3888	0.8146	0.3888
Northeast	0.2039	0.4031	0.2085	0.4065
Midwest	0.2345	0.4239	0.2415	0.4282
South	0.3596	0.4802	0.3476	0.4765
West	0.2021	0.4018	0.2024	0.4021
Employed	0.4212	0.4940	0.3951	0.4892
Unemployed, in labor force	0.0736	0.2612	0.0439	0.2050
Not in labor force	0.5052	0.5003	0.5610	0.4966
Observations	820			

Cross-Tabulations for Consumers' Use of Mobile Phones

Table C.70. Do you own or have regular access to a mobile phone?

Percent, except as noted

Age categories	No	Yes	Total	Number of respondents	Percentage of users in category
18–29	9.7	90.3	100.0	387	22.3
30–44	8.9	91.1	100.0	583	26.6
45–59	12.9	87.1	100.0	843	26.9
60+	20.3	79.7	100.0	1,112	24.3
Number of respondents	322	2,603	2,925		100.0

Table C.71. Is your mobile phone a smartphone?

Percent, except as noted

Age categories	Refused	No	Yes	Total	Number of respondents	Percentage of users in category
18–29	0.5	15.1	84.4	100.0	355	26.5
30–44	0.2	13.8	86.0	100.0	546	32.2
45–59	0.3	33.0	66.6	100.0	757	25.3
60+	0.2	53.3	46.5	100.0	945	15.9
Number of respondents	8	820	1775	2,603		100.0

Table C.72. Do you own or have regular access to a mobile phone?

Percent, except as noted

Education	No	Yes	Total	Number of respondents	Percentage of users in category
Less than high school	25.6	74.4	100.0	189	10.6
High school	16.9	83.1	100.0	803	28.4
Some college	11.0	89.0	100.0	839	29.5
Bachelor's degree or higher	6.3	93.7	100.0	1,094	31.6
Number of respondents	322	2,603	2,925		100.0

Table C.73. Is your mobile phone a smartphone?

Percent, except as noted

Education	Refused	No	Yes	Total	Number of respondents	Percentage of users in category
Less than high school	0.0	48.0	52.0	100.0	144	7.8
High school	0.2	34.6	65.2	100.0	682	26.1
Some college	0.1	27.1	72.8	100.0	754	30.2
Bachelor's degree or higher	0.6	18.8	80.5	100.0	1,023	35.9
Number of respondents	8	820	1775	2,603		100.0

Table C.74. Do you own or have regular access to a mobile phone?

Percent, except as noted

Race/ethnicity	No	Yes	Total	Number of respondents	Percentage of users in category
White, non-Hispanic	11.7	88.3	100.0	2,242	66.6
Black, non-Hispanic	17.4	82.6	100.0	234	11.0
Other, non-Hispanic	14.4	85.6	100.0	115	6.4
Hispanic	14.7	85.3	100.0	248	14.9
2+ races, non-Hispanic	26.7	73.3	100.0	86	1.1
Number of respondents	322	2,603	2,925		100.0

Table C.75. Is your mobile phone a smartphone?

Percent, except as noted

Race/ethnicity	Refused	No	Yes	Total	Number of respondents	Percentage of users in category
White, non-Hispanic	0.4	31.5	68.1	100.0	2,010	64.0
Black, non-Hispanic	0.0	33.6	66.4	100.0	201	10.3
Other, non-Hispanic	0.0	17.0	83.0	100.0	101	7.5
Hispanic	0.0	18.2	81.8	100.0	216	17.2
2+ races, non-Hispanic	0.0	35.5	64.5	100.0	75	1.0
Number of respondents	8	820	1,775	2,603		100.0

Table C.76. Do you own or have regular access to a mobile phone?

Percent, except as noted

Income group	No	Yes	Total	Number of respondents	Percentage of users in category
Less than \$25,000	26.2	73.8	100.0	465	18.4
\$25,000–\$39,999	15.6	84.4	100.0	409	15.0
\$40,000–\$74,999	10.7	89.3	100.0	494	17.0
\$75,000–\$99,999	9.3	90.7	100.0	742	24.1
Greater than \$100,000	4.9	95.1	100.0	815	25.6
Number of respondents	322	2,603	2,925		100.0

Table C.77. Is your mobile phone a smartphone?

Percent, except as noted

Income group	Refused	No	Yes	Total	Number of respondents	Percentage of users in category
Less than \$25,000	0.0	47.0	53.0	100.0	351	13.8
\$25,000–\$39,999	0.3	36.0	63.7	100.0	351	13.5
\$40,000–\$74,999	0.2	27.2	72.6	100.0	440	17.4
\$75,000–\$99,999	0.6	26.1	73.3	100.0	689	24.9
Greater than \$100,000	0.2	15.3	84.5	100.0	772	30.5
Number of respondents	8	820	1,775	2,603		100.0

Cross-Tabulations for Consumers' Use of Mobile Banking and Mobile Payments

C.78.a. Cross-tabulations for consumers' use of mobile banking by age, race, gender, education, and income: Smartphone users
Percent, except as noted

Use of mobile banking in past 12 months	Refused	No	Yes	Total	Number of respondents	Percentage of users in category
Age categories						
18–29	0.2	33.4	66.4	100.0	260	31.2
30–44	1.8	38.5	59.8	100.0	437	36.9
45–59	1.0	53.5	45.5	100.0	518	23.4
60+	1.1	73.1	25.7	100.0	457	8.5
Number of respondents	15	859	798	1,672		100.0
Race/ethnicity						
White, non-Hispanic	0.8	51.2	48.0	100.0	1,282	61.8
Black, non-Hispanic	0.8	43.3	55.8	100.0	117	10.1
Other, non-Hispanic	1.8	43.2	55.0	100.0	81	8.3
Hispanic	2.1	34.3	63.6	100.0	149	18.6
2+ races, non-Hispanic	0.0	38.8	61.2	100.0	43	1.1
Number of respondents	15	859	798	1,672		100.0
Gender						
Female	1.7	46.7	51.6	100.0	797	51.0
Male	0.4	47.6	52.0	100.0	875	49.0
Number of respondents	15	859	798	1,672		100.0
Education						
Less than high school	2.9	55.0	42.2	100.0	53	5.0
High school	0.1	56.3	43.6	100.0	367	20.9
Some college	1.5	42.5	56.0	100.0	492	33.3
Bachelor's degree or higher	1.1	43.8	55.2	100.0	760	40.9
Number of respondents	15	859	798	1,672		100.0
Income group						
Less than \$25,000	1.3	40.9	57.8	100.0	138	12.2
\$25,000–\$39,999	0.5	52.2	47.3	100.0	188	12.1
\$40,000–\$74,999	0.7	42.0	57.3	100.0	279	20.1
\$75,000–\$99,999	1.1	47.6	51.3	100.0	453	25.4
Greater than \$100,000	1.3	49.8	48.8	100.0	614	30.2
Number of respondents	15	859	798	1,672		100.0

C.78.b. Cross-tabulations for consumers' use of mobile payments by age, race, gender, education, and income: Smartphone users

Percent, except as noted

Use of mobile payments in past 12 months	Refused	No	Yes	Total	Number of respondents	Percentage of users in category
Age categories						
18–29	0.6	61.8	37.6	100.0	303	35.1
30–44	1.4	64.0	34.6	100.0	469	39.3
45–59	0.4	78.8	20.8	100.0	536	18.5
60+	0.1	87.3	12.6	100.0	467	7.1
Number of respondents	7	1,340	428	1,775		100.0
Race/ethnicity						
White, non-Hispanic	0.2	75.9	23.9	100.0	1,329	53.8
Black, non-Hispanic	0.0	58.3	41.7	100.0	135	15.1
Other, non-Hispanic	2.0	73.5	24.6	100.0	84	6.5
Hispanic	2.5	58.8	38.6	100.0	179	23.4
2+ races, non-Hispanic	0.0	65.0	35.0	100.0	48	1.2
Number of respondents	7	1,340	428	1,775		100.0
Gender						
Female	0.8	68.9	30.3	100.0	849	54.8
Male	0.6	73.0	26.4	100.0	926	45.2
Number of respondents	7	1,340	428	1,775		100.0
Education						
Less than high school	2.6	72.7	24.7	100.0	70	6.8
High school	0.6	74.8	24.5	100.0	406	22.6
Some college	0.7	67.7	31.5	100.0	523	33.6
Bachelor's degree or higher	0.4	70.3	29.4	100.0	776	37.1
Number of respondents	7	1,340	428	1,775		100.0
Income group						
Less than \$25,000	1.5	65.0	33.6	100.0	172	16.3
\$25,000–\$39,999	0.5	67.8	31.8	100.0	204	15.1
\$40,000–\$74,999	0.9	69.3	29.8	100.0	292	18.2
\$75,000–\$99,999	0.0	70.8	29.2	100.0	472	25.6
Greater than \$100,000	0.9	75.9	23.2	100.0	635	24.9
Number of respondents	7	1,340	428	1,775		100.0

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Wal-Mart takes on money transfer companies with new service

Thu, Apr 17 2014

By [Phil Wahba](#)

(Reuters) - Wal-Mart Stores Inc is launching a money transfer service in a direct challenge to the dominance of Western Union Co. and MoneyGram, aiming to broaden the financial services it offers to low-income customers and increase store traffic.

Wal-Mart said on Thursday that Euronet Worldwide Inc's Ria Money Transfer subsidiary would begin running the service, called "Walmart-2-Walmart," next week.

The new service, which Wal-Mart says will charge lower fees than those currently offered by competitors, will enable shoppers to send and receive cash from family members and friends at more than 4,000 U.S. discount stores.

Wal-Mart, which will not offer the service online or in its international stores, hopes consumers will turn around and spend at least some of that money at the stores.

Daniel Eckert, senior vice president of services for Walmart U.S., said Walmart-2-Walmart "challenges the status quo and drives down prices."

After the news, Western Union shares were down 4 percent, while those of MoneyGram International Inc, which currently provides such services for Wal-Mart shoppers, plummeted 15.6 percent. Euronet was up 4.4 percent.

"This significant foray casts a pall over Western Union's pricing model and long-term organic revenue growth outlook," Andrew Jeffrey, an analyst at SunTrust Robinson, said in a research note.

For Western Union, U.S. domestic money transfer represents about 8 percent of its total 2013 revenue.

When asked about the new Walmart service, Western Union said it was well-positioned in the business, saying it offered services through a network of about 46,000 agents in the United States alone.

Sterne Agee analyst Jennifer Dugan said she thought the new Walmart service would not have a significant impact on Western Union's market share and average pricing.

"We believe Western Union's agent locations in the U.S. are ... more convenient to the majority of those sending and receiving money transfers," she wrote in a research note.

LITTLE ACCESS TO BANKING SERVICES

The new service is another effort to boost finance revenues from Wal-Mart customers, many of whom have little access to banking services, into stores that are experiencing declining traffic.

According to a 2011 survey by the Federal Deposit Insurance Corp, 8.2 percent of U.S. households are "unbanked" and another 20.1 percent are "underbanked," making money transfers an important personal finance tool for them.

Walmart-2-Walmart customers can transfer up to \$50 for a fee of \$4.50, compared with between \$4.75 and \$5 at rival services, Wal-Mart said. Transferring \$900 will cost \$9.50, compared with \$73 via MoneyGram.

"The bigger loser is MoneyGram as they have a bigger threat as they have 27 percent revenue that came from Walmart in 2013," said Rahul Agarwal at Guggenheim Partners. "MoneyGram gets a quarter of their revenue through that agreement."

The Walmart service will limit customers to \$900 in transfers a day; higher amounts would require the sender to provide much more information, adding a level of complexity that would compound costs, Eckert told Reuters, noting there will little demand anyway for transfers above \$1,000.

Consumers can still transfer money through MoneyGram. MoneyGram also facilitates online money transfers, while WalMart-2-Mart will strictly transfer cash from store to store.

Western Union said its online domestic money transfer service was growing fast.

Wal-Mart has long been interested in taking a bigger piece of the financial services market. It had applied for a bank charter but withdrew it in 2007 after opposition from banks and labor unions.

Wal-Mart U.S. last year generated about 1 percent of annual sales from financial services such as money orders, prepaid cards, wire transfers, check cashing and bill payments, according to its latest annual report. The company offers those services at its Walmart MoneyCenter locations and customer service desks.



Exhibit G-1

Wal-Mart shares were up 0.6 percent to \$77.70 in afternoon trading.

(Reporting by Phil Wahba in New York. Additional reporting by Avik Das; Editing by Paul Simao, [Jilian Mincer](#) and [Bernadette Baum](#))

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The real reasons why Walmart and Facebook are entering the money transfer space



BY MICHAEL CARNEY
ON APRIL 17, 2014

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Exhibit G-2



Make no mistake about it, things are heating up in the money transfer sector. After years of almost no innovation, two giants recently announced plans to get into the financial services game. Earlier this week, we heard news that [Facebook will be resurrecting its payments ambitions](#) with the launch of a money transfer

Dancing Giants: At SAP, it is about trying to make the battleship turn faster



BY JAMES ROBINSON

4 minutes ago

Yik Yak raises \$1.5M

Anonymous chat app Yik Yak has raised \$1.5 million in seed funding. Investors include Vaizra Investments, DCM, Azure Capital Partners, and others. [Source: [TechCrunch](#)]

13 minutes ago

“No matter how you look at the case, [broadcasters] offer no rational reason for suggesting Aereo is not legal. They keep citing things from the sixties, and the copyright arguments they make are utterly baseless. Even the cable companies don’t pay for copyright payments — they pay retransmission fees. It has nothing to do with copyright. Trying to extend that copyright to corporate has never been done before.”

—Aereo CEO Chet Kanojia, whose company is making final oral arguments to the supreme court today

13 minutes ago

service in Europe. Today, Walmart jumped on the bandwagon with the announcement of [Walmart2Walmart](#), an in-store money transfer service set to debut on April 24th at the retailer's more than 4,000 US locations.

So what gives? Why all the attention around money transfer?

The simple answer is money transfer is big business. Look no further than the \$9 billion plus combined market caps of [Western Union](#) and [MoneyGram](#) – down 5 percent and 18 percent respectively on today's news – to know why Walmart and Facebook want in on this action.

Western Union generated \$5.5 billion in 2013 revenue. Combine that with MoneyGram's nearly \$1.5 billion in revenue during the same period and you've almost matched the \$7.8 billion top line figure generated by Facebook's advertising business. It will take a few more zeros added to those numbers to move the financial needle for Walmart, but direct money transfer income is just one benefit of hosting this service.

Just as importantly, offering money transfer services is another way for Walmart and Facebook to get users to walk through their physical and virtual doors, respectively. This is as much about revenue generation as it is about customer loyalty and engagement. The more time Facebook's users spend on its site the more ads they can serve. Likewise, the more reasons customers have to walk into a Walmart, the more likely they are to buy other products.

HTC says it would buy one of Nokia's plants

HTC has said that it would consider purchasing one of Nokia's plants in Chennai if it went up for sale. While there has been no word about whether the plant is to go on the market, this could be the case since Nokia has a slew of unresolved tax disputes with Indian authorities. [Source: [Times of India](#)]

13 minutes ago

AT&T launches \$500M venture to build Netflix rival

AT&T has announced a \$500 million co-venture with the Chernin Group to create a Netflix-like video streaming service. It's still unclear what type of content the service is hoping to offer. [Source: [Gigaom](#)]

13 minutes ago

Facebook powers 51% of social logins

According to data from the login service Giga, Facebook is the leader when it comes to logging into services via a social account. Facebook powers 51 percent of these logins; Google comes in second with 31 percent. [Source: [TechCrunch](#)]

13 minutes ago

Weebly raises \$35M at a \$455M valuation

Website hosting platform Weebly has raised \$35 million in new capital, reportedly valuing the company at \$455 million. The investment came from Sequoia Capital and Chinese internet company Tencent. [Source: [Digits](#)]

13 minutes ago

Finally, not to be overlooked, is the power of the data generated by the money transfer space. Facebook's entire business is based around knowing its users and their extended social graphs. More often than not, money transfers happen between friends and family. Mapping the endpoint of these transfers, not to mention the frequency, dollar amounts, and motivating factors, will give Facebook an even richer picture of its users that it can use to serve targeted ads or deliver other services.

While it's easy to think of Walmart as an "atoms" rather than "bits" company, it's among the most technologically sophisticated of all global retailers and knows more about its customers, their shopping habits, and their personal lives than most consumers realize. If [Target knows when one of its customers is pregnant](#) before even her family does, what kind of personal dossier do you think Walmart, at six-and-a-half-times Target's size, keeps on its customers? Make no mistake, data scientists working deep within the bowels of Walmart are licking their chops at the prospect of getting access to more payments data.

So with those three reasons alone, it should come as no shock that Facebook and Walmart are throwing their hats into the proverbial money transfer ring. Don't be surprised to see other non-financial institutions follow suit. If the recent rise in popularity of bitcoin has proven one thing, it's that consumers are looking for better and easier ways to manage their finances outside the existing banking system.

Reddit removes /r/Technology from frontpage after censorship scandal

Last week a Reddit user exposed that the moderators of the 'technology' subreddit had effectively banned articles that used terms such as 'National Security Agency', 'Bitcoin', 'Net Neutrality', 'Snowden', 'GCHQ', and even 'startup'. Yesterday the "Front Page of the Internet" removed /r/Technology from its own front page menus. It's a continuation of a theme for Reddit—last year a similar censorship scandal affected the /r/Politics subreddit, raising serious concerns over transparency and the social nature of the news site.

[Source: [BBC](#)]

13 minutes ago

Ukrainian militia captures Vice reporter

Vice journalist Simon Ostrovsky, who has been covering the Ukraine since early March, has been taken by a militia in the city of Solviansk. The leader of this group Vachislav Ponomaryov has admitted to having the reporter "in custody." Vice has tweeted that it is aware of the situation and working to ensure Ostrovsky's safety.

[Source: [Mashable](#)]

13 minutes ago

YouTube's product head may leave his post soon

Re/code is reporting that Shishir Mehrotra, YouTube's head of product, may soon part ways with the company. While YouTube wouldn't confirm the full departure, it did say that Mehrotra is taking on an advisory role. [Source: [Re/code](#)]

13 minutes ago

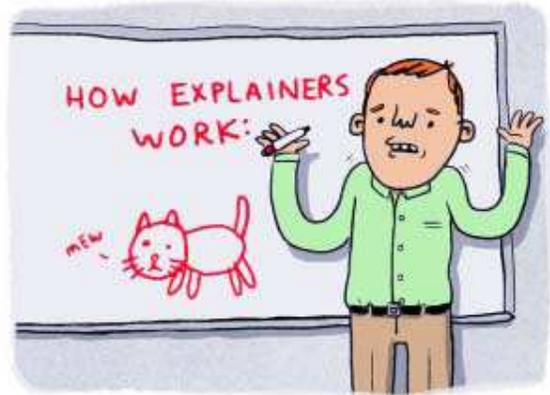
While details on Facebook's money transfer system remain thin, Walmart's fees structure is laid out for all to see. It will cost consumers \$4.50 to transfer sums under \$50 – a rate of 9 percent at the lowest end – and \$9.50 to transfer any sum between \$50 and \$900 – 1.05 to 19 percent. It's not the highway robbery of the legacy services which can cost \$50 or more to transfer a few hundred bucks, but it's not exactly pennies either.

It seems like there's still more room for these fees to fall, should a disruptor like Coinbase or Venmo decide to take on the category. Furthermore, Walmart doesn't yet allow international transfers, and Facebook's service has no US component, meaning that the remittance market, which represents an enormous portion of the money transfer sector, is not yet affected.

Given the financial opportunity at stake, expect the battle for money transfer dominance to turn into a long and ugly bloodbath. It won't just be the old guard of Western Union and MoneyGram versus the new guard of Walmart and Facebook either. Traditional banking companies and alternative payment networks like [PayNearMe](#), [Dwolla](#), and others surely have an eye on this market.

The good news is that with more competition, prices are sure to come down and service is bound to improve, making this a win for consumers. The bad news, however, is that the new market entrants want more than your money transfer commissions. They want your data, your attention, and the rest of your

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Vault of Satoshi opens up to avoid the next Mt Gox

shopping business. Buckle up, this contest is just getting started.

[Image via [Propmoney](#)]

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Michael Carney

Michael Carney has spent his career exploring the world of early stage technology as an investor

and entrepreneur and has participated in building companies in multiple countries within North and South America and Asia. Ultimately, he is an enthusiast of all things shiny and electronic and is inspired by those who build businesses and regularly tackle difficult problems. You can follow Michael on Twitter [@mcarney](#).

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margsvi 4 days ago

Realizing the more compromised motives of Facebook and Walmart, also invites the actions and outcomes of our 'too big to fail' banks to be put in clearer perspective. As author and ex-banker (former Goldman Sachs managing director) Nomi Prins outlines in his book, 'All the Presidents' Bankers' "The Hidden Alliances That Drive American Power", stated; "We are in great danger". To paraphrase



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Prins, who describes the historical basis of how the banks have used power to influence not only domestic affairs but foreign affairs, which, in the manipulation of events, led the US in and out of wars, as profits indicated. It seems, it now rest on the devils you know and how the laws enable them to again, misuse their customers or how new money changers can be made to be far more competitive, given the number of viable competitors. Maybe, the public should try for once to be pro-active on one end, to later wait for a variety of like companies, one of which might actually service their real needs, as opposed to ones with questionable outcomes (usually set up only for their gains). Please note that Nomi Prins is currently a member of Sen. Bernie Sanders, of the Federal Reserve Advisory Council. Although it seems to be repeating the obvious, no average person would want to be blind-sided again by their government or their personal bank, (that just happened to be 'too big to fail').

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WmBerlin 4 days ago

No mention of privacy issues concerning Facebook and Walmart nor Facebook's more than likely ongoing NSA Facebook partnership ?

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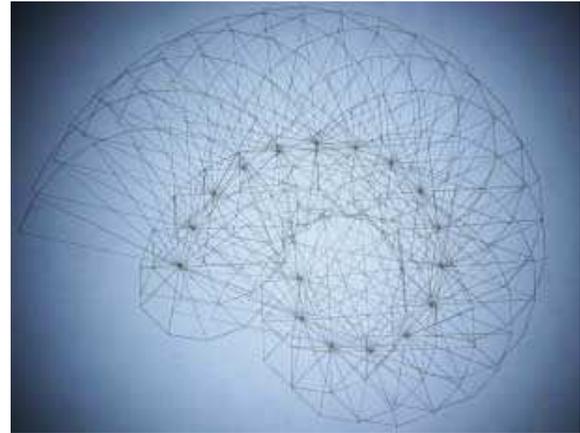
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BY DAVID HOLMES

about 8 hours ago

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BY JAMES ROBINSON

about 21 hours ago

Netflix to raise prices after solid first quarter

According to CEO Reed Hastings Q1 letter to shareholders, Netflix will increase its monthly subscription price by a \$1 or \$2 for new users sometime this quarter. Hastings stressed that existing Netflix subscribers will be grandfathered at the current \$7.99/month rate for "a generous period of time." The company also recorded \$53.1 net income on \$1.3 billion in revenues for the first quarter.

about 21 hours ago

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BY DAN RAILE

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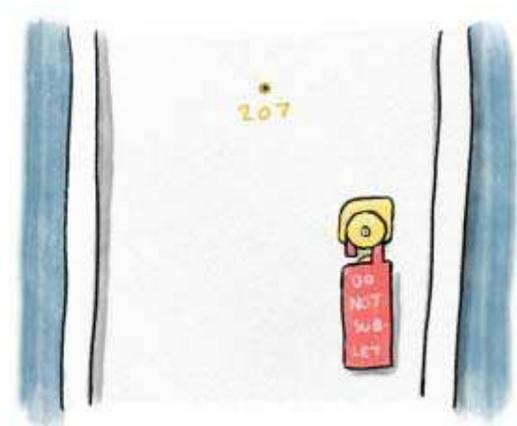
GitHub president Tom Preston-Werner resigns

GitHub co-founder and president Tom Preston-Werner has resigned following an investigation into allegations of misconduct by him and his wife, the company announced on its blog today.

[Source: [GitHub](#)]

about 22 hours ago

The Airbnb/New York spat is coming to a head



BY CALE GUTHRIE WEISSMAN

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its honor

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Why this group of investors is still trying to save Mt. Gox

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Apple Pay, in-person deals to drive mobile payment use



By **Rex Crum**

Published: Nov 17, 2014 2:02 p.m. ET

19 3 26 11

Aa 

Forrester: U.S. mobile payments to nearly triple in five years





A terminal at a Whole Foods Market displays the Apple Pay logo.

SAN FRANCISCO (MarketWatch) — The advent of services such as Apple Inc.'s Apple Pay, and a growing search for better security offerings, are expected to dominate a mobile-payments market in the U.S. that Forrester Research says will nearly triple in the next five years.

A new report Monday on the evolution of mobile payments in the U.S. from Forrester analyst Denee Carrington estimates that U.S. consumers will make \$52 billion in mobile payments this year, and that amount will surge to \$142 billion by the end of 2019. Carrington said that what is currently the smallest category of mobile payments, those done in person, "hold[s] the greatest growth potential" as grocery stores and restaurants are seen as taking the lead on accepting and promoting new mobile-payment options.

Such in-person payments are those done using a mobile handset at a retail point-of-sale station. Carrington forecasts in-person mobile payments of \$3.74 billion in the U.S. in 2014 will trail the \$5.26 billion expected from peer-to-peer transfers, and \$42.56 billion from remote payments. However, in-person payments are expected to grow faster than the other two payment areas, and show a compounded annual growth rate of 56%, to hit \$34.2 billion in five years.

"The category is marked by tremendous investments and experimentation," said Carrington, who noted that coffee-retailing giant Starbucks **SBUX, +0.32%** currently provides the best example of the potential for in-person mobile payments to succeed, as the company already counts 16% of its U.S. transactions coming from mobile-payment options.

Remote payments are seen as remaining the biggest area of all mobile-payment options, with such transactions expected to rise to \$90.7 billion in five years, while peer-to-peer transfers are forecast to grow to \$16.8 billion by the end of 2019.

Carrington said fears about complexity of systems and security have impacted consumers' willingness to pay for items via their smartphones on a consistent basis. Additionally, businesses are just beginning to really get on board with the concept due to "a highly fragmented market, and solutions that delivered limited merchant value to offset the barriers to acceptance."

Carrington said the launch of Apple's **AAPL, -0.69%** Apple Pay offering with the iPhone 6 should provided a step in the right direction both for merchants and consumers, due to Apple's use of what is called "tokenization" technology. Apple claims that tokenization is more secure than prior mobile-payment technologies because it doesn't store any of a consumers usable payment data with a merchant during a payment transaction.

"In the coming year, we expect to see a much greater use of tokenization across a broader range of payment experiences and channels such as in-store, in-app, and even more widely with online payments," Carrington said.

STOCK REFERENCES

SBUX
+0.25 +0.32%

AAPL
-0.80 -0.69%

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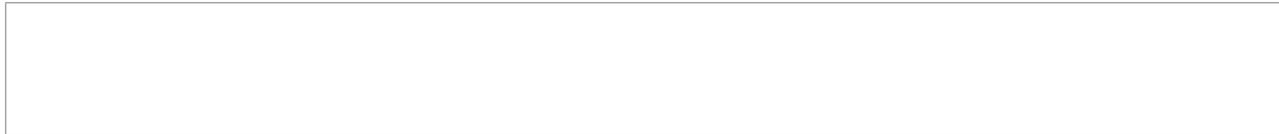


Rex Crum is a technology reporter for MarketWatch in San Francisco. Follow him on Twitter @mktwcrum.

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NEWEST OLDEST

Maxander D10

2 days ago

It looks like investors investing in Apple & keep finding out any xyz reason to retain or hold the Apple stocks would have to shift their focus as Apple the smartphone maker to as Apple an online payment service provider;))))

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Michael Gonzales

2 days ago

Many actually prefer using NFC on on their Android phones to make payments even swifter and more secure than Apple.

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Malcolm Manness

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There is a really good description of the tokenization process here:

<http://jmmxtech.wordpress.com/2014/09/25/understanding-tokens-digging-deeper/>

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WorldRemit brings mobile money transfer services to US



With the U.S. the top sender of international remittances, a London-based company believes now is the time to cross the Atlantic and do business here despite competition from established brands such as Western Union and Xoom.

WorldRemit earlier this week announced that its remittance services now are available to consumers in nine states and Washington, D.C., either online or through a mobile app. The company must obtain a money transmitter license to operate in each state and expects to secure all 50 required licences during the first quarter of 2015. Then it can really go about cashing in on the new opportunity developing in the U.S.

Exhibit G-4

"The U.S. is really buzzing about financial services and mobile coming together at the moment and I think for WorldRemit to be a part of that evolving story is genuinely exciting," Iain Mackenzie, the company's head of communications, told Mobile Payments Today in an interview.

WorldRemit gives consumers the ability to send money abroad using a computer, smartphone or tablet. Recipients can have funds deposited in a traditional bank account or a mobile money account such as M-Pesa, or simply collect the cash at a participating bank or retailer. Bank account transfers can take one to three business days to clear, while mobile money deposits and cash pickups are available almost immediately. Consumers also have the ability to purchase and remit mobile airtime minutes.

WorldRemit fees depend on the transfer amount and destination. For example, a \$100 transfer from the U.S. to Mexico would cost \$3.99, but to send the same amount to Nigeria would cost \$6.99. For the Mexican transaction, the company charges the same fee as Western Union, but for remittances to Nigeria, WorldRemit charges \$3–\$5 less than its larger competitor, depending on the sender's funding source.

Record funding

Ismail Ahmed, chief executive and founder of WorldRemit, started the company in 2010 as a result of his bad experiences sending money to relatives in Africa while he attended college in London, Mackenzie said. The company earlier this year became a London fintech success story when Accel Partners invested \$40 million in a Series A funding round, which stands as one of the largest amounts in the European tech industry. Accel also was an early investor in Dropbox, Facebook and Spotify.

WorldRemit almost immediately used the money to expand its destination list to 15 countries in Latin America, and to help kick-start its efforts in the U.S., where it now has an office in Denver (right in Western Union's backyard).

"I think of the things that attracted Accel to us is that we're a very global service," Mackenzie said. "It's a general attitude in the company. We try to service as many markets as possible."

WorldRemit's services are now available to senders in 50 countries and recipients in 110 countries — significantly more than Xoom's 30 destinations.

Mackenzie said WorldRemit will tout that global reach to differentiate itself from competitors. For example, Xoom users cannot send funds to any African country, while WorldRemit boasts Nigeria as one of its top recipient countries. Nigerian migrants in the U.S. sent some \$6.1 billion in remittances to their home country in 2012, according to the World Bank.

But Xoom, Western Union, MoneyGram have an advantage over WorldRemit with an established customer base in the U.S. Still, the World Bank research suggests there should be enough customers to go around as this corner of the financial services industry continues to grow.

International migrants in the U.S. sent some \$123.2 billion in remittances to their home countries in 2012. Worldwide, some \$529 billion in remittances crisscrossed the globe that same year. India received the largest share of remittances at \$69 billion. Some industry observers believe those figures are on the conservative side, though.

WorldRemit will attempt to establish its own customer base in the U.S. without a flashy marketing push, using vehicles such as Facebook ads to target potential users, Mackenzie said.

"About 10 years ago, you would've had to launch a massive marketing operation on a city by city basis," he said. "[With Facebook] you can get an incredible head start going direct ... with very personal messages to people anywhere in the world.

"It's certainly something that's worked in our favor and given us the ability to get potential users worldwide from our base in London."

Mackenzie believes that the convenience provided by technology also can help WorldRemit win customers in an indirect way: Even where Western Union services are prominent, many migrants who send remittances must still visit a check cashing store where Western Union services are prominent.

"We're not out there saying technology will do the job for us," Mackenzie said. "We're out there saying that it's an incredible thing that you can be sitting on the bus in downtown Washington, D.C., and you decide to send mobile money to someone in the Phillipines using your smartphone.

"We think people will come to recognize that experience."

And that experience is now available to iOS device-users. WorldRemit released an app on Thursday for the Apple operating system, which comes just a few weeks after its app for Android devices dropped on Google Play. Consumers worldwide have downloaded the company's Android app more than 10,000 times and have made it one of the top financial apps across nine countries, WorldRemit said in a press release.

Photo courtesy of Kevin Hutchinson.

Topics: Money Transfer / P2P



Will Hernandez / Will Hernandez has 14 years of experience ranging from newspapers to wire services and trade publications. Before becoming Editor of MobilePaymentsToday.com, he spent two years as the content manager for PaymentsJournal.com, a leading payments industry news aggregator and information hub published by Mercator Advisory Group. Will spent four years covering the payments industry as an associate editor for multiple publications in SourceMedia's Payments Group based in Chicago.

[LinkedIn profile](#)

Apple Pay Set to Transform Mobile Payments Starting October 20

New Service Offers Easy, Secure & Private Way to Pay

CUPERTINO, California—October 16, 2014—Apple® today announced that customers can start making payments with the touch of a finger on Monday, October 20, when Apple Pay™ becomes available in the US. Apple Pay offers an easy, secure and private way to pay using Touch ID™ on iPhone® 6 and iPhone 6 Plus in stores and within apps. Users of the just-announced iPad Air™ 2 and iPad mini™ 3 will be able to use Touch ID on their devices for Apple Pay within apps. The new service will be enabled by a free software update to iOS 8.

“Our team has worked incredibly hard to make Apple Pay private and secure, with the simplicity of a single touch of your finger,” said Eddy Cue, Apple’s senior vice president of Internet Software and Services. “The reaction to Apple Pay has been amazing. We continue to add more Apple Pay ready banks, credit card companies and merchants, and think our users will love paying with Apple Pay.”

“We are excited to make it easier and more convenient for our customers to shop at Whole Foods Market,” said Walter Robb, co-CEO of Whole Foods Market. “We are thrilled to be one of the first retailers to accept Apple Pay across all of our locations nationwide as it offers our shoppers a fast, private and secure check out option at our stores.”

Apple Pay is designed to protect the user’s personal information. It doesn’t collect any transaction information that can be tied back to a user and payment transactions are between the user, the merchant and the user’s bank. Apple doesn’t collect your purchase history, so when you are shopping in a store or restaurant we don’t know what you bought, where you bought it or how much you paid for it. Actual card numbers are not stored on the device, instead, a unique Device Account Number is created, encrypted and stored in the Secure Element of the device. The Device Account Number in the Secure Element is walled off from iOS and not backed up to iCloud®.

Apple Pay supports credit and debit cards from the three major payment networks, American Express, MasterCard and Visa, issued by the top US banks. In addition to American Express, Bank of America, Capital One Bank, Chase, Citi, Wells Fargo and others, who announced support in September, more than 500 new banks from across the country have signed on to Apple Pay. Users can make purchases in stores and within apps, with credit cards issued by many of the leading banks nationwide, which make up 83 percent of the credit card purchase volume in the US.*

Apple Pay in stores is fast and easy to use. Simply hold iPhone near the contactless reader while keeping a finger on Touch ID. In addition to the 262 Apple retail stores in the US, availability from leading retailers at launch include: Aéropostale, American Eagle Outfitters, Babies”R”Us, BJ’s Wholesale Club, Bloomingdale’s, Champs Sports, Chevron and Texaco retail stores including ExtraMile, Disney Store, Duane Reade, Footaction, Foot Locker, House of Hoops by Foot Locker, Kids Foot Locker, Lady Foot Locker, Macy’s, McDonald’s, Nike, Office Depot, Panera Bread, Petco, RadioShack, RUN by Foot Locker, SIX:02, Sports Authority, SUBWAY, Toys”R”Us, Unleashed by Petco, Walgreens, Wegmans and Whole Foods Market. In addition, many others will add support this year, such as Anthropologie, Free People, Sephora, Staples, Urban Outfitters, Walt Disney Parks and Resorts and more.

Checkout is simple and can happen with a single touch—there’s no need to manually fill out lengthy account forms or repeatedly type in shipping and billing information. Your actual card number is kept private and not shared with the online merchant. Online shopping within apps allows users to pay for physical goods and services including apparel, electronics, health and beauty products, tickets and more. Apps with the ability to use Apple Pay at launch include: Apple Store app, Chairish, Fancy, Groupon, HotelTonight, Houzz, Instacart, Lyft, OpenTable, Panera Bread, Spring, Staples, Target and Uber. Many more will support Apple Pay by the end of this year with popular apps such as Airbnb, Disney Store, Eventbrite, JackThreads, Levi’s® Stadium by VenueNext, Sephora, Starbucks, StubHub, Ticketmaster and Tickets.com, among others.

Leading payment solution providers and terminal suppliers such as Adyen, Authorize.Net,

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Bank of America Merchant Services, Braintree, CyberSource, Chase Paymentech, First Data, Heartland Payment Systems, iMobile3, NCR, Oracle's Micros, Stripe, TSYS and VeriFone, among others, are working to bring merchants in stores and in apps the ability to easily, securely and privately accept payments using Apple Pay.

Availability

Apple Pay will be available in the US starting Monday, October 20 with iOS 8.1. For shopping in stores, Apple Pay will work with iPhone 6, iPhone 6 Plus and with Apple Watch™, upon availability. For online shopping within apps, Apple Pay is available on iPhone 6, iPhone 6 Plus, iPad Air 2 and iPad mini 3. Users should contact their bank to determine their card's eligibility, some banks may not support all card types. Apple Pay will be available in select retailers and apps in 2014. For more information visit www.apple.com/apple-pay.

* American Express, Bank of America, Capital One Bank, Chase, Citi and Wells Fargo at availability with additional banks coming quickly thereafter including Barclaycard, Navy Federal Credit Union, PNC Bank, USAA and U.S. Bank.

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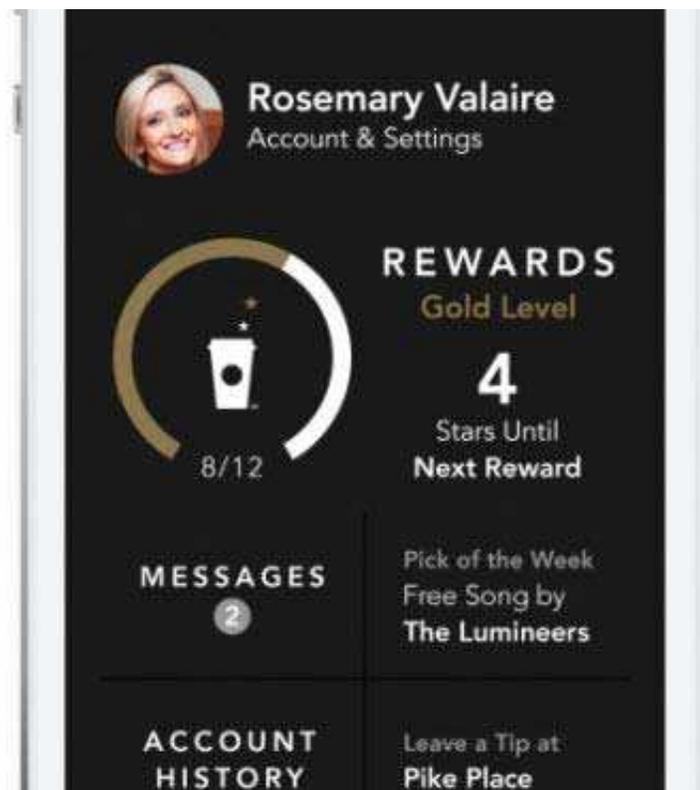


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March 11, 2014 Customer Experience

Digital Tipping and 'Shake to Pay' are New with Starbucks Enhanced App for iPhone



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Exhibit G-6

Starbucks announces an enhanced mobile app for Apple's iOS which will allow customers to tip their baristas directly from the Starbucks for iPhone® app.

Beginning March 19, customers using Starbucks App for iPhone in the U.S., U.K. and Canada will experience a streamlined design and easy access to their account and [My Starbucks Rewards](#) information. In addition, customers using the app will have the option to leave a tip at more than 7,000 company-operated Starbucks® stores in the U.S.

“With more than 11 percent of transactions a week now happening with a mobile device in our stores, and nearly 10 million customers currently using our mobile app, we’re thrilled to make the digital experience even easier and more rewarding for our customers and partners,” said Adam Brotman, chief digital officer for Starbucks. “This update to the Starbucks App for iPhone is an important next step in digital innovation at Starbucks and one of the many ways we’ll expand and improve our digital experience in the months to come.”

Digital tipping has been a top suggestion on [MyStarbucksIdea.com](#), an online community for people to share, vote, discuss and put into action ideas on how to enhance the Starbucks Experience. Starbucks expects to introduce a complete update to the Starbucks for Android™ app, including a digital tipping feature, later this year.

“As more and more customers are using their phone to pay, they have also asked for a convenient and meaningful way to show their appreciation to store partners,” said Cliff Burrows, group president, U.S., Americas and Teavana. “We’re proud to offer digital tipping as an option through the updated Starbucks for iPhone® app for customers in the U.S.”

Through the Starbucks for iPhone® app, customers can enjoy the following features:

- **Mobile Payment** - For customers looking for the fastest way to pay, the Starbucks App for iPhone offers customers the convenience of paying for their favorite Starbucks® beverages with their mobile devices.
- **Digital Tipping (NEW!)** - Customers can show their appreciation to store partners by tipping through the Starbucks App for iPhone. Customers are given the option to provide a tip in the following denominations: \$0.50, \$1.00, \$2.00.
- **Shake to Pay (NEW!)** - To simplify mobile payments, customers can now bring the barcode of their Starbucks Card front and center at any time, simply by shaking their mobile device.
- **My Starbucks Rewards™ status** - The My Starbucks Rewards™ screen has been redesigned to streamline viewing of Rewards history. The display also features new transaction types, such as multiple transactions in a single day and promotional offers, in one integrated view.
- **Reload** - Customers can reload their Starbucks Card balance directly from their mobile device with a major credit card. Customers can even set up automatic reloads.
- **Store Locator** – Customers can search for the closest Starbucks® stores, view the amenities available at each store, and save favorite stores.

- **Starbucks Card eGift- Allows customers to treat friends and family to their favorite Starbucks® beverage, food or merchandise through a fast and easy virtual gift from their iPhone®. Starbucks Card eGifts can be customized with a personal message and sent directly using contacts for any amount between \$5- \$100. (U.S. only)**

The Starbucks for iPhone app is available for download through iTunes® at <http://sbux.co/StarbucksforiPhone>. Additionally, customers can access their Starbucks account using Passbook, allowing customers' mobile Starbucks Cards to appear on their iPhone® screen automatically after they enter a favorite Starbucks® store.

Fact Sheet: Starbucks Mobile Apps and Mobile Payment

About Starbucks

Since 1971, Starbucks Coffee Company has been committed to ethically sourcing and roasting high-quality *arabica* coffee. Today, with more than 21,000 stores around the globe, Starbucks is the premier roaster and retailer of specialty coffee in the world. Through our unwavering commitment to excellence and our guiding principles, we bring the unique Starbucks Experience to life for every customer through every cup. To share in the experience, please visit our stores or online at Starbucks.com and news.starbucks.com

For more information on this news release, [contact us](#).

December 5, 2014 Company

Starbucks Launches Mobile Order & Pay in Portland; National Introduction in 2015



Share

Exhibit G-7

Starbucks launched **Mobile Order & Pay** in Portland, Oregon (December 3, 2014) and expects to introduce this feature nationally beginning in 2015.

Mobile Order & Pay allows customers to place orders in advance of their visit and pick them up at their chosen Starbucks® store. The mobile ordering experience is seamlessly integrated into Starbucks world-class mobile app and My Starbucks Rewards® loyalty program. Mobile Order & Pay is available for customers using a Starbucks® app for iPhone® (version 3.2)* in markets where the feature is available.

Store locations appear based on the GPS functionality of a customer's iPhone®. Upon first use, customers will be asked to accept location services allowing Starbucks to identify the nearest location offering Mobile Order & Pay. If customers choose not to accept location services, they will not be able to use the Mobile Order & Pay feature but will have access to the Starbucks® Mobile Menu.

How Mobile Order & Pay works

To use Mobile Order & Pay, customers may:

1. Click on the "Order" option at the top right of the screen
2. Select the food and beverage items to order: Just as in-stores, beverages are customizable, including the option to modify size, number of espresso shots, dairy selections and more.
3. Select the participating store for pick up: Approximate wait times will be viewable on the customer's phone prior to selecting store location. Directions will also be available if needed.
4. Confirm by clicking "order:" At the time of order, payment is made from the customer's registered Starbucks Card.
5. Proceed to the selected Starbucks® store to pick up food and beverages: Orders are immediately sent to the selected store where Starbucks partners (baristas) will begin preparing the items.

*This feature will be available for customers using the Starbucks® app for Android™ in 2015 as national rollout of mobile ordering continues.

Additional Media images and b-roll

About Starbucks

Since 1971, Starbucks Coffee Company has been committed to ethically sourcing and roasting high-quality *arabica* coffee. Today, with more than 21,000 stores around the globe, Starbucks is the premier roaster and retailer of specialty coffee in the world. Through our unwavering commitment to excellence and our guiding principles, we bring the unique Starbucks Experience to life for every customer through every cup. To share in the experience, please visit our stores or online at Starbucks.com and news.starbucks.com

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CNET > Internet > Snapchat, Square want to make it easy for you to send cash

Snapchat, Square want to make it easy for you to send cash

The social networking service popular among teens jumps into the mobile payments market.

by **Ian Sherr** and **Donna Tam** / November 17, 2014 2:46 PM PST

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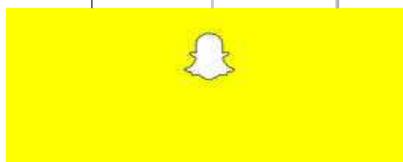
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Snapchat's latest feature: Money transfers.

Snapchat, known for sending photos that immediately disappear after being viewed, **has teamed with payment processing service Square** to help users send money to one another. The unusual pairing gives Snapchat a new feature its larger competitors like Twitter and Facebook can't yet match.

The system is remarkably simple: start a message, use a dollar sign and give the amount.

"The product you're seeing today is fast, fun and incredibly simple," Snapchat said in a statement.

The move marks Snapchat's latest effort to expand beyond disappearing messages. In the three years since launching, Snapchat has become synonymous with a new breed of social-networking services that focus on simple communication of either a photo or video. The company has said users send 700 million photos and videos a day.

The new Snapcash service ties two big trends. The first taps into Snapchat's popularity among the 14- to 34-year-old set, **according to industry researcher eMarketer**. That age group also happens to be the largest without a bank account, **according to surveys by the Federal Deposit Insurance Corporation**. The Snapcash service could help change that.

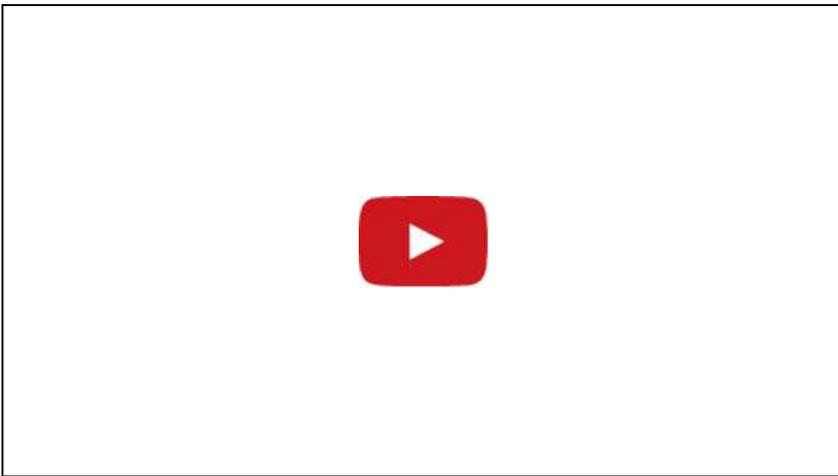
Exhibit G-8

Mobile payments are already skyrocketing, due in part to the popularity of smartphones and new services like **Apple Pay** and Google Wallet. In the US alone, mobile payments are expected to nearly triple to \$142 billion in 2019, up from an estimated \$52 billion this year, according to Forrester.

One of the companies at the center of this trend is Square. Originally known for its mobile credit card reader for very small businesses, the company has expanded its service to include payments through a debit card issued by a bank and tied to an account for transactions. Square Cash, as it's called, was launched a year ago to help users send money to one another with a debit card via email or text message.

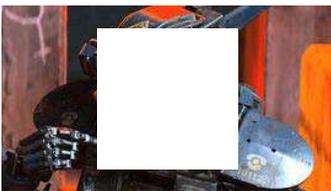
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While it's unclear how big the peer-to-peer money transfer industry actually is, Square said in August its users had sent "hundreds of millions of dollars" to one another. Last month PayPal reported customers used Venmo to send \$700 million in payments in the third quarter -- a 50 percent increase from its previous quarter.



Tags: Internet, Mobile Apps, Snapchat

FEATURED VIDEO



TECH INDUSTRY

'Chappie' stirs up questions about artificial intelligence

Some of the biggest names in tech have warned about the dangers of creating AI, and machines that can think are at the center of Sony's upcoming film. CNET's Bridget Carey asks the movie's stars to weigh in. / [WATCH VIDEO](#)

ABOUT THE AUTHOR



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Donna Tam covers Amazon and other fun stuff for CNET News. She is a San Francisco native who enjoys feasting, merrymaking, checking her Gmail and reading her Kindle. [See full bio](#)



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Ian Sherr is an executive editor for the west coast at CNET News. He writes about social networking and manages coverage of video games, Internet

giants, cybersecurity, the sharing economy, e-commerce and wearable tech. Previously, he wrote about Apple, the PC industry and video games at The Wall Street Journal. He's also written for Reuters and the Agence France-Press, among others. He's a native of the San Francisco Bay Area, though he knows what real weather feels like too. [See full bio](#)

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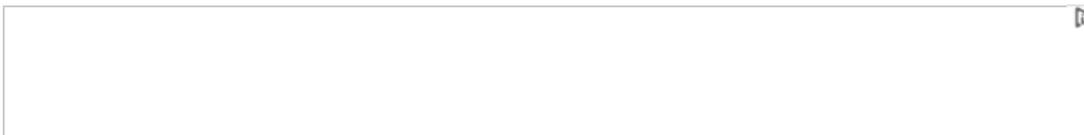
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Runcible is a smartphone masquerading as a pocket watch (pictures)



CNET > Internet > FCC got Net neutrality 'right,' but fight isn't over, Franken says

FCC got Net neutrality 'right,' but fight isn't over, Franken says

Sen. Al Franken says regulating the Internet like a telephone service is the only way the FCC could withstand legal challenges from the telecom industry.

by **Marguerite Reardon** @maggie_reardon / March 3, 2015 9:11 PM PST

55 / 8.2K / 359 / 23 / / more+

Four years ago, Sen. Al Franken was one of the few US lawmakers standing up for rules to keep the Internet open.

Now he's celebrating a victory, along with President Barack Obama and congressional Democrats who applauded the Federal Communications Commission's new Net neutrality rules adopted last week.



Senator Al Franken (D-Minn.)

For years Franken -- comedy writer, author and talk radio host who became a Democratic US senator for Minnesota in 2009 -- has been calling for regulations that ensure all Internet traffic gets fair and equal treatment. "Let's not sell out," he **exhorted Internet entrepreneurs at the 2011 South by Southwest Festival (SXSW) in Texas.** "And let's not let the government sell us out. Let's fight for Net neutrality. Let's keep Austin weird. Let's keep the Internet weird. Let's keep the Internet free."

What does keeping the Internet free mean? Net neutrality is the idea that traffic on the Internet should be treated equally. That means your broadband provider, which controls your access to the Internet, can't block or slow down your ability to use services or applications or view websites. It also means your Internet service provider -- whether it's a cable company or telephone service -- can't create so-called "fast lanes" that force content companies like Netflix to pay an additional fee to deliver their content to customers faster.

But the **newly approved rules also reclassify broadband as a Title II service** under the 1934 Communications Act, which basically means the FCC can regulate the

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Internet the same way it does telephone service. That reclassification has raised the ire of broadband providers, who say the FCC could now impose new taxes and tariffs and force them to share their networks with competitors. Republicans, who also disapprove, are dubbing the new regulation "Obamacare for the Internet."

Franken and other Net neutrality supporters scoff at that. "No, no, no, no!" FCC Chairman Tom Wheeler said Tuesday **during a fireside chat** at the Mobile World Congress in Barcelona. Wheeler said the Net neutrality rules wouldn't dictate rates, impose tariffs, open up carriers' networks to competitors or meddle with their business.

Franken, Wheeler and others say reclassifying broadband is the only way to make sure the rules stand up to court challenges. Experience has shown they need that legal heft. The current rules replace ones a federal appeals court threw out in January 2014, saying the FCC didn't have the legal authority to impose them.

"This is a an enormous victory," Franken said in a statement last week. "This is the culmination of years of hard work by countless Americans who believe -- just as I do -- that the Internet should remain the free and open platform that it's always been."

But the fight isn't over, Franken said in an interview last week. Here's why he's happy about the FCC vote and what's next in his campaign to keep the Internet open.



Emotions have run high over Net neutrality. Here, protesters interrupt a meeting of the FCC commissioners on December 11, 2014. (Wheeler is second from left.)

Brendan Smialowski/AFP/Getty Images

Q: Republicans in Congress seem OK with the basic principles in the Net neutrality rules the FCC adopted. What they seem most bothered by is reclassifying broadband as a Title II service. Why was it necessary for the FCC to reclassify broadband?

Franken: This was the FCC's third attempt to preserve Net neutrality in writing rules. The first two times Comcast and Verizon, respectively, took the agency to court and both times the DC Circuit Court of Appeals ruled against the FCC's rules, not because the court was against Net neutrality, but because it said that the FCC hadn't used the right legal basis. Basically, the court in both instances pointed to invoking Title II as the way to do this.

Was that the right call?

Yes, I think they were right. And I think we finally got to the right solution. What the FCC has done is reclassify the Internet as a telecommunications service. And that is exactly what it is. You do voice and video over the Internet. This is every bit as much as a telecommunications service as the traditional phone service.

Republicans in Congress have been drafting Net neutrality legislation that aims to supersede the FCC's regulations. But just before the vote last week, they backed off and said they would try to rally support from Democrats before moving ahead. Do you think any Democrats will cross party lines to support their efforts?

No, [Senator] Bill Nelson (D-Fla.), who [Senator] John Thune (R-SD) had reached out to, said "This doesn't give the FCC the tools it needs to preserve Net neutrality. So I am not for this." I think that was pretty much when Senator Thune [who had drafted the Republicans' bill] said "Oh, ok **I guess we don't have the support** of Democrats on this."

You were involved in efforts by some Democrats to also draft Net neutrality legislation. Now that the FCC's rules have been adopted, is there any need for a law from Congress to protect the Internet?

No, what the FCC did was exercise its authority. The Internet doesn't change tomorrow. It stays the same and that is what we wanted. We just wanted no paid prioritization and we wanted to preserve Net neutrality. There is no need for us to go further legislatively.

There's an election in 2016. And a Republican could win the White House. Would a Republican FCC overturn the regulations?

It could happen. But remember Chairman Wheeler, a Democrat, was the one who floated the idea of paid prioritization on the Internet. And I think he was convinced by the 4 plus million Americans who submitted comments -- twice as many comments as has ever been submitted on any issue before the FCC. And the vast majority of those were pro Net neutrality. I think the more the Republicans see Americans want this, the more they understand that there's no reason not to preserve the open architecture of the Internet on which we've had all this innovation. I think it may be hard for them if they try to change it. Of course, this is also another reason to think about how you vote in a general presidential election.

The Republicans say they fear the FCC in the future could choose to regulate the Internet with a much heavier hand. Are you concerned about that?

The purpose of these rules is to simply preserve Net neutrality and to make sure things don't change. I don't think it's the intent of anyone who has been for preserving Net neutrality to impose stricter regulation. I think that's why the FCC tried to do this a couple of times without invoking Title II. But I think it's a false worry.

In November, President Obama issued a statement encouraging the FCC to adopt Net neutrality rules and insisting they be based on Title II. Some have argued that President Obama's involvement was inappropriate. What do you think?

I don't think it was inappropriate. I think the FCC is an independent agency. And President Obama expressed his opinion. It's a big deal. This is a big issue. It's about freedom of speech and it's about innovation. I think he did the proper thing.

The vote last week was split along party lines, with the three Democrats voting in favor of the new Net neutrality rules and the two Republicans voting against. Has the FCC become too partisan?

I wish the other two commissioners had voted with the majority. But unfortunately

we see this too often within regulatory agencies, whether its the NLRB (National Labor Relations Board) or others. It would be nice on these big big issues if there were a little bit more meeting-of-the minds. But that didn't happen this time.

Who do you think is to blame for the contentious climate in the FCC?

Oh, that is a long long answer to that question. And I don't have the time to answer that. It's a long history that goes way back.

Is it institutional within the FCC?

Oh no.

Commissioner Mignon Clyburn (Democrat) said last week that she was surprised by the misinformation about Net neutrality that was thrown around before the vote. Were you surprised?

No. [laughs] I have been kind of a student of misinformation for a long time. So I am never, never surprised by misinformation and disinformation on any manner of stuff.

*This story is part of a **CNET special report** looking at the challenges of Net neutrality, and what rules -- if any -- are needed to fuel innovation and protect US consumers.*

Tags: Net Fix, Internet, FCC

ABOUT THE AUTHOR



Marguerite Reardon /

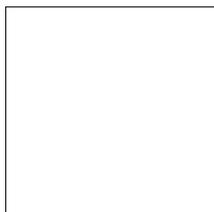
Marguerite Reardon has been a CNET News reporter since 2004, covering cell phone services, broadband, citywide Wi-Fi, the Net neutrality debate, as well as the ongoing consolidation of the phone companies. [E-mail Maggie.](#)

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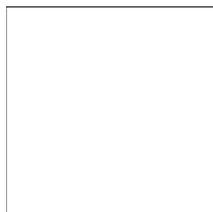
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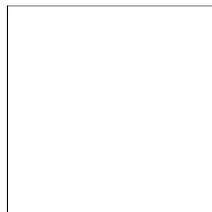
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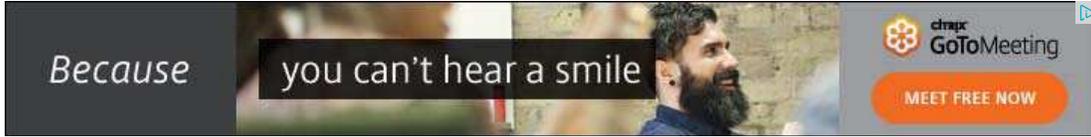
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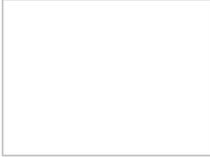
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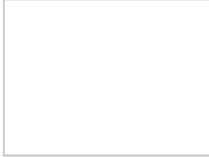
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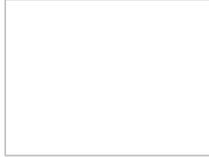
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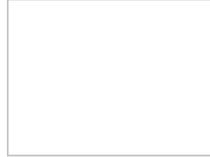
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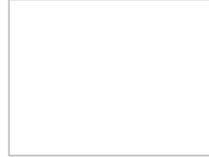
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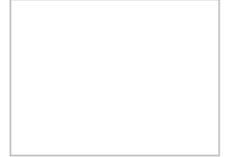
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Snapchat launches Snapcash money transfer service

Snapchat has unveiled a new feature that allows users to send money to friends via private messages



Snapchat chief executive Evan Spiegel Photo: AP

By Sophie Curtis

6:11PM GMT 18 Nov 2014

Ephemeral messaging service Snapchat has teamed up with payment processing company Square to launch a new money transfer service called Snapcash, that allows users to send and receive money directly from the app.

Square already offers a payment app called Square Cash, which allows users to type a dollar amount into the subject line of an email in order to send cash to friends.

Snapcash builds on this by allowing Snapchat users to type the dollar amount into a private message and transfer the money into the recipient's pre-registered account with the touch of a button.

The service is currently limited to Snapchat users in the United States who have a debit card and are 18 or older. However, it is possible the company will roll it out on a wider scale if it proves to be successful.

Snapchat emphasised that no personal financial data will be stored on Snapchat's servers. Square will be responsible for storing all user bank and debit card information, and for handling transactions.

"Square has a ton of experience in this area and our teams have been hard at work to make Snapcash a great experience for everyone," said Snapchat in a blog post.

This will help to allay the security concerns of some users, after Snapchat was hacked at the end of last year, resulting in the usernames and phone numbers of 4.6 million users being leaked.

The company has also had to face allegations earlier this year that it misled users about its data collection methods and failed to tell users that others could save their messages without their knowledge.

Commenting on the news, Bram Meuleman, strategy director at global media agency Carat, said that Snapchat partnering with Square Cash will allow it to form a more complete picture of its users.

"Up until now, the data they received was made-up user name, contacts, IP location, volunteered age, phone number, and who they watch / follow. And because Snapchat only stores this info for a limited amount of time it makes it difficult to monetise service," he said.

"However partnering with Square Cash means that, between them, they have a far more well-rounded picture of users: Snapchat data complemented with real name, address, payment details etc. from Square Cash.

"This means that Snapchat can serve far more targeted ads – ads that are relevant to users' interests and actual location. And the payment info helps them prove ROI far more easily."

Exhibit G-9

3/4/2015

Snapchat launches Snapcash money transfer service - Telegraph

Snapchat has produced an introductory video to Snapcash, which can be viewed here:

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BUSINESS INSIDER

Billion-dollar London money transfer startup TransferWise is coming to the US

ROB PRICE

FEB. 17, 2015, 10:52 AM

Andreessen Horowitz-backed money transfer startup [TransferWise](#) is expanding to the United States, the company [announced today](#).

Based in London, the fintech company [recently raised \\$58 million in a Series C funding round led by Andreessen Horowitz](#), with an estimated valuation of as much as \$1 billion. TransferWise aims to make overseas money transfers cheaper for consumers by using a peer-to-peer system.

[It matches up payments with those going the opposite direction using sophisticated software](#). So "your" money never actually leaves the country — it's rerouted to someone who's being sent a similar amount by someone overseas. Your foreign recipient, meanwhile, receives their funds from someone trying to send money out of their own country. But customers never have to deal with this peer-to-peer complexity — they just select the receiver's currency and enter their details.

TransferWise claims its services are, on average, eight times less expensive than the transfers offered by traditional banks.

With the opening on a New York office, customers can now send and receive US Dollars. Brazil, the Philippines, Canada, Malaysi and Nigeria have also been added to the platform today.

“We came up with this idea to save ourselves money, and we’ve continued to grow and expand our platform because we believe that people who live, work, study, or do business abroad shouldn’t be ripped off when they transfer their money,” said co-founder Taavet Hinrikus. “This launch means that expats living in the States no longer need to go along with the traditional banks’ old and unfair way of doing things.”

NOW WATCH: [5 Ways Retailers Trick You Into Spending More Money](#)



TransferWise

TransferWise founders Taavet Hinrikus and Kristo Käärmann.

Exhibit G-10

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TransferWise launches money-transfer service in the U.S.

By [Daniel Huang](#) and [Emily Glazer](#)

Published: Feb 17, 2015 5:01 p.m. ET

Americans can now send money overseas through a high-profile startup trying to fill the gap left by banks pulling back from the cash-transfer business.

TransferWise, a London-based startup founded in 2011, on Tuesday launched its currency-transfer services on this side of the Atlantic.

The peer-to-peer site claims to offer lower fees and better exchange rates than those offered by many banks.

TransferWise has so far attracted \$91 million from high-profile backers like venture-capital firm Andreessen Horowitz, and investors Richard Branson and Peter Thiel, including \$58 million raised in a round of funding last month.

The company matches users with their counterparts abroad who wish to transfer money in the other direction. The company says its peer-to-peer model ensures transactions are executed at a lower exchange rate than what banks use. It charges 1% for transactions below \$5,000 and 0.7% for amounts above that. On average, the company claims, it is eight times less expensive than banks.

"Banks often inflate the exchange rate and charge hidden fees," said co-founder Taavet Hinrikus in an interview, equating the practices to "highway robbery."



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Exhibit G-11

Facebook 'planning money transfer service'

A computer science student has discovered a payments feature hidden in Facebook Messenger's source code



Facebook Messenger users could send payments as easily as attachments Photo: AFP / GETTY / Karen Bleier

By Sophie Curtis

10:55AM BST 06 Oct 2014

Facebook is preparing to launch a new money transfer service that will allow users to attach cash payments to their messages in the same way they typically attach a photo, it has emerged.

Stanford computer science student Andrew Aude discovered the feature hidden in Facebook Messenger's source code, with the help of iOS app exploration developer tool Cycrypt.

Posting his discovery on Twitter on Saturday, Aude suggested it would allow Facebook Messenger users to make payments in the same way users of the Square Cash app send money via their mobile phone.

The app can use any card details that are already registered with Facebook for payments, or users

can add a separate debit card. They can also set up an in-app pincode for added security.

It is not known whether Facebook will attempt to monetise Messenger by charging a small fee for money transfers, or offer the functionality for free to drive usage of its standalone chat app.

In an interview with *TechCrunch*, Aude speculated that “based on my understanding of the debit interchange rates, each transaction will cost Facebook roughly \$0.40 to \$0.50 (Durbin swipe fee + ACH fee)”.

However, he added that the app does not mention a fee to send, so it will probably be free – to begin with at least. "Over time they might add a \$1 fee," he said.

Would you trust Facebook with your money?

- Yes, I think it's a great idea
- Maybe, if it was backed by the banks
- No, social networks cannot be trusted

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The news comes after Facebook hired David Marcus, formerly the president of PayPal, to run Facebook's messaging products earlier this year.

As vice-president of messaging products, Marcus oversees the Messenger service within Facebook's social network as well as the free Messenger mobile app.

Roughly 12bn messages are sent every day on Facebook, and the Messenger app has more than 200m users, according to the company.

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Find The Top Money Transfer Services

By [Tim Parker](#) | February 04, 2015



Sometimes you have to get money to somebody (or yourself) fast. When that happens, one easy way to do it is through a money transfer company. Here are some of the best-known companies with wide networks to meet most needs.

Western Union (WU). Founded in 1851 as New York and Mississippi Valley Printing Telegraph Company, Western Union now has more than 500,000 agent locations around the world. It includes money transfer, bill payment, prepaid cards and more options. You can send money to people for arrival in minutes or via the more economical three-day service. The faster you need it there, the more you will pay.

PayPal. PayPal was born in 1998 and eventually became an eBay ([EBAY](#)) company in 2002. Today, the service is used for much more than buying on eBay. You can transfer money to friends and family free of charge in most cases or pay for purchases with your credit card. Although PayPal acts as more of a payment processor than a transfer service, its offerings rival other transfer companies. The downside? PayPal has no retail locations. You can, however, pay with your PayPal app in many retail locations.

Xoom (XOOM) Xoom was founded in 2001 in San Francisco. Customers can send money to 31 countries using the app or a desktop computer. Xoom does not have its own retail locations, but it does partner with banks and retailers to give recipients the option to pick up money from various locations. Use its [fee calculator](#) to estimate fees and exchange rates.

Wal-Mart (WMT). You might not know that you can transfer money from any Wal-Mart location. You can send money from one Wal-Mart to another in as little as 10 minutes for \$4.50. Wal-Mart partners with Ria and MoneyGram for store-to-store transfers. You can also send money to any of MoneyGram's 336,000 locations in as little as 10 minutes for \$4.75. Simply go to any Wal-Mart customer service counter or send online at walmart.moneygram.com.

Ria. This company opened its doors in New York City in 1987 to help immigrants send money to their home countries. Now Ria has more than 240,000 locations in 130 countries, as well as the ability to transfer money online. You can send up to \$2,999 per day online and up to \$999 from any 7-Eleven store. Transfer time is one day or two hours to any Indian bank. Ria is a wholly owned subsidiary of Euronet Worldwide, Inc ([EEFT](#)).

MoneyGram (MGI). MoneyGram was founded in 1940 in Dallas, Texas. The company has more than 320,000 locations in 200 countries and territories. Like Ria, you can send up to \$2,999 per day online; there's a one-day transfer time unless the customer pays for faster turnaround, including MoneyGram's 10-minute transfer service.

The Bottom Line

Transfer companies can get money to others or yourself in an emergency. The transfer rates may not be as favorable as using other options, and some fees can be quite high. Before making the transfer, figure out the fees and exchange rate, and compare to others. These companies don't always make that information easy to find, in large part because it depends on so many factors, but each has a fee estimator.

When choosing which company to use, also research how easy it will be for the recipient to pick up the money at the other end. For more information, read [5 Money Transfer Tips For Foreign Workers](#) and [5 Money Transfer Technologies And Their Risks](#).

Exhibit G-13

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TECHNOLOGY

Facebook Announces a Payments Feature for Its Messenger App

By VINDU GOEL MARCH 17, 2015

SAN FRANCISCO — Facebook’s instant messaging service isn’t just for sending smiley faces and photos anymore. Now you can use it to send money instantly to your friends.

Facebook, the social networking company, announced Tuesday that American users of its Messenger app would be able to link their debit cards to the service and use it to message money to one another just as easily as they send a snapshot or text.

Given Facebook’s huge size and reach, the introduction of its payments feature — which has been highly anticipated by Wall Street — is likely to cause tremors in the nascent market for instantly sending money to individuals, known as peer-to-peer payments.

And analysts said that if the payment system succeeded, Facebook would extend it to other types of purchases, such as consumers’ buying of products directly from advertisers.

“Facebook could use this as a back door to get people’s debit cards to enable the buy button,” said Robert Peck, an Internet analyst with SunTrust Robinson Humphrey.

WeChat, which is essentially the Facebook of China, and other Asia-based communications services like Alipay already allow their hundreds of millions of users to send money via instant message. But the technology is only beginning to appear in the United States, where email payment services like PayPal have long been more popular.

Exhibit G-14

As messaging has begun to eclipse email as the preferred form of electronic communication, especially among younger users, Facebook has sought to dominate that market much as it dominates social networking.

The company's Messenger app is one of the largest platforms in the world, with more than 500 million monthly users. And last year, Facebook spent nearly \$22 billion to buy WhatsApp, a separate messaging platform that now counts more than 700 million active users globally.

In the United States, a host of peer-to-peer money transfer services have emerged and are trying to capture the wallets of messaging enthusiasts.

Venmo, a mobile payments app owned by eBay's PayPal unit, is perhaps the most direct competitor to Facebook's new offering. Popular with young users, it is not just a payment system, but a social network that allows users to post public or private messages about what the money is for.

Square, the e-commerce start-up, offers a similar app that allows payments to individuals by email. And Snapchat, the start-up known for its disappearing messages, also allows users to send cash to one another through a partnership with Square.

With its service, Facebook wanted to simplify the process as much as possible, according to Steve Davis, the product manager in charge of the project.

"We know that conversations about money are happening all the time," he said in an interview. "But most conversations begin in one place and end in another place."

Facebook wanted to keep the payment and the conversation in one message thread that would also serve as a record. So right next to the thumbs-up button on the Messenger screen will be a dollar-sign icon to send money. If a debit card number is already saved in the app, you can send money to the other person in the conversation by clicking the dollar sign and entering an amount. The whole conversation will be saved for later reference.

To reduce the risk of unauthorized transactions, Facebook said, users must enter a PIN or use Apple's fingerprint identification system before they can send the money.

By using debit cards to handle the transfer, the money can move fairly quickly between the two bank accounts while allowing Facebook to offer the service free to users. Unlike PayPal or Venmo, “you don’t have to remember to withdraw the funds later,” Mr. Davis said.

As with most new Facebook features, the Messenger payments button will be gradually introduced to Messenger users in the United States over the next few months, and will be available on mobile apps as well as the web version.

Initially the service will be limited to sending money between people who are Facebook friends, so it will not immediately compete with Apple Pay and other mobile payment services meant to allow people to make purchases easily with their phones. The commercial market, Mr. Davis said, poses a different set of challenges.

Still, some merchants, particularly overseas, have been informally using Messenger to make transactions, Facebook said. The company has a payments business that brought in nearly \$1 billion last year, mostly for items purchased within games hosted on its platform. It has also been experimenting with an e-commerce system that allows merchants to list items for sale and collect money for purchases directly on the social network.

Wall Street has been hotly anticipating the addition of payments to Messenger since June, when Facebook hired the president of PayPal, David Marcus, to lead its messaging efforts.

Mark Zuckerberg, Facebook’s chief executive, told analysts in January that he expected Messenger and WhatsApp to be big moneymakers eventually.

“I’m a big fundamental believer that these are going to be very big contributors to our businesses over time, but we just have to do it right,” he said.

Mike Isaac contributed reporting from Austin, Tex.

A version of this article appears in print on March 18, 2015, on page B1 of the New York edition with the headline: Facebook to Introduce Payments in Messages.